TSG RAN Meeting #26 **RP-040437**
Vouliagmeni Athens, Greece, 08 - 10 December 2004

Title **CRs (Rel-6 Category B) for the introduction of MBMS in RAN3 specifications**
Source **TSG RAN WG3**
Agenda Item **8.4**

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	CR	Rev	Cat	Rel	Title	Work item
R3-041700	25.430	6.2.0	6.3.0	57	1	B	Rel-6	Introduction of MBMS in UTRAN	MBMS-RAN
R3-041714	25.433	6.3.0	6.4.0	1049	4	B	Rel-6	Introduction of MBMS	MBMS-RAN
R3-041723	25.401	6.4.0	6.5.0	95	1	B	Rel-6	CR for Introducing MBMS in 25.401	MBMS-RAN
R3-041724	25.402	6.0.0	6.1.0	45	3	B	Rel-6	MBMS related changes	MBMS-RAN
R3-041725	25.410	6.1.0	6.2.0	59	2	B	Rel-6	Introduction of MBMS in TS25410	MBMS-RAN
R3-041726	25.413	6.3.0	6.4.0	706	2	B	Rel-6	MBMS stage 3 support over Iu	MBMS-RAN
R3-041727	25.420	6.1.0	6.2.0	44	2	B	Rel-6	Introduction of MBMS	MBMS-RAN
R3-041728	25.423	6.3.0	6.4.0	999	2	B	Rel-6	MBMS changes for RNSAP	MBMS-RAN

3GPP TSG-RAN3 Meeting #45
Yokohama, Japan, 15th – 18th November 2004

Tdoc ⌘R3-041723

CR-Form-v7.1

CHANGE REQUEST

⌘ **25.401** **CR** **95** ⌘**rev** **1** ⌘ Current version: **6.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network **X** Core Network **X**

Title:	⌘	Introducing MBMS in 25.401
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	19/11/2004
Category:	⌘	**B**
Release:	⌘	REL-6

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

	Rel-7 (Release 7)

Reason for change: ⌘	Introducing of MBMS in 25.401
Summary of change: ⌘	New referecen to 25.346, 23.246 was added New Abbreviations (APN, HPLMN, MBMS, MCCH, MSCH, MTCH, TMGI) were added New chapter to describe the description for Service Identifiers for MBMS. MBMS provision and MBMS Notificaiton coordination were added in list of functions. New chapter to describe fuctions related to MBMS.
Consequences if not approved: ⌘	

Clauses affected:	⌘	2, 3.2, 6.1.xx (new), 7.1, 7.2.yy(new), 11.2.3				
		Y	**N**			
Other specs	⌘	**X**		Other core specifications	⌘	CR 045 on 25.402 v 6.0.0 CR 059 on 25.410 v 6.1.0 CR 706 on 25.413 v 6.3.0 CR 044 on 25.420 v 6.1.0 CR 999 on 25.423 v 6.3.0 CR 057 on 25.430 v 6.2.0 CR1049 on 25.433 v 6.3.0
affected:			**X**	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

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3GPP TS 25.401 V6.4.0 (2004-09)

Technical Specification

3rd Generation Partnership Project;
Technical Specification Group Radio Access Network;
UTRAN overall description
(Release 6)

Keywords
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Postal address

3GPP support office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet
http://www.3gpp.org

Contents

Foreword

This Technical Specification (TS) has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document describes the overall architecture of the UTRAN, including internal interfaces and assumptions on the radio and Iu interfaces.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] 3GPP TR 25.990: "Vocabulary".

[2] 3GPP TS 23.110: "UMTS Access Stratum Services and Functions".

[3] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[4] 3GPP TS 25.442: "UTRAN Implementation Specific O&M Transport".

[5] 3GPP TS 25.402: "Synchronisation in UTRAN, Stage 2".

[6] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[7] 3GPP TS 25.331: "RRC Protocol Specification".

[8] 3GPP TS 23.101: "General UMTS Architecture".

[9] 3GPP TS 25.414: " UTRAN Iu Interface Data Transport & Transport Signalling".

[10] 3GPP TS 25.424: "UTRAN Iur Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".

[11] 3GPP TS 25.434: "UTRAN Iub Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".

[12] IETF RFC 2460: "Internet Protocol, Version 6 (Ipv6) Specification".

[13] IETF RFC 2474: "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers " December 1998

[14] IETF RFC 768: "User Datagram Protocol", (8/1980)

[15] "Information technology – Open Systems Interconnection – Network service definition", X.213, ISO/IEC 8348.

[16] "Information technology – Open Systems Interconnection – Network service definition Amendment 1: Addition of the Internet protocol address format identifier", X.213/Amd.1, ISO/IEC 8348.

[17] IETF RFC 791 (1981): "Internet Protocol".

[18] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams".

[19] Void

[20] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".

[21] 3GPP TR 43.930: "Iur-g interface; Stage 2".

[22] 3GPP TR 44.901: "External Network Assisted Cell Change".

[23] 3GPP TS 48.018: "General Packet Radio Service (GPRS); BSS GPRS Protocol (BSSGP)".

[24] 3GPP TS 25.460: "UTRAN Iuant Interface: General Aspects and Principles".

[25] 3GPP TS 25.461: "UTRAN Iuant Interface: Layer 1".

[26] 3GPP TS 25.462: "UTRAN Iuant Interface: Signalling Transport".

[27] 3GPP TS 25.463: "UTRAN Iuant Interface: Remote Electrical Tilting (RET) Antennas Application Part (RETAP) Signalling".

[r1] 3GPP TS 25.346: “Introduction of the Multimedia Broadcast Multicast Service (MBMS) in the Radio Access Network (RAN); Stage 2”.

[r2] 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

ALCAP: generic name for the transport signalling protocols used to set-up and tear-down transport bearers

Cell: Radio Network object that can be uniquely identified by a User Equipment from a (cell) identification that is broadcasted over a geographical area from one *UTRAN Access Point*
A Cell is either FDD or TDD mode.

Iu: interface between an RNC and an MSC, SGSN or CBC, providing an interconnection point between the RNS and the Core Network. It is also considered as a reference point

Iub: interface between the RNC and the Node B

Iur: logical interface between two RNCs
Whilst logically representing a point to point link between RNCs, the physical realisation need not be a point to point link.

Iur-g: logical interface between RNC/BSS and BSS
Whilst logically representing a point to point link between RNC/BSS and BSS, the physical realisation need not be a point to point link.

Logical Model: Logical Model defines an abstract view of a network or network element by means of information objects representing network element, aggregations of network elements, the topological relationship between the elements, endpoints of connections (termination points), and transport entities (such as connections) that transport information between two or more termination points

The information objects defined in the Logical Model are used, among others, by connection management functions. In this way, a physical implementation independent management is achieved.

Node B: logical node in the RNS responsible for radio transmission / reception in one or more cells to/from the UE
The logical node terminates the Iub interface towards the RNC.

Radio Resources: resources that constitute the radio interface in UTRAN, e.g. frequencies, scrambling codes, spreading factors, power for common and dedicated channels

Node B Application Part: Radio Network Signalling over the Iub

Radio Network Controller: logical node in the RNS in charge of controlling the use and the integrity of the radio resources

Controlling RNC: role an RNC can take with respect to a specific set of Node B's
There is only one Controlling RNC for any Node B. The Controlling RNC has the overall control of the logical resources of its node B's.

Radio Network Subsystem: RNS can be either a full UTRAN or only a part of a UTRAN
An RNS offers the allocation and release of specific radio resources to establish means of connection in between an UE and the UTRAN. A Radio Network Subsystem contains one RNC and is responsible for the resources and transmission/reception in a set of cells.

Serving RNS: role an RNS can take with respect to a specific connection between an UE and UTRAN
There is one Serving RNS for each UE that has a connection to UTRAN. The Serving RNS is in charge of the radio connection between a UE and the UTRAN. The Serving RNS terminates the Iu for this UE.

Drift RNS: role an RNS can take with respect to a specific connection between an UE and UTRAN
An RNS that supports the Serving RNS with radio resources when the connection between the UTRAN and the UE need to use cell(s) controlled by this RNS is referred to as Drift RNS.

Radio Access Network Application Part: Radio Network Signalling over the Iu

Radio Network Subsystem Application Part: Radio Network Signalling over the Iur

RRC Connection: point-to-point bi-directional connection between RRC peer entities on the UE and the UTRAN sides, respectively
An UE has either zero or one RRC connection.

Stand-Alone SMLC: logical node that interconnects to the RNC over the Iupc interface via the PCAP protocol
This node provides GPS related data to the RNC and may perform the position calculation function.

User Equipment: Mobile Equipment with one or several UMTS Subscriber Identity Module(s)
A device allowing a user access to network services via the Uu interface. The UE is defined in ref. [8]. If this term is used in the context of Iur-g, it means MS in case it uses radio resources of a DBSS.

Universal Terrestrial Radio Access Network: UTRAN is a conceptual term identifying that part of the network which consists of RNCs and Node Bs between Iu an Uu
The concept of UTRAN instantiation is currently undefined.

UTRAN Access Point: conceptual point within the UTRAN performing radio transmission and reception
A UTRAN access point is associated with one specific *cell*, i.e. there exists one UTRAN access point for each cell. It is the UTRAN-side end point of a *radio link*.

Radio Link: "radio link" is a logical association between a single User Equipment and a single UTRAN access point
Its physical realisation comprises one or more radio bearer transmissions.

Radio Link Set: set of one or more Radio Links that has a common generation of Transmit Power Control (TPC) commands in the DL

Uu: Radio interface between UTRAN and the User Equipment

RAB sub-flows: Radio Access Bearer can be realised by UTRAN through several sub-flows
These sub-flows correspond to the NAS service data streams that have QoS characteristics that differ in a predefined manner within a RAB e.g. different reliability classes.

RAB sub-flows have the following characteristics:

1) The sub-flows of a RAB are established and released at the RAB establishment and release, respectively.

2) The sub-flows of a RAB are submitted and delivered together at the RAB SAP.

3) The sub-flows of a RAB are carried over the same Iu transport bearer.

4) The sub-flows of a RAB are organised in a predefined manner at the SAP and over the Iu interface. The organisation is imposed by the NAS as part of its co-ordination responsibility.

Set of co-ordinated DCHs: set of co-ordinated DCHs is a set of dedicated transport channels that are always established and released in combination
Individual DCHs within a set of co-ordinated DCHs cannot be operated on individually e.g. if the establishment of one DCH fails, the establishment of all other DCHs in the set of co-ordinated DCHs shall be terminated unsuccessfully. A set of coordinated DCHs is transferred over one transport bearer. All DCHs in a set of co-ordinated DCHs shall have the same TTI.

Shared Network Area (SNA): Area consisting or one or more LA's to which access can be controlled.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL	ATM Adaptation Layer
AAL2	ATM Adaptation Layer 2
ALCAP	Access Link Control Application Part
APN	Access Point Name
ATM	Asynchronous Transfer Mode
BM-IWF	Broadcast Multicast Interworking Function
BMC	Broadcast/Multicast Control
BSS	Base Station Subsystem
CBC	Cell Broadcast Centre
CBS	Cell Broadcast Service
CN	Core Network
CPCH	Common Packet Channel
CRNC	Controlling Radio Network Controller
DCH	Dedicated Channel
DL	Downlink
DRNS	Drift RNS
EDGE	Enhanced Data rates for Global Evolution
FACH	Forward Access Channel
FFS	For Further Study
GERAN	GSM EDGE Radio Access Network
GSM	Global System for Mobile Communications
GTP	GPRS Tunnelling Protocol
HPLMN	Home PLMN
IPv4	Internet Protocol, version 4
IPv6	Internet Protocol, version 6
LA	Location Area
MAC	Medium Access Control
MBMS	Multimedia Broadcast Multicast Service
MCCH	MBMS point-to-multipoint Control Channel
MSCH	MBMS point-to-multipoint Scheduling Channel
MTCH	MBMS point-to-multipoint Traffic Channel
NACC	Network Assisted Cell Change
NAS	Non Access Stratum
NBAP	Node B Application Part
NNSF	NAS Node Selection Fuction
NSAP	Network Service Access Point
PCH	Paging Channel
PLMN	Public Land Mobile Network
PTM	Point To Multipoint
PTP	Point To Point
QoS	Quality of Service
RAB	Radio Access Bearer
RACH	Random Access Channel
RANAP	Radio Access Network Application Part
RET	Remote Electrical Tilting

RIM	RAN Information Management
RNC	Radio Network Controller
RNL	Radio Network Layer
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTI	Radio Network Temporary Identity
SAB	Service Area Broadcast
SAS	Stand-Alone SMLC
SMLC	Serving Mobile Location Centre
SNA	Shared Network Area
SRNC	Serving Radio Network Controller
SRNS	Serving RNS
TEID	Tunnel Endpoint Identifier
TMGI	Temporary Mobile Group Identity
TNL	Transport Network Layer
TTI	Transmission Time Interval
UDP	User Datagram Protocol
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunication System
URA	UTRAN Registration Area
USIM	UMTS Subscriber Identity Module
UTRAN	Universal Terrestrial Radio Access Network

3.3 Notation

Parts of the document apply only to one mode, FDD or TDD. Any such area will be tagged by [FDD — xxxxxxxxx] and [TDD — yyyyyyyyyyy] respectively. The tag applies to the text until the closing bracket.

4 General principles

The general principles guiding the definition of UTRAN Architecture as well as the UTRAN interfaces are the following:

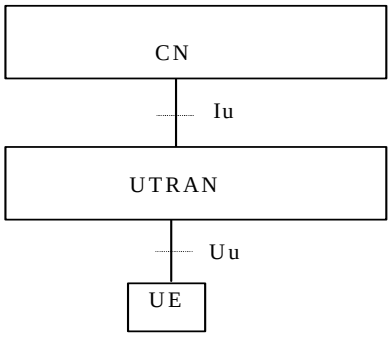
- Logical separation of signalling and data transport networks.
- UTRAN and CN functions are fully separated from transports functions. Addressing scheme used in UTRAN and CN shall not be tied to the addressing schemes of transport functions. The fact that some UTRAN or CN function resides in the same equipment as some transport functions does not make the transport functions part of the UTRAN or the CN.
- Macro diversity (FDD only) is fully handled in the UTRAN.
- Mobility for RRC connection is fully controlled by the UTRAN.
- When defining the UTRAN interfaces the following principles were followed: The functional division across the interfaces shall have as few options as possible.
- Interfaces should be based on a logical model of the entity controlled through this interface.
- One Physical Network Element can implement multiple Logical Nodes.

Transport Network Control Plane is a functional plane in the interfaces protocol structure that is used for the transport bearer management. The actual signalling protocol that is in use within the Transport Network Control Plane depends on the underlying transport layer technology. The intention is not to specify a new UTRAN specific Application Part for the Transport Network Control Plane but to use signalling protocols standardised in other groups (if needed) for the applied transport layer technology.

5 UMTS General architecture

5.1 Overview

Figure 1 shows a simplified UMTS architecture with the external reference points and interfaces to the UTRAN.



UTRAN UMTS Terrestrial Radio Access Network
CN Core Network
UE User Equipment

Figure 1: UMTS Architecture

5.2 General protocols architecture

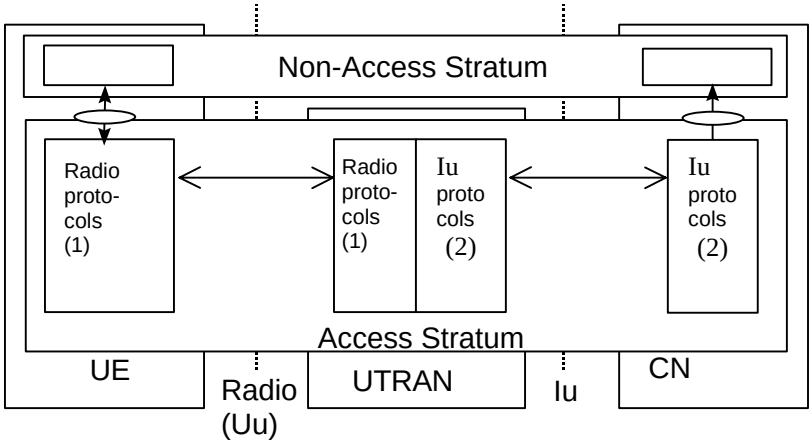
The protocols over Uu and Iu interfaces are divided into two structures:

- **User plane protocols**
  These are the protocols implementing the actual radio access bearer service, i.e. carrying user data through the access stratum.

- **Control plane protocols**
  These are the protocols for controlling the radio access bearers and the connection between the UE and the network from different aspects (including requesting the service, controlling different transmission resources, handover & streamlining etc.). Also a mechanism for transparent transfer of NAS messages is included.

5.2.1 User plane

The radio access bearer service is offered from SAP to SAP by the Access Stratum. Figure 2 shows the protocols on the Uu and Iu interfaces that linked together provide this radio access bearer service.

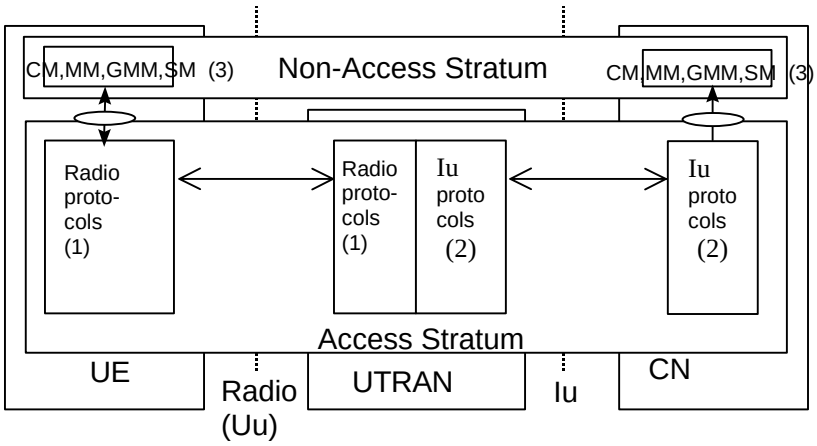


(1) The radio interface protocols are defined in documents TS 25.2xx and TS 25.3xx.
(2) The Iu interface protocols are defined in documents TS 25.41x.

Figure 2: Iu and Uu User plane

5.2.2 Control plane

Figure 3 shows the control plane (signalling) protocol stacks on Iu and Uu interfaces.



(1) The radio interface protocols are defined in documents TS 25.2xx and TS 25.3xx.
(2) The protocol is defined in documents TS 25.41x. (Description of Iu interface).
(3) **CM,MM,GMM,SM:** This exemplifies a set of NAS control protocols between UE and CN. There may be different NAS protocol stacks in parallel. The evolution of the protocol architecture for these protocols is outside the scope of the present document.

Figure 3: Iu and Uu Control plane

NOTE: Both the Radio protocols and the Iu protocols contain a mechanism to transparently transfer NAS messages.

6 UTRAN Architecture

The UTRAN consists of a set of Radio Network Subsystems connected to the Core Network through the Iu.

A RNS consists of a Radio Network Controller one or more Node Bs and optionally one SAS. A Node B is connected to the RNC through the Iub interface.

A Node B can support FDD mode, TDD mode or dual-mode operation.

There are two chip-rate options in the TDD mode: 3.84 Mcps TDD and 1.28 Mcps TDD. Each TDD cell supports either of these options.

A Node B which supports TDD cells can support one chip-rate option only, or both options.

A RNC which supports TDD cells can support one chip-rate option only, or both options.

The RNC is responsible for the Handover decisions that require signalling to the UE.

A RNC may include a combining/splitting function to support combination/splitting of information streams (see subclause 7.2.4.3).

Inside the UTRAN, the RNCs of the Radio Network Subsystems can be interconnected together through the Iur. Iu(s) and Iur are logical interfaces. Iur can be conveyed over direct physical connection between RNCs or virtual networks using any suitable transport network.

The UTRAN architecture is shown in figure 4.

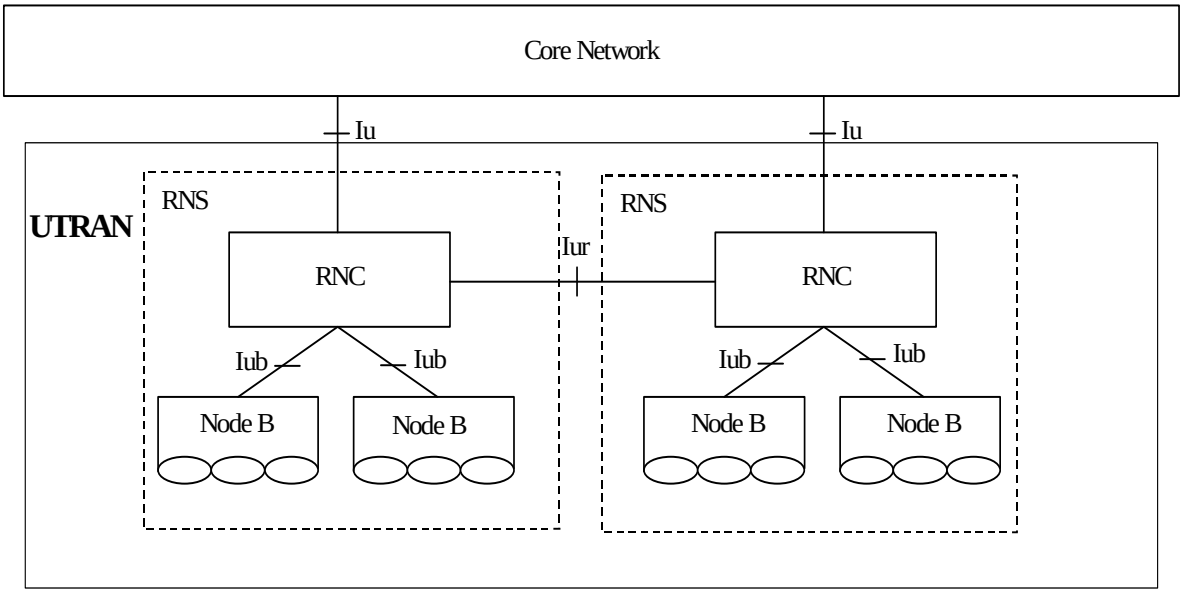


Figure 4: UTRAN Architecture

Regarding the UE positioning method, the RNC may have full internal support for this function and/or may be connected to one SAS via the Iupc interface. The following picture illustrates the resulting UTRAN architecture when the Iupc interface is adopted.

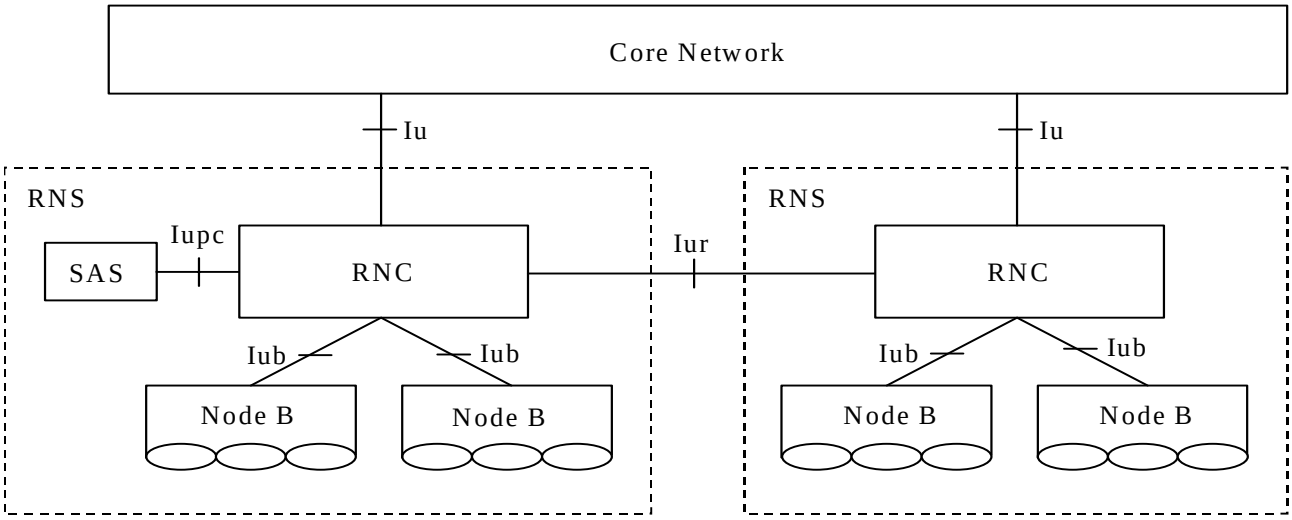


Figure 4a: UTRAN Architecture with the Iupc option

The RNC may be connected to BSS supporting GERAN Iu mode via the Iur-g interface. The following picture illustrates the UTRAN and GERAN Iu mode connection when the Iur-g interface is adopted.

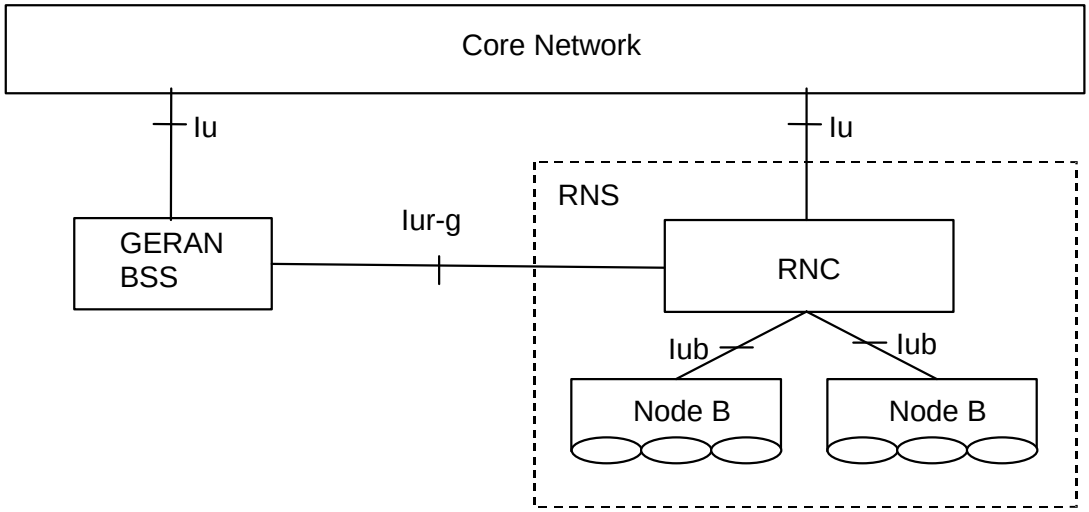


Figure 4b: UTRAN and GERAN Iu mode connection with Iur-g

Each RNS is responsible for the resources of its set of cells.

For each connection between User Equipment and the UTRAN, One RNS is the Serving RNS. When required, Drift RNSs support the Serving RNS by providing radio resources as shown in figure 5. The role of an RNS (Serving or Drift) is on a per connection basis between a UE and the UTRAN.

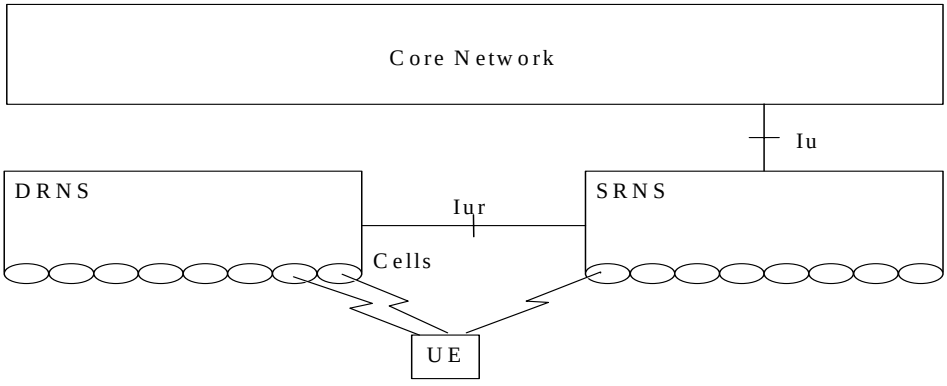


Figure 5: Serving and Drift RNS

To support UE mobility between UTRAN and GERAN Iu mode, the Serving RNS may be connected to the DBSS and vice versa as illustrated in figures 5x and 5y. The role of an RNS or BSS (Serving or Drift) is on a per connection basis between an UE and the UTRAN/GERAN Iu mode.

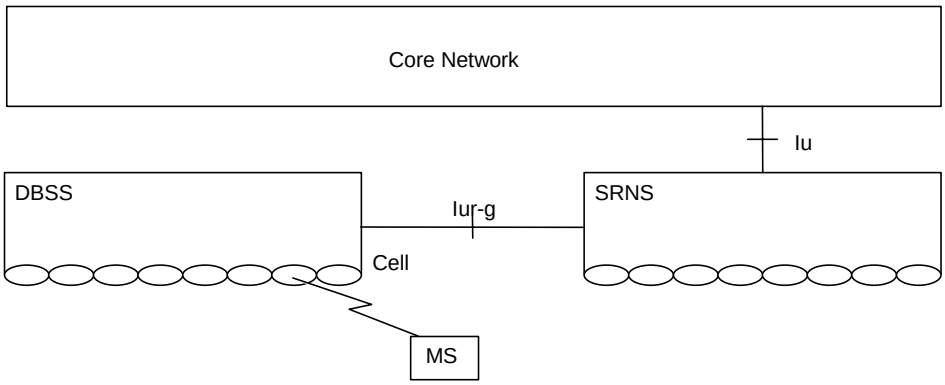


Figure 5a: Serving RNS and Drift BSS

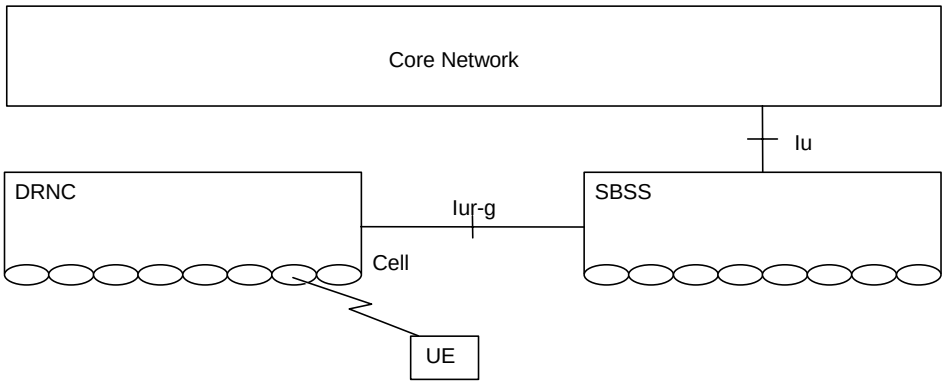


Figure 5b: Serving BSS and Drift RNS

The UTRAN is layered into a Radio Network Layer and a Transport Network Layer.

The UTRAN architecture, i.e. the UTRAN logical nodes and interfaces between them, are defined as part of the Radio Network Layer.

For each UTRAN interface (Iu, Iur, Iub, Iupc) the related transport network layer protocol and functionality is specified. The transport network layer provides services for user plane transport, signalling transport and transport of implementation specific O&M.

An implementation of equipment compliant with the specifications of a certain interface shall support the Radio Network Layer protocols specified for that interface. It shall also as a minimum, for interoperability, support the transport network layer protocols according to the transport network layer specifications for that interface.

The network architecture of the transport network layer is not specified by 3GPP and is left as an operator issue.

The equipment compliant to 3GPP standards shall at least be able to act as endpoints in the transport network layer, and may also act as a switch/router within the transport network layer.

For implementation specific O&M signalling to the Node B, only the transport network layer protocols are in the scope of UTRAN specifications.

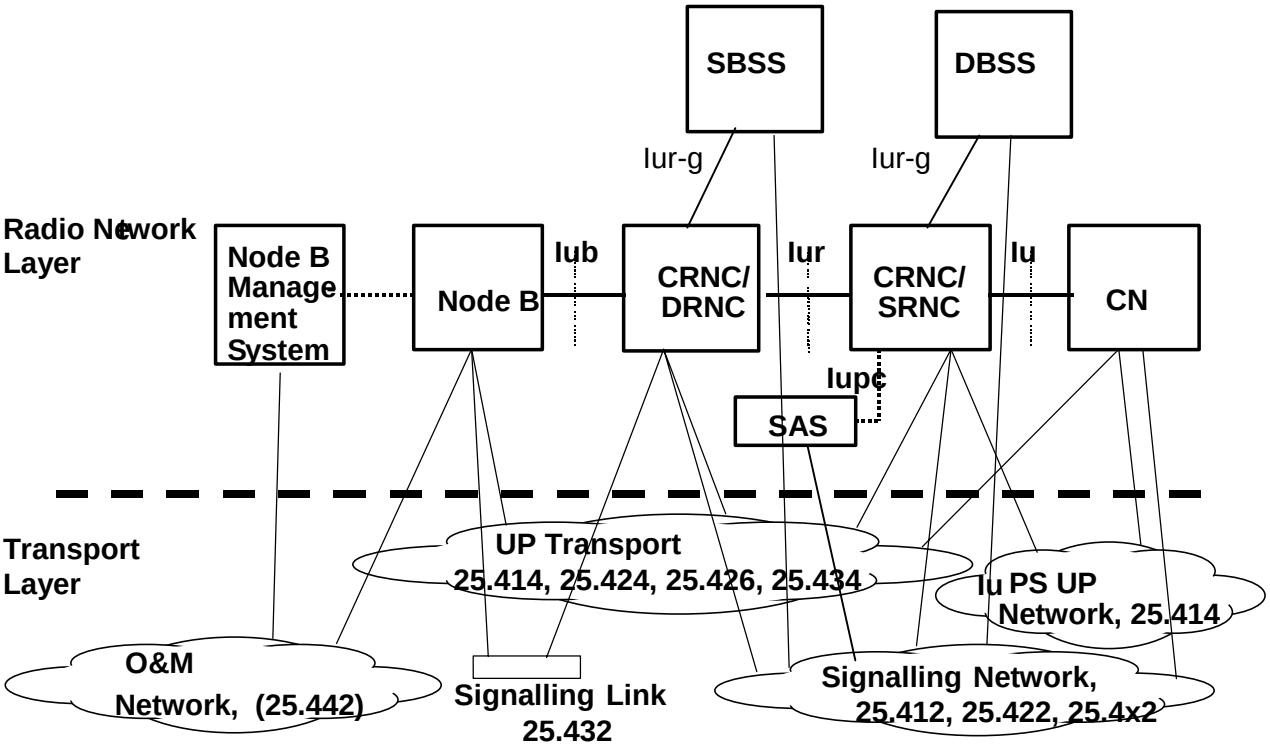


Figure 6: Protocol layering

Figure 6 illustrates which parts of the transport network layer that may be (but are not mandated to be) configured by the operator as transport networks, i.e. the radio network layer provides a destination address, namely:

- Transport network for implementation specific O&M traffic;
- Signalling network for Iu, Iur, Iur-g and Iupc;
- Transport network for Iub, Iur and Iu CS user plane connections;
- Transport network for Iu PS user plane connections.

The signalling link for Iub signalling as seen by the radio network layer cannot be configured as a network (no address provided).

A transport network for UTRAN may be configured by the operator to be used also for other traffic than UTRAN traffic.

6.1 UTRAN Identifiers

6.1.1 PLMN Identity

A Public Land Mobile Network is uniquely identified as define in [6] subclause 12.1.

6.1.2 CN Domain Identifier

A CN Domain Edge Node is identified as defined in [6] sub-clause 12.2.

6.1.3 RNC Identifier

An RNC node is uniquely identified by its RNC Identifier among the nodes in UTRAN and GERAN Iu mode as defined in [6] sub-clause 12.3. A BSS node in GERAN Iu mode is uniquely identified by its RNC Identifier among the nodes in GERAN Iu mode and UTRAN.

6.1.4 Service Area Identifier

The Service Area Identifier (SAI) is defined in [6] sub-clause 12.4.

6.1.5 Cell Identifier

The Cell identifier (C-Id) is used to uniquely identify a cell within an RNS/BSS. The Cell-Id together with the identifier of the controlling RNC/BSS (CRNC-Id) constitutes the UTRAN/GERAN Cell Identity (UC-Id) and is used to identify the cell uniquely within UTRAN/GERAN Iu mode. UC-Id or C-Id is used to identify a cell in UTRAN Iub and Iur interfaces or Iur-g interface.

- **UC-Id = RNC-Id + C-Id.**

The C-Id is defined by the operator, and set in the RNC/BSS via O&M. The C-Id is set in a Node B by its C-RNC or in the GERAN Iu mode cell.

6.1.6 Local Cell Identifier

The Local Cell identifier is used to uniquely identify the set of resources within a Node B required to support a cell (as identified by a C-Id). As a minimum it shall be unique within the Node B, but it is also capable of supporting uniqueness within the UTRAN for management system purposes.

The Local Cell Identifier is used for the initial configuration of a Node B when no C-Id is defined. The Local Cell identifier is defined by the operator, and set in both the Node B and its C-RNC via O&M. The relationship between the Local Cell Identifier and C-Id is set in the C-RNC via O&M.

6.1.7 UE Identifiers

Radio Network Temporary Identities (RNTI) are used as UE identifiers within UTRAN/GERAN Iu mode and in signalling messages between UE and UTRAN/GERAN Iu mode.

Six types of RNTI exist:

1) Serving RNC/BSS RNTI (s-RNTI);
2) Drift RNC/BSS RNTI (d-RNTI);
3) Cell RNTI (c-RNTI);
4) UTRAN/GERAN RNTI (u-RNTI);
5) DSCH RNTI (DSCH-RNTI);
6) HS-DSCH RNTI (HS-DSCH RNTI);]

s-RNTI is used:

- by UE to identify itself to the Serving RNC/BSS;
- by SRNC/SBSS to address the UE/MS;
- by DRNC/DBSS to identify the UE to Serving RNC.

s-RNTI is allocated for all UEs having a RRC connection, it is allocated by the Serving RNC/BSS and it is unique within the Serving RNC/BSS. s-RNTI is reallocated always when the Serving RNC/BSS for the RRC connection is changed.

d-RNTI is used:

- by serving RNC/BSS to identify the UE to Drift RNC/BSS.

NOTE: The d-RNTI is never used on Uu.

d-RNTI is allocated by drift RNC/BSS upon drift UE contexts establishment and it shall be unique within the drift RNC/BSS. Serving RNC/BSS shall know the mapping between s-RNTI and the d-RNTIs allocated in Drift RNCs/BSSs for the same UE. Drift RNC/BSS shall know the s-RNTI and SRNC-ID related to existing d-RNTI within the drift RNC/BSS.

c-RNTI is used:

- by UE to identify itself to the controlling RNC;

- by controlling RNC to address the UE.

c-RNTI is allocated by controlling RNC upon UE accessing a new cell. C-RNTI shall be unique within the accessed cell. Controlling RNC shall know the d-RNTI associated to the c-RNTI within the same logical RNC (if any).

u-RNTI

The u-RNTI is allocated to an UE having a RRC connection and identifies the UE within UTRAN/GERAN Iu mode.

u-RNTI is composed of:

- SRNC identity;

- s-RNTI.

DSCH-RNTI is used:

- by controlling RNC to address the UE on the DSCH [TDD- and USCH].

DSCH-RNTI is allocated by controlling RNC upon UE establishing a DSCH [TDD - or USCH] channel. DSCH-RNTI shall be unique within the cell carrying the DSCH [TDD – and/or USCH]. [FDD - DSCH-RNTI is used as UE identifier in the MAC-c/sh header over DSCH. It is used only in the downlink.] [TDD – DSCH-RNTI is used as UE identifier in RRC messages concerning DSCH and USCH allocations and is used in both the downlink and uplink].

HS-DSCH RNTI is used:

- for the UE specific CRC in HS-SCCH and HS-PDSCH.

HS-DSCH RNTI is allocated by controlling RNC upon UE establishing a HS-DSCH channel. HS-DSCH RNTI shall be unique within the cell carrying the HS-DSCH.

Each RNC has a unique identifier within the UTRAN part of the PLMN, denoted by RNC identifier (RNC-ID). This identifier is used to route UTRAN interface messages to correct RNC. RNC-ID of the serving RNC together with the s-RNTI is a unique identifier of the UE in the UTRAN part of the PLMN.

6.1.7.1 Usage of RNTI

u-RNTI is used as a UE identifier for the first cell access (at cell change) when a RRC connection exists for this UE and for UTRAN originated paging including associated response messages. RNC-ID is used by Controlling RNC/BSS to route the received uplink messages towards the Serving RNC/BSS.

NOTE: For the initial access a unique core network UE identifier is used.

c-RNTI is used as a UE identifier in all other DCCH/DTCH common channel messages on air interface.

6.1.8 Identifiers for dedicated resources within UTRAN

6.1.8.1 Radio Network Control Plane identifiers

Each addressable object in each reference point has an application part level identifier. This identifier is allocated autonomously by the entity responsible for initiation of the setup of the object. This application part identifier will be used as a reference to the object that is setup. Both ends of the reference point shall memorise the AP Identifier during the lifetime of the object. Application part identifier can be related to a specific Transport Network identifier and that relationship shall also be memorised by both ends.

Table 1 lists the basic AP level identifiers in each reference point.

Table 1: Basic AP level identifiers in each reference point

Object	Identifier	Abbreviation	Valid for
Radio Access Bearer	Radio Access Bearer ID	RAB-ID	Iu
Dedicated Transport channel	DCH-ID	DCH-ID	Iur, Iub
Downlink Shared Channel	DSCH-ID	DSCH-ID	Iur, Iub
[TDD Uplink Shared Channel]	USCH-ID	USCH-ID	Iur, Iub

6.1.8.2 Transport Network Identifiers

Transport Network identifiers are used in the Transport Network Layer (TNL) to identify the transport bearer and may be used in User Plane in the actual data transmission using the transport link. The Transport Network identifier identifies the transport link according to the naming conventions defined for the transport link type in question. Both ends of the reference point of the concerned TNL shall memorise the Transport Network identifiers during the lifetime of the transport link. Each Transport Network identifier can be binded to an Application Part identifier.

The Transport Network identifiers vary depending on the transport link type.

Table 2 indicates examples of the identifiers used for different transmission link types.

Table 2: Examples of the identifiers used for different transmission link types

Transmission link type	Transport Network Identifier
AAL2	AAL2 Path ID + CID
GTP over IP	IP address + TEID
UDP over IP	IP address + UDP port

The communication of Transport Network identifiers is made in two ways:

When an ALCAP is used, the transport layer address communicated via the Radio Network Layers protocols (NBAP, RNSAP, RANAP…) is a Transport Network Control Plane address and the Transport Network identifiers are communicated through this Transport Network Control Plane only.

When no ALCAP is used, the Transport Network identifiers are directly communicated via the Radio Network Layers protocols (NBAP, RNSAP, RANAP…) on all interfaces.

In both cases, the transport layer address (e.g. IP address) is encapsulated by the Transport Network Layer in the NSAP structure as defined in [Annex A of [15], [16]] transported transparently on Iub, Iur and Iu-CS and passed transparently from the Radio Network Layer to the Transport Network Layer. The NSAP structure (encapsulation) is only used in order to provide to the TNL explicit identification of the type of the TNL address that is being conveyed by the given RNL protocol. It is then the responsibility of the Transport Network Layer to interpret this structure (e.g. to determine accordingly if the requested network type is ATM or IP).

On the Iu-PS, the NSAP structure is not used in RANAP but the 'straight IP addressing' shall be used.

The following scheme depicts the encapsulation of a native IPv6 address in NSAP structure when conveyed in RANAP, RNSAP and NBAP.

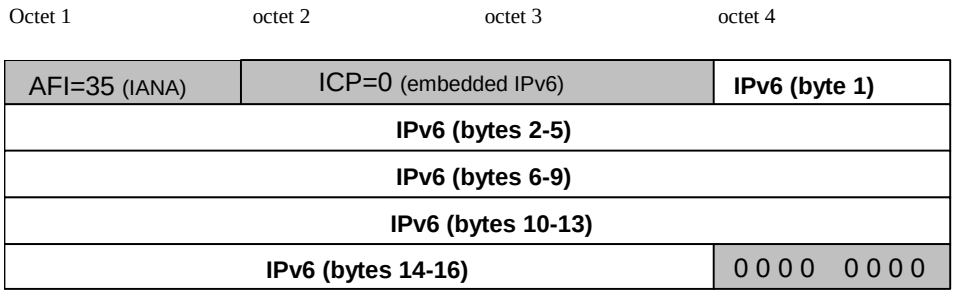


Figure 6A: IPv6 address embedded in NSAP structure in RANAP/RNSAP/NBAP.

6.1.8.3 Binding identifier

Binding Identifier (Binding ID) is used to initialise the linkage between ALCAP and Application Part (RANAP, RNSAP, NBAP) identifiers. Binding identifier can be used both in Radio Network Control plane Application Part protocols and in Transport Network Control Plane's ALCAP protocol. When no ALCAP is used, Binding ID may also be used to carry the UDP port on Iub, Iur and Iu-CS interfaces.

Binding ID binds the Radio and Transport Network Control plane identifiers together. To ensure maximal independence of those two planes, the binding ID should be used only when necessary: Binding ID shall thus be used only in Radio Network Control plane Application Part messages in which a new association between the planes is created and in ALCAP messages creating new transport bearers.

Binding ID for each transport bearer shall be allocated before the setup of that transport bearer.

The Binding ID is sent on one direction using the Application Part protocol and is return in the other direction by the ALCAP protocol.

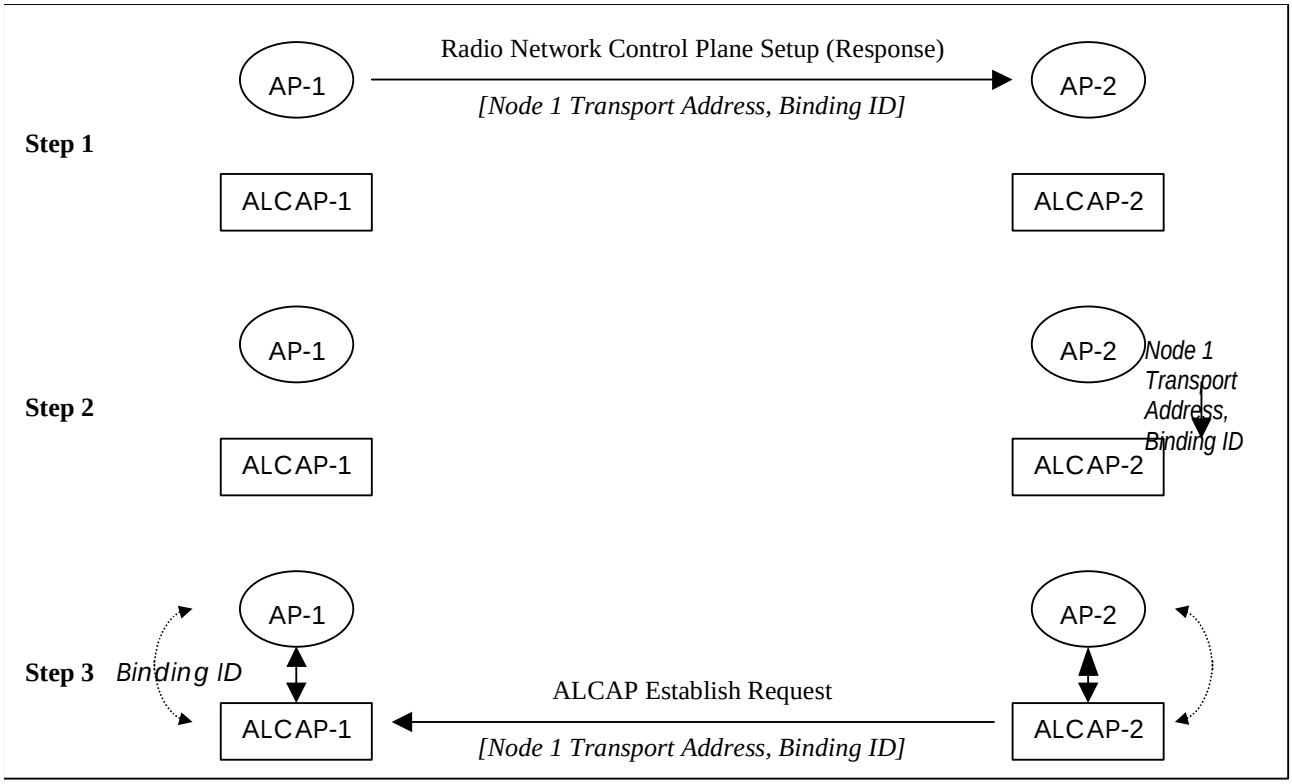
When an Application Part procedure with an allocated Binding ID is applied for modifying an existing Radio Network User Plane connection, the decision to use the Binding ID (and the ALCAP procedures) shall be done by that end of the reference point that decides whether to use the existing transport bearer or to set up a new transport bearer.

The Binding ID shall already be assigned and tied to a radio application procedure when the first ALCAP message is received in a node.

The association between the connection Id in the Application Part protocol (e.g. identifying a RAB) and the corresponding connection Id in the ALCAP protocol (e.g. identifying the AAL2 channel for that RAB) that was created with the help of Binding ID shall be memorised by both peers of each reference point for the lifetime of the corresponding transport bearer.

The Binding ID may be released and re-used as soon as both the Application Part procedure and the ALCAP procedure that used it are completed in both peers of the reference point.

Figure 6a illustrates how application instances of the Radio Network Control Plane and instances of the Transport Network Plane are linked together through the Binding Identifier in the set-up phase.



Step 1: Application Part AP-1 assigns the Binding Identifier and sends a Radio Network Control Plane Set-up (Response) message (which of the two messages depends on the involved interface - Iu/Iur or Iub). The message contains the originating node Transport layer address and the Binding Identifier.

Step 2: Among reception of the Radio Network Control Plane Set-up message, the peer entity AP-2 requests ALCAP-2 to establish a transport bearer. The Binding Identifier is passed to ALCAP-2.

Step 3: ALCAP-2 sends an ALCAP Establish Request to the peer entity ALCAP-1. The message contains the Binding Identifier. The Binding Identifier allows correlating the incoming transport connection with the Application Part transaction in step 1.

Figure 6a: Usage of Binding ID

Table 3 indicates the binding identifier allocating entity in each interface.

Table 3: Binding identifier allocating entity in each interface

Reference point	Allocating entity	Application part message including Binding-ID
Iu	CN	Request from CN
Iur	DRNC	Response to the request from SRNC
Iub	Node-B	Response to the request from DRNC

6.1.9 URA Identity

The URA identity is used to uniquely identify an URA, which is a specified set of UTRAN and/or GERAN cells. The URA identity can be used to indicate to the UE and the SRNC which URA it shall use in case there are multiple URA identities broadcast in the cell where the UE is located.

6.1.xx Service Identifiers for MBMS

6.1.xx.1 IP Multicast Address and APN

The IP Multicast Address and an APN are used to enable the routing of MBMS registration requests within the CN. These identifiers are transparent to RAN.

6.1.xx.2 TMGI

The Temporary Mobile Group Identity (TMGI) is used for group notification purposes and is unique within HPLMN. TMGI is used at the start of a session and at UE linking to identify an MBMS Bearer Service.

The structure of TMGI is specified in [6].

6.1.xx.3 Session Identifier

MBMS session Identifier is used to identify one specific session of a MBMS service and is forwarded transparently to the UE.

6.1.xx.4 MBMS Service Area

The MBMS Service Area is defined in [r2].

The mapping between a MBMS Service Area and a list of cells is set in the RNC via O&M.

6.1.xx.5 MBMS Cell Group Identifier

The MBMS Cell Group Identifier is defined in [r1]

6.1.xx.6 MBMS UTRAN Cell Group Identifier

The MBMS UTRAN Cell Group Identifier is defined in [r1]

6.2 Transport Addresses

The transport layer address parameter is transported in the radio network application signalling procedures that result in establishment of transport bearer connections.

The transport layer address parameter shall not be interpreted in the radio network application protocols and reveal the addressing format used in the transport layer.

The formats of the transport layer addresses are further elaborated in [9], [10], [11], [18].

6.3 Function Distribution Principles

For radio resource management functionality, the following principles apply:

- The CRNC owns the radio resources of a cell.
- The SRNC handles the connection to one UE, and may borrow radio resources of a certain cell from the CRNC.
- Dynamical control of power for dedicated channels, within limits admitted by CRNC, is done by the SRNC.
- Dynamic control on smaller time-scale for some radio links of the UE connection may be done by the Node B. This “inner loop” control is controlled by an “outer loop”, for which the SRNC has overall responsibility.
- Scheduling of data for dedicated channels is done by the SRNC, while for common channels it is done by the CRNC.

For management of node-internal resources, the following principle apply:

- Each UTRAN node is considered a network element on its own. The knowledge about the equipment of a network element is kept within the network element itself and its management system. The node itself always manages node-internal resources.

For transport network resource management, the following principle apply:

- Management of transport network resources belong to the Transport Layer. Mechanisms relevant for the selected transport technology are used. No functional split between UTRAN nodes is specified what regards the Transport Layer.

As a general guideline, the UTRAN protocols should be designed in such a way that they minimise the need for a DRNC to interpret the user plane frame protocol information other than for the combining/splitting purpose.

7 UTRAN Functions description

7.1 List of functions

- Transfer of User Data.
- Functions related to overall system access control:
  - Admission Control;
  - Congestion Control;
  - System information broadcasting.
- Radio channel ciphering and deciphering.
- Integrity protection.
- Functions related to mobility:
  - Handover;
  - SRNS Relocation;
  - Paging support;
  - Positioning;
  - GERAN System Information Retrieval.
- Functions related to radio resource management and control:
  - Radio resource configuration and operation;
  - Radio environment survey;
  - Combining/splitting control;
  - Connection set-up and release;
  - Allocation and deallocation of Radio Bearers;
  - [TDD - Dynamic Channel Allocation (DCA)];
  - Radio protocols function;
  - RF power control;
  - [3.84 Mcps TDD - Timing Advance];
  - [1.28 Mcps TDD – Uplink Synchronisation];
  - Radio channel coding;
  - Radio channel decoding;
  - Channel coding control;

  - Initial (random) access detection and handling;
  - CN Distribution function for Non Access Stratum messages.
- Synchronisation.
- Functions related to broadcast and multicast services (see note) (broadcast/multicast interworking function BM-IWF).

NOTE: Only Broadcast is applicable for Release 99.

- Broadcast/Multicast Information Distribution.
- Broadcast/Multicast Flow Control.
- CBS Status Reporting.
- Tracing.
- Volume reporting.
- NAS Node Selection.
- RAN Information Management.
- MBMS provision.
- MBMS Notification Coordination.

7.2 Functions description

7.2.0 Transfer of user data

This function provides user data transfer capability across the UTRAN between the Iu and Uu reference points.

7.2.1 Functions related to overall system access control

System access is the means by which a UMTS user is connected to the UTRAN in order to use UMTS services and/or facilities. User system access may be initiated from either the mobile side, e.g. a mobile originated call, or the network side, e.g. a mobile terminated call.

7.2.1.1 Admission Control

The purpose of the admission control is to admit or deny new users, new radio access bearers or new radio links (for example due to handover). The admission control should try to avoid overload situations and base its decisions on interference and resource measurements. The admission control is employed at for example initial UE access, RAB assignment/reconfiguration and at handover. These cases may give different answers depending on priority and situation.

The Admission Control function based on UL interference and DL power is located in the Controlling RNC.

The Serving RNC is performing admission Control towards the Iu interface.

7.2.1.2 Congestion Control

The task of congestion control is to monitor, detect and handle situations when the system is reaching a near overload or an overload situation with the already connected users. This means that some part of the network has run out, or will soon run out of resources. The congestion control should then bring the system back to a stable state as seamless as possible.

NOTE: This admission Control function is related to Radio Resources.

Congestion control is performed within UTRAN.

7.2.1.3 System information broadcasting

This function provides the mobile station with the Access Stratum and Non Access Stratum information which are needed by the UE for its operation within the network.

The basic control and synchronisation of this function is located in UTRAN.

7.2.2 Radio channel ciphering and deciphering

This function is a pure computation function whereby the radio transmitted data can be protected against a non-authorised third-party. Ciphering and deciphering may be based on the usage of a session-dependent key, derived through signalling and/or session dependent information.

This function is located in the UE and in the UTRAN.

7.2.3 Functions related to Mobility

7.2.3.1 Handover

This function manages the mobility of the radio interface. It is based on radio measurements and it is used to maintains the Quality of Service requested by the Core Network.

Handover may be directed to/from another system (e.g. UMTS to GSM handover).

The handover function may be either controlled by the network, or independently by the UE. Therefore, this function may be located in the SRNC, the UE, or both.

7.2.3.2 SRNS Relocation

The SRNS Relocation function coordinates the activities when the SRNS role is to be taken over by another RNS/BSS. The SRNS relocation function manages the Iu interface connection mobility from an RNS to another RNS/BSS.

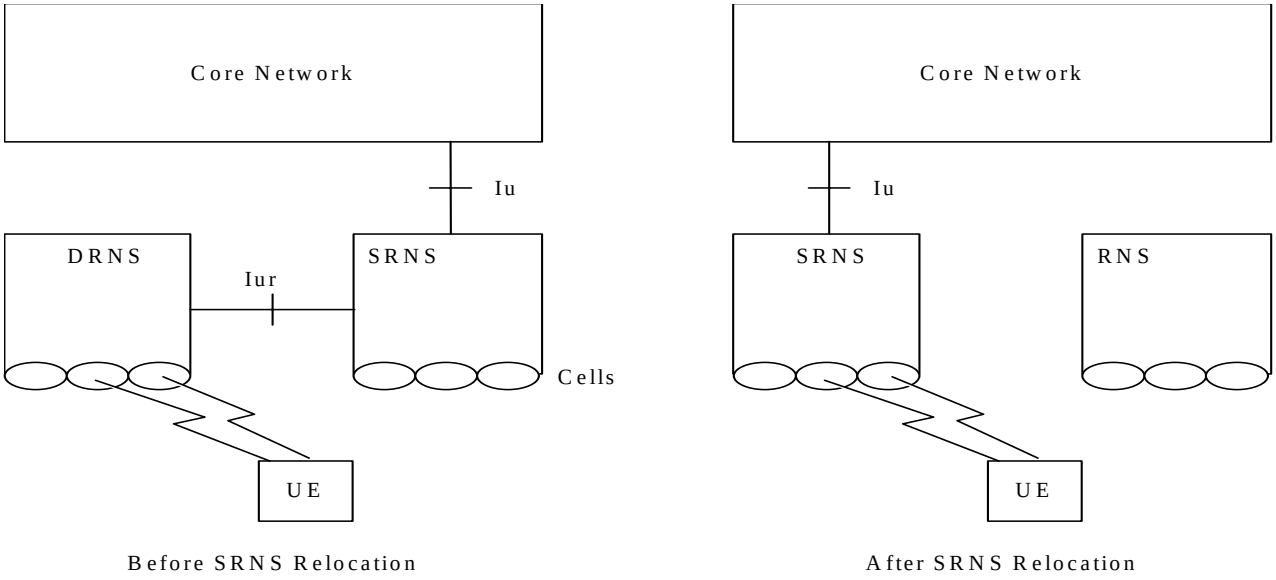


Figure 7: Serving RNS Relocation

The SRNS Relocation is initiated by the SRNC.

This function is located in the RNC and the CN.

7.2.3.3 Paging support

This function provides the capability to request a UE to contact the UTRAN/GERAN Iu mode when the UE is in Idle, CELL_PCH or URA_PCH/GRA_PCH states [6], [21]. This function also encompasses a coordination function between the different Core Network Domains onto a single RRC connection.

7.2.3.4 Positioning

This function provides the capability to determine the geographic position of a UE.

7.2.3.5 NAS Node Selection Function

The optional NAS Node Selection Function (NNSF) enables the RNC to initially assign CN resources to serve a UE and subsequently setup a signalling connection to the assigned CN resource.

The NNSF is described in detail in [20].

7.2.3.6 Shared Networks Access Control

The Shared Networks Access Control function allows the CN to request the UTRAN to apply UE specific access control to LAs of the UTRAN and LAs of neighbouring networks.

The Shared Networks Access Control function is based on either whole PLMNs or Shared Network Areas (SNAs). An SNA is an area corresponding to one ore more LAs within a single PLMN to which UE access can be controlled.

In order to apply Shared Networks Access Control for the UTRAN or for a neighbouring system, the UTRAN shall be aware of whether the concerned LA belongs to one (or several) SNA(s) or not.

If access for a specific UE needs to be restricted, the CN shall provide SNA Access Information for that UE. The SNA Access Information indicates which PLMNs and/or which SNAs the UE is allowed to access.

Based on whether the LA belongs to the PLMNs or SNAs the UE is allowed to access, the UTRAN determines if access to a certain LA for a certain UE shall be allowed.

If access is not allowed, the UTRAN shall request the CN to release existing resources either by initiating Iu Release Request procedure with cause value “Access Restricted due to Shared Network” or by requesting a relocation with the same cause value.

7.2.3.7 GERAN System Information Retrieval

In order to provide the UE with system information related to NACC towards a GERAN system - to be used as an optimisation - the GERAN System Information Retrieval function allows:

- The source RAN to request GERAN (via CN) to provide this system information.
- The SRNC to request the DRNC (via Iur interface) to provide this system information, if available.

The request and subsequent transfer of the GERAN System Information is performed transparently with the RIM function. The RIM function is further described in section 7.2.8.

7.2.4 Functions related to radio resource management and control

Radio resource management is concerned with the allocation and maintenance of radio communication resources. UMTS radio resources must be shared between circuit transfer mode services and packet transfer modes services (i.e. Connection-oriented and/or connectionless-oriented services).

7.2.4.1 Radio resource configuration and operation

This function performs configures the radio network resources, i.e. cells and common transport channels, and takes the resources into or out of operation.

7.2.4.2 Radio environment survey

This function performs measurements on radio channels (current and surrounding cells) and translates these measurements into radio channel quality estimates. Measurements may include:

1) Received signal strengths (current and surrounding cells);
2) Estimated bit error ratios, (current and surrounding cells);
3) Estimation of propagation environments (e.g. high-speed, low-speed, satellite, etc.);
4) Transmission range (e.g. through timing information);
5) Doppler shift;
6) Synchronisation status;
7) Received interference level;
8) Total DL transmission power per cell.

This function is located in the UE and in the UTRAN.

7.2.4.3 Combining/splitting control

This function controls the combining/splitting of information streams to receive/ transmit the same information through multiple physical channels (possibly in different cells) from/ towards a single mobile terminal.

The UL combining of information streams may be performed using any suitable algorithm, for example:

- [FDD - based on maximum ratio algorithm (maximum ratio combining)];
- [FDD - based on quality information associated to each TBS (selection-combining)];
- [TDD - based on the presence/absence of the signal (selection)].

[FDD - combining/splitting control should interact with channel coding control in order to reduce the bit error ratio when combining the different information streams].

In some cases, depending on physical network configuration, there may be several entities which combine the different information streams, i.e. there may be combining/splitting at the SRNC, DRNC or Node B level.

This function is located in the UTRAN.

7.2.4.4 Connection set-up and release

This function is responsible for the control of connection element set-up and release in the radio access sub network. The purpose of this function is:

1) To participate in the processing of the end-to-end connection set-up and release;
2) And to manage and maintain the element of the end-to-end connection, which is located in the radio access sub network.

In the former case, this function will be activated by request from other functional entities at call set-up/release. In the latter case, i.e. when the end-to-end connection has already been established, this function may also be invoked to cater for in-call service modification or at handover execution.

This function is located both in the UE and in the RNC.

7.2.4.5 Allocation and deallocation of Radio Bearers

This function consists of translating the connection element set-up (resp. release) requests into physical radio channel allocation (resp. deallocation) accordingly to the QoS of the Radio Access Bearer.

This function may be activated during the call since e.g. the user service request may vary, or macro diversity may be used.

This function is located in the CRNC and SRNC.

7.2.4.6 [TDD - Dynamic Channel Allocation (DCA)]

DCA is used in the TDD mode. It includes Fast DCA and Slow DCA. Slow DCA is the process of assigning radio resources, including time slots, to different TDD cells according to the varying cell load. Fast DCA is the process of assigning resources to Radio Bearers, and is related to Admission Control.

7.2.4.7 Radio protocols function

This function provides user data and signalling transfer capability across the UMTS radio interface by adapting the services (according to the QoS of the Radio Access Bearer) to the Radio transmission. This function includes amongst other:

- Multiplexing of services and multiplexing of UEs on Radio bearers;
- Segmentation and reassembly;
- Acknowledged/Unacknowledged delivery according to the Radio Access Bearer QoS.

7.2.4.8 RF power control

This group of functions controls the level of the transmitted power in order to minimise interference and keep the quality of the connections. It consist of the following functions: UL Outer Loop Power Control, DL Outer Loop Power Control, UL Inner Loop Power Control, DL Inner Loop Power Control, UL Open Loop Power Control and DL Open Loop Power Control.

7.2.4.8.1 UL Outer Loop Power Control

The UL Outer Loop Power Control located in the SRNC [TDD – except for uplink shared channels where it is located in the CRNC] sets the target quality value for the UL Inner Loop Power Control which is located in Node B for FDD and 1.28 Mcps TDD and is located in the UE for 3.84 Mcps TDD. It receives input from quality estimates of the transport channel. The UL outer loop power control is mainly used for a long-term quality control of the radio channel.

In FDD and 1.28 Mcps TDD this function is located in the UTRAN, in 3.84 Mcps TDD the function is performed in UTRAN and the target quality value is sent to the UE by the SRNC or the CRNC, respectively.

In FDD and 1.28 Mcps TDD, if the connection involves both a SRNS and a DRNS the function UL Outer Loop Power Control (located in the SRNC [1.28 Mcps TDD – or in the CRNC, respectively]) sets the target quality for the UL Inner Loop Power Control function (located in Node B).

7.2.4.8.2 DL Outer Loop Power Control

The DL Outer Loop Power Control sets the target quality value for the DL inner loop power control. It receives input from quality estimates of the transport channel, measured in the UE. The DL outer loop power control is mainly used for a long-term quality control of the radio channel.

This function is located mainly in the UE, but some control parameters are set by the UTRAN.

The SRNC, regularly (or under some algorithms), sends the target down link power range based on the measurement report from UE.

7.2.4.8.3 UL Inner Loop Power Control

The UL Inner Loop Power Control sets the power of the uplink dedicated [TDD – and shared] physical channels.

In FDD, it is a closed loop process. It receives the quality target from UL Outer Loop Power Control and quality estimates of the uplink dedicated physical control channel. The power control commands are sent on the downlink dedicated physical control channel to the UE. This function is located in both the UTRAN and the UE.

In 3.84 Mcps TDD it is a open loop process, it receives the quality target from the UL Outer Loop Power Control and uses the quality target and quality estimates of downlink channels to set the transmit power. This function is located in the UE.

In 1.28 Mcps TDD, it is a closed loop process. It receives the quality target from UL Outer Loop Power Control, and quality estimates of the uplink dedicated physical channels as well as physical uplink shared channels, if any. The power control commands are sent on the downlink dedicated physical channels and physical downlink shared channels, if any, to the UE. This function is located in both the UTRAN and the UE.

7.2.4.8.4 DL Inner Loop Power Control

The DL Inner Loop Power Control sets the power of the downlink dedicated [TDD – and shared] physical channels. It receives the quality target from DL Outer Loop Power Control and quality estimates of the [FDD - downlink dedicated physical control channel] [TDD – downlink dedicated physical channels and physical downlink shared channels if any]. The power control commands are sent on the [FDD - uplink dedicated physical control channel] [TDD – downlink dedicated physical channels and physical downlink shared channels if any] to the UTRAN.

This function is located in both the UTRAN and the UE.

7.2.4.8.5 UL Open Loop Power Control

The UL Open Loop Power Control sets the initial power of the UE, i.e. at random access. The function uses UE measurements and broadcasted cell/system parameters as input.

This function is located in both the UTRAN and the UE.

7.2.4.8.6 DL Open Loop Power Control

The DL Open Loop Power Control sets the initial power of downlink channels. It receives downlink measurement reports from the UE.

This function is located in both the UTRAN and the UE.

7.2.4.9 Radio channel coding

This function introduces redundancy into the source data flow, increasing its rate by adding information calculated from the source data, in order to allow the detection or correction of signal errors introduced by the transmission medium. The channel coding algorithm(s) used and the amount of redundancy introduced may be different for the different types of logical channels and different types of data.

This function is located in both the UE and in the UTRAN.

7.2.4.10 Radio channel decoding

This function tries to reconstruct the source information using the redundancy added by the channel coding function to detect or correct possible errors in the received data flow. The channel decoding function may also employ a priori error likelihood information generated by the demodulation function to increase the efficiency of the decoding operation. The channel decoding function is the complement function to the channel coding function.

This function is located in both the UE and in the UTRAN.

7.2.4.11 Channel coding control

This function generates control information required by the channel coding/ decoding execution functions. This may include channel coding scheme, code rate, etc.

This function is located in both the UE and in the UTRAN.

7.2.4.12 Initial (random) access detection and handling

This function will have the ability to detect an initial access attempt from a mobile station and will respond appropriately. The handling of the initial access may include procedures for a possible resolution of colliding attempts, etc. The successful result will be the request for allocation of appropriate resources for the requesting mobile station.

This function is located in the UTRAN.

7.2.4.13 CN Distribution function for Non Access Stratum messages

In the RRC protocol, messages from the NAS shall be transparently transferred within the Access Stratum using the Direct Transfer procedure. A distribution function in the UE and the SRNC shall handle the CN domain indicator being part of the AS message to direct messages to the appropriate NAS entity i.e. the appropriate Mobility Management instance in the UE domain and the appropriate CN domain.

In the downlink direction the UE shall be provided by the SRNC with the information on the originating CN domain for the individual NAS message.

In the uplink direction, the process performed by the distribution function in the UE consists in inserting the appropriate values for the CN domain indicator in the AS message and the process performed by the SRNC consists in evaluating the CN domain indicator contained in the AS message and distribute the NAS message to the corresponding RANAP instance for transfer over Iu interface.

This distribution function is located in both the UE and in the SRNC.

7.2.4.14 [3.84 Mcps TDD - Timing Advance]

This function is used in uplink to align the uplink radio signals from the UE to the UTRAN. Timing Advance is based on uplink burst timing measurements performed by the Node B L1, and on Timing Advance commands sent downlink to the UE.

7.2.4.15 Service specific function for Non Access Stratum messages

A service specific function in the UE provides a SAP for a particular service (e.g. a given priority). In the downlink direction, the SRNC may base the routing on this SAP.

This service specific function is located in both the UE and the SRNC.

7.2.4.16 [1.28 Mcps TDD – Uplink Synchronisation]

This function is used in uplink to synchronise the uplink radio signals from the UE to the UTRAN. At the detection of uplink burst, the Node B will evaluate the received power level and timing, and reply by sending the adjustment information to UE to modify its timing and power level for next transmission and for establishment of the Uplink synchronisation procedure.

7.2.5 Functions related to broadcast and multicast services (broadcast/multicast interworking function BM-IWF)

See note.

7.2.5.1 Broadcast/Multicast Information Distribution

The broadcast/multicast information distribution function distributes received CBS messages towards the BMC entities configured per cell for further processing. The distribution of broadcast/multicast information relate on the mapping between service area and cells controlled by the RNC. The provision of this mapping information is an O&M function.

NOTE: Only Broadcast is applicable for Release 99.

7.2.5.2 Broadcast/Multicast Flow Control

When processing units of the RNC becomes congested, the Broadcast/Multicast Flow Control function informs the data source about this congestion situation and takes means to resolve the congestion.

7.2.5.3 CBS Status Reporting

The RNC collects status data per cell (e.g. No-of-Broadcast-Completed-List, Radio-Resource-Loading-List), and matches these data to Service Areas. The status data is transmitted to the CBC, if a query has been made by the CBC.

7.2.6 Tracing

This function allows tracing of various events related to the UE and its activities.

7.2.7 Volume Reporting

The data volume reporting function is used to report the volume of unacknowledged data to the CN for accounting purpose.

7.2.8 RAN Information Management

The RAN Information Management (RIM) function is a generic mechanism that allows the request and transfer of information between two RAN nodes e.g. GERAN System information. The RIM mechanism allows to start, stop and resume both on demand and on event transfer of information. RIM also provides native error handling function at RIM level and at RIM application level. The RIM function is further described in [22] and [23].

7.2.yy Functions related to MBMS

7.2.yy.1 MBMS provision

The MBMS provision enables the RNC to provide a multicast service via an optimised transmission of the MBMS bearer service in UTRAN via techniques such as PTM transmission, selective combining, Soft Combining and transmission mode selection between PTM and PTP bearer.

The MBMS provision enables the RNC to provide a broadcast service via a PTM transmission bearer.

7.2.yy.2 MBMS Notification Coordination

The characteristic of MBMS implies a need for MBMS notification co-ordination i.e. specific handling of MBMS Notification when UE is in Cell-DCH state. MBMS notification co-ordination is performed by UTRAN when the session is ongoing. The TMGI is used for coordination.

The MBMS functions are further described in [r1]

8 Mobility Management

8.1 Signalling connection

Based on [2], the UE may either have or not have a signalling connection:

1) When a signalling connection exists that is established over the Dedicated Control Service Access Point (DC-SAP) from the Access Stratum.
   Therefore, the CN can reach the UE by the dedicated connection SAP on the CN side, and the UTRAN has a context with the UE and CN for this particular connection. This context is erased when the connection is released. The *dedicated connection* can be initiated from the UE only.

NOTE: A dedicated connection is currently defined as Signalling Connection in [2]. Note that in the radio interface, dedicated or common channels can be used.

Depending on the activity of a UE, the location of the UE is known either on cell level (higher activity) or in a larger area consisting of several cells (lower activity). This will (i) minimise the number of location update messages for moving UEs with low activity and (ii) remove the need for paging for UEs known on cell level.

2) When a dedicated connection does not exist, the CN must reach the UE via the Notification SAP. The message sent to the UE can be a request to the UE to establish a dedicated connection. The UE is addressed with a user/terminal identity and a "geographical area".

8.2 Consequences for Mobility Handling

It is generally agreed to contain radio access specific procedures within UTRAN. This means that all cell level mobility should be handled within UTRAN. Also the cell structure of the radio network should not necessarily be known outside the UTRAN.

When there exists a dedicated connection to the UE, the UTRAN shall handle the radio interface mobility of the UE. This includes procedures such as soft handover, and procedures for handling mobility in the CELL_PCH and URA_PCH/GRA_PCH state [7].

When a dedicated connection between the UTRAN and the UE does not exist, no UE information is needed in UTRAN. Therefore, the mobility is handled directly between UE and CN outside access stratum (e.g. by means of registration procedures). When paging the UE, the CN indicates a 'geographical area' that is translated within UTRAN to the actual cells that shall be paged. A 'geographical area' shall be identified in a cell-structure independent way. One possibility is the use of 'Location Area identities'.

During the lifetime of the dedicated connection, the registrations to the CN are suppressed by the UE. When a dedicated connection is released, the UE performs a new registration to the CN, when needed.

Thus, the UTRAN does not contain any permanent 'location registers' for the UE, but only temporary contexts for the duration of the dedicated connection. This context may typically contain location information (e.g. current cell(s) of the UE) and information about allocated radio resources and related connection references.

9 Synchronisation

9.1 SYNCHRONISATION MODEL

Different synchronisation issues are identified within UTRAN, i.e.:

- Network Synchronisation;
- Node Synchronisation;
- Transport Channel synchronisation;
- Radio Interface Synchronisation;
- Time Alignment handling.

The Nodes involved by the above mentioned synchronisation issues (with exception of Network and Node Synchronisation) are shown by the Synchronisation Issues Model of figure 8.

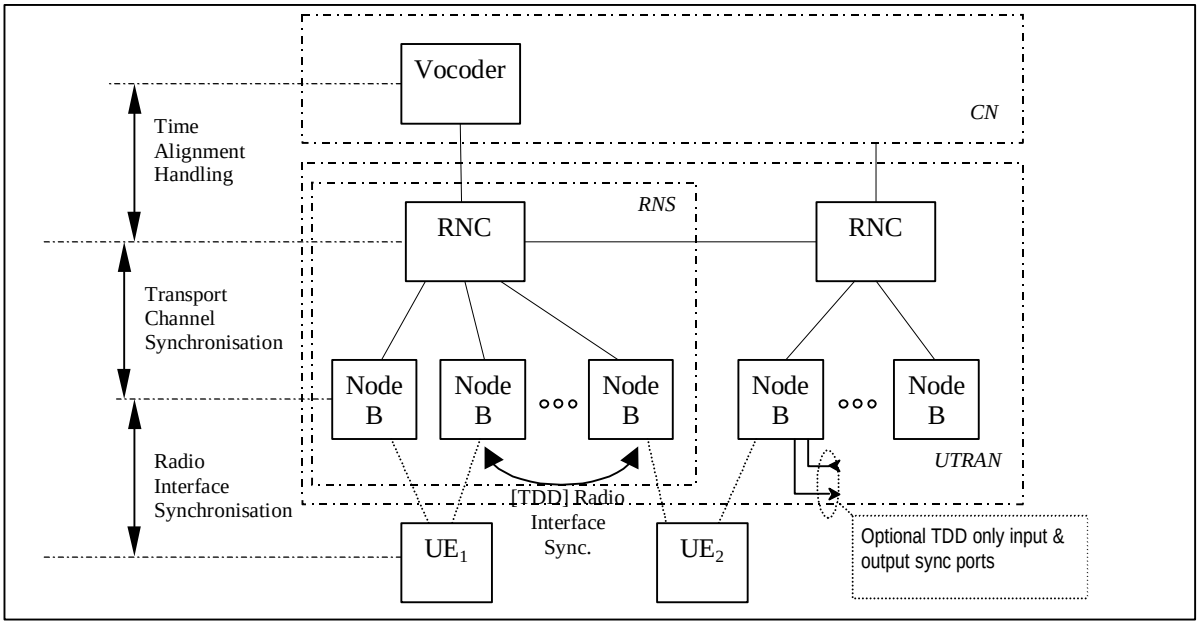


Figure 8: Synchronisation issues model

10 UTRAN O&M Requirements

10.1 O&M of Node B

The O&M of Node B is separated in two parts: the O&M linked to the actual implementation of Node B, denoted as Implementation Specific *O&M*, and the O&M which impacts on the traffic carrying resources in Node B controlled from the RNC, denoted *logical O&M*. The RNS architecture with the O&M interfaces is shown in figure 9.

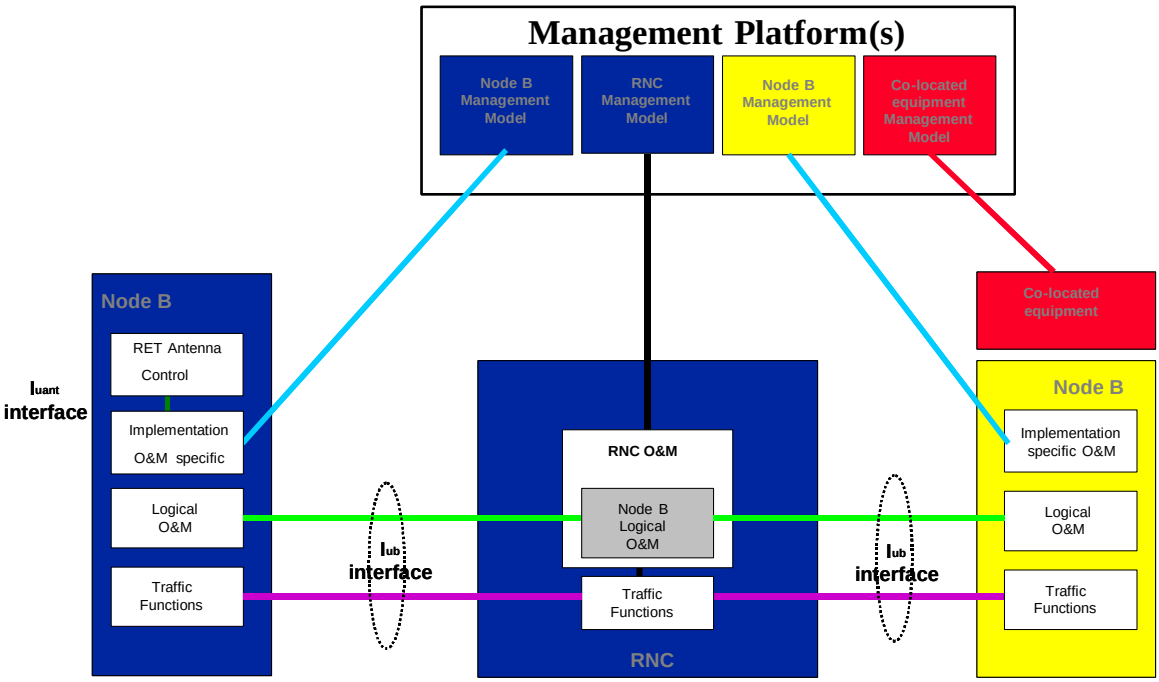


Figure 9: RNS architecture with O&M interfaces

NOTE 1: The concept of an interface from the RNC to the management system is shown for clarity only. It's definition is outside the scope of 3GPP-TSG-RAN-WG3.

NOTE 2: The presentation of the O&M functions within the management system is shown for clarity only. Their actual implementation is outside the scope of 3GPP-TSG-RAN-WG3.

NOTE 3: The standardisation of the Implementation Specific O&M is outside the scope of 3GPP-TSG-RAN-WG3. The 3GPP-TSG-RAN-WG3 should only address the bearer for the Implementation Specific O&M.

NOTE 4: The figure shows only logical connections and does not intend to mandate any physical interfaces.

NOTE 5: The Iuant interface to the control unit of the RET antenna is specified in the series of Technical Specifications 25.460, 25.461, 25.462 and 25.463 [24,25,26,27]. An Implementation Specific O&M function is needed for the RET antenna control to translate the control signalling from the Node B Element Manager into the control commands of the Iuant interface specified in [24].

10.1.1 Implementation Specific O&M

The Implementation Specific O&M functions are heavily dependent on the implementation of Node B, both for its hardware components and for the management of the software components. It needs therefore to be implementation dependent, and be performed between Node B and the management system.

One solution for the transport of Implementation Specific O&M is to route from Node B to the management system via the RNC. In this case, the Implementation Specific O&M interface and Iub interface share the same physical bearer, and [4] specifies the routing function and the transport bearer for this scenario. The deployment of the routing across the RNC in the UTRAN is optional. Where signalling between co-located equipment and its management system is required, this may be carried over the same bearer as Implementation Specific O&M.

10.1.2 Logical O&M

Logical O&M is the signalling associated with the control of logical resources (channels, cells,…) owned by the RNC but physically implemented in the Node B. The RNC controls these logical resources. A number of O&M procedures physically implemented in Node B impact on the logical resources and therefore require an information exchange between RNC and Node B. All messages needed to support this information exchange are classified as Logical O&M forming an integral part of NBAP.

11 UTRAN Interfaces

11.1 General Protocol Model for UTRAN Interfaces

11.1.1 General

The general protocol model for UTRAN Interfaces is depicted in figure 10, and described in detail in the following subclauses. The structure is based on the principle that the layers and planes are logically independent of each other. Therefore, as and when required, the standardisation body can easily alter protocol stacks and planes to fit future requirements.

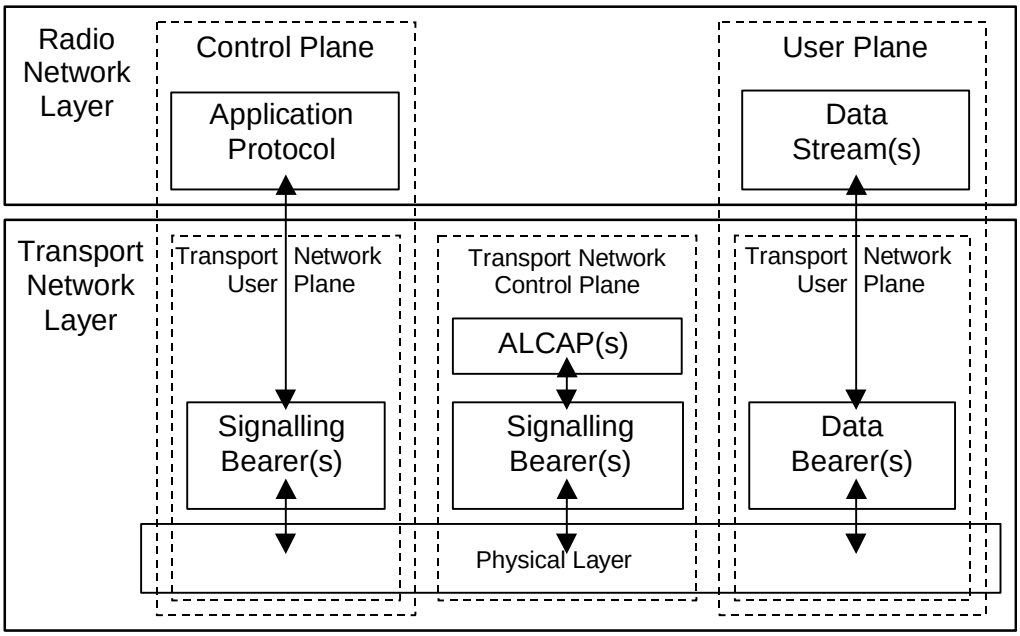


Figure 10: General Protocol Model for UTRAN Interfaces

11.1.2 Horizontal Layers

The Protocol Structure consists of two main layers, Radio Network Layer, and Transport Network Layer. All UTRAN related issues are visible only in the Radio Network Layer, and the Transport Network Layer represents standard transport technology that is selected to be used for UTRAN, but without any UTRAN specific requirements.

11.1.3 Vertical Planes

11.1.3.1 Control Plane

The Control Plane Includes the Application Protocol, i.e. RANAP, RNSAP or NBAP, and the Signalling Bearer for transporting the Application Protocol messages.

Among other things, the Application Protocol is used for setting up bearers for (i.e. Radio Access Bearer or Radio Link) in the Radio Network Layer. In the three plane structure the bearer parameters in the Application Protocol are not directly tied to the User Plane technology, but are rather general bearer parameters.

The Signalling Bearer for the Application Protocol may or may not be of the same type as the Signalling Protocol for the ALCAP. The Signalling Bearer is always set up by O&M actions.

11.1.3.2 User Plane

The User Plane Includes the Data Stream(s) and the Data Bearer(s) for the Data Stream(s). The Data Stream(s) is/are characterised by one or more frame protocols specified for that interface.

11.1.3.3 Transport Network Control Plane

The Transport Network Control Plane does not include any Radio Network Layer information, and is completely in the Transport Layer. It includes the ALCAP protocol(s) that is/are needed to set up the transport bearers (Data Bearer) for the User Plane. It also includes the appropriate Signalling Bearer(s) needed for the ALCAP protocol(s).

The Transport Network Control Plane is a plane that acts between the Control Plane and the User Plane. The introduction of Transport Network Control Plane is performed in a way that the Application Protocol in the Radio Network Control Plane is kept completely independent of the technology selected for Data Bearer in the User Plane. Indeed, the decision to actually use an ALCAP protocol is completely kept within the Transport Network Layer.

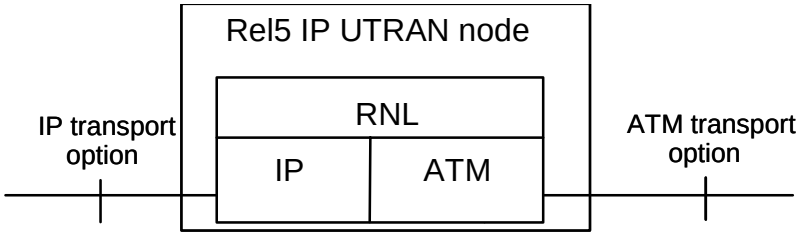
It should be noted that ALCAP might not be used for all types Data Bearers. If there is no ALCAP signalling transaction, the Transport Network Control Plane is not needed at all. This is the case when pre-configured Data Bearers are used or when the IP UTRAN option is used between two IP UTRAN nodes or between an IP UTRAN node and an IP CN node.

When Transport Network Control Plane is used, the transport bearers for the Data Bearer in the User Plane are set up in the following fashion. First there is a signalling transaction by the Application Protocol in the Control Plane, which triggers the set up of the Data Bearer by the ALCAP protocol that is specific for the User Plane technology.

The following interworking alternatives are specified for the IP-ATM interworking:

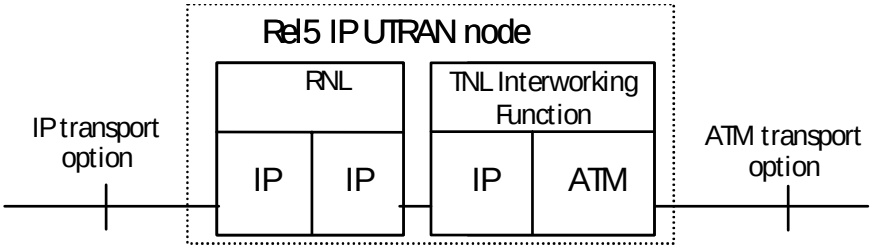
1) ATM/IP Dual Stack supported in the IP UTRAN node. When an ATM/IP dual stack is implemented in the IP UTRAN node, support of an IP ALCAP protocol is not required.

Annex A of [9] shows an example of protocols for the case the ATM&IP UTRAN/CN-node has no ATM connectivity.



2) An Interworking Function (IWF), either internal or external to the UTRAN/CN node.

Annex A of [9] shows an example of a protocol stack for the case when the IWF is an external unit to the UTRAN/CN node. Other protocol stacks for this case are not precluded.



11.1.3.4 Transport Network User Plane

The Data Bearer(s) in the User Plane, and the Signalling Bearer(s) for Application Protocol, belong also to Transport Network User Plane. As described in the previous subclause, the Data Bearers in Transport Network User Plane are directly controlled by Transport Network Control Plane during real time operation, but the control actions required for setting up the Signalling Bearer(s) for Application Protocol are considered O&M actions.

11.2 Protocol Model (Informative)

The following subclause is a informative subclause which aim is to provide an overall picture of how the MAC layer is distributed over Uu, Iub and Iur for the RACH, FACH, DCH, DSCH, HS-DSCH and [TDD USCH].

11.2.1 RACH Transport Channel

Figure 11 shows the protocol stack model for the RACH transport channel when the Controlling and Serving RNC are co-incident.

For the RACH transport channel, Dedicated MAC (MAC-d) uses the services of Common MAC (MAC-c/sh).

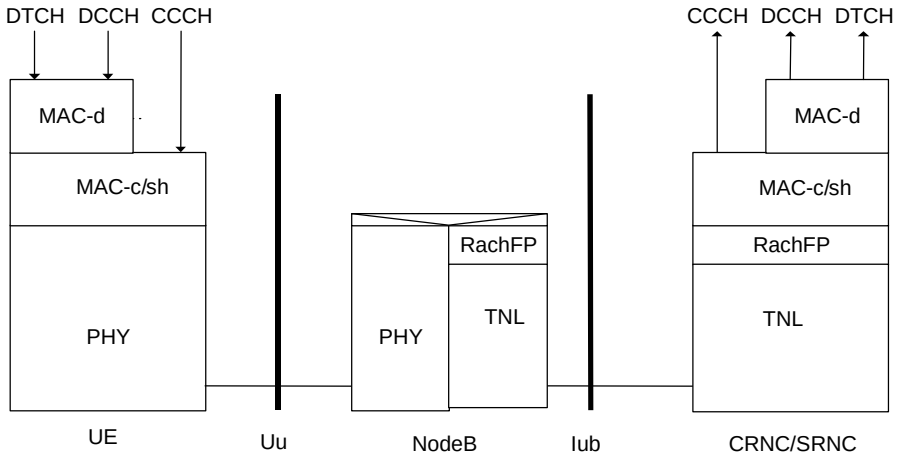


Figure 11: RACH: Coincident Controlling and Serving RNC

The Common MAC (MAC-c/sh) entity in the UE transfers MAC-c/sh PDU to the peer MAC-c/sh entity in the RNC using the services of the Physical Layer.

An Interworking Function (IWF) in the Node B interworks the RACH frame received by the PHY entity into the RACH Frame Protocol (RACH FP) entity.

The RACH Frame Protocol entity adds header information to form a RACH FP PDU that is transported to the RNC over a transport bearer.

At the RNC, the RACH FP entity delivers the MAC-c/sh PDU to the MAC-c/sh entity.

Figure 12 shows the protocol model for the RACH transport channel with separate Controlling and Serving RNC. In this case, Iur RACH Frame Protocol (RACH FP) is used to interwork the Common MAC (MAC-c/sh) at the Controlling RNC with the Dedicated MAC (MAC-d) at the Serving RNC.

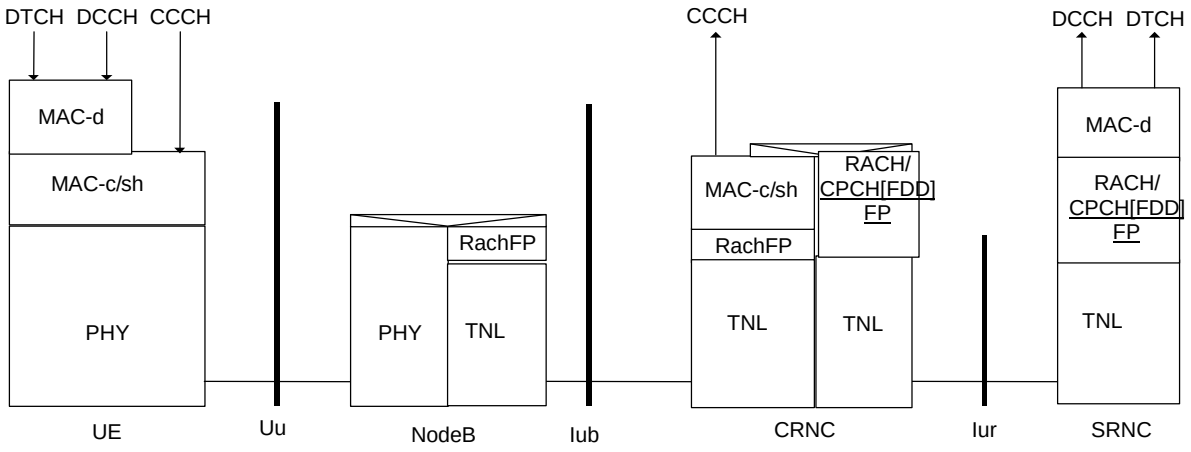


Figure 12: RACH: Separate Controlling and Serving RNC

11.2.2 CPCH [FDD] Transport Channel

Figure 13 shows the protocol model for the CPCH [FDD] transport channel when the Controlling and Serving RNC are co-incident.

For the CPCH [FDD] transport channel, Dedicated MAC (MAC-d) uses the services of Common MAC (MAC-c/sh).

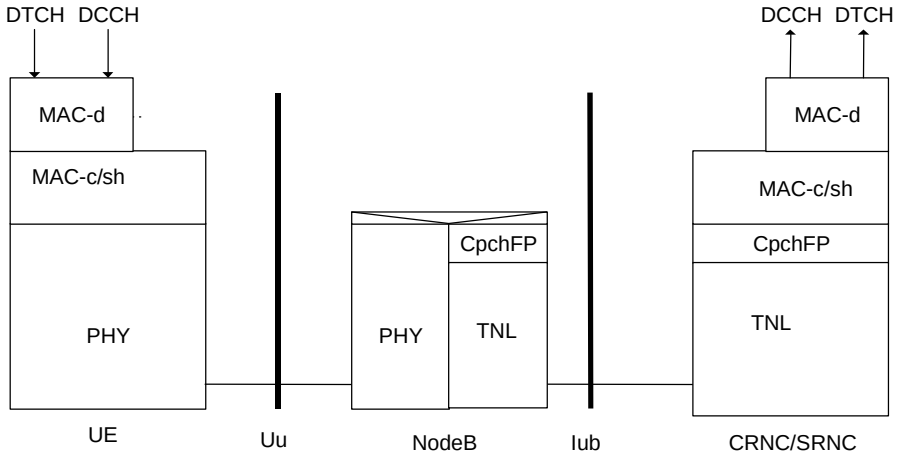


Figure 13: CPCH [FDD]: Coincident Controlling and Serving RNC

The Common MAC (MAC-c/ sh) entity in the UE transfers MAC-c PDU to the peer MAC-c entity in the RNC using the services of the Physical Layer.

An Interworking Function (IWF) in the Node B interworks the CPCH [FDD] frame received by the PHY entity into the CPCH [FDD] Frame Protocol (CPCH FP) entity.

The CPCH [FDD] Frame Protocol entity adds header information to form a CPCH [FDD] FP PDU which is transported to the RNC over a transport bearer.

At the RNC, the CPCH [FDD] FP entity delivers the MAC-c PDU to the MAC-c entity.

Figure 14 shows the protocol model for the CPCH [FDD] transport channel with separate Controlling and Serving RNC. In this case, Iur CPCH [FDD] Frame Protocol (CpchFP) is used to interwork the Common MAC (MAC-c/sh) at the Controlling RNC with the Dedicated MAC (MAC-d) at the Serving RNC.

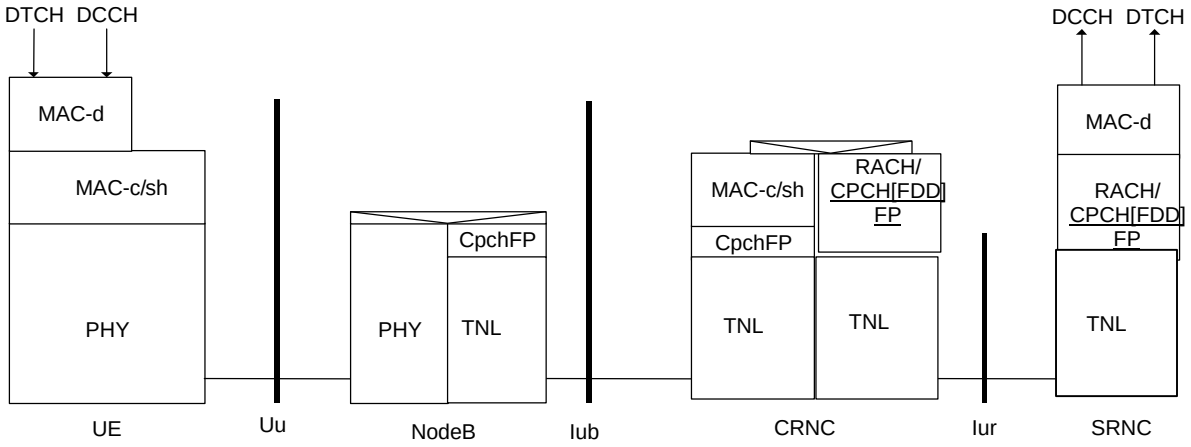


Figure 14: CPCH [FDD]: Separate Controlling and Serving RNC

11.2.3 FACH Transport Channel

Figure 15 shows the protocol model for the FACH transport channel when the Controlling and Serving RNC are co-incident.

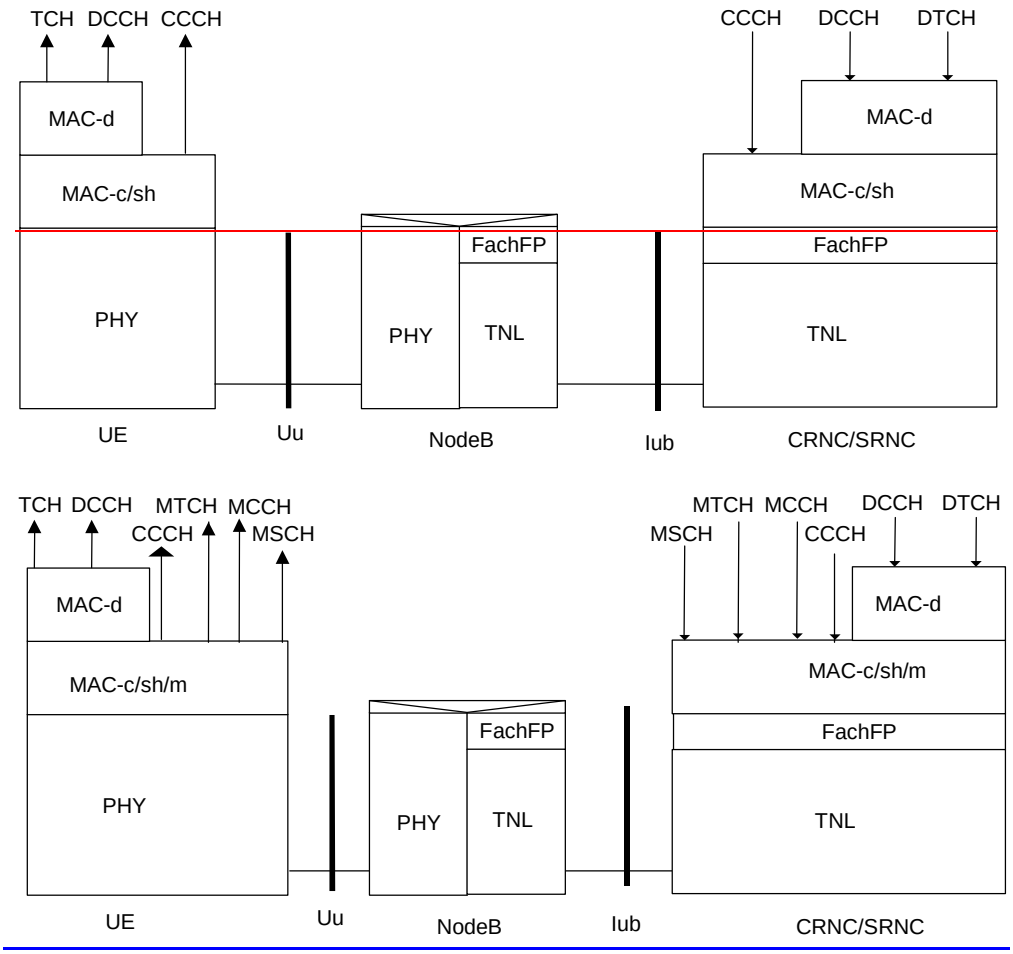


Figure 15: FACH Co-incident Controlling and Serving RNC

The Common MAC (MAC-c/sh/m) entity in the RNC transfers MAC-c PDU to the peer MAC-c entity in the UE using the services of the FACH Frame Protocol (FACH FP) entity.

The FACH Frame Protocol entity adds header information to form a FACH FP PDU which is transported to the Node B over a transport bearer.

An Interworking Function (IWF) in the Node B interworks the FACH frame received by FACH Frame Protocol (FACH FP) entity into the PHY entity.

FACH scheduling is performed by MAC-c/sh/m in the CRNC.

Figure 16 shows the protocol model for the FACH transport channel with separate Controlling and Serving RNC. In this case, Iur FACH Frame Protocol is used to interwork the Common MAC (MAC-c) at the Controlling RNC with the Dedicated MAC (MAC-d) at the Serving RNC.

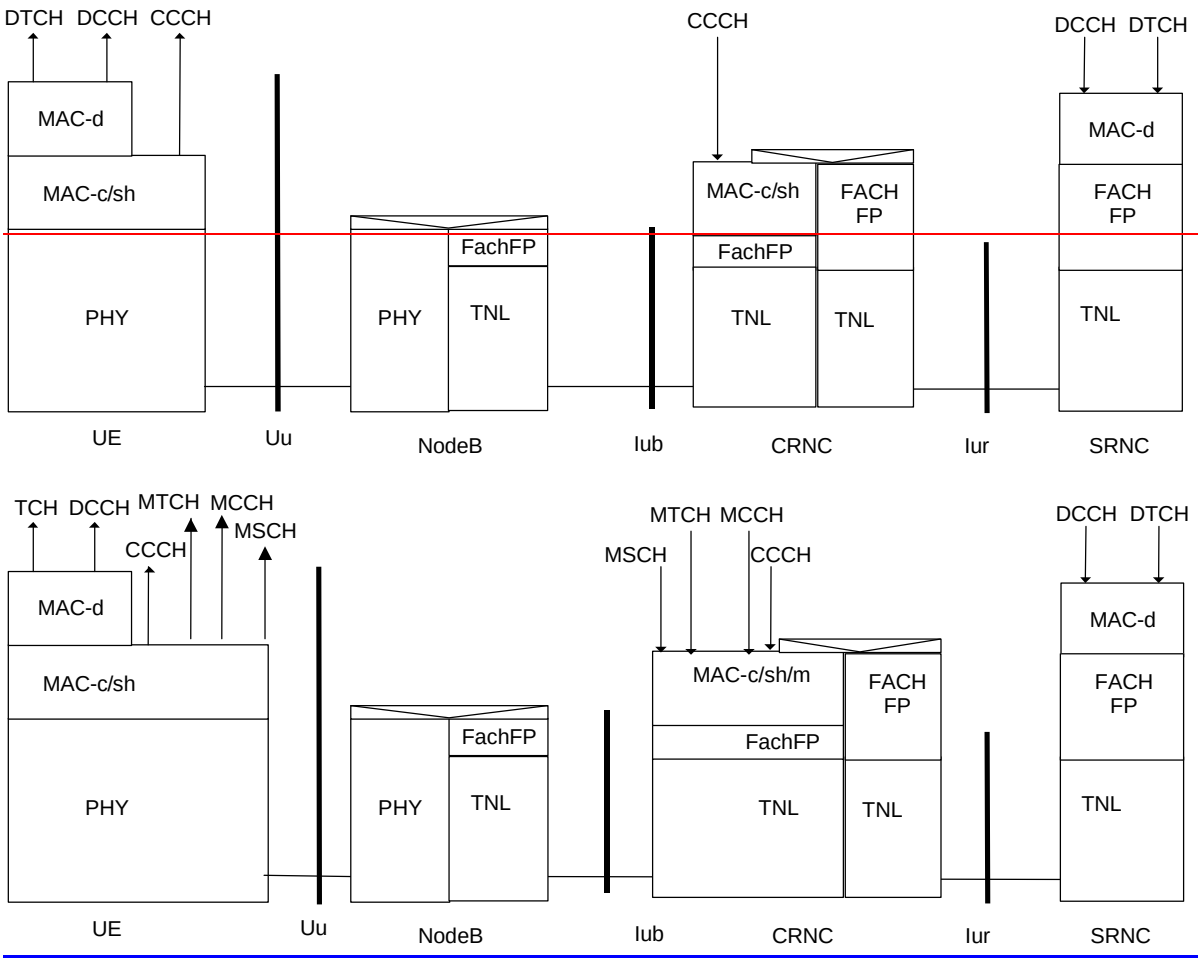


Figure 16: FACH: Separate Controlling and Serving RNC

11.2.4 DCH Transport Channel

Figure 17 shows the protocol model for the DCH transport channel when the Controlling and Serving RNC are co-incident.

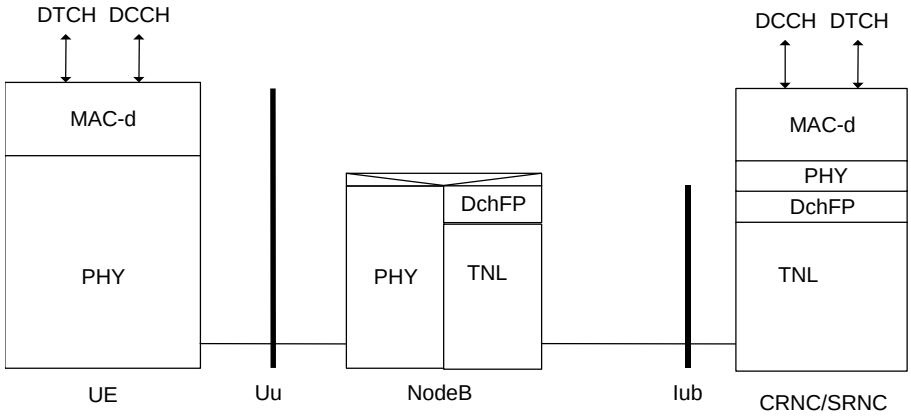


Figure 17: DCH: Co-incident Controlling and Serving RNC

The DCH transport channel introduces the concept of distributed PHY layer.

An Interworking Function (IWF) in the Node B interworks between the DCH Frame Protocol (DCH FP) entity and the PHY entity.

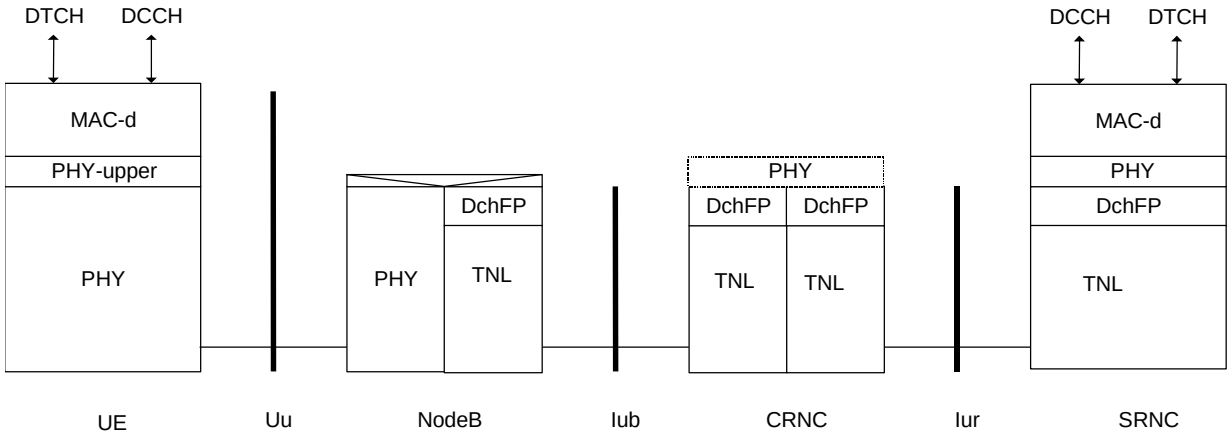


Figure 18: DCH: Separate Controlling and Serving RNC

Figure 18 shows the protocol model for the DCH transport channel with separate Controlling and Serving RNC. In this case, the Iub DCH FP is terminated in the CRNC and interworked with the Iur DCH FP through a PHY function. This function performs optional soft handover or can be a null function.

11.2.5 DSCH Transport Channel

Figure 19 shows the protocol model for the DSCH transport channel when the Controlling and Serving RNC are co-incident.

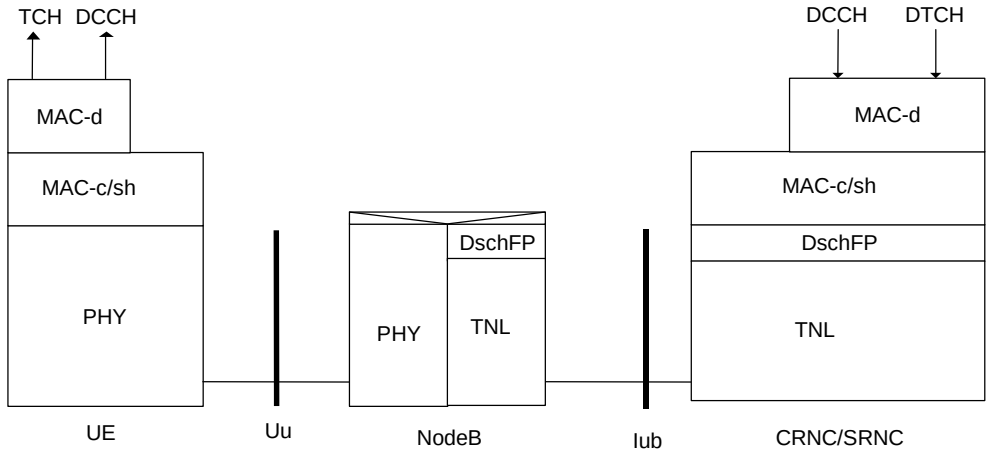


Figure 19: DSCH Co-incident Controlling and Serving RNC

The Shared MAC (MAC-c/sh) entity in the RNC transfers MAC-c/sh PDU to the peer MAC-c/sh entity in the UE using the services of the DSCH Frame Protocol (DSCH FP) entity. The DSCH FP entity adds header information to form a DSCH FP PDU that is transported to the Node B over a transport bearer.

An Interworking Function (IWF) in the Node B interworks the DSCH frame received by DSCH FP entity into the PHY entity. DSCH scheduling is performed by MAC-c/sh in the CRNC.

Figure 20 shows the protocol model for the DSCH transport channel with separate Controlling and Serving RNC. In this case, Iur DSCH Frame Protocol is used to interwork the MAC-c/sh at the Controlling RNC with the MAC-d at the Serving RNC.

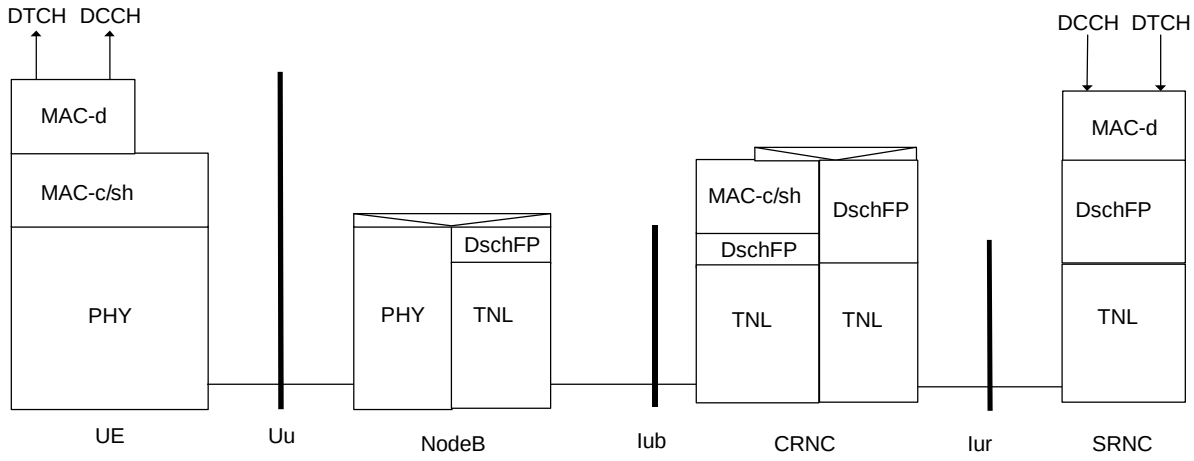


Figure 20: DSCH: Separate Controlling and Serving RNC

11.2.6 USCH Transport Channel [TDD]

Figure 21 shows the protocol model for the USCH transport channel when the Controlling and Serving RNC are co-incident.

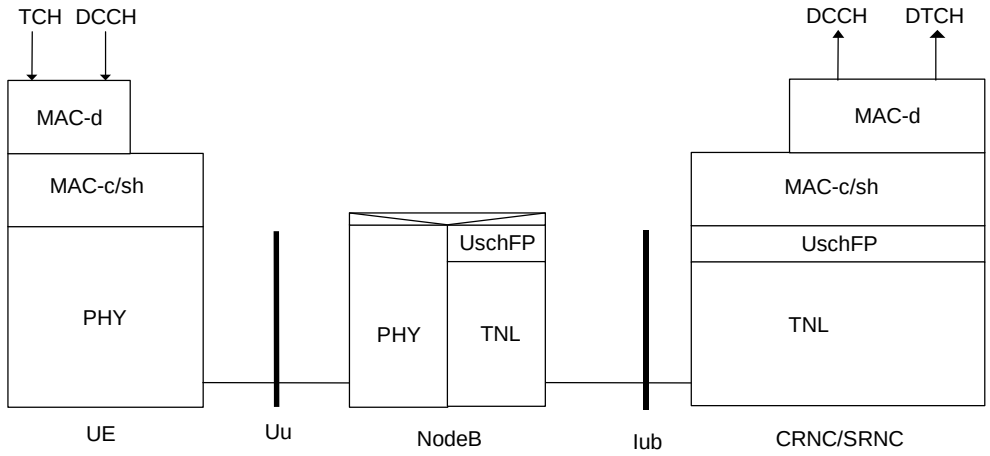


Figure 21: USCH Co-incident Controlling and Serving RNC

The Shared MAC (MAC-c/sh) entity in the RNC *receives* MAC-c/sh PDU *from* the peer MAC-c/sh entity in the UE using the services of the Interworking Function in the Node B, and the USCH Frame Protocol (USCH FP) entity. The USCH FP entity *in the Node B* adds header information to form a USCH FP PDU that is transported to the *RNC* over a transport bearer.

An Interworking Function (IWF) in the Node B interworks *the received USCH PHY entity into an USCH frame to be transmitted by the USCH FP entity over the Iub interface*. USCH scheduling is performed by MAC-c/sh in UE and by C-RRC in the CRNC.

Figure 22 shows the protocol model for the USCH transport channel with separate Controlling and Serving RNC. In this case, Iur USCH Frame Protocol is used to interwork the MAC-c/sh at the Controlling RNC with the MAC-d at the Serving RNC.

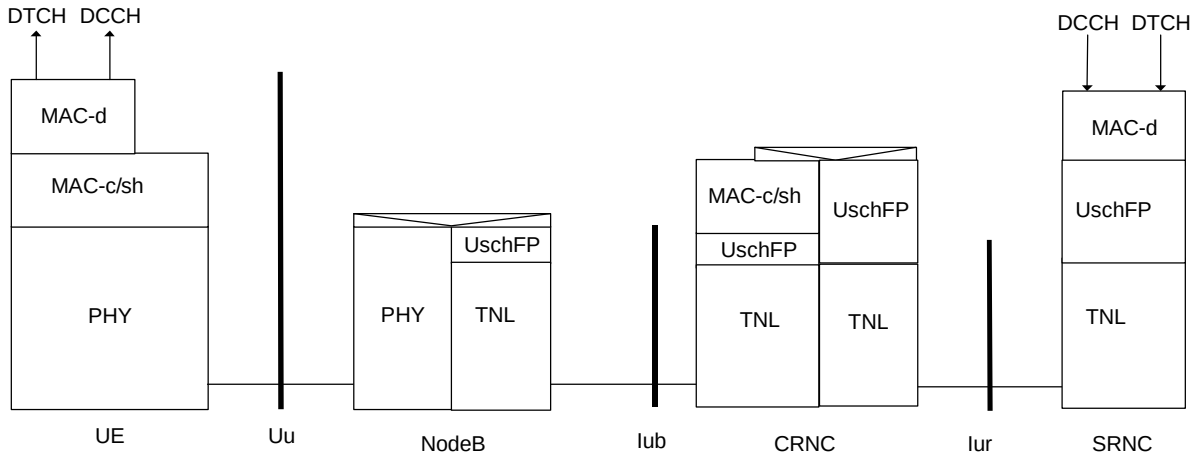


Figure 22: USCH: Separate Controlling and Serving RNC

11.2.7 HS-DSCH Transport Channel

Figure 23 shows the protocol model for the HS-DSCH transport channel when the Controlling and Serving RNC are co-incident.

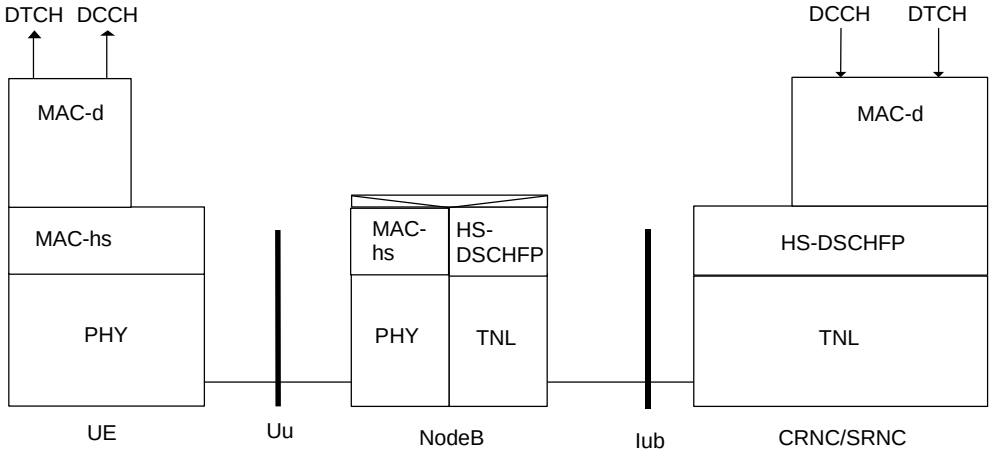


Figure 23: HS-DSCH Co-incident Controlling and Serving RNC

The High Speed MAC (MAC-hs) entity in the Node B transfers MAC-hs PDU to the peer MAC-hs entity in the UE over the Uu interface. The Dedicated MAC (MAC-d) entity in the RNC transfers MAC-d PDUs to the MAC-hs in the Node B using the services of the HS-DSCH Frame Protocol (HS-DSCH FP) entity. The HS-DSCH FP entity adds header information to form a HS-DSCH FP PDU that is transported to the Node B over a transport bearer.

A Relaying Function in the Node B relays the HS-DSCH frame received by HS-DSCH FP entity to the MAC-hs entity. HS-DSCH scheduling is performed by MAC-hs in the Node B.

Figure 24 shows the protocol model for the HS-DSCH transport channel with separate Controlling and Serving RNC. In this case, Iur HS-DSCH Frame Protocol is used to interwork the Flow Control function at the Controlling RNC with the MAC-d at the Serving RNC. Also in this case, Iub HS-DSCH Frame Protocol is used to interwork the MAC-hs at the Node B with the Flow Control function at the Controlling RNC.

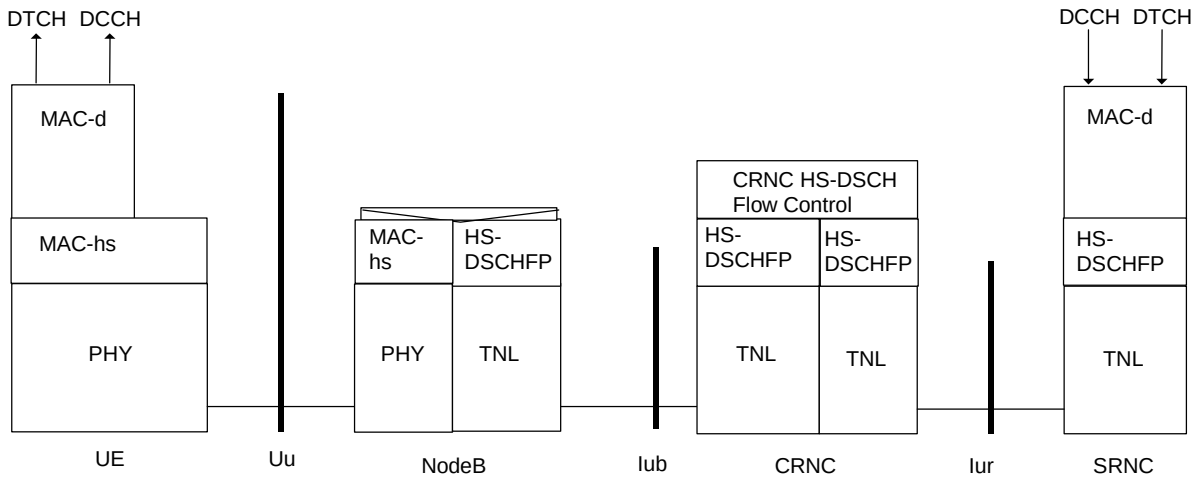


Figure 24: HS-DSCH: Separate Controlling and Serving RNC (configuration with CRNC flow control)

Figure 25 shows the protocol model for the HS-DSCH transport channel with the Controlling RNC user plane RNL being bypassed. In this case, the CRNC does not have any user plane RNL function for the HS-DSCH. MAC-d in SRNC is located directly above MAC-hs in Node B, i.e. in the HS-DSCH user plane RNL, the SRNC is directly connected to the Node B, thus bypassing the CRNC user plane RNL. The CRNC performs only user plane TNL functions.

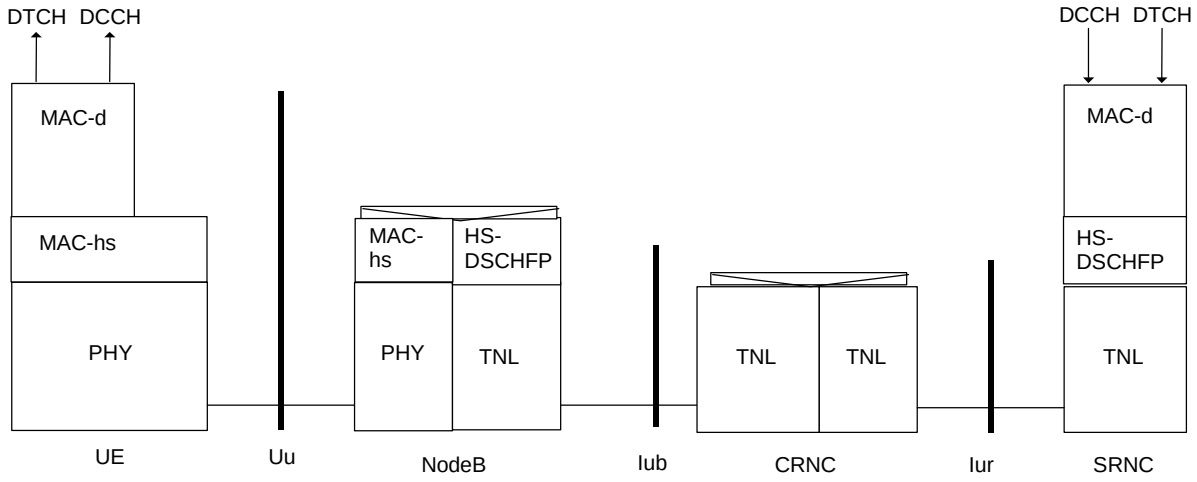


Figure 25: HS-DSCH: Serving RNC with bypassed Controlling RNC (configuration without CRNC flow control)

12 UTRAN Performance Requirements

12.1 UTRAN delay requirements

Void.

Annex A (informative): Change history

Change history					
TSG RAN#	Version	CR	Tdoc RAN	New Version	Subject/Comment
RAN_05	-	-	-	3.0.0	Approved at TSG RAN #5 and placed under Change Control
RAN_06	3.0.0	-	RP-99735	3.1.0	Approved at TSG RAN #6
RAN_06	3.0.0	-	RP-99736	3.1.0	Approved at TSG RAN #6
RAN_06	3.0.0	-	RP-99737	3.1.0	Approved at TSG RAN #6
RAN_06	3.0.0	-	RP-99738	3.1.0	Approved at TSG RAN #6
RAN_07	3.1.0	-	RP-000073	3.2.0	Approved at TSG RAN #7
RAN_08	3.2.0	-	RP-000231	3.3.0	Approved at TSG RAN #8
RAN_09	3.3.0	013 014 015 016 017	RP-000370	3.4.0	Approved at TSG RAN #9
RAN_10	3.4.0	018 019	RP-000607	3.5.0	Approved at TSG RAN #10
RAN_11	3.5.0	020 021	RP-010107	3.6.0	Approved at TSG RAN #11

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
March 01	11	RP-010164	23	1	Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
June 01	12	RP-010370	025, 028, 032		Approved at TSG RAN #12	4.0.0	4.1.0
June 01	12	RP-010389	026, 029		Approved at TSG RAN #12	4.0.0	4.1.0
June 01	12	RP-010403	030		Approved at TSG RAN #12 and placed under Change Control	4.1.0	5.0.0
09/2001	13	RP-010575	033		Uplink power control for LCR TDD	5.0.0	5.1.0
09/2001	13	RP-010575	038		Clarification of coordinated DCHs	5.0.0	5.1.0
03/2002	15	RP-020221	046		New UE identifier for MAC-c/sh multiplexing for DSCH	5.1.0	5.2.0
03/2002	15	RP-020189	044	2	Introduction of IP Transport in UTRAN	5.1.0	5.2.0
03/2002	15	RP-020190	039	2	HSDPA Additions for REL-5	5.1.0	5.2.0
03/2002	15	RP-020195	045	1	NNSF Functional Description	5.1.0	5.2.0
06/2002	16	RP-020422	047		HSDPA-related changes	5.2.0	5.3.0
06/2002	16	RP-020421	048		Corrections on ATM-IP interoperability scenarios	5.2.0	5.3.0
06/2002	16	RP-020399	051		New UE identifier for Shared Channel handling for TDD DSCH/USCH	5.2.0	5.3.0
06/2002	16	RP-020421	052		Introduction of IP transport in UTRAN	5.2.0	5.3.0
06/2002	16	RP-020421	053	2	Independence of RNL and TNL	5.2.0	5.3.0
09/2002	17	RP-020605	055	1	Clarification on ALCAP Indentifiers	5.3.0	5.4.0
09/2002	17	RP-020627	056	1	Introduction of Iur-g	5.3.0	5.4.0
09/2002	17	RP-020625	057	1	Introduction of the Access Control Function: SNA	5.3.0	5.4.0
09/2002	17	RP-020628	059		Introduction of HS-DSCH RNTI in TS25.401	5.3.0	5.4.0
12/2002	18	RP-020750	062		Definition of URA	5.4.0	5.5.0
12/2002	18	RP-020764	064	1	Corrections to the SNA Access Control Function	5.4.0	5.5.0
03/2003	19	RP-030084	065		CR on revising the definition of SAS to support all REL-4 UE positioning methods	5.5.0	6.0.0
06/2003	20	RP-030317	068	1	Correction to HS-DSCH transport in case of SRNC not coincident with DRNC and without flow control in the DRNC	6.0.0	6.1.0
12/2003	22	RP-030675	076	1	NAS/AS issue for shared networks in connected mode	6.1.0	6.2.0
06/2004	24	RP-040182	084	1	Introduction of Iu and Iur support of Network Assisted Cell Change from UTRAN to GERAN	6.2.0	6.3.0
06/2004	24	RP-040254	086		Completion of the REL-5 IP Transport WI	6.2.0	6.3.0
09/2004	25	RP-040303	087	1	Introduction of Iuant into UTRAN architecture for control of RET Antennas	6.3.0	6.4.0
09/2004	25	RP-040297	091		Terminology correction of IP ALCAP CR	6.3.0	6.4.0

3GPP TSG-RAN3 Meeting #45
Shin-Yokohama, Japan, 15th – 19th November 2004

TDoc ⌘[H1] R3-041724

CR-Form-v7.1

CHANGE REQUEST

⌘ **25.402** **CR** **045** ⌘**rev** **3** ⌘ Current version: **6.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	MBMS related changes to 25.402
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	19/11/2004
Category:	⌘	**B**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Allow setup of synchronised transport channels for MBMS
Summary of change:	⌘	MBMS related abbreviations are added Introduction of new MBMS related descriptive chapter
Consequences if not approved:	⌘	Combining methods in UE might work very inefficiently.

Clauses affected:	⌘	Section 3.3 and new chapter 11			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ TS25.401 v 6.4.0 CR95 TS25.410 v 6.1.0 CR59 TS25.413 v 6.3.0 CR706 TS25.420 v 6.2.0 CR044 TS25.430 v 6.2.0 CR057 TS25.423 v 6.3.0 CR999 TS25.433 v 6.3.0 CR1049
affected:			**X**	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3.3 Abbreviations

……Text omitted

UMTS	Universal Mobile Telecommunications System
USCH	Uplink Shared CHannel
UTRAN	UMTS Terrestrial Radio Access Network

MBMS	Multimedia Broadcast Multicast Service
MCCH	MBMS point-to-multipoint Control Channel
MTCH	MBMS point-to-multipoint Traffic Channel
p-t-p	Point-to-Point
p-t-m	Point-to-Multipoint

11 MBMS related Transport Channel Synchronisation

11.1 General

Point-to-multipoint transmission is used to transfer MBMS specific control/user plane information between the network and several UEs in RRC Connected or Idle Mode. In p-t-m mode, FACH is used as a transport channel for MTCH and MCCH. S-CCPCH is used as a physical channel for FACH carrying MTCH or MCCH.

11.2 FDD MBMS related Transport Channel Synchronisation

11.3 TDD MBMS related Transport Channel Synchronisation

3GPP TSG-RAN WG3 #45 **⌘R3-041725**
Shin Yokohama, Japan, 15th November – 19 November 2004

CR-Form-v7.1

CHANGE REQUEST

⌘ **TS25.410** **CR** **CR059** ⌘**rev** **2** ⌘ Current version: **6.1.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network [X] Core Network [X]

Title:	⌘	Introduction of MBMS in TS25.410
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	15/11/2004
Category:	⌘	**B**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change:	⌘	Introduce MBMS on Iu interface.
Summary of change:	⌘	MBMS feature is introduced on Iu interface.
Consequences if not approved:	⌘	

Clauses affected:	⌘	2, 3, 4, 5, 6			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ TS25.401 v 6.4.0 CR95 TS25.402 v 6.0.0 CR45 TS25.413 v 6.3.0 CR706 TS25.420 v 6.2.0 CR044 TS25.430 v 6.2.0 CR057 TS25.423 v 6.3.0 CR999 TS25.433 v 6.3.0 CR1049
affected:			**X**	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 25.401: "UTRAN Overall Description".

[2] 3GPP TR 23.930: "Iu Principles".

[3] 3GPP TS 23.110: "UMTS Access Stratum Services and Functions".

[4] 3GPP TS 25.411: "UTRAN Iu Interface Layer 1".

[5] 3GPP TS 25.412: "UTRAN Iu Interface Signalling Transport".

[6] 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".

[7] 3GPP TS 25.414: "UTRAN Iu Interface Data Transport and Transport Signalling"

[8] 3GPP TS 25.415: "UTRAN Iu Interface User Plane Protocols".

[9] ITU-T Recommendation Q.711 (07/1996): "Functional description of the signalling connection control part".

[10] ITU-T Recommendation Q.712 (07/1996): "Definition and function of signalling connection control part messages".

[11] ITU-T Recommendation Q.713 (07/1996): "Signalling connection control part formats and codes".

[12] ITU-T Recommendation Q.714 (07/1996): "Signalling connection control part procedures".

[13] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[14] 3GPP TS 25.419: "UTRAN Iu Interface: Service Area Broadcast Protocol SABP".

[15] 3GPP TS 23.153: "Out of Band Transcoder Control; Stage 2".

[16] ITU-T Recommendation Q.2630.1: "AAL type 2 signalling protocol - (Capability Set 1)".

[17] ITU-T Recommendation Q.2630.2: "AAL type 2 signalling protocol - Capability Set 2".

[18] INTERNET-DRAFT, G. Sidebottom et al, "SS7 MTP3-User Adaptation Layer (M3UA)", draft-ietf-sigtran-m3ua-12.txt, February 2002.

[19] IETF RFC 1889(01/1996): "RTP: A Transport Protocol for Real Time Applications".

[20] IETF RFC 768 (08/1980): "User Datagram Protocol".

[21] IETF RFC 793 (09/1981): "TCP, Transmission Control Protocol".

[22] IETF RFC 791 (09/1981): "Internet Protocol".

[23] IETF RFC 2460 (12/1998): "Internet Protocol, Version 6 (IPv6) Specification".

[24] IETF RFC 2960 (10/2000): "Stream Control Transmission Protocol".

[25] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".

[r1] 3GPP TS23.246: Multimedia Broadcast/Multicast Service (MBMS) Architecture and functional description

[r2] 3GPP TS 25.346: “Introduction of the Multimedia Broadcast Multicast Service (MBMS) in the Radio Access Network (RAN); Stage 2”.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in [1] apply.

MBMS related terms and definitions:

MBMS bearer service: as defined in [r1].

MBMS RAB: as defined in [r2].

MBMS Iu signalling connection: as defined in [r2].

MBMS session start: as defined in [r2].

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

3G-MSC	3rd Generation Mobile Switching Centre
3G-SGSN	3rd Generation Serving GPRS Support Node
AAL	ATM Adaptation Layer
ATM	Asynchronous Transfer Mode
BC	Broadcast
BSSMAP	Base Station Subsystem Management Application Part
CBS	Cell Broadcast Service
CC	Connection Confirm
CN	Core Network
CR	Connection Release
CREF	Connection Refusal
CS	Circuit Switched
GT	Global Title
GTP-U	GPRS Tunnelling Protocol
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
ISDN	Integrated Services Digital Network
LA	Location Area
M3UA	MTP3 User Adaptation Layer
MBMS	Multimedia Broadcast Multicast Service
NAS	Non Access Stratum
NACC	Network Assisted Cell Change
NNSF	NAS Node Selection Function
O&M	Operation and Maintenance
PLMN	Public Land Mobile Network
PS	Packet Switched
PSTN	Public Switched Telephone Network

PVC	Permanent Virtual Circuit
QoS	Quality of Service
RA	Routing Area
RAB	Radio Access Bearer
RANAP	Radio Access Network Application Part
RIM	RAN Information Management
RLP	Radio Link Protocol
RNC	Radio Network Controller
RNL	Radio Network Layer
RRC	Radio Resource Control
RTCP	Real Time Control Protocol
RTP	Real Time Protocol
SA	Service Area
SABP	Service Area Broadcast Protocol
SAP	Service Access Point
SCCP	Signalling Connection Control Part
SCTP	Stream Control Transmission Protocol
SNA	Shared Network Area
SPC	Signalling Point Code
SRNS	Serving Radio Network Subsystem
SSN	Sub-System Number
SVC	Switched Virtual Circuit
TCP	Transmission Control Protocol
UE	User Equipment
UDP	User Datagram Protocol
UP	User Plane
URA	UTRAN Registration Area
UTRAN	UMTS Terrestrial Radio Access Network
VC	Virtual Circuit

3.3 Specification Notations

For the purposes of the present document, the following notations apply:

Procedure	When referring to a procedure in the specification the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. Radio Network Layer procedures.
Message	When referring to a message in the specification the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. RADIO LINK SETUP REQUEST message.
Frame	When referring to a control or data frame in the specification the CONTROL/DATA FRAME NAME is written with all letters in upper case characters followed by the words "control/data frame", e.g. DCH transport frame.

4 General Aspects

4.1 UTRAN Architecture

4.1.1 Iu Interface Architecture

The overall UMTS architecture and UTRAN architectures are described in [1]. This subclause specifies only the architecture of the Iu interface, and shall not constrain the network architecture of either Core or Radio Access Networks.

The I_u interface is specified at the boundary between the Core Network and UTRAN. Figure 4.1 depicts the logical division of the I_u interface. From the Iu perspective, the UTRAN access point is an RNC.

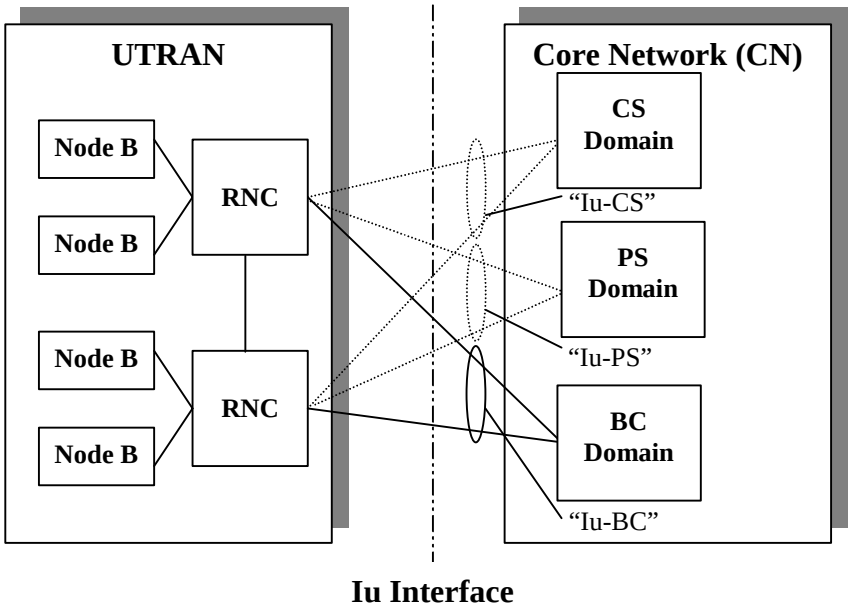


Figure 4.1: I_u Interface Architecture

The Iu interface towards the PS-domain of the core network is called Iu-PS, and the Iu interface towards the CS-domain is called Iu-CS. The differences between Iu-CS and Iu-PS are treated elsewhere in the present document. The Iu interface to the Broadcast domain is called Iu-BC.

There shall not be more than one Iu interface (Iu-PS) towards the PS-domain from any one RNC– except where the NNSF is used, see subclause 4.1.3. Each RNC shall not have more than one Iu interface (Iu-CS) towards its default CN node within the CS domain, but may also have further Iu interfaces (Iu-CS) towards other CN nodes within the CS domain. (See [6] for definition of Default CN node.) These further Iu interfaces (Iu-CS) shall only be used as a result of intra-MSC inter-system handover or SRNS relocation, in the case the anchor CN node directly connects to the target RNC. There may also be more than one Iu interface towards the CS-Domain if the NNSF is used – see subclause 4.1.3. There shall not be more than one Iu interface (Iu-BC) from an RNC towards the Broadcast domain.

In the separated core network architecture, this means that there shall be separate signalling and user data connections towards the PS and CS domains – this applies in both transport and radio network layers.

In the combined architecture, there shall be separate connections in the user plane towards the PS and CS domains (in both transport and radio network layers). In the control plane, there shall be separate SCCP connections to the two logical domains.

In either architecture, there can be several RNCs within UTRAN and so UTRAN may have several I_u access points towards the Core Network. As a minimum, each Iu access point (in UTRAN or CN) shall independently fulfil the requirements of the relevant Iu specifications (25.41x series – see clause 7).

4.1.2 I_u connection principles

The Iu interface has a hierarchical architecture where one higher layer entity controls several lower layer entities. The hierarchy for the CN - UTRAN signalling connection end points is described below:

- Each CN Access Point may be connected to one or more UTRAN Access Points.
- For the PS domain, each UTRAN Access Point shall not be connected to more than one CN Access Point – except where the NNSF is used, see subclause 4.1.3.
- For the CS domain, each UTRAN Access Point may be connected to one or more CN Access Points.
- For the BC domain, each UTRAN Access Point may be connected to one CN Access Point only.

4.1.3 Implementation of the NAS Node Selection Function

The optional NAS Node Selection Function (NNSF) is described in [x1].

If the NAS Node Selection Function is used by an RNC:

- There may be more than one Iu interface (Iu-CS) towards the CS domain and/or more than one Iu interface (Iu-PS) towards the PS-domain from this RNC.

4.2 I_u Interface General Principles

From a UTRAN perspective, maximising the commonality of the various protocols that flow on the Iu interface is desirable. This means at the minimum that:

- A common set of radio access bearer services will be offered by UTRAN to the Core Network nodes, regardless of their type (e.g. 3G-MSC or 3G-SGSN).

There will be a common functional split between UTRAN and the Core Network nodes, regardless of their type (e.g. 3G-MSC or 3G-SGSN).

Signalling in the radio network control plane shall not depend on the specific choice of transport layers.

4.3 I_u Interface Specification Objectives

The following objectives are partly derived from [2].

The I_u interface shall be specified such that it can support:

- the interconnection of RNCs with Core Network Access Points within a single PLMN.
- the interconnection of RNCs with Core Network Access Points irrespective of the manufacturer of any of the elements.
- all UMTS services.

The I_u interface shall facilitate the use of the same RNC, MSC or SGSN in all PLMNs.

The I_u interface shall facilitate the sharing of transport technology between Iu-PS and Iu-BC.

The I_u interface shall allow interworking to the GSM Core Network.

Independence between the protocol layers and between control and user planes shall be maintained on the Iu interface.

The I_u interface shall allow independent evolution of technologies within the Core, Radio Access and Transport Networks.

The I_u interface shall allow separate evolution of O&M facilities.

The I_u interface shall be standardised as an open and multi-vendor interface.

The Iu interface specifications shall facilitate the migration of some services from the CS-domain to the PS-domain. In particular, the RANAP protocol shall be common to both PS and CS domains, and the I_u user plane protocol(s) shall be independent of the core network domain (PS or CS), except where a specific feature is only required for one domain.

4.4 I_u Interface Capabilities

The following capabilities are derived from the requirements described in [2].

The I_u interface supports:

- procedures to establish, maintain and release Radio Access Bearers;
- procedures to perform SRNS relocation, intra-system handover, inter-system handover and inter-system change;

- procedures to support the Cell Broadcast service;
- a set of general procedures, not related to a specific UE;
- the separation of each UE on the protocol level for user specific signalling management;
- the transfer of NAS signalling messages between UE and CN;
- location services by transferring requests from the CN to UTRAN, and location information from UTRAN to CN. The location information may comprise a geographical area identifier or global co-ordinates with uncertainty parameters;
- simultaneous access to multiple CN domains for a single UE;
- mechanisms for resource reservation for packet data streams~~.~~,
- procedures to support MBMS bearer services.

4.5 I_u Interface Characteristics

4.5.1 Use of Transport Network User Plane as Signalling Bearer

4.5.1.1 Use of SCCP

4.5.1.1.1 General

The SCCP is used to support signalling messages between the CNs and the RNC. One user function of the SCCP, called Radio Access Network Application Part (RANAP), is defined. The RANAP uses one SCCP signalling connection per active UE and CN for the transfer of layer 3 messages. RANAP also uses one SCCP signalling connection per MBMS bearer service.

Both connectionless and connection-oriented procedures are used to support the RANAP. TS 25.413 explains whether connection oriented or connectionless services should be used for each layer 3 procedure.

RANAP may use SSN, SPC and/or GT and any combination of them as addressing schemes for the SCCP. Which of the available addressing scheme to use for the SCCP is an operator matter.

When GT addressing is utilised, the following settings shall be used:

- SSN Indicator = 1 (RANAP SSN as defined in [13] shall always be included).
- Global Title Indicator = 0100 (GT includes translation type, numbering plan, encoding scheme and nature of address indicator).
- Translation Type = 0000 0000 (not used).
- Numbering Plan = 0001 (E.163/4).
- Nature of Address Indicator = 000 0100 (International Significant Number).
- Encoding Scheme = 0001 or 0010 (BCD, odd or even).
- Routing indicator = 0 or 1 (route on GT or PC/SSN).

When used, the GT shall be the E.164 address of the relevant node.

The following subclauses describe the use of SCCP connections for RANAP transactions. Subclause 4.5.1.2 describes the connection establishment procedures. Subclause 4.5.1.3 describes the connection release procedures. Subclause 4.5.1.4 describes abnormal conditions.

4.5.1.1.2 SCCP Connection Establishment procedure

A new SCCP connection is established when information related to the communication between a UE and the network has to be exchanged between RNC and CN, and no SCCP connection exists between the CN and the RNC involved, for the concerned UE. A new SCCP connection is also established for MBMS service purpose between the RNC and CN.

Various SCCP connection establishment cases have to be distinguished:

i) RNC Initiated SCCP Signalling Connection for a UE;

ii) CN Initiated SCCP Signalling Connection for a UE;

iii) CN Initiated SCCP Signalling Connection for an MBMS Service.

The above cases are the only cases currently identified for SCCP connection establishment. Others may emerge in the future.

4.5.1.1.2.1 Establishment procedure in case i

The SCCP signalling connection establishment is initiated, by the RNC, at the reception of the first layer 3 non access stratum message from the UE.

Initiation

The RNC sends SCCP CONNECTION REQUEST message to the Core Network. A RANAP message shall be included in the user data field of the SCCP CONNECTION REQUEST message when the RANAP message size is less than or equal to the maximum size of the user data field in the SCCP CONNECTION REQUEST message. When the RANAP message is longer than the maximum size, the user data field shall not be included in the SCCP CONNECTION REQUEST message.

Termination

- **successful outcome**
  - The SCCP CONNECTION CONFIRM message, which may optionally contain a connection oriented RANAP message in the user data field, is returned to the RNC.
- **unsuccessful outcome**
  - If the SCCP signalling connection establishment fails, an SCCP CONNECTION REFUSAL message will be sent back to the RNC. This message may contain a RANAP message in the user data field.

For more information on how the RANAP procedure Initial UE Message is handled, please see the elementary procedure Initial UE Message in TS 25.413 [6].

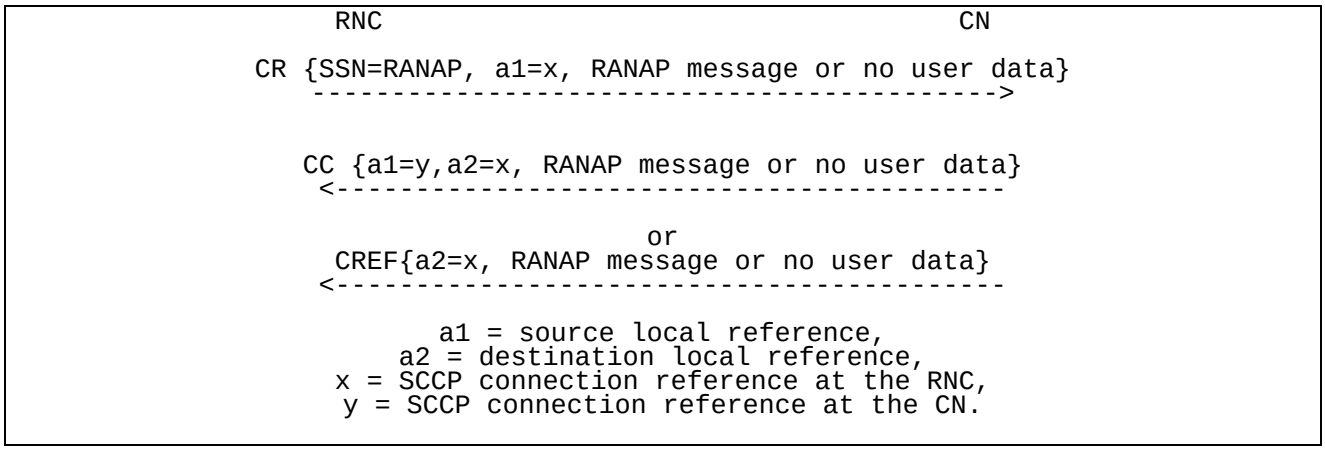


Figure 4.2: Setting-up of RNC Initiated SCCP Signalling Connection

4.5.1.1.2.2 Establishment procedure in case ii

The SCCP signalling connection establishment is initiated, by the Core Network, in connection with performing a Relocation.

Initiation

The Core Network initiates the connection establishment by sending an SCCP CONNECTION REQUEST message to the RNC. Optionally, a RANAP message may be included in the user data field of the SCCP CONNECTION REQUEST message.

Termination

- **successful outcome**
  - The SCCP CONNECTION CONFIRM message, which may optionally contain a connection oriented RANAP message in the user data field, is returned to the Core Network.
- **unsuccessful outcome**
  - If the SCCP signalling connection establishment fails, an SCCP CONNECTION REFUSAL message will be sent back to the Core Network. This message may contain a RANAP message in the user data field.

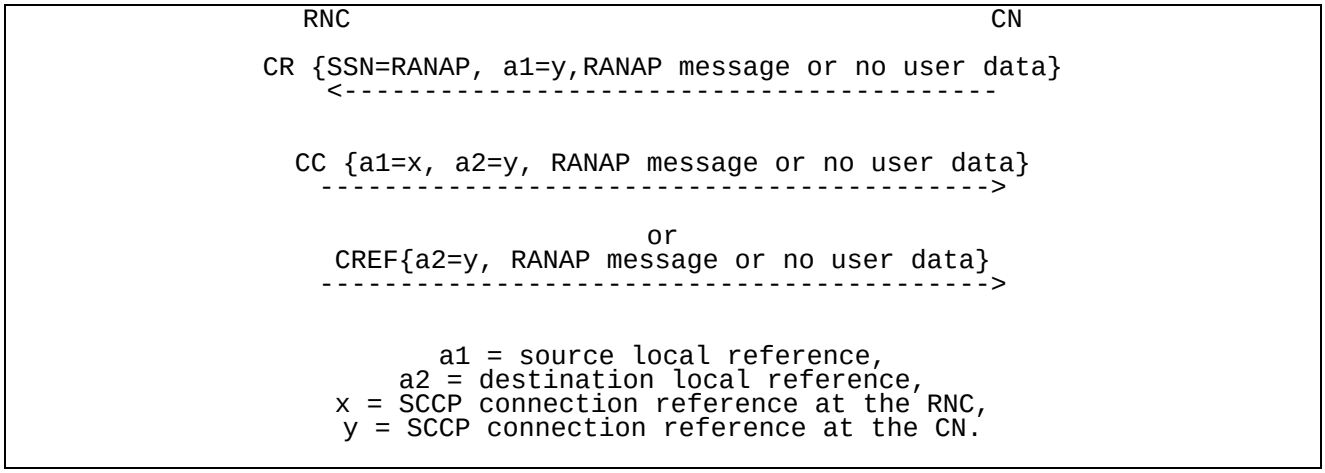


Figure 4.3: Setting-up of CN Initiated SCCP Signalling Connection

4.5.1.1.2.3 Establishment procedure in case iii

The SCCP signalling connection establishment is initiated, by the Core Network, to establish a new SCCP connection between the RNC and the CN for an MBMS service at the start of an MBMS session and when no SCCP connection already exists between the CN and the RNC involved, for the concerned MBMS service.

Initiation

The Core Network initiates the connection establishment by sending an SCCP CONNECTION REQUEST message to the RNC. Optionally, a RANAP message may be included in the user data field of the SCCP CONNECTION REQUEST message.

Termination

- **successful outcome**
  - The SCCP CONNECTION CONFIRM message, which may optionally contain a connection oriented RANAP message in the user data field, is returned to the Core Network.
- **unsuccessful outcome**
  - If the SCCP signalling connection establishment fails, an SCCP CONNECTION REFUSAL message will be sent back to the Core Network. This message may contain a RANAP message in the user data field.

4.5.1.1.3 SCCP Connection Release procedure

This procedure is always initiated at the Core Network side in normal release case.

An SCCP connection is released when the CN realises that a given signalling connection is no longer required.

The CN sends a SCCP RELEASED message.

The procedure may be initiated at the Core Network side and the RNC side in any abnormal release case.

4.5.1.1.4 General SCCP Abnormal Conditions

If a user-out-of-service information or signalling-point-inaccessible information is received by the RANAP, no new attempt to establish SCCP connections towards the affected point code will be started until the corresponding user-in-service information or signalling-point-accessible information is received.

When a user-out-of-service information or signalling-point-inaccessible is received by the RNC, an optional timer may be started. When the timer expires, all the SCCP connections towards the affected point code will be released. When the user-in-service or signalling-point-accessible is received, the timer is stopped.

If for any reason an SCCP connection is released, the optional timer expires or a connection refusal is received while any of the RANAP procedures are being performed or while a dedicated resource is still allocated, the following actions are taken:

At RNC:

- Any RNC procedure relating to that connection is abandoned.
- The UTRAN resources allocated to the connection are released.

At Core Network:

- The resources associated with the SCCP connection are cleared as soon as possible.

4.5.1.2 Use of MTP3b

- For a given MSC, the RNC shall be able to access RANAP and ALCAP either under the same MTP3b destination point code, or under different point codes;
- For a given RNC, the MSC shall be able to access RANAP and ALCAP either under the same MTP3b destination point code, or under different point codes.

4.5.2 Use of Transport Network User Plane as User Data Bearer

4.5.2.1 Use of AAL2

In the ATM transport option AAL2 is used as the user data bearer towards the CS domain.

Q.2630.2 is used as the protocol for dynamically setup AAL-2 connections over Iu towards the CS domain. Q.2630.2 adds new optional capabilities to Q.2630.1.

4.5.2.2 Use of GTP-U

GTP-U is used as the user data bearer towards the PS domain.

RANAP Signalling is used to establish, modify and release the GTP-U tunnels towards the PS domain.

4.5.2.3 Use of RTP

RTP/UDP/IP is used as the user data bearer towards the CS domain in the IP transport option. The use of RTCP [x2] is optional.

RANAP Signalling is used to establish, modify and release RTP sessions towards the CS domain.

4.5.3 Use of Transport Network User Plane on Iu-BC

TCP/IP is used as the bearer for the radio network layer protocol over I_u-BC.

The TCP connection is normally established by the CN using standard TCP procedures.

A new TCP connection is established by the RNC only when there is information (e.g. failure or restart indications) that needs to be sent from RNC to the CN, and there is no existing TCP connection. The RNC shall establish the connection using standard TCP procedures.

The node that established the connection shall release the TCP connection.

5 Functions of the I_u Interface Protocols & Functional Split

5.1 General

This subclause defines the functional split between the core network and the UMTS radio access network. In addition, the possible interaction between the functions is defined. The functional split is shown in table 5.1.

Table 5.1: Iu interface functional split

Function	UTRAN	CN
RAB management functions:		
RAB establishment, modification and release	X	X
RAB characteristics mapping I_u transmission bearers	X	
RAB characteristics mapping Uu bearers	X	
RAB queuing, pre-emption and priority	X	X
Radio Resource Management functions:		
Radio Resource admission control	X	
Broadcast Information	X	X
I_u link Management functions:		
I_u signalling link management	X	X
ATM VC management	X	X
AAL2 establish and release	X	X
AAL5 management	X	X
GTP-U Tunnels management	X	X
TCP Management	X	X
Buffer Management	X	
I_u U-plane (RNL) Management:		
I_u U-plane frame protocol management		X
I_u U-plane frame protocol initialization	X	
Mobility management functions:		
Location information reporting	X	X
Handover and Relocation		
Inter RNC hard HO, Iur not used or not available	X	X
Serving RNS Relocation (intra/inter MSC)	X	X
Inter system hard HO (UMTS-GSM)	X	X
Inter system Change (UMTS-GSM)	X	X
Paging Triggering		X
GERAN System Information Retrieval	X	X
Security Functions:		
Data confidentiality		
Radio interface ciphering	X	
Ciphering key management		X
User identity confidentiality	X	X
Data integrity		
Integrity checking	X	
Integrity key management		X
Service and Network Access functions:		
CN Signalling data	X	X
Data Volume Reporting	X	
UE Tracing	X	X
Location reporting	X	X
I_u Co-ordination functions:		
Paging co-ordination	X	X
NAS Node Selection Function	X	
MBMS functions		
MBMS RAB Management	X	X
MBMS UE Linking Function	X	X
MBMS Registration Control Function	X	X
MBMS Enquiry Function	X	X

5.2 RAB management Functions

5.2.1 RAB establishment, modification and release function

The RAB, Radio Access Bearer, is defined to be set-up between UE and CN. Depending on subscription, service, requested QoS etc. different types of RABs will be used. It is the CN that controls towards the UTRAN the establishment, modification or release of a RAB. Furthermore, the CN selects the type of the transport bearer, i.e. ATM or IP.

The RAB identity is allocated by CN by mapping the value for the NAS Binding information (from the actual protocol IE for the respective CN domain) to the RAB ID as specified in [3]. The RAB identity is globally significant on both the radio bearer and on the Iu bearer for a given UE in a particular CN domain.

RAB establishment, modification and release is a CN initiated function.

RAB establishment, modification and release is a UTRAN executed function.

RAB release request is a UTRAN initiated function, triggered when UTRAN e.g. fails to keep the RAB established with the UE.

5.2.2 RAB characteristics mapping to Uu bearers function

The RAB characteristics mapping function is used to map the radio access bearers to the Uu bearers. The mapping is performed during the establishment of the RAB. UTRAN shall perform the mapping between the bearers.

RAB mapping to Uu transmission bearers is a UTRAN function.

5.2.3 RAB characteristics mapping to Iu transport bearers

The RAB characteristics mapping function is used to map the radio access bearers to the Iu interface transport bearers. The mapping is performed during the establishment of the RAB.

UTRAN shall perform this mapping between the bearers if AAL2 is used, since it is the UTRAN that establishes the AAL2 connections.

In case of RAB towards the PS domain, UTRAN shall perform the mapping between the radio access bearers and the IP layer.

RAB characteristics mapping to Iu transport bearers is a UTRAN function.

5.2.4 RAB queuing, pre-emption and priority function

The allocation/retention priority level of a RAB is determined by the CN based on e.g. subscription information, QoS information etc. Accordingly, the CN shall request RAB establishment or modification with an indication of the priority level and the pre-emption capability of that RAB and the queuing vulnerability. Queuing and resource pre-emption shall be performed by UTRAN accordingly.

RAB queuing, pre-emption and allocation/retention priority handling is a UTRAN controlled function.

RAB queuing, pre-emption and allocation/retention priority setting is a CN function.

5.3 Radio Resource Management over Iu

5.3.1 Radio resource admission control

When UTRAN receives a request to establish or modify a radio access bearer from the CN, the current radio resource situation is analysed and the admission control either accepts or rejects the request. This is called "Radio resource admission control" and is handled by the UTRAN. If the request is queued, it is handled by the RAB queuing, pre-emption and priority function.

5.3.2 Broadcast information management

This function consists in the broadcast from network toward UE of some information in the coverage area of the whole network or different parts of the network.

There are two kinds of Broadcast information management. UTRAN broadcast information, and Cell Broadcast information management. All UTRAN broadcast information management shall be handled locally within UTRAN. All Cell Broadcast information is controlled by CN and executed by UTRAN.

5.4 I_u link Management functions

5.4.1 I_u Signalling Link Management function

The I_u signalling link management function provides a reliable transfer of the radio network signalling between UTRAN and CN. Both CN and UTRAN manage the function.

This function is in particular responsible for Iu signalling connection establishment, which can be established either by the CN or the RNC and for I_u signalling connection release, which is controlled by CN possibly upon UTRAN request.

5.4.2 ATM Virtual Connection Management function

This function refers to handling of ATM Virtual Connections (VCs) between CN and UTRAN.

This function shall be used to establish, maintain and release the ATM VCs. For permanent VCs, it is regarded to be an O&M function.

This function also includes the selection of a Virtual Circuit to be used for a particular RAB. The selection of ATM VC upon an Iu radio access bearer service request, shall be done by UTRAN. The selected VC shall fulfil the requirements of the request. The VC may consist of several sublinks: such as SCCP connections, AAL2 connections or IP flows.

5.4.3 AAL2 connection establish and release function

This function is used to establish and release the AAL type 2 connections between CN and UTRAN upon an Iu radio access bearer service request. Both UTRAN and CN are taking part in the establishment of AAL2 connection. UTRAN shall initiate both establishment and release of AAL2 connections. In abnormal cases, the CN may also initiate release of AAL2 connections. The use of AAL2 for Iu transmission bearers depends on type of CN.

5.4.4 AAL5 management function

AAL5 connections between CN and UTRAN shall be pre-configured at system initialisation. Basic configuration is PVCs. For user data, SVC is possible.

The AAL5 management is a function handled by both the CN and the UTRAN.

5.4.5 GTP-U tunnels management function

This function is used to establish and release GTP-U tunnels between CN and UTRAN upon a radio access bearer service request. This involves assigning a tunnel identifier for each direction and the creation of a context containing the tunnel information. The tunnel identifier for the downlink is allocated by the UTRAN, and the tunnel identifier for the uplink is allocated by the CN. Both CN and UTRAN should maintain the context. The use of GTP-U for I_u transport bearers depends on type of CN.

5.4.6 TCP Management Function

This function is used to establish and release the TCP connections between CN and UTRAN over I_u-BC.

The TCP management function exists in both UTRAN and CN.

5.4.7 Buffer Management

Congestion control shall be performed over the Iu user plane using buffer management and no flow control.

This function includes buffers to store received packet data units that at reception can not be processed due to e.g. congestion. In UTRAN, there must be a buffer management function handling received packets from the peer CN node.

The used mechanism is not in the scope of the present document and not relevant to be standardised.

Buffer management is a UTRAN function.

5.4.8 RTP Session Management Function

This function is used to establish and release RTP sessions between CN and UTRAN upon a radio access bearer service request. This involves assigning a RTP session identifier for each direction and the creation of a context containing the RTP session information. The RTP session identifier for the downlink is allocated by the UTRAN, and the RTP session identifier for the uplink is allocated by the CN. Both CN and UTRAN should maintain the RTP session context. The use of RTP for Iu transport bearers depends on type of CN.

5.5 I_u U-plane (RNL) Management Functions

5.5.1 I_u U-plane frame protocol mode selection function

The I_u UP in the Radio Network Layer provides modes of operation that can be activated on RAB basis. For a given RAB, the I_u UP operates either in a Transparent or in Support mode. I_u U-plane frame protocol mode is selected by the CN. A set of appropriate U-plane version(s) is indicated within RANAP. The final U-plane version is selected during the Iu UP initiation procedure among the indicated version(s).

This function is a CN function.

5.5.2 I_u U-plane frame protocol initialisation

I_u U-plane frame protocol is initialised by the UTRAN. In certain cases, as described in [15], the I_u U-plane frame protocol may be initialised by the CN.

5.6 Mobility Management Functions

5.6.1 Location information update function

Some functionality within the CN, needs information about the present location of an active UE, i.e. a UE with established signalling connection. The Location information update function is used to transfer this information from the UTRAN to the CN. It is the UTRAN responsibility to send this information initially at the signalling connection establishment for a UE and at any change of the UE location as long as the signalling connection exists. For this function, the location information shall be at Location and Routing Area level.

5.6.2 Handover and Relocation functions

5.6.2.1 Inter RNC hard HO function, Iur not used or not available

This functionality includes procedures for handover from one RNC to another RNC when Iur interface is not used or is not available, i.e. soft handover is not possible. The connection is switched in the CN, so both UTRAN and CN are involved. Both intra and inter CN entity cases are applicable. This functionality includes also the moving of the Serving RNS functionality from one RNC to another RNC.

5.6.2.2 Serving RNS Relocation function

This functionality allows moving the Serving RNS functionality from one RNC to another RNC, e.g. closer to where the UE has moved during the communication. The Serving RNS Relocation procedure may be applied when active cell management functionality has created a suitable situation for it. Both UTRAN and CN are involved.

5.6.2.3 Inter system Handover (e.g. UMTS-GSM) function

Inter system handover is performed when a mobile hands over between cells belonging to different systems such as GSM and UMTS. For intersystem handover between UMTS and GSM, the GSM procedures are used within the GSM network. Both UTRAN and CN are involved.

NOTE: The GSM BSSMAP procedures are outside the scope of the present document.

5.6.2A Inter System Change (e.g. UMTS-GSM) function

Inter system change is performed when a GPRS attached mobile moves from cells belonging to different systems such as GSM and UMTS. For intersystem change between UMTS and GSM, the GPRS procedures are used within the GPRS network. Both UTRAN and CN are involved.

5.6.3 Paging Triggering

The Core Network shall, when considered necessary, trigger the Location/Routing/RNC Area paging in the UTRAN system.

5.6.4 Shared Networks Access Control

The Shared Networks Access Control function allows the CN to request the UTRAN to apply UE specific access control to the UTRAN and the neighbouring networks on a PLMN or an SNA basis. The Shared Networks Access Control function is further described in [1].

5.6.5 GERAN System Information Retrieval

In order to provide the UE with system information related to NACC towards a GERAN system - to be used as an optimisation - the GERAN System Information Retrieval function allows the source system to request GERAN (via CN) to provide this system information. The request and subsequent transfer of the GERAN System Information is performed transparently with the RIM function. The RIM function is further described in [1]

5.7 Security Functions

5.7.1 Data Confidentiality

5.7.1.1 Radio interface ciphering function

The radio interface shall be ciphered upon request of the Core Network. Both Signalling and user data may be subject to ciphering. The ciphering shall be done within UTRAN.

5.7.1.2 Ciphering key management function

The ciphering key and the permitted algorithm shall be supplied by the CN. UTRAN selects the used algorithm.

5.7.2 Data integrity

5.7.2.1 Integrity checking

The purpose of the integrity check is to make sure that the signalling continues between the same elements as by authentication. The integrity check shall be done within the UTRAN.

5.7.2.2 Integrity key management

The integrity key and the permitted algorithm shall be supplied by the CN. UTRAN selects the used algorithm.

5.8 Service and Network Access Functions

5.8.1 Core Network signalling data transfer function

The NAS CN signalling data such as Call Control (CC), Session Management (SM), Mobility Management (MM), Short Message Services Point to Point and Supplementary Services (SS) shall be transparently conveyed between the CN and the UE. Over the Iu interface, the same Iu interface channel that is used for the UTRAN-CN signalling shall be used.

5.8.2 Data Volume Reporting

The data volume reporting function is used to report the volume of unacknowledged data to the CN. The function shall be in the UTRAN and is triggered from the CN.

5.8.3 UE Tracing

This feature allows tracing of various events related to the UE and its activities. This is an O&M functionality.

5.8.4 Location reporting function

The positioning function performs the determination of the geographical position for an UE. The location reporting function transfers the positioning information between the UTRAN and the CN according to CN commands. This function involves UTRAN and CN.

5.9 Co-ordination Functions

5.9.1 Paging Co-ordination function

The two CN domain architecture implies need for a page co-ordination, i.e. handling of page triggered by one CN node when UE has a signalling connection to the other CN node. The paging co-ordination is performed by UTRAN and/or optionally by CN. The Common ID is used for UTRAN paging co-ordination. The CN provides the UTRAN with the Common ID.

The paging co-ordination is a UTRAN function. Optionally the paging co-ordination may be performed in the CN.

5.9.2 NAS Node Selection Function

The optional NAS Node Selection Function enables the RNC to initially assign CN resources to serve a UE and subsequently setup a signalling connection to the assigned CN resource.

The method by which the RNC initially assigns CN resources is implementation dependent.

The NNSF is described in detail in [25].

5.9.3 Information Transfer Function

The Information Transfer function allows configuration data to be passed from the CN to the RNC upon CN trigger. This function is operated in acknowledged mode. It should be used by the CN to maintain alignment between the data as configured in the CN and the configuration data provided to the UTRAN. This may be used e.g. to coordinate the SNA geographical definition (LA to SNA mapping) between CN and UTRAN in order to apply access control on an SNA basis.

5.10 MBMS Functions

5.10.1 MBMS RAB Management functions

The MBMS RAB, Radio Access Bearer, is defined to be set-up between the CN and one or several UEs for MBMS. Depending on the MBMS service characteristics, different types of MBMS RABs will be used. It is the CN that controls towards the UTRAN the establishment, update or release of an MBMS RAB.

5.10.2 MBMS UE Linking Function

This function provides the RNC with the list of MBMS services that a given UE, with existing dedicated Iu-PS signalling connection, has “joined” or has “left” [r1].

5.10.3 MBMS Registration Control Function

This function allows the RNC to either register or deregister to the CN for a specific MBMS bearer service so that it is notified whenever a session of this service starts.

It also allows the CN to inform the RNC that a given MBMS bearer service is no longer available.

5.10.4 MBMS Enquiry Function

This function allows the RNC to request to the SGSN the list of MBMS bearer services that a given UE has “joined” [r1] or the IP Multicast Address and APN defined in [1] which correspond to a given MBMS bearer service.

6 I_u Interface Protocol Structure

6.1 General

The Radio Network signalling over Iu consists of the Radio Access Network Application Part (RANAP). The RANAP protocol consists of mechanisms to handle all procedures between the CN and UTRAN. It is also capable of conveying messages transparently between the CN and the UE without interpretation or processing by the UTRAN.

Over the I_u interface the RANAP protocol is, e.g. used for:

- Facilitate a set of general UTRAN procedures from the Core Network such as paging -notification as defined by the notification SAP in [3].
- Separate each User Equipment (UE) on the protocol level for mobile specific signalling management as defined by the dedicated SAP in [3].
- Transfer of transparent non-access signalling as defined in the dedicated SAP in [3].
- Request of various types of UTRAN Radio Access Bearers through the dedicated SAP in [3].
- Perform the SRNS Relocation function.

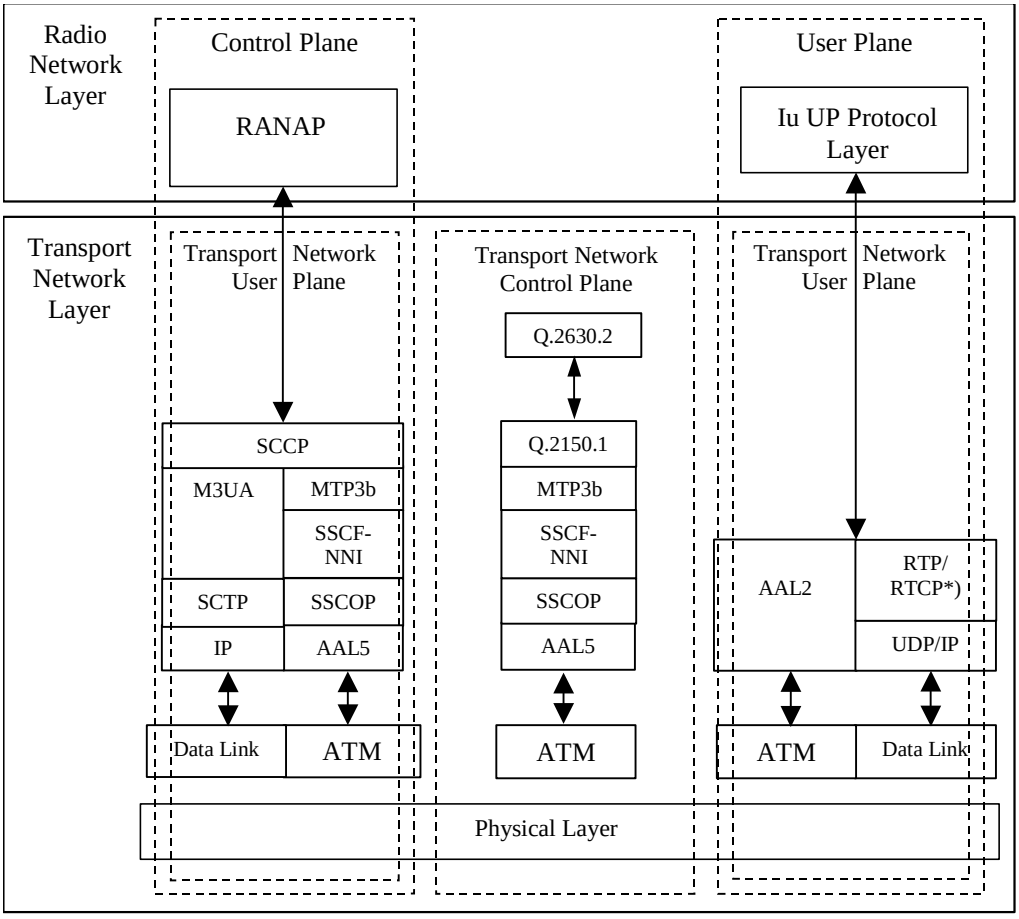
- Perform the various MBMS procedures.

The Radio Access Bearers are provided by the Access Stratum.

Over Iu-BC, a datagram mechanism is used, so there is no clear separation of control and user planes, and the SABP protocol is used for data transfer and signalling.

6.2 Iu-CS

Figure 6.1 shows the protocol structure for I_u-CS, following the structure described in [1].



*) RTCP is optional.

Figure 6.1: I_u –Interface Protocol Structure towards CS Domain

6.3 I_u-BC

Figure 6.2 shows the protocol structure for the I_u-BC.

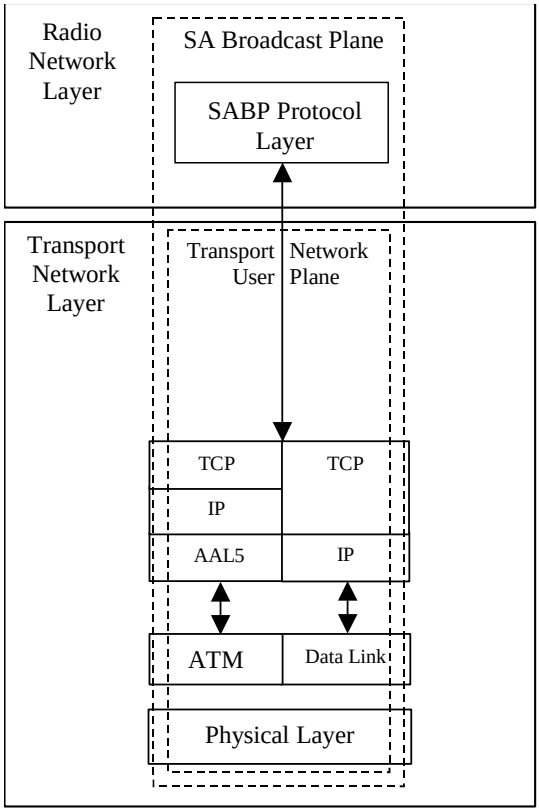


Figure 6.2: I_u Interface Protocol Structure towards Broadcast Domain

6.4 I_u-PS

Figure 6.3 shows the protocol structure for Iu-PS, following the structure described in [1].

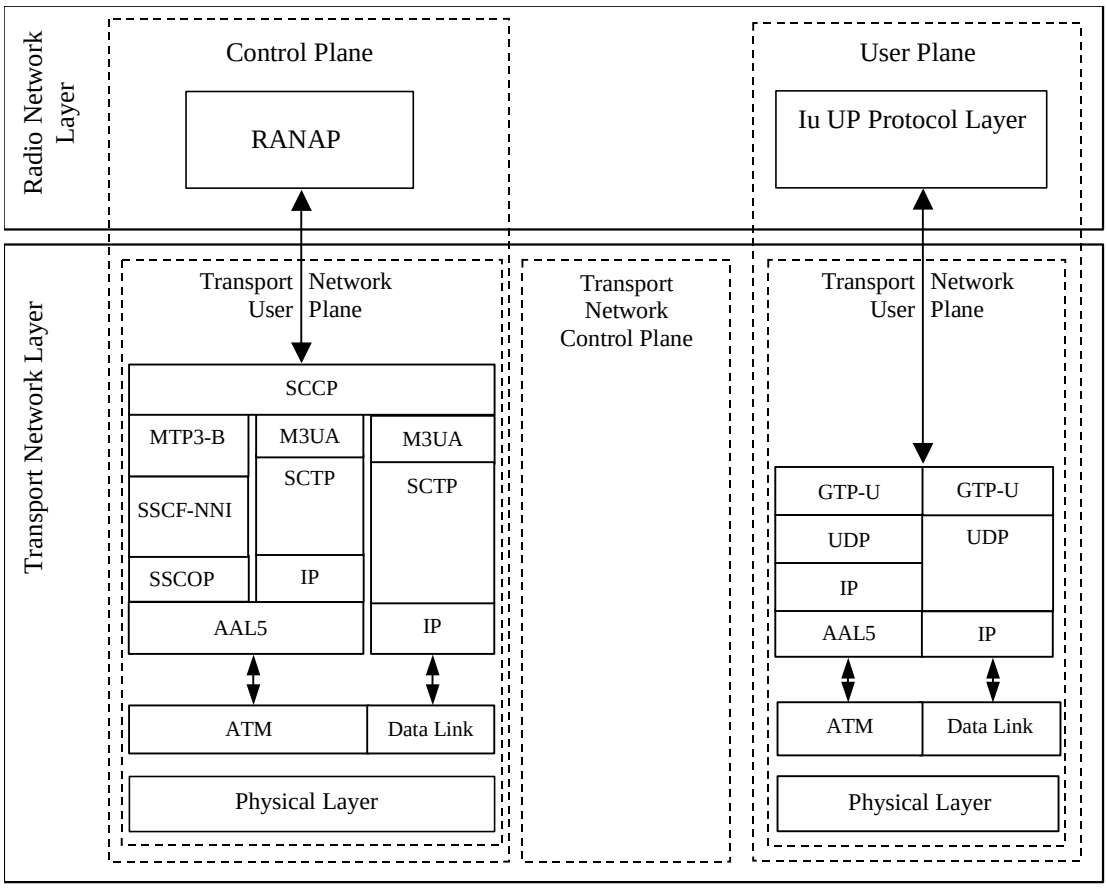


Figure 6.3: I_u Interface Protocol Structure towards PS Domain

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CR-Form-v7.1

CHANGE REQUEST

⌘ **25.413** **CR** **706** ⌘ **rev** **2** ⌘ Current version: **6.3.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [ ] Radio Access Network [X] Core Network [X]

Title:	⌘	MBMS stage 3 support over Iu
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	24/11/2004
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change:	⌘	Introduction of MBMS support over Iu interface
Summary of change:	⌘	Introduction of all required MBMS functions and procedures to support and manage over Iu MBMS.
Consequences if not approved:	⌘	

Clauses affected:	⌘	2, 3.1, 3.3, 5, 6, 7, 8.1, 8.5, 8.6, 8.7, 8.x1(new), 8.x1a(new), 8.x2(new), 8.x3(new), 8.x4(new), 8.x5(new), 8.x6(new), 8.35, 9.1.10, 9.1.11, 9.1.55, 9.1.56, 9.1.57, 9.1.x7(new), 9.1.x8(new), 9.1.x9(new), 9.1.x10(new), 9.1.x11(new), 9.1.x12(new), 9.1.x13(new), 9.1.x14(new), 9.1.x15(new), 9.1.x16(new), 9.1.x17(new), 9.1.x18(new), 9.1.x19(new), 9.1.x20(new), 9.1.x21(new), 9.1.x22(new), 9.2.1.xx11a(new), 9.2.1.xx11b(new), 9.2.1.xx11c(new), 9.2.1.xx11d(new), 9.2.1.xx1a(new), 9.2.1.xx1b(new), 9.2.1.xx1c(new), 9.2.1.xx1e(new), 9.2.3.x3a(new) , 9.2.3.x3b(new) , 9.2.3.x3c(new) , 9.2.3.x3d(new) , 9.2.3.x3e(new) , 9.2.3.x3f(new) , 9.2.3.x3g(new) , 9.2.3.x3h(new) , 9.2.3.x3i(new) , 9.2.3.x3j(new) , 9.2.3.x3k(new), 9.3.2, 9.3.3, 9.3.4 and 9.3.6.

		Y	N			
Other specs	⌘	X		Other core specifications	⌘	CR95r1 to 25.401 CR 45r3 to 25.402 CR 59r2 to 25.410 CR 44r2 to 25.420 CR 999r2 to 25.423

affected:			CR 57r1 to 25.430 CR 1049r4 to 25.433
		X	Test specifications
		X	O&M Specifications
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] 3GPP TR 23.930 (version.4.0.0, 2001-04): "Iu Principles".

[2] 3GPP TS 25.410: "UTRAN Iu Interface: General Aspects and Principles".

[3] 3GPP TS 25.401: "UTRAN Overall Description".

[4] 3GPP TR 25.931: "UTRAN Functions, Examples on Signalling Procedures".

[5] 3GPP TS 25.412: "UTRAN Iu interface signalling transport".

[6] 3GPP TS 25.415: "UTRAN Iu interface user plane protocols".

[7] 3GPP TS 23.107: "Quality of Service (QoS) concept and architecture".

[8] 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core network protocols; Stage 3".

[9] 3GPP TS 25.414: "UTRAN Iu interface data transport and transport signalling".

[10] 3GPP TS 25.331: Radio Resource Control (RRC) protocol specification".

[11] 3GPP TS 48.008: "Mobile Switching Centre – Base Station System (MSC - BSS) interface; Layer 3 specification".

[12] GSM TS 12.08: "Subscriber and equipment trace".

[13] ITU-T Recommendation X.691 (1997): "Information technology - ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)".

[14] ITU-T Recommendation X.680 (1997): "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".

[15] ITU-T Recommendation X.681 (1997): "Information technology - Abstract Syntax Notation One (ASN.1): Information object specification".

[16] 3GPP TS 23.110: "UMTS Access Stratum, Services and Functions".

[17] 3GPP TS 25.323: "Packet Data Convergence Protocol (PDCP) specification".

[18] 3GPP TR 25.921: "Guidelines and principles for protocol description and error handling".

[19] 3GPP TS 23.003: "Numbering, addressing and identification".

[20] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[21] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[22] 3GPP TS 24.080: "Mobile radio Layer 3 supplementary services specification; Formats and coding".

[23] 3GPP TS 29.108: "Application of the Radio Access Network Application Part (RANAP) on the E-interface".

[24] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[25] GSM TS 12.20: "Base Station System (BSS) management information".

[26] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".

[27] 3GPP TS 43.051: "3rd Generation Partnership Project; Technical Specification Group GSM/EDGE Radio Access Network; Overall description - Stage 2".

[28] 3GPP TS 25.305: "Stage 2 Functional Specification of Location Services (LCS) in UTRAN".

[29] 3GPP TS 43.059: "Functional stage 2 description of Location Services (LCS) in GERAN".

[30] 3GPP TS 22.071: "Location Services (LCS); Service description - Stage 1".

[31] 3GPP TR 25.994: "Measures employed by the UMTS Radio Access Network (UTRAN) to overcome early User Equipment (UE) implementation faults".

[32] 3GPP TR 25.995: "Measures employed by the UMTS Radio Access Network (UTRAN) to cater for legacy User Equipment (UE) which conforms to superseded versions of the RAN interface specification".

[33] 3GPP TS 23.195: "Provision of UE Specific Behaviour Information to Network Entities".

[34] 3GPP TS 49.031: "Location Services (LCS) – Base Station System Application Part LCS Extension – (BSSAP-LE)".

[35] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[36] 3GPP TS 48.018: "General Packet Radio Service (GPRS); BSS GPRS Protocol (BSSGP)".

[37] 3GPP TS 32.421: "Subscriber and equipment trace: Trace concepts and requirements".

[38] 3GPP TS 32.422: "Subscriber and equipment trace: Trace control and Configuration Management".

[r1] 3GPP TS 22.146: "Multimedia Broadcast/Multicast Service; Stage 1".

[r2] 3GPP TS 23.246: "Multimedia Broadcast Multicast Service; Architecture and Functional Description".

[r3] 3GPP TS 25.346: "Introduction of the Multimedia Broadcast Multicast Service (MBMS) in the Radio Access Network (RAN); Stage 2".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions below apply. Terms and definitions not defined below can be found in [35].

Cell Load-Based Inter-System Handover: This mechanism, which is contained within a UTRAN RNC, consists of three primary functions:

1. The RNC has the capability to generate and send Cell Load Information towards the target/source system.
2. The RNC has the capability to receive Cell Load Information from the target/source system, and is able to interpret this information.
3. The ability of the RNC to make a handover decision by comparing the Cell Load Information that it has received from the target system with the Cell Load Information it has about its own cells.

Ciphering Alternative: defines both the Ciphering Status (started/not started) together with the Ciphering Algorithm considered altogether**.**

Default CN node: An RNC with an inactive or not implemented NAS Node Selection Function [26] has one single permanent default CN node per CN domain. It always initiates the Initial UE Message procedure towards its default CN node. If the NAS Node Selection Function is active, then no Default CN node exists.

Directed retry: Directed retry is the process of assigning a User Equipment to a radio resource that does not belong to the serving RNC e.g. in situations of congestion. It is triggered by the RAB Assignment procedure and employs relocation procedures.

Elementary Procedure: RANAP protocol consists of Elementary Procedures (EPs). An Elementary Procedure is a unit of interaction between the RNS and the CN. These Elementary Procedures are defined separately and are intended to be used to build up complete sequences in a flexible manner. If the independence between some EPs is restricted, it is described under the relevant EP description. Unless otherwise stated by the restrictions, the EPs may be invoked independently of each other as stand alone procedures, which can be active in parallel. Examples on using several RANAP EPs together with each other and EPs from other interfaces can be found in reference [4].

An EP consists of an initiating message and possibly a response message. Three kinds of EPs are used:

- **Class 1:** Elementary Procedures with response (success and/or failure).
- **Class 2:** Elementary Procedures without response.
- **Class 3:** Elementary Procedures with possibility of multiple responses.

For Class 1 EPs, the types of responses can be as follows:

Successful:

- A signalling message explicitly indicates that the elementary procedure successfully completed with the receipt of the response.

Unsuccessful:

- A signalling message explicitly indicates that the EP failed.
- On time supervision expiry (i.e. absence of expected response).

Successful and Unsuccessful:

- One signalling message reports both successful and unsuccessful outcome for the different included requests. The response message used is the one defined for successful outcome.

Class 2 EPs are considered always successful.

Class 3 EPs have one or several response messages reporting both successful, unsuccessful outcome of the requests and temporary status information about the requests. This type of EP only terminates through response(s) or EP timer expiry.

GERAN BSC in Iu mode: In the context of this specification no distinction between an UTRAN RNC and a GERAN BSC in Iu mode is made. The GERAN BSC in Iu mode will behave as a RNC unless explicitely stated (see [27]).

Integrity Protection Alternative: defines both the Integrity Protection Status (started/not started) together with the Integrity Protection Algorithm considered altogether**.**

Management Based Activation: as defined in [37].

MBMS Bearer Service: as defined in [r2].

MBMS Iu signalling connection: as defined in [r3].

MBMS RAB: as defined in [r3].

MBMS Service Area: as defined in [r2].

MBMS Service Context: as defined in [r3].

MBMS Session: as defined in [r3].

MBMS session start: as defined in [r3].

MBMS session stop: as defined in [r3].

Multicast Service: as defined in [r1].

PUESBINE feature: as defined in [33].

Relocation of SRNS: relocation of SRNS is a UMTS functionality used to relocate the serving RNS role from one RNS to another RNS. This UMTS functionality is realised by several elementary procedures executed in several interfaces and by several protocols and it may involve a change in the radio resources used between UTRAN and UE

It is also possible to relocate the serving RNS role from:

- one RNS within UMTS to another relocation target external to UMTS;
- functionality equivalent to the serving RNS role from another relocation source external to UMTS to another RNS.

RAN Information Management: as defined in [36].

Trace Recording Session: as defined in [37].

Trace Recording Session Reference: as defined in [37].

Trace Reference: as defined in [37].

Trace Session: as defined in [37].

Serving RNC: SRNC is the RNC belonging to SRNS

Serving RNS: role an RNS can take with respect to a specific connection between an UE and UTRAN. There is one serving RNS for each UE that has a connection to UTRAN. The serving RNS is in charge of the radio connection between a UE and the UTRAN. The serving RNS terminates the Iu for this UE

Signalling Based Activation: as defined in [37].

Source RNC: source RNC is the RNC belonging to source RNS

Source RNS: role, with respect to a specific connection between UTRAN and CN, that RNS takes when it decides to initiate a relocation of SRNS

Target RNC: target RNC is the RNC belonging to target RNS

Target RNS: role an RNS gets with respect to a specific connection between UTRAN and CN when it is being a subject of a relocation of SRNS which is being made towards that RNS

UE Specific Behaviour Information – Iu: as defined in [33].

3.2 Symbols

Void.

3.3 Abbreviations

Applicable abbreviations can be found in [35]. For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaptation Layer type 2
ALCAP	Access Link Control Application Part
APN	Access Point Name
AS	Access Stratum
ASN.1	Abstract Syntax Notation One

ATM	Asynchronous Transfer Mode
BSC	Base Station Controller
CC	Call Control
CN	Core Network
CRNC	Controlling RNC
CS	Circuit Switched
DCH	Dedicated Channel
DL	Downlink
DRNC	Drift RNC
DRNS	Drift RNS
DSCH	Downlink Shared Channel
EP	Elementary Procedure
GERAN	GSM/EDGE Radio Access Network
GPRS	General Packet Radio System
GSM	Global System for Mobile communications
GTP	GPRS Tunnelling Protocol
IE	Information Element
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
IPv4	Internet Protocol (version 4)
IPv6	Internet Protocol (version 6)
MBMS	Multimedia Broadcast Multicast Service
MM	Mobility Management
MSC	Mobile services Switching Center
NACC	Network Assisted Cell Change
NAS	Non Access Stratum
NNSF	NAS Node Selection Function
NRT	Non-Real Time
N-PDU	Network – Protocol Data Unit
OSP:IHOSS	Octet Stream Protocol: Internet-Hosted Octet Stream Service
P-TMSI	Packet TMSI
PDCP	Packet Data Convergence Protocol
PDP	Packet Data Protocol
PDU	Protocol Data Unit
PLMN	Public Land Mobile Network
PPP	Point-to-Point Protocol
PS	Packet Switched
PTP	Point To Point
PUESBINE	Provision of UE Specific Behaviour Information to Network Entities
QoS	Quality of Service
RAB	Radio Access Bearer
RANAP	Radio Access Network Application Part
RIM	RAN Information Management
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RRC	Radio Resource Control
RT	Real Time
SAI	Service Area Identifier
SAP	Service Access Point
SDU	Service Data Unit
SGSN	Serving GPRS Support Node
SNA	Shared Network Area
SNAC	Shared Network Area Code
SRNC	Serving RNC
SRNS	Serving RNS
TEID	Tunnel Endpoint Identifier
TMGI	Temporary Mobile Group Identity
TMSI	Temporary Mobile Subscriber Identity
UE	User Equipment
UEA	UMTS Encryption Algorithm
UESBI-Iu	UE Specific Behaviour Information - Iu
UIA	UMTS Integrity Algorithm

UL	Uplink
UMTS	Universal Mobile Telecommunications System
USCH	Uplink Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

Not affected section 4 not shown here

5 RANAP Services

RANAP provides the signalling service between UTRAN or GERAN (in Iu mode) and CN that is required to fulfil the RANAP functions described in clause 7. RANAP services are divided into ~~three~~ four groups. The first three are~~s~~ based on Service Access Points (SAP) defined in [16]:

1. General control services: They are related to the whole Iu interface instance between RNC and logical CN domain, and are accessed in CN through the General Control SAP. They utilise connectionless signalling transport provided by the Iu signalling bearer.

2. Notification services: They are related to specified UEs or all UEs in specified area, and are accessed in CN through the Notification SAP. They utilise connectionless signalling transport provided by the Iu signalling bearer.

3. Dedicated control services: They are related to one UE, and are accessed in CN through the Dedicated Control SAP. RANAP functions that provide these services are associated with Iu signalling connection that is maintained for the UE in question. The Iu signalling connection is realised with connection oriented signalling transport provided by the Iu signalling bearer.

4. MBMS control services: They are related to one MBMS Bearer Service. RANAP functions that provide these services are associated with one or several Iu signalling connection that is maintained for the MBMS Bearer Service in question during the MBMS Session. The Iu signalling connection is realised with connection oriented signalling transport provided by the Iu signalling bearer.

6 Services Expected from Signalling Transport

Signalling transport (See [5]) shall provide two different service modes for the RANAP.

1. Connection oriented data transfer service. This service is supported by a signalling connection between RNC and CN domain. It shall be possible to dynamically establish and release signalling connections based on the need. Each active UE shall have its own signalling connection. Each MBMS Bearer Service during a given MBMS Session shall have one or several signalling connections. The signalling connection shall provide in sequence delivery of RANAP messages. RANAP shall be notified if the signalling connection breaks.

2. Connectionless data transfer service. RANAP shall be notified in case a RANAP message did not reach the intended peer RANAP entity.

7 Functions of RANAP

RANAP protocol has the following functions:

- Relocating serving RNC. This function enables to change the serving RNC functionality as well as the related Iu resources (RAB(s) and Signalling connection) from one RNC to another.

- Overall RAB management. This function is responsible for setting up, modifying and releasing RABs.

- Queuing the setup of RAB. The purpose of this function is to allow placing some requested RABs into a queue, and indicate the peer entity about the queuing.

- Requesting RAB release. While the overall RAB management is a function of the CN, the RNC has the capability to request the release of RAB.

- Release of all Iu connection resources. This function is used to explicitly release all resources related to one Iu connection.

- Requesting the release of all Iu connection resources. While the Iu release is managed from the CN, the RNC has the capability to request the release of all Iu connection resources from the corresponding Iu connection.

- SRNS context forwarding function. This function is responsible for transferring SRNS context from the RNC to the CN for intersystem change in case of packet forwarding.

- Controlling overload in the Iu interface. This function allows adjusting the load in the control plane of the Iu interface.

- Resetting the Iu. This function is used for resetting an Iu interface.

- Sending the UE Common ID (permanent NAS UE identity) to the RNC. This function makes the RNC aware of the UE's Common ID.

- Paging the user. This function provides the CN for capability to page the UE.

- Controlling the tracing of the subscriber or user equipment activity. This function allows setting the trace mode for a given subscriber or user equipment. This function also allows the deactivation of a previously established trace.

- Transport of NAS information between UE and CN (see [8]). This function has two sub-classes:

  1. Transport of the initial NAS signalling message from the UE to CN. This function transfers transparently the NAS information. As a consequence also the Iu signalling connection is set up.

  2. Transport of NAS signalling messages between UE and CN, This function transfers transparently the NAS signalling messages on the existing Iu signalling connection. It also includes a specific service to handle signalling messages differently.

- Controlling the security mode in the UTRAN. This function is used to send the security keys (ciphering and integrity protection) to the UTRAN, and setting the operation mode for security functions.

- Controlling location reporting. This function allows the CN to operate the mode in which the UTRAN reports the location of the UE.

- Location reporting. This function is used for transferring the actual location information from RNC to the CN.

- Data volume reporting function. This function is responsible for reporting unsuccessfully transmitted DL data volume over UTRAN for specific RABs.

- Reporting general error situations. This function allows reporting of general error situations, for which function specific error messages have not been defined.

- Location related data. This function allows the CN to either retrieve from the RNC deciphering keys (to be forwarded to the UE) for the broadcast assistance data, or request the RNC to deliver dedicated assistance data to the UE.

- Information Transfer. This function allows the CN to transfer information to the RNC.

- Uplink Information ~~Transfer~~Exchange. This function allows the RNC to transfer or request information to the CN. For instance the RNC has the capability to request MBMS specific information to the CN e.g. the Multicast Service lists for a given UE or the IP Multicast Address and APN for one or several MBMS Bearer Services.

- MBMS RANAP overall function. This function allows the following different sub-functions:

  - MBMS RAB management. This function is responsible for setting up, updating and releasing the MBMS RAB as well as the MBMS Iu signalling connection corresponding to one MBMS Session.

  - MBMS CN de-registration. This function makes the RNC aware that a given Multicast Service is no longer available.

  - MBMS UE linking/de-linking. This function makes the RNC aware that a given UE, with existing Iu-ps signalling connection, has joined/leaved some Multicast Service(s).

- Requesting MBMS Service registration/de-registration. While the overall MBMS CN de-registration is a function of the CN, the RNC has the capability to register/de-register to a specific Multicast Service.

These functions are implemented by one or several RANAP elementary procedures described in the following clause.

8 RANAP Procedures

8.1 Elementary Procedures

In the following tables, all EPs are divided into Class 1, Class 2 and Class 3 EPs (see subclause 3.1 for explanation of the different classes):

Table 1: Class 1

Elementary Procedure	Initiating Message	Successful Outcome Response message	Unsuccessful Outcome Response message
Iu Release	IU RELEASE COMMAND	IU RELEASE COMPLETE	
Relocation Preparation	RELOCATION REQUIRED	RELOCATION COMMAND	RELOCATION PREPARATION FAILURE
Relocation Resource Allocation	RELOCATION REQUEST	RELOCATION REQUEST ACKNOWLEDGE	RELOCATION FAILURE
Relocation Cancel	RELOCATION CANCEL	RELOCATION CANCEL ACKNOWLEDGE	
SRNS Context Transfer	SRNS CONTEXT REQUEST	SRNS CONTEXT RESPONSE	
Security Mode Control	SECURITY MODE COMMAND	SECURITY MODE COMPLETE	SECURITY MODE REJECT
Data Volume Report	DATA VOLUME REPORT REQUEST	DATA VOLUME REPORT	
Reset	RESET	RESET ACKNOWLEDGE	
Reset Resource	RESET RESOURCE	RESET RESOURCE ACKNOWLEDGE	
Location related Data	LOCATION RELATED DATA REQUEST	LOCATION RELATED DATA RESPONSE	LOCATION RELATED DATA FAILURE
Information Transfer	INFORMATION TRANSFER INDICATION	INFORMATION TRANSFER CONFIRMATION	INFORMATION TRANSFER FAILURE
Uplink Information ~~Transfer~~ Exchange	UPLINK INFORMATION EXCHANGE REQUEST~~TRANSFER INDICATION~~	UPLINK INFORMATION EXCHANGE RESPONSE~~TRANSFER CONFIRMATION~~	UPLINK INFORMATION ~~TRANSFER~~ EXCHANGE FAILURE
MBMS Session Start	MBMS SESSION START	MBMS SESSION START RESPONSE	MBMS SESSION START FAILURE
MBMS Session Update	MBMS SESSION UPDATE	MBMS SESSION UPDATE RESPONSE	MBMS SESSION UPDATE FAILURE
MBMS Session Stop	MBMS SESSION STOP REQUEST	MBMS SESSION STOP RESPONSE	
MBMS UE Linking	MBMS UE LINKING REQUEST	MBMS UE LINKING RESPONSE	
MBMS Registration	MBMS REGISTRATION REQUEST	MBMS REGISTRATION RESPONSE	MBMS REGISTRATION FAILURE
MBMS CN De-Registration	MBMS CN DE-REGISTRATION REQUEST	MBMS CN DE-REGISTRATION RESPONSE	

Table 2: Class 2

Elementary Procedure	Message
RAB Modification Request	RAB MODIFY REQUEST
RAB Release Request	RAB RELEASE REQUEST
Iu Release Request	IU RELEASE REQUEST
Relocation Detect	RELOCATION DETECT
Relocation Complete	RELOCATION COMPLETE
SRNS Data Forwarding Initiation	SRNS DATA FORWARD COMMAND
SRNS Context Forwarding from Source RNC to CN	FORWARD SRNS CONTEXT
SRNS Context Forwarding to Target RNC from CN	FORWARD SRNS CONTEXT
Paging	PAGING
Common ID	COMMON ID
CN Invoke Trace	CN INVOKE TRACE
CN Deactivate Trace	CN DEACTIVATE TRACE
Location Reporting Control	LOCATION REPORTING CONTROL
Location Report	LOCATION REPORT
Initial UE Message	INITIAL UE MESSAGE
Direct Transfer	DIRECT TRANSFER
Overload Control	OVERLOAD
Error Indication	ERROR INDICATION
UE Specific Information	UE SPECIFIC INFORMATION INDICATION
Direct Information Transfer	DIRECT INFORMATION TRANSFER
MBMS RAB Establishment Indication	MBMS RAB ESTABLISHMENT INDICATION

Table 3: Class 3

Elementary Procedure	Initiating Message	Response Message
RAB Assignment	RAB ASSIGNMENT REQUEST	RAB ASSIGNMENT RESPONSE x N (N>=1)

The following applies concerning interference between Elementary Procedures:

- The Reset procedure takes precedence over all other EPs.
- The Reset Resource procedure takes precedence over all other EPs except the Reset procedure.
- The Iu Release procedure takes precedence over all other EPs except the Reset procedure and the Reset Resource procedure.

Not affected parts of section 8 not shown here

8.5 Iu Release

8.5.1 General

The purpose of the Iu Release procedure is to enable the CN to release an Iu connection and all UTRAN resources related only to that Iu connection. The procedure uses connection oriented signalling.

The Iu Release procedure can be initiated for at least the following reasons:

- Completion of transaction between the UE and the CN.
- UTRAN-generated reasons, e.g. reception of an IU RELEASE REQUEST message.
- Completion of successful relocation of SRNS.

- Cancellation of relocation after successful completion of a Relocation Resource Allocation procedure.

The Iu release procedure should also be initiated when there is a period of Iu signalling inactivity with no existing RAB.

8.5.2 Successful Operation

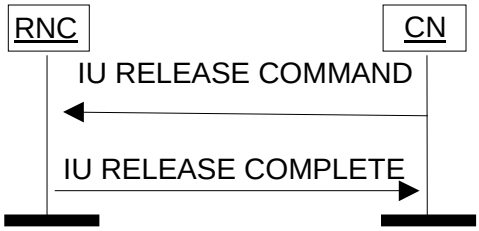

Figure 4: Iu Release procedure. Successful operation.

The CN initiates the procedure by sending an IU RELEASE COMMAND message to the UTRAN.

After the IU RELEASE COMMAND message has been sent, the CN shall not send further RANAP connection-oriented messages on this particular connection.

The IU RELEASE COMMAND message shall include a *Cause* IE indicating the reason for the release (e.g. "Successful Relocation", "Normal Release", "Release due to UTRAN Generated Reason", "Relocation Cancelled", "No Remaining RAB").

When the RNC receives the IU RELEASE COMMAND message:

1. Clearing of the related UTRAN resources is initiated. However, the UTRAN shall not clear resources related to other Iu signalling connections the UE might have. The Iu transport bearers for RABs subject to data forwarding and other UTRAN resources used for the GTP-PDU forwarding process, are released by the RNC only when the timer $T_{DATAfwd}$ expires.

2. The RNC returns any assigned Iu user plane resources to idle i.e. neither uplink user data nor downlink user data can be transferred over the Iu interface anymore. Then the RNC sends an IU RELEASE COMPLETE message to the CN. (The RNC does not need to wait for the release of UTRAN radio resources or for the transport network layer signalling to be completed before returning the IU RELEASE COMPLETE message.) When an IU RELEASE COMPLETE message is sent, the procedure is terminated in the UTRAN.

In case the UE has been linked to Multicast Service(s) in UTRAN and the RNC receives the IU RELEASE COMMAND message from PS domain or from CS domain when no Iu signalling connection exists towards the other domain the RNC shall perform UE de-linking as described in [r3].

The IU RELEASE COMPLETE message shall include within the *RABs Data Volume Report List* IE for each RAB towards the PS domain successfully addressed and for which data volume reporting was requested during RAB establishment, the total amount of unsuccessfully transmitted DL data for the RAB since its establishment.

If the release was initiated by the UTRAN, for each RAB towards the PS domain for which the *DL GTP-PDU Sequence Number* IE and/or the *UL GTP-PDU Sequence Number* IE are (is) available, the RNC shall include the available sequence number(s) in the *RABs Released Item* IE (within the *RAB Released List* IE) in the IU RELEASE COMPLETE message.

The *RAB Release Item* IE shall not be present if there is no sequence number to be reported for that RAB.

Reception of an IU RELEASE COMPLETE message terminates the procedure in the CN.

Interaction with Trace:

In case of simultaneous Iu signalling connections for both CS and PS domains, if a trace session was activated by both domains, the successful release of one of the connections should not close this trace session. If the trace session was activated by only one domain and the Iu connection for this domain is successfully released, this trace session shall be stopped in UTRAN.

8.5.3 Abnormal Conditions

If the Iu Release procedure is not initiated towards the source RNC from the CN before the expiry of timer $T_{RELOCoverall}$, the source RNC should initiate the Iu Release Request procedure towards the CN with a cause value "$T_{RELOCoverall}$ expiry".

8.6 Relocation Preparation

8.6.1 General

The purpose of the Relocation Preparation procedure is to prepare relocation of SRNS either with involving the UE or without involving the UE. The relocation procedure shall be co-ordinated over all Iu signalling connections existing for the UE in order to allow Relocation co-ordination in the target RNC. The procedure uses connection oriented signalling.

The source RNC shall not initiate the Relocation Preparation procedure for an Iu signalling connection if a Prepared Relocation exists in the RNC for that Iu signalling connection or if a Relocation Preparation procedure is ongoing for that Iu signalling connection.

8.6.2 Successful Operation

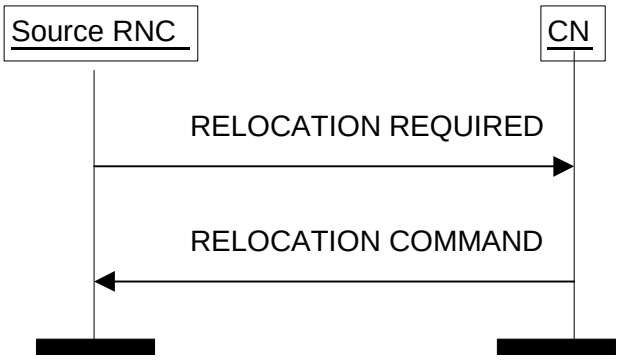

Figure 5: Relocation Preparation procedure. Successful operation.

The source RNC initiates the procedure by sending a RELOCATION REQUIRED message. The source RNC shall decide whether to initiate an intra-system Relocation or an inter-system handover. In case of intra-system Relocation, the source RNC shall indicate in the *Source ID* IE the RNC-ID of the source RNC and in the *Target ID* IE the RNC-ID of the target RNC. In case of inter-system handover, the source RNC shall indicate in the *Source ID* IE the Service Area Identifier and in the *Target ID* IE the cell global identity of the cell in the target system. The source RNC shall indicate the appropriate cause value for the Relocation in the *Cause* IE. Typical cause values are "Time critical Relocation", "Resource optimisation relocation", "Relocation desirable for radio reasons" , "Directed Retry", "Reduce Load in Serving Cell", "Access Restricted Due to Shared Networks".

The source RNC shall determine whether the relocation of SRNS shall be executed with or without involvement of the UE. The source RNC shall set accordingly the *Relocation Type* IE to "UE involved in relocation of SRNS" or "UE not involved in relocation of SRNS".

In case of intra-system Relocation, the source RNC shall include in the RELOCATION REQUIRED message the *Source RNC to Target RNC Transparent Container* IE. This container shall include the *Relocation Type* IE and the *Number of Iu Instances* IE containing the number of Iu signalling connections existing for the UE .

Only in case of intra-system relocation, the *Source RNC to Target RNC Transparent Container* IE shall include the *Integrity Protection Key* IE from the last received domain on which the Security Mode Control procedure has been successfully performed, and the associated *Chosen Integrity Protection Algorithm* IE that has been selected for this domain.

Only in case of intra-system relocation, the *Source RNC to Target RNC Transparent Container* IE shall include the *Ciphering Key* IE for the signalling data from the last received domain on which the Security Mode Control procedure has been successfully performed if the ciphering has been started, together with the associated *Chosen Encryption*

Algorithm IE that has been selected for this domain. If the ciphering has not been started, the RNC may include the *Ciphering Key* IE and the *Chosen Encryption Algorithm* IE if they are available.

Only in case of intra-system relocation, for each domain where the Security Mode Control procedure has been successfully performed in the source RNC, the *Source RNC to Target RNC Transparent Container* IE shall include the *Chosen Encryption Algorithm* IE of CS (PS respectively) user data corresponding to the ciphering alternative that has been selected for this domain. If the Security Mode Control procedure had not been successful or performed for one domain or had proposed no ciphering alternative, the *Chosen Encryption Algorithm* IE for the user data of this domain shall not be included. When both the CS and the PS user data *Chosen Encryption Algorithm* IEs are provided, they shall be the same.

This *Source RNC to Target RNC Transparent Container* IE shall include the *RRC Container* IE. If the *Relocation Type* IE is set to "UE not involved in relocation of SRNS" and the UE is using DCH(s), DSCH(s), USCH(s) or HS-DSCH, the *Source RNC to Target RNC Transparent Container* IE shall:

- for each RAB include the RAB ID, the *CN Domain Indicator* IE and the mapping between each RAB subflow and transport channel identifier(s) over Iur, i.e. if the RAB is carried on a DCH(s), the DCH ID(s) shall be included, and when it is carried on DSCH(s), USCH(s) or HS-DSCH, the DSCH ID(s), USCH ID(s) or HS-DSCH MAC-d Flow ID respectively shall be included,

- only in the case the active SRBs in SRNC are not all mapped onto the same DCH, include the *SRB TrCH Mapping* IE containing for each SRB the SRB ID and the associated transport channel identifier over Iur, i.e. if the SRB is carried on a DCH, the DCH ID shall be included, and when it is carried on DSCH or USCH, the DSCH ID or USCH ID respectively shall be included.

If the *Relocation Type* IE is set to "UE not involved in relocation of SRNS", the *d-RNTI* IE shall be included in the *Source RNC to Target RNC Transparent Container* IE. If the *Relocation Type* IE is set to "UE involved in relocation of SRNS", the *Target Cell ID* IE shall be included in the *Source RNC to Target RNC Transparent Container* IE.

In case a Trace Recording Session is active in the Source RNC due to a Signalling Based Activation (see ref [37]), the *Trace Recording Session Information* IE containing information identifying the Trace Record being generated may be included in the *Source RNC to Target RNC Transparent Container* IE.

In case the UE has been linked to at least one Multicast Service, the Source RNC shall include in the *Source RNC to Target RNC Transparent Container* IE the *MBMS Linking Information* IE, if available.

In case of inter-system handover to GSM the RNC:

- shall include the *MS Classmark 2* and *MS Classmark 3* IEs received from the UE in the RELOCATION REQUIRED message to the CN.

- shall include the *Old BSS to New BSS Information* IE within the RELOCATION REQUIRED message only if the information is available. This information shall include, if available, the current traffic load in the source cell, i.e. prior to the inter-system handover attempt. This information shall also include the source cell identifier the included traffic load values correspond to. In the case the UE is using, prior to the inter-system handover attempt, radio resources of more than one cell, it is implementation specific for which cell the source RNC should report the current traffic load and the cell identifier.

When the source RNC sends the RELOCATION REQUIRED message, it shall start the timer $T_{RELOCprep.}$

When the preparation including resource allocation in the target system is ready and the CN has decided to continue the relocation of SRNS, the CN shall send a RELOCATION COMMAND message to the source RNC and the CN shall start the timer $T_{RELOCcomplete}$.

If the *Target RNC To Source RNC Transparent Container* IE or the *L3 information* IE is received by the CN from the relocation target, it shall be included in the RELOCATION COMMAND message.

The RELOCATION COMMAND message may also contain the *Inter-System Information Transparent Container* IE.

For each RAB successfully established in the target system and originating from the PS domain, the RELOCATION COMMAND message shall contain at least one pair of Iu transport address and Iu transport association to be used for the forwarding of the DL N-PDU duplicates towards the relocation target. If more than one pair of Iu transport address and Iu transport association is included, the source RNC shall select one of the pairs to be used for the forwarding of the DL N-PDU duplicates towards the relocation target. Upon reception of the RELOCATION COMMAND message from the PS domain, the source RNC shall start the timer $T_{DATAfwd.}$

The Relocation Preparation procedure is terminated in the CN by transmission of the RELOCATION COMMAND message.

If the target system (including target CN) does not support all existing RABs, the RELOCATION COMMAND message shall contain a list of RABs indicating all the RABs that are not supported by the target system. This list is contained in the *RABs to Be Released* IE. The source RNC shall use this information to avoid transferring associated contexts where applicable and may use this information e.g. to decide if to cancel the relocation or not. The resources associated with these not supported RABs shall not be released until the relocation is completed. This is in order to make a return to the old configuration possible in case of a failed or cancelled relocation.

Upon reception of the RELOCATION COMMAND message the source RNC shall stop the timer $T_{RELOCprep}$, start the timer $T_{RELOCOverall}$ and terminate the Relocation Preparation procedure. The source RNC is then defined to have a Prepared Relocation for that Iu signalling connection.

When the Relocation Preparation procedure is successfully terminated and when the source RNC is ready, the source RNC should trigger the execution of relocation of SRNS.

Interactions with other procedures:

If, after a RELOCATION REQUIRED message is sent and before the Relocation Preparation procedure is terminated, the source RNC receives a RANAP message initiating another connection oriented RANAP class 1 or class 3 procedure (except IU RELEASE COMMAND message, which shall be handled normally) via the same Iu signalling connection, the source RNC shall either:

1. cancel the Relocation Preparation procedure i.e. execute the Relocation Cancel procedure with an appropriate value for the *Cause* IE, e.g. "Interaction with other procedure", and after successful completion of the Relocation Cancel procedure, the source RNC shall continue the initiated RANAP procedure;

or

2. terminate the initiated RANAP procedure without any changes in UTRAN by sending the appropriate response message with the cause value “Relocation Triggered” to the CN. The source RNC shall then continue the relocation of SRNS.

If during the Relocation Preparation procedure the source RNC receives a DIRECT TRANSFER message it shall be handled normally.

If during the Relocation Preparation procedure the source RNC receives connection oriented RANAP class 2 messages (with the exception of DIRECT TRANSFER message) it shall decide to either execute the procedure immediately or suspend it. In case the relocation is cancelled, the RNC shall resume any suspended procedures (if any).

After the Relocation Preparation procedure is successfully terminated, all RANAP messages (except IU RELEASE COMMAND message, which shall be handled normally) received via the same Iu signalling bearer shall be ignored by the source RNC.

8.6.2.1 Successful Operation for GERAN Iu-mode

The relocation between UTRAN and GERAN Iu-mode shall be considered in the Relocation Preparation procedure as intra-system relocation from RANAP point of view.

For GERAN Iu-mode and to support Relocation towards a GERAN BSC in Iu mode the following shall apply in addition for the successful operation of the Relocation Preparation procedure:

- In case of a Relocation to GERAN Iu-mode (only for CS), the RNC shall include, if available, the *GERAN Classmark* IE within the RELOCATION REQUIRED message in those cases where the transmission of the *GERAN Classmark IE* is required, as defined in [27].

8.6.3 Unsuccessful Operation

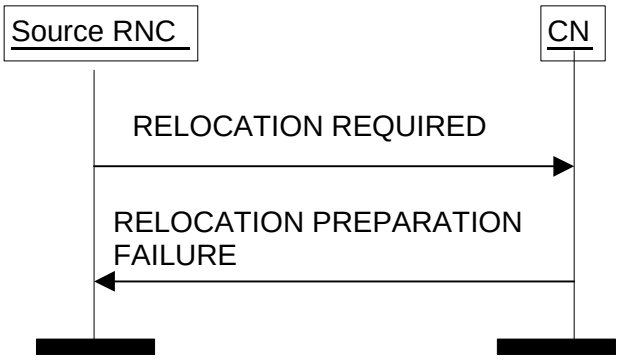

Figure 6: Relocation Preparation procedure. Unsuccessful operation.

If the CN or target system is not able to even partially accept the relocation of SRNS, or a failure occurs during the Relocation Preparation procedure in the CN, or the CN decides not to continue the relocation of SRNS, the CN shall send a RELOCATION PREPARATION FAILURE message to the source RNC.

The RELOCATION PREPARATION FAILURE message shall contain the appropriate value for the *Cause* IE, e.g. "$T_{RELOCalloc}$ expiry", "Relocation Failure in Target CN/RNC or Target System", "Relocation not supported in Target RNC or Target System", "Relocation Target not allowed", "No Radio Resources Available in Target Cell" or "Traffic Load In The Target Cell Higher Than In The Source Cell".

Transmission of the RELOCATION PREPARATION FAILURE message terminates the procedure in the CN. Reception of the RELOCATION PREPARATION FAILURE message terminates the procedure in UTRAN.

When the Relocation Preparation procedure is unsuccessfully terminated, the existing Iu signalling connection can be used normally.

If the Relocation Preparation procedure is unsuccessfully terminated, the CN shall release the possibly existing Iu signalling connection for the same UE and related to the same relocation of SRNS towards the target RNC by initiating the Iu Release procedure towards the target RNC with an appropriate value for the *Cause* IE, e.g. "Relocation Cancelled".

The RELOCATION PREPARATION FAILURE message may contain the *Inter-System Information Transparent Container* IE.

Interactions with Relocation Cancel procedure:

If there is no response from the CN to the RELOCATION REQUIRED message before timer $T_{RELOCprep}$ expires in the source RNC, the source RNC shall cancel the Relocation Preparation procedure by initiating the Relocation Cancel procedure with the appropriate value for the *Cause* IE, e.g. "$T_{RELOCprep}$ expiry".

8.6.4 Abnormal Conditions

If the target RNC indicated in the RELOCATION REQUIRED message is not known to the CN:

1. The CN shall reject the relocation of SRNS by sending a RELOCATION PREPARATION FAILURE message to the source RNC with *Cause* IE set to "Unknown target RNC".

2. The CN shall continue to use the existing Iu connection towards the source RNC.

NOTE: In case two CN domains are involved in the SRNS Relocation Preparation procedure and the Source RNC receives the *Target RNC to Source RNC Transparent Container* IE via two CN domains, it may check whether the content of the two *Target RNC to Source RNC Transparent Container* IE is the same. In case the Source RNC receives two different *Target RNC to Source RNC Transparent Container* IEs, the RNC behaviour is left implementation-specific.

8.6.5 Co-ordination of Two Iu Signalling Connections

If the RNC decides to initiate the Relocation Preparation procedure for a UTRAN to UTRAN relocation, the RNC shall initiate simultaneously a Relocation Preparation procedure on all Iu signalling connections existing for the UE. The source RNC shall also include the same *Source RNC to Target RNC Transparent Container* IE, *Relocation Type* IE, *Source ID* IE and *Cause* IE in the RELOCATION REQUIRED message towards the two domains.

For intersystem handover to GSM, the Relocation Preparation procedure shall be initiated only towards the circuit-switched CN.

The source RNC shall not trigger the execution of relocation of SRNS unless it has received a RELOCATION COMMAND message from all Iu signalling connections for which the Relocation Preparation procedure has been initiated.

If the source RNC receives a RELOCATION PREPARATION FAILURE message from the CN, the RNC shall initiate the Relocation Cancel procedure on the other Iu signalling connection for the UE if the other Iu signalling connection exists and if the Relocation Preparation procedure is still ongoing or the procedure has terminated successfully in that Iu signalling connection.

8.7 Relocation Resource Allocation

8.7.1 General

The purpose of the Relocation Resource Allocation procedure is to allocate resources from a target RNS for a relocation of SRNS. The procedure shall be co-ordinated over all Iu signalling connections existing for the UE. The procedure uses connection oriented signalling.

8.7.2 Successful Operation

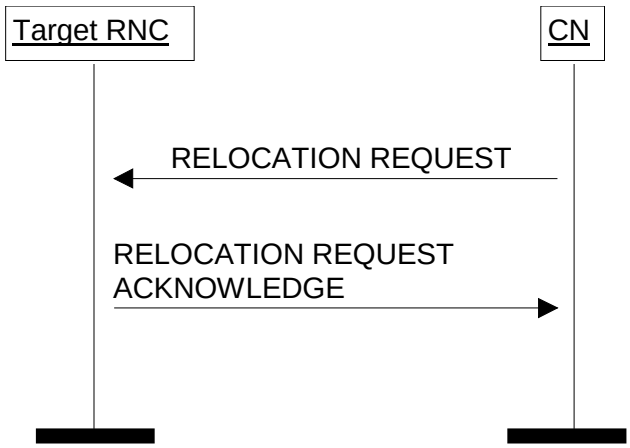

Figure 7: Relocation Resource Allocation procedure. Successful operation.

The CN initiates the procedure by generating a RELOCATION REQUEST message. In a UTRAN to UTRAN relocation, the message shall contain the information (if any) required by the UTRAN to build the same set of RABs as existing for the UE before the relocation. The CN may indicate that RAB QoS negotiation is allowed for certain RAB parameters and in some cases also which alternative values to be used in the negotiation.

When the CN transmits the RELOCATION REQUEST message, it shall start the timer $T_{RELOCalloc.}$

When a RELOCATION REQUEST message is sent from a CN node towards an RNC for which the sending CN node is not the default CN node, the *Global CN-ID* IE shall be included.

Upon reception of the RELOCATION REQUEST message, the target RNC shall initiate allocation of requested resources.

The RELOCATION REQUEST message shall contain the following IEs:

- *Permanent NAS UE Identity* IE (if available);
- *Cause* IE;
- *CN Domain Indicator* IE;
- *Source RNC To Target RNC Transparent Container* IE;
- *Iu Signalling Connection Identifier* IE;
- *Integrity Protection Information* IE (if available);
- *SNA Access Information* IE (if available);
- *UESBI-Iu* IE (if available);
- *CN MBMS Linking Information* IE (if available).

For each RAB requested to relocate (or to be created e.g. in the case of inter-system handover), the message shall contain the following IEs:

- *RAB-ID* IE;
- *NAS Synchronisation Indicator* IE (if the relevant NAS information is provided by the CN);
- *RAB parameters* IE;
- *User Plane Information* IE;
- *Transport Layer Address* IE;
- *Iu Transport Association* IE;
- *Data Volume Reporting Indication* IE (only for PS);
- *PDP Type Information* IE (only for PS).

The RELOCATION REQUEST message may include the following IE:

- *Encryption Information* IE (shall not be included if the *Integrity Protection Information* IE is not included).

For each RAB requested to relocate the message may include the following IEs:

- *Service Handover* IE;
- *Alternative RAB Parameter Values* IE.

The following information elements received in RELOCATION REQUEST message require the same special actions in the RNC as specified for the same IEs in the RAB Assignment procedure:

- *RAB-ID* IE;
- *User plane Information* IE (i.e. required User Plane Mode and required User Plane Versions);
- *Priority level* IE, *Queuing Allowed* IE, *Pre-emption Capability* IE and *Pre-emption Vulnerability* IE;
- *Service Handover* IE.

The *SDU Format Information Parameter* IE in the *RAB Parameters* IE shall be present only if the *User Plane Mode* IE is set to “support mode for pre-defined SDU sizes” and the *Traffic Class* IE is set to either “Conversational” or “Streaming”.

For a RAB setup, the *RAB Parameters* IE may contain the *Signalling Indication* IE. The *Signalling Indication* IE shall not be present if the *Traffic Class* IE is not set to "Interactive" or if the *CN Domain Indicator* IE is not set to "PS domain".

If the RELOCATION REQUEST message includes the Permanent NAS UE identity (i.e. IMSI), the RNC shall associate the permanent identity to the RRC Connection of that user and shall save it for the duration of the RRC connection.

If the RELOCATION REQUEST message includes the *PDP Type Information* IE, the UTRAN may use this IE to configure any compression algorithms.

The *Cause* IE shall contain the same value as the one received in the related RELOCATION REQUIRED message.

The *Iu Signalling Connection Identifier* IE contains an Iu signalling connection identifier which is allocated by the CN. The value for the *Iu Signalling Connection Identifier* IE shall be allocated so as to uniquely identify an Iu signalling connection for the involved CN node. The RNC shall store and remember this identifier for the duration of the Iu connection.

The RNC shall, if supported, use the *UESBI-Iu* IE when included in the RELOCATION REQUEST message.

If the *CN MBMS Linking Information* IE is included in the RELOCATION REQUEST message, the RNC shall, if supported, use the *CN MBMS Linking Information* IE to perform suitable UE linking as described in [r3].

The algorithms within the *Integrity Protection Information* IE and the *Encryption Information* IE shall be ordered in preferred order with the most preferred first in the list.

The *Permitted Encryption Algorithms* IE within the *Encryption Information IE* may contain “no encryption” within an element of its list in order to allow the RNC not to cipher the respective connection. This can be done either by not starting ciphering or by using the UEA0 algorithm. In the absence of the *Encryption Information* IE, the RNC shall not start ciphering.

In case of intra-system relocation, if no *Integrity Protection Key* IE (*Ciphering Key* IE respectively) is provided within the *Source RNC to Target RNC Transparent Container* IE, the target RNC shall not start integrity protection (ciphering respectively).

In case of intra-system relocation, when an *Ciphering Key* IE is provided within the *Source RNC to Target RNC Transparent Container* IE, the target RNC may select to use a ciphering alternative where an algorithm is used. It shall in this case make use of this key to cipher its signalling data whatever the selected algorithm. The *Encryption Key* IE that is contained within the *Encryption Information* IE of the RELOCATION REQUEST message shall never be considered for ciphering of signalling data.

In case of intra-system relocation, when an *Integrity Protection Key* IE is provided within the *Source RNC to Target RNC Transparent Container* IE, the target RNC shall select one integrity algorithm to start integrity and shall in this case make use of this key whatever the selected algorithm. The integrity protection key that is contained within the *Integrity Protection Information* IE of the RELOCATION REQUEST message shall never be considered.

In case of intra-system relocation, when a *Trace Recording Session Information* IE is provided within the *Source RNC to Target RNC Transparent Container* IE, the Target RNC should store that information to include it in a potential future Trace Record for that UE.

In case of inter-system relocation, the integrity protection and ciphering information to be considered shall be the ones received in the *Integrity Protection Information* IE and *Encryption Information* IE of the RELOCATION REQUEST message.

The *Global CN-ID* IE contains the identity of the CN node that sent the RELOCATION REQUEST message, and it shall, if included, be stored together with the Iu signalling connection identifier. If the *Global CN-ID* IE is not included, the RELOCATION REQUEST message shall be considered as coming from the default CN node for the indicated CN domain.

The following additional actions shall be executed in the target RNC during the Relocation Resource Allocation procedure:

If the *Relocation Type* IE is set to "UE involved in relocation of SRNS":

- The target RNC may accept a requested RAB only if the RAB can be supported by the target RNC.
- Other RABs shall be rejected by the target RNC in the RELOCATION REQUEST ACKNOWLEDGE message with an appropriate value in the *Cause* IE, e.g. "Unable to Establish During Relocation".

- The target RNC shall include information adapted to the resulting RAB configuration in the target to source RNC transparent container to be included in the RELOCATION REQUEST ACKNOWLEDGE message sent to the CN. If the target RNC supports triggering of the Relocation Detect procedure via the Iur interface, the RNC shall assign a d-RNTI for the context of the relocation and include it in the container. If two CNs are involved in the relocation of SRNS, the target RNC may, however, decide to send the container to only one CN.

- If any alternative RAB parameter values have been used when allocating the resources, these RAB parameter values shall be included in the RELOCATION REQUEST ACKNOWLEDGE message within the *Assigned RAB Parameter Values* IE.

If the *Relocation Type* IE is set to "UE not involved in relocation of SRNS":

- The target RNC may accept a RAB only if the radio bearer(s) for the RAB either exist(s) already and can be used for the RAB by the target RNC, or do(es) not exist before the relocation but can be established in order to support the RAB in the target RNC.

- If existing radio bearers are not related to any RAB that is accepted by the target RNC, the radio bearers shall be ignored during the relocation of SRNS and the radio bearers shall be released by the radio interface protocols after completion of relocation of SRNS.

- If any alternative RAB parameter values have been used when allocating the resources, these RAB parameter values shall be included in the RELOCATION REQUEST ACKNOWLEDGE message within the *Assigned RAB Parameter Values* IE. It should be noted that the usage of alternative RAB parameter values is not applicable to the UTRAN initiated relocation of type "UE not involved in relocation of SRNS".

After all necessary resources for accepted RABs including the initialised Iu user plane, are successfully allocated, the target RNC shall send a RELOCATION REQUEST ACKNOWLEDGE message to the CN.

For each RAB successfully setup the RNC shall include the following IEs:

- *RAB ID*

- *Transport Layer Address* (when no ALCAP has been used)

- *Iu Transport Association* (when no ALCAP has been used)

Two pairs of *Transport Layer Address* IE and *Iu Transport Association* IE may be included for RABs established towards the PS domain.

For each RAB the RNC is not able to setup during the Relocation Resource Allocation procedure, the RNC shall include the *RAB ID* IE and the *Cause* IE within the *RABs Failed To Setup* IE. The resources associated with the RABs indicated as failed to set up shall not be released in the CN until the relocation is completed. This is in order to make a return to the old configuration possible in case of a failed or cancelled relocation.

The RELOCATION REQUEST ACKNOWLEDGE message sent to the CN shall, if applicable and if not sent via the other CN domain, include the *Target RNC To Source RNC Transparent Container* IE. This container shall be transferred by the CN to the source RNC or the external relocation source while completing the Relocation Preparation procedure.

If the target RNC supports cell load-based inter-system handover, then in the case of inter-system handover, the *New BSS to Old BSS Information* IE may be included in the RELOCATION REQUEST ACKNOWLEDGE message. This information shall include, if available, the current traffic load in the target cell assuming a successful completion of the handover in progress.

In case of inter-system relocation, the RNC shall include the *Chosen Integrity Protection Algorithm* IE (*Chosen Encryption Algorithm* IE respectively) within the RELOCATION REQUEST ACKNOWLEDGE message, if, and only if the *Integrity Protection Information* IE (*Encryption Information* IE respectively) was included in the RELOCATION REQUEST message.

In case of intra-system relocation, the RNC shall include the *Chosen Integrity Protection Algorithm* IE (*Chosen Encryption Algorithm* IE respectively) within the RELOCATION REQUEST ACKNOWLEDGE message, if, and only if the *Integrity Protection Key* IE (*Ciphering Key* IE respectively) was included within the *Source RNC-to-Target RNC transparent container* IE.

If one or more of the RABs that the target RNC has decided to support can not be supported by the CN, then these failed RABs shall not be released towards the target RNC until the relocation is completed.

If the *NAS Synchronisation Indicator* IE is contained in the RELOCATION REQUEST message, the target RNC shall pass it to the UE.

If the *SNA Access Information* IE is contained in the RELOCATION REQUEST message, the target RNC shall store this information and use it to determine whether the UE has access to radio resources in the UTRAN. The target RNC shall consider that the UE is authorised to access only the PLMNs identified by the *PLMN identity* IE in the *SNA Access Information* IE. If the *Authorised SNAs* IE is included for a given PLMN (identified by the *PLMN identity* IE), then the target RNC shall consider that the access to radio resources for the concerned UE is restricted to the LAs contained in the SNAs identified by the *SNAC* IEs.

If the *SNA Access Information* IE is not contained in the RELOCATION REQUEST message, the target RNC shall consider that no access restriction applies to the UE in the UTRAN.

Transmission and reception of a RELOCATION REQUEST ACKNOWLEDGE message terminate the procedure in the UTRAN and in the CN respectively.

Before reporting the successful outcome of the Relocation Resource allocation procedure, the RNC shall have executed the initialisation of the user plane mode as requested by the CN in the *User Plane Mode* IE. If the RNC can not initialise the requested user plane mode for any of the user plane mode versions in the *UP Mode Versions* IE according to the rules for initialisation of the respective user plane mode versions, as described in [6], the RAB Relocation shall fail with the cause value "RNC unable to establish all RFCs".

Interactions with Uplink Information Exchange procedure:

In case of UTRAN to UTRAN CS only relocation, if the RELOCATION REQUEST message includes the *MBMS Linking Information* IE in the *Source RNC To Target RNC Transparent Container* IE, the RNC shall, if supported, initiate the Uplink Information Exchange procedure to retrieve the Multicast Service list for the UE, create relevant MBMS Service Context, store this information and perform the relevant UE linking as defined in [r3].

8.7.2.1 Successful Operation for GERAN Iu-mode

The relocation between UTRAN and GERAN Iu-mode shall be considered in the Relocation Resource Allocation procedure as intra-system relocation from RANAP point of view.

For GERAN Iu-mode and to support Relocation towards a GERAN BSC in Iu mode the following shall apply in addition for the successful operation of the Relocation Resource Allocation procedure:

- In case of GERAN Iu-mode, for RAB requested to be relocated from the the CS domain, the RELOCATION REQUEST message may contain the *GERAN BSC Container* IE in order to provide GERAN specific information to the target BSC (see [27]).

8.7.3 Unsuccessful Operation

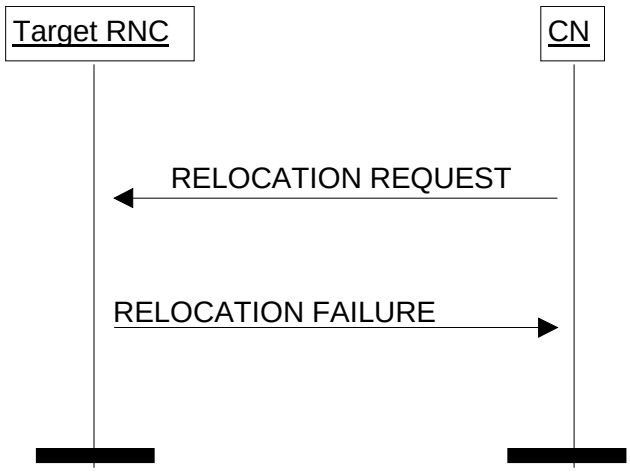

Figure 8: Relocation Resource Allocation procedure: Unsuccessful operation.

If the target RNC can not even partially accept the relocation of SRNS or a failure occurs during the Relocation Resource Allocation procedure in the target RNC, the target RNC shall send a RELOCATION FAILURE message to the CN. The RELOCATION FAILURE message shall contain the *Cause* IE with an appropriate value.

If the target RNC cannot support any of the integrity protection (ciphering respectively) alternatives provided in the *Integrity Protection Information* IE or *Encryption Information* IE, it shall return a RELOCATION FAILURE message with the cause “Requested Ciphering and/or Integrity Protection algorithms not supported”.

If the target RNC cannot support the relocation due to PUESBINE feature, it shall return a RELOCATION FAILURE message with the cause “Incoming Relocation Not Supported Due To PUESBINE Feature”.

Transmission and reception of a RELOCATION FAILURE message terminate the procedure in the UTRAN and in the CN respectively.

When the CN receives a RELOCATION FAILURE message from the target RNC, it shall stop timer $T_{RELOCalloc}$ and shall assume possibly allocated resources within the target RNC completely released.

In case of inter-system handover, and if the target RNC supports cell load-based inter-system handover, then

- the *NewBSS to Old BSS Information* IE may be included in the RELOCATION FAILURE message. This information shall include, if available, the current traffic load in the target cell.
- the RELOCATION FAILURE message shall contain the *Cause* IE with an appropriate value, e.g. "No Radio Resources Available in Target Cell" or "Traffic Load In The Target Cell Higher Than In The Source Cell".
- If the *Cause* IE received in the RELOCATION REQUEST message contains the value "Reduce Load in Serving Cell" and the load in the target cell is greater than in the source cell then, if the target cell is not in a congested or blocked state, the RNC shall return a RELOCATION FAILURE message which may include the cause "Traffic Load In The Target Cell Higher Than In The Source Cell".
- When the RNC returns a RELOCATION FAILURE message with the cause "Traffic Load In The Target Cell Higher Than In The Source Cell", it shall also include the *NewBSS to Old BSS Information* IE. This information shall include the current traffic load in the target cell.

8.7.3.1 Unsuccessful Operation for GERAN Iu-mode

For GERAN Iu-mode and to support Relocation towards a GERAN BSC in Iu mode the following shall apply in addition for the unsuccessful operation of the Relocation Resource Allocation procedure:

- In case a Relocation to GERAN Iu-mode fails (only for CS), because the Target BSC cannot provide an appropriate RAB corresponding to the content of the *GERAN BSC Container* IE (if received), the Target BSC shall report the unsuccessful Relocation Resource Allocation by indicating the cause value “GERAN Iu-mode Failure” within the RELOCATION FAILURE message and shall include the *GERAN Classmark* IE.

8.7.4 Abnormal Conditions

If after reception of the RELOCATION REQUEST message, the target RNC receives another RELOCATION REQUEST message on the same Iu connection, then the target RNC shall discard the latter message and the original Relocation Resource Allocation procedure shall continue normally.

If the target RNC receives a *Source RNC to Target RNC Transparent Container* IE containing *Chosen Integrity Protection* (*Encryption* respectively) *Algorithm* IE without *Integrity Protection* (*Ciphering* respectively) *Key* IE, it shall return a RELOCATION FAILURE message with the cause “Conflict with already existing Integrity protection and/or Ciphering information”.

Interactions with Iu Release procedure:

If the CN decides to not continue the Relocation Resource Allocation procedure (e.g. due to $T_{RELOCalloc}$ expiry) before the Relocation Resource Allocation procedure is completed, the CN shall stop timer $T_{RELOCalloc}$ (if timer $T_{RELOCalloc}$ has not already expired) and the CN shall, if the Iu signalling connection has been established or later becomes established, initiate the Iu Release procedure towards the target RNC with an appropriate value for the *Cause* IE, e.g. "Relocation Cancelled".

NOTE: In case two CN domains are involved in the Relocation Resource Allocation procedure, the target RNC may check whether the content of the two *Source RNC to Target RNC Transparent Container* IEs or the two *SNA Access Information* IEs is the same. In case the target RNC receives two different *Source RNC to Target RNC Transparent Container* IEs or two different *SNA Access Information* IEs, the RNC behaviour is left implementation specific.

8.7.5 Co-ordination of Two Iu Signalling Connections

Co-ordination of two Iu signalling connections during Relocation Resource Allocation procedure shall be executed by the target RNC when the *Number of Iu Instances* IE received in the *Source RNC to Target RNC Transparent Container* IE in the RELOCATION REQUEST message indicates that two CN domains are involved in relocation of SRNS.

When both the CS and PS user data *Chosen Encryption Algorithm* IE are received within the *Source RNC to Target RNC Transparent Container* IE and if these two received *Chosen Encryption Algorithm* IE are not the same, the target RNC shall fail the Relocation Resource Allocation procedure by sending back a RELOCATION FAILURE message.

The integrity protection (ciphering respectively) alternatives provided in the *Integrity Protection Information* IE (*Encryption Information* IE respectively) of the RELOCATION REQUEST messages received from both CN domains shall have at least one common alternative, otherwise the Relocation Resource Allocation shall be failed by sending back a RELOCATION FAILURE message.

If two CN domains are involved, the following actions shall be taken by the target RNC:

- The target RNC shall utilise the *Permanent NAS UE Identity* IE, received explicitly from each CN domain within the RELOCATION REQUEST messages, to co-ordinate both Iu signalling connections.

- The target RNC shall generate and send RELOCATION REQUEST ACKNOWLEDGE messages only after all expected RELOCATION REQUEST messages are received and analysed.

- If the target RNC decides to send the *Target RNC to Source RNC Transparent Container* IE via the two CN domains, the target RNC shall ensure that the same *Target RNC to Source RNC Transparent Container* IE is included in RELOCATION REQUEST ACKNOWLEDGE messages transmitted via the two CN domains and related to the same relocation of SRNS.

If the target RNC receives the *UESBI-Iu* IE on the Iu-CS but not on the Iu-PS interface (or vice versa), the RNC shall, if supported, use the *UESBI-Iu* IE for both domains.

Not affected parts of section 8 not shown here

8.35 Uplink Information Exchange~~Transfer~~

8.35.1 General

The purpose of the Uplink Information Exchange~~Transfer~~ procedure is to transfer or request some information to the CN.

This procedure uses connectionless signalling.

8.35.2 Successful Operation

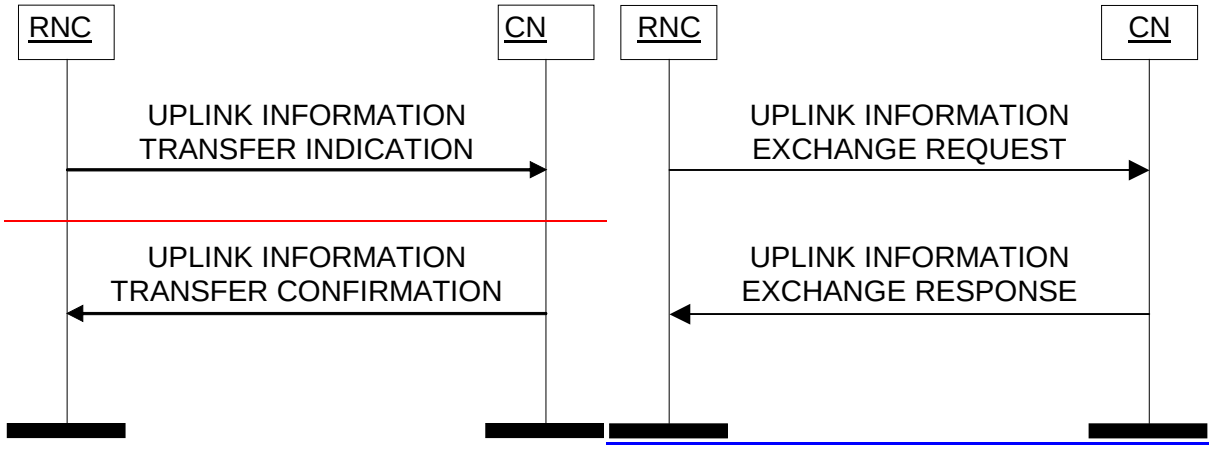

Figure 44: Uplink Information ~~Transfer~~ Exchange procedure. Successful operation.

The procedure is initiated with an UPLINK INFORMATION EXCHANGE REQUEST~~TRANSFER INDICATION~~ message sent from the RNC to the CN.

The UPLINK INFORMATION EXCHANGE REQUEST~~TRANSFER INDICATION~~ message shall contain the following IEs:

- Information ~~Transfer~~ Exchange ID
- Information ~~Transfer~~ Exchange Type
- CN Domain Indicator
- Global RNC-ID

The *Information Exchange Type* IE indicates whether the RNC asks the CN to either transfer or request specific information. If the *Information Exchange Type* IE is set to the value "transfer", the RNC shall also include in the UPLINK INFORMATION EXCHANGE REQUEST message ~~T~~the *Information Transfer Type* IE which indicates the nature of the information transferred.

If the *Information Exchange Type* IE is set to the value "request", the RNC shall also include in the UPLINK INFORMATION EXCHANGE REQUEST message the *Information Request Type* IE which indicates the nature of the information requested.

When the transferred information in the *Information Transfer Type* IE relates to a Trace Session in the RNC, the *Trace Activation Indicator* IE indicates whether the Trace Session identified by the *Trace Reference* IE is activated or deactivated in the RNC. In case the Trace Session is activated, the *Equipments To Be Traced* IE gives the Equipment Identity of the UEs that the RNC has to trace.

When the requested information in the *Information Request Type* IE relates to the Multicast Service list for a given UE identified by its Permanent NAS UE Identity in the *Information Request Type* IE, this requested information, i.e. the list of Multicast Services the UE has joined, shall be included in the *Information Requested* IE in the UPLINK INFORMATION EXCHANGE RESPONSE message.

When the requested information in the *Information Request Type* IE relates to the IP Multicast Address and APN for one or several MBMS bearer service identified by their respective TMGIs in the *Information Request Type* IE, this requested information, i.e. IP Multicast Address and APN, shall be included in the *Information Requested* IE in the UPLINK INFORMATION EXCHANGE RESPONSE message.

If the CN node is capable of processing the request or the transfer, the RNC shall be informed by the UPLINK INFORMATION EXCHANGE RESPONSE~~TRANSFER CONFIRMATION~~ message. The UPLINK INFORMATION EXCHANGE RESPONSE~~TRANSFER CONFIRMATION~~ message shall contain the *Information ~~Transfer~~ Exchange ID* IE and the *CN Domain Indicator* IE. If the RNC has not sent the UPLINK INFORMATION EXCHANGE REQUEST~~TRANSFER INDICATION~~ message to the default CN node, the UPLINK INFORMATION EXCHANGE RESPONSE~~TRANSFER CONFIRMATION~~ message shall also include the *Global CN-ID* IE.

Upon reception of the UPLINK INFORMATION EXCHANGE RESPONSE message including the IP Multicast Address and APN list in the *Information Requested* IE, the RNC shall store this information in the relevant MBMS Service Contexts.

Upon reception of the UPLINK INFORMATION EXCHANGE RESPONSE message including the Multicast Service list in the *Information Requested* IE, the RNC shall perform, for each TMGI received, the corresponding UE linking as described in [r3].

8.35.3 Unsuccessful Operation

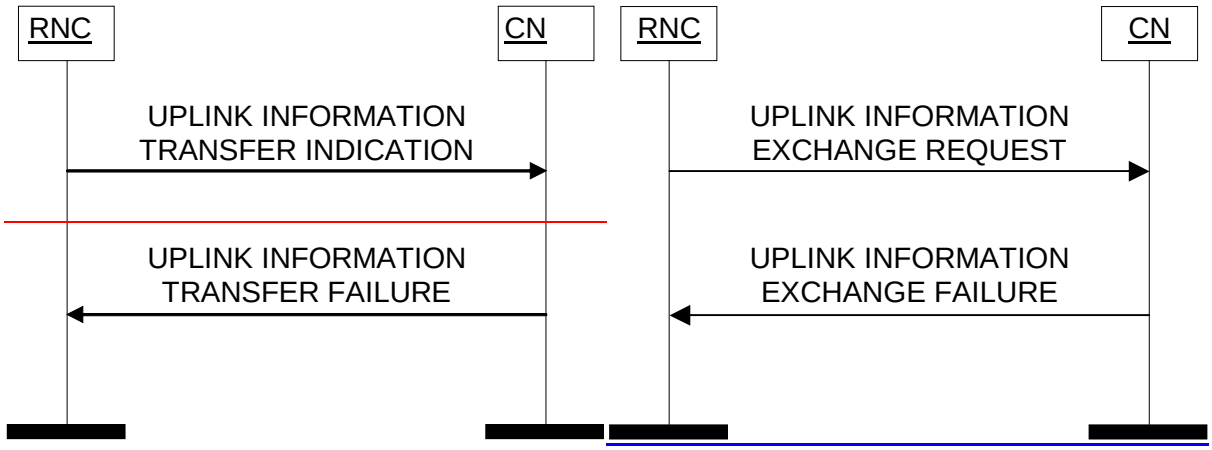

Figure 45: Uplink Information ~~Transfer~~ Exchange procedure. Unsuccessful operation.

If the CN node is not capable of correctly processing the request or the transfer, the RNC shall be informed by the UPLINK INFORMATION ~~TRANSFER~~ EXCHANGE FAILURE message. The UPLINK INFORMATION EXCHANGE~~TRANSFER~~ FAILURE message shall contain the *Information ~~Transfer~~ Exchange ID* IE and the *CN Domain Indicator* IE. If the RNC has not sent the UPLINK INFORMATION EXCHANGE REQUEST~~TRANSFER INDICATION~~ message to the default CN node, the UPLINK INFORMATION EXCHANGE~~TRANSFER~~ FAILURE message shall include the *Global CN-ID* IE.

The UPLINK INFORMATION EXCHANGE FAILURE message shall inform the RNC about the reason for unsuccessful operation with an appropriate cause value e.g. " MBMS - No Multicast Service For This UE", "MBMS - Unknown UE ID".

8.35.4 Abnormal Conditions

Not Applicable.

8.x1 MBMS Session Start

8.x1.1 General

The purpose of the MBMS Session Start procedure is to request the UTRAN to notify UEs about an upcoming MBMS Session of a given MBMS Bearer Service and to establish a MBMS RAB and MBMS Iu signalling connection for this MBMS Session.

The procedure uses connection oriented signalling.

8.x1.2 Successful Operation

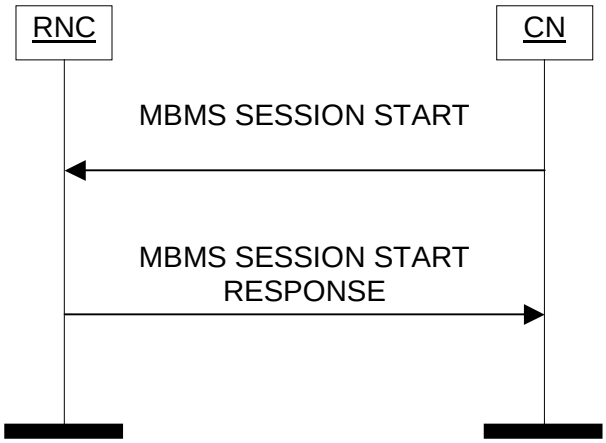

Figure f1: MBMS Session Start procedure. Successful operation.

The CN initiates the procedure by sending a MBMS SESSION START message.

The MBMS SESSION START message shall contain:

- TMGI;
- MBMS Bearer Service Type;
- MBMS Session Identifier;
- Iu Signalling Connection Identifier IE;
- RAB parameters (including e.g. Allocation/Retention Priority);
- PDP Type Information, if available;
- MBMS Session Duration, if available;
- MBMS Service Area;
- Frequency Layer Convergence Flag, if available;
- RA List of Idle Mode UEs, if available.
- Global CN-ID IE, only when the MBMS SESSION START message is sent from a CN node towards an RNC for which the sending CN node is not the default CN node.

Upon reception of the MBMS SESSION START message, the RNC shall store the *Iu Signalling Connection Identifier* IE for the duration of the MBMS Iu signalling connection. The *Iu Signalling Connection Identifier* IE contains an Iu signalling connection identifier which is allocated by the CN. The value for the *Iu Signalling Connection Identifier* IE shall be allocated so as to uniquely identify an Iu signalling connection for the involved CN node.

The *Global CN-ID* IE contains the identity of the CN node that sent the MBMS SESSION START message, and it shall, if included, be stored together with the Iu signalling connection identifier. If the *Global CN-ID* IE is not included, the MBMS SESSION START message shall be considered as coming from the default CN node.

If the RNC controls cells contained in the indicated MBMS Service Area or serves UEs consuming radio resources from cells contained in the indicated MBMS Service Area, the RNC shall store, if not already, and remember the *TMGI* IE, the *RAB parameters* IE and the other attributes of the session as part of the MBMS Service Context. The *TMGI* IE contains the TMGI identifier which uniquely identifies the MBMS Bearer Service.

Upon reception of the MBMS SESSION START message, the RNC shall initiate allocation of requested resources for the MBMS RAB if at least one of the following two conditions is fulfilled:

- the RNC controls at least one cell contained in the indicated MBMS Service Area and, if the *RA List of Idle Mode UEs* IE is included in MBMS SESSION START message, at least one RNC´s RA is contained in this list,

- the RNC serves UEs consuming radio resources from cells contained in the indicated MBMS Service Area.

In case the *RA List of Idle Mode UEs* IE is included in MBMS SESSION START message but none of above conditions is fulfilled, the RNC may decide to wait for either an update of the RA List of Idle Mode UEs or a UE linking to finally establish the MBMS RAB. If the RNC decides so, it shall report it immediately to the CN in the MBMS SESSION START RESPONSE message with the cause value "Successful MBMS Session Start - No Data Bearer Necessary".

The allocation of requested resources shall be made according to the values of the *Allocation/Retention Priority* IE (priority level, pre-emption indicators) and the resource situation as follows:

- The RNC shall consider the priority level of the requested MBMS RAB, when deciding on the resource allocation.

- The *Queuing Allowed* IE shall be ignored for MBMS RAB.

- The priority levels and the pre-emption indicators may (singularly or in combination) be used to determine whether the MBMS RAB establishment has to be performed unconditionally and immediately. If the requested MBMS RAB is marked as "may trigger pre-emption" and the resource situation requires so, the RNC may trigger the pre-emption procedure which may then cause the forced release of a lower priority RAB which is marked as "pre-emptable". Whilst the process and the extent of the pre-emption procedure is operator-dependent, the pre-emption indicators, if given in the MBMS SESSION START message, shall be treated as follows:

  1. If the *Pre-emption Capability* IE is set to "may trigger pre-emption", then this allocation request may trigger the pre-emption procedure. UTRAN shall only pre-empt RABs (other MBMS RABs or UE specific RABs) with lower priority, in ascending order of priority.

  2. If the *Pre-emption Capability* IE is set to "shall not trigger pre-emption", then this allocation request shall not trigger the pre-emption procedure.

  3. If the *Pre-emption Vulnerability* IE is set to "pre-emptable", then this connection shall be included in the pre-emption process.

  4. If the *Pre-emption Vulnerability* IE is set to "not pre-emptable", then this connection shall not be included in the pre-emption process.

  5. If the *Priority Level* IE is set to "no priority" the given values for the *Pre-emption Capability* IE and *Pre-emption Vulnerability* IE shall not be considered. Instead the values "shall not trigger pre-emption" and "not pre-emptable" shall prevail.

- If the *Allocation/Retention Priority* IE is not given in the MBMS SESSION START message, the allocation request shall not trigger the pre-emption process and the connection may be pre-empted and considered to have the value "lowest" as priority level. Moreover, queuing shall not be allowed.

The UTRAN shall use the *PDP Type Information* IE to configure any compression algorithms.

In case of successful MBMS RAB establishment, the RNC shall include the *Transport Layer Address* IE and the *Iu Transport Association* IE in the MBMS SESSION START RESPONSE message. The RNC may answer successfully even though the MBMS resources have not been established in all relevant cells.

If NNSF is active, the RNC may receive from several CN nodes for a certain MBMS Bearer Service the MBMS SESSION START message. In this case, if the RNC decides to establish the requested MBMS RAB, it shall only establish one MBMS Iu bearer and shall inform the selected CN node accordingly i.e. with MBMS SESSION START RESPONSE message including the *Transport Layer Address* IE and the *Iu Transport Association* IE.

If the RNC receives from several CN nodes for a certain MBMS Bearer Service the MBMS SESSION START message and all the MBMS SESSION START messages include the *RA List of Idle Mode UEs* IE, the RNC shall, if supported, maintain an MBMS Iu signalling connection toward all the CN nodes and inform them accordingly i.e. with MBMS SESSION START RESPONSE message and cause value "Successful MBMS Session Start - No Data Bearer Necessary" to all the CN nodes except the one, if any, towards which the RNC confirmed the successful MBMS RAB establishment.

Transmission and reception of a MBMS SESSION START RESPONSE message terminate the procedure in the UTRAN and in the CN respectively.

8.x1.3 Unsuccessful Operation

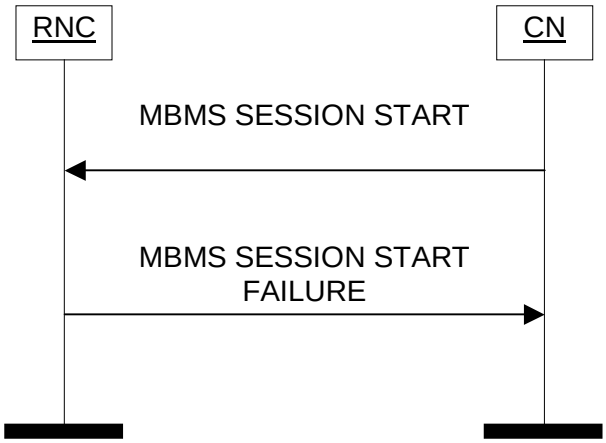

Figure f2: MBMS Session Start procedure. Unsuccessful operation.

If the RNC is not capable of correctly processing the request (e.g. the MBMS resources could not be established at all in any cell), the CN shall be informed by the MBMS SESSION START FAILURE message.

If NNSF is active and the RNC received from several CN nodes for a certain MBMS Bearer Service the MBMS SESSION START message, but not all of the MBMS SESSION START messages include the *RA List of Idle Mode UEs* IE, the RNC shall inform the respective CN nodes accordingly i.e. with MBMS SESSION START FAILURE message and cause value "MBMS - Superseded Due To NNSF" to all the CN nodes except the one towards which the RNC confirmed the successful MBMS RAB establishment with MBMS SESSION START RESPONSE message.

When UTRAN reports failure of the MBMS Session Start procedure, the cause value should be precise enough to enable the core network to know the reason for unsuccessful establishment/modification. Typical cause values are: "MBMS - Superseded Due To NNSF", "Requested Traffic Class not Available", "Invalid RAB Parameters Value", "Requested Maximum Bit Rate not Available", "Requested Guaranteed Bit Rate not Available", "Requested Transfer Delay not Achievable", "Invalid RAB Parameters Combination", "Condition Violation for Guaranteed Bit Rate", "Iu Transport Connection Failed to Establish", "No Resource Available".

Transmission and reception of a MBMS SESSION START FAILURE message terminate the procedure in the UTRAN and in the CN respectively.

8.x1.4 Abnormal Conditions

If, for a MBMS RAB requested to be set up, the *PDP Type Information* IE is not present, the RNC shall continue with the procedure.

8.x1a MBMS Session Update

8.x1a.1 General

The purpose of the MBMS Session Update procedure is to inform the RNC during a MBMS Session whenever the RA List of Idle Mode UEs changes compared to one previously sent.

The procedure uses connection oriented signalling.

8.x1a.2 Successful Operation

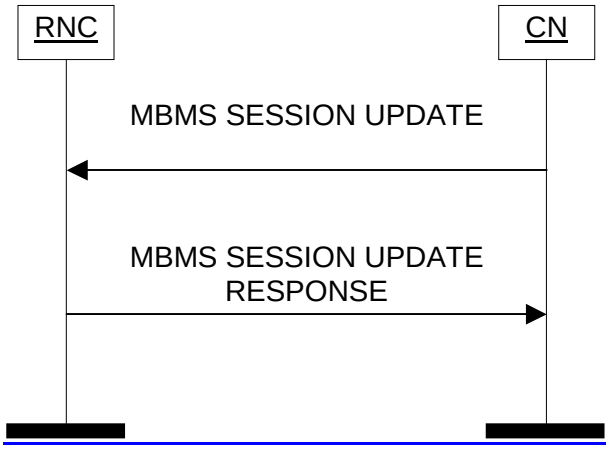

Figure f3: MBMS Session Update procedure. Successful operation.

The CN initiates the procedure by sending a MBMS SESSION UPDATE message.

The MBMS SESSION UPDATE message shall contain the *Delta RA List of Idle Mode UEs* IE and the *Session Update ID* IE.

Upon reception of the MBMS SESSION UPDATE message, if a MBMS RAB has already been established, the RNC shall initiate allocation of additional MBMS radio resources for this MBMS RAB if the RNC controls at least one cell that is part of both the MBMS Service Area and one of the RNC´s RAs indicated in the *RA to be added List* IE, if this IE is included in the *Delta RA List of Idle Mode UEs* IE group. The RNC may release the existing MBMS radio resources for the cells part of the RNC's RAs indicated in the *RA to be removed List* IE, if this IE is included in the *Delta RA List of Idle Mode UEs* IE group.

Upon reception of the MBMS SESSION UPDATE message, if no MBMS RAB has yet been established, the RNC shall establish the MBMS RAB if the RNC controls at least one cell that is part of both the MBMS Service Area and one of the RNC´s RAs indicated in the *RA to be added List* IE, if this IE is included in the *Delta RA List of Idle Mode UEs* IE group. If the previous condition is not fulfilled, the RNC may decide to wait for either another update of the RA List of Idle Mode UEs or a UE linking to finally establish the MBMS RAB.

In case of successful MBMS RAB establishment, the RNC shall include the *Transport Layer Address* IE and the *Iu Transport Association* IE in the MBMS SESSION UPDATE RESPONSE message.

When the update of the RA List of Idle Mode UEs is successfully executed, the UTRAN shall report it to the CN in the MBMS SESSION UPDATE RESPONSE message, which shall include the same *Session Update ID* IE as received in the MBMS SESSION UPDATE message. The RNC may answer successfully even though MBMS resources have not been established in all relevant cells.

Transmission and reception of a MBMS SESSION UPDATE RESPONSE message terminate the procedure in the UTRAN and in the CN respectively.

8.x1a.3 Unsuccessful Operation

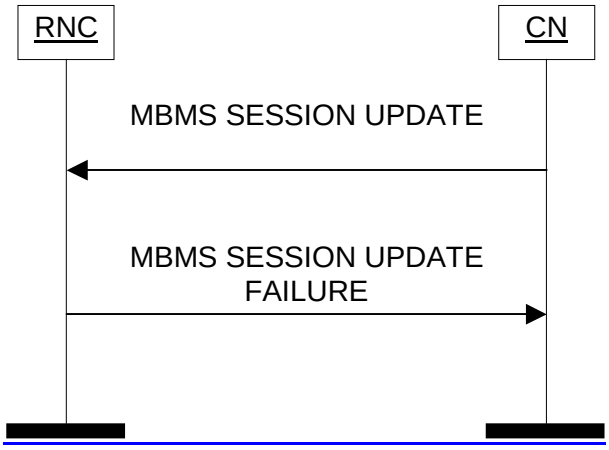

Figure f4: MBMS Session Update procedure. Unsuccessful operation.

If the RNC is not capable of correctly processing the request (e.g. additional MBMS resources could not be established at all in any cell), the CN shall be informed by the MBMS SESSION UDATE FAILURE message, which shall include the same *Session Update ID* IE as received in the MBMS SESSION UPDATE message.

Transmission and reception of a MBMS SESSION UPDATE FAILURE message terminate the procedure in the UTRAN and in the CN respectively.

8.x1a.4 Abnormal Conditions

Not applicable.

8.x2 MBMS Session Stop

8.x2.1 General

The purpose of the MBMS Session Stop procedure is to request the UTRAN to notify UEs about the end of a given MBMS Session and to release the corresponding MBMS RAB and MBMS Iu signalling connection for this MBMS Session. The MBMS RAB Session Stop procedure may also be used as the last MBMS session stop to make the RNC aware that a certain Multicast Service is no longer available.

The procedure uses connection oriented signalling.

8.x2.2 Successful Operation

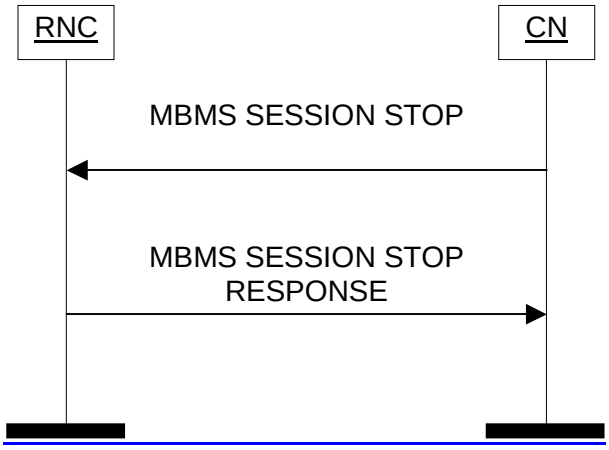

Figure f5: MBMS Session Stop procedure. Successful operation.

The CN initiates the procedure by sending a MBMS SESSION STOP message.

Upon reception of the MBMS SESSION STOP message, the RNC shall release all allocated resources for the MBMS RAB, including the MBMS Iu signalling connection used for this MBMS RAB.

The MBMS SESSION STOP message shall include the *MBMS CN De-Registration* IE. If the *MBMS CN De-Registration* IE is set to the value "deregister", the RNC shall also remove all associated MBMS Service Context(s) and release all allocated MBMS resources for the MBMS Bearer Service.

The RNC does not need to wait for the release of all UTRAN radio resources before returning the MBMS SESSION STOP RESPONSE message.

In case of successful release of the MBMS Iu signalling connection, after the MBMS SESSION STOP RESPONSE message has been sent, the CN shall not send further RANAP connection-oriented messages on this particular connection.

Transmission and reception of a MBMS SESSION STOP RESPONSE message terminate the procedure in the UTRAN and in the CN respectively.

8.x2.3 Abnormal Conditions

Not applicable.

8.x3 MBMS UE Linking

8.x3.1 General

The purpose of the MBMS UE Linking procedure is to make the RNC aware that a given UE, with existing Iu-ps signalling connection, joined and/or left one or several Multicast Services.

The procedure uses connection oriented signalling.

8.x3.2 Successful Operation

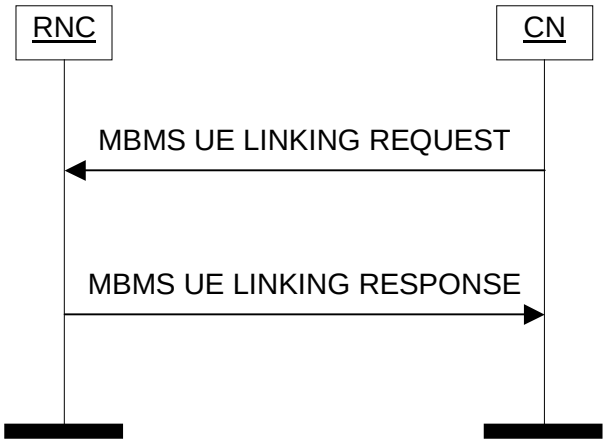

Figure f6: MBMS UE Linking procedure. Successful operation.

The CN initiates the procedure by sending a MBMS UE LINKING REQUEST message.

The MBMS UE LINKING REQUEST message shall contain the following IEs:

- a list of one or several TMGIs, each identifying the MBMS Bearer Service that the UE joined or left and which has not yet been linked or unlinked respectively in the UTRAN,

- for each of the MBMS Bearer Services that the UE joined,

  - the PTP RAB ID.

Upon reception of the MBMS UE LINKING REQUEST message, for each TMGI received identifying the MBMS Bearer Service that the UE joined and which has not yet been linked in the UTRAN, the RNC shall perform the corresponding UE linking as described in [r3].

Upon reception of the MBMS UE LINKING REQUEST message, for each TMGI received identifying the MBMS Bearer Service that the UE left and which has not yet been de-linked in the UTRAN, the RNC shall perform the corresponding UE de-linking as described in [r3].

After handling all received TMGI(s), the RNC shall only report to the CN in the MBMS UE LINKING RESPONSE message the unsuccessful linking(s)/de-linking(s) with an appropriate cause value e.g. "MBMS - UE Linking Already Done", "MBMS - UE De-Linking Failure - No Existing UE Linking".

Transmission and reception of a MBMS UE LINKING RESPONSE message terminate the procedure in the UTRAN and in the CN respectively.

8.x3.3 Unsuccessful Operation

The unsuccessful operation for this Class 1 Elementary procedure is described under the Successful Operation chapter.

8.x3.4 Abnormal Conditions

Upon reception of the MBMS UE LINKING REQUEST message, if for a given TMGI received identifying the MBMS Bearer Service that the UE joined, the linking has already been done in the UTRAN, the RNC shall consider this linking as unsuccessful but shall proceed with the other ones.

Upon reception of the MBMS UE LINKING REQUEST message, if a given TMGI received identifying the MBMS Bearer Service that the UE left, cannot be found in the UE context, the RNC shall consider this de-linking as unsuccessful but shall proceed with the other ones.

8.x4 MBMS Registration

8.x4.1 General

The purpose of the MBMS Registration procedure is to request the CN to register or de-register the RNC for a certain Multicast Service.

The procedure uses connectionless signalling, unless the procedure is used to request CN to de-register the RNC for a Multicast Service which has an existing Iu signalling connection towards the RNC i.e. during a MBMS Session. In this last case, the procedure uses connection oriented signalling.

8.x4.2 Successful Operation

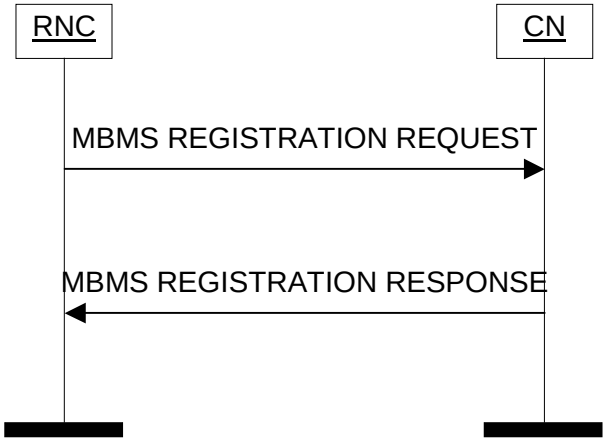

Figure f7: MBMS Registration procedure. Successful operation.

The RNC initiates the procedure by sending a MBMS REGISTRATION REQUEST message.

The MBMS REGISTRATION REQUEST message shall contain the following IEs:

- MBMS Registration Request type;

- TMGI;

- The associated IP Multicast Address and the APN corresponding to the MBMS Bearer Service identified by the TMGI, only in the case the *MBMS Registration Request type* IE is set to “register”;

- Global RNC-ID, if connectionless signalling.

If the CN node is capable of processing the request, the RNC shall be informed by the MBMS REGISTRATION RESPONSE message.

In case of connectionless signalling the MBMS REGISTRATION RESPONSE message shall contain the same TMGI as received in the MBMS REGISTRATION REQUEST message.

If the RNC has not sent the MBMS REGISTRATION REQUEST message with the *MBMS Registration Request Type* IE set to “register”, to the default CN node, the MBMS REGISTRATION RESPONSE message shall also include the *Global CN-ID* IE.

Upon reception of the MBMS REGISTRATION RESPONSE message as a response to a connectionless MBMS REGISTRATION REQUEST message with the *MBMS Registration Request Type* IE set to “deregister”, the RNC shall remove all associated MBMS resources and context(s) corresponding to the MBMS Bearer Service identified by the TMGI included in the MBMS REGISTRATION REQUEST message.

Upon reception of the MBMS REGISTRATION RESPONSE message as a response to a connection oriented MBMS REGISTRATION REQUEST message with the *MBMS Registration Request Type* IE set to “deregister”, the RNC shall release the MBMS Iu signalling connection and the RAB, if any, identified by the TMGI included in the MBMS REGISTRATION REQUEST message.

Transmission and reception of a MBMS REGISTRATION RESPONSE message terminate the procedure in the CN and in the UTRAN respectively.

8.x4.3 Unsuccessful Operation

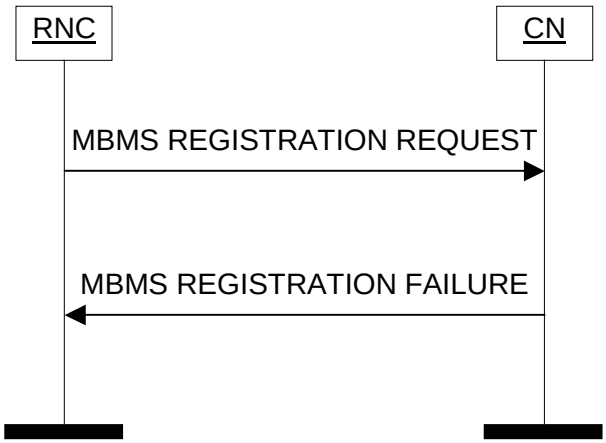

Figure f8: MBMS Registration procedure. Unsuccessful operation.

If the CN node is not capable of correctly processing the request, the RNC shall be informed by the MBMS REGISTRATION FAILURE message.

In case of connectionless signalling, the MBMS REGISTRATION FAILURE message shall contain the same TMGI as received in the MBMS REGISTRATION REQUEST message.

The MBMS REGISTRATION FAILURE message shall inform the RNC about the reason for unsuccessful operation thank to appropriate cause value e.g. "TMGI Unknown", "IP Multicast Address And APN Not Valid", "MBMS De-Registration Rejected Due To Implicit Registration", "MBMS - Request Superseded", "MBMS De-Registration During Session Not Allowed".

In case of connectionless signalling, if the RNC has not sent the MBMS REGISTRATION REQUEST message with the *MBMS Registration Request Type* IE set to “register”, to the default CN node, the MBMS REGISTRATION FAILURE message shall also include the *Global CN-ID* IE.

Transmission and reception of a MBMS REGISTRATION FAILURE message terminate the procedure in the CN and in the UTRAN respectively.

8.x4.4 Abnormal Conditions

Not applicable.

8.x5 MBMS CN De-Registration

8.x5.1 General

The purpose of the MBMS CN De-Registration procedure is to make the RNC aware that a certain Multicast Service is no longer available.

The procedure uses connectionless signalling.

8.x5.2 Successful Operation

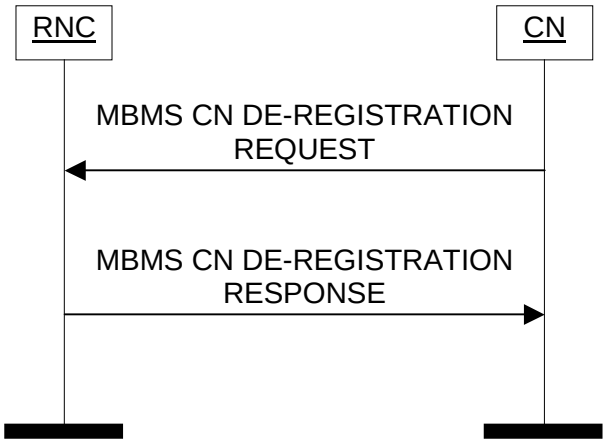

Figure f9: MBMS CN De-Registration procedure. Successful operation.

The CN initiates the procedure by sending a MBMS CN DE-REGISTRATION REQUEST message.

The MBMS CN DE-REGISTRATION REQUEST message shall contain the following IEs:

- TMGI;

- Global CN-ID IE, only when the MBMS CN DE-REGISTRATION REQUEST message is sent from a CN node towards an RNC for which the sending CN node is not the default CN node.

If the *Global CN-ID* IE is not included, the MBMS CN DE-REGISTRATION REQUEST message shall be considered as coming from the default CN node.

Upon reception of the MBMS CN DE-REGISTRATION REQUEST message, the RNC shall remove all associated MBMS context(s) and resources corresponding to the MBMS Bearer Service identified by the indicated TMGI and shall report it to the CN by sending the MBMS CN DE-REGISTRATION RESPONSE message.

Upon reception of the MBMS CN DE-REGISTRATION REQUEST message, if no existing MBMS Bearer Service can be identified by the indicated TMGI in the RNC, it shall consider this MBMS CN De-Registration procedure unsuccessful and shall report it to the CN by sending the MBMS CN DE-REGISTRATION RESPONSE message with the appropriate cause value e.g. "TMGI unknown".

The MBMS CN DE-REGISTRATION RESPONSE message shall contain the *Global RNC-ID* IE and the same TMGI as received in the MBMS CN DE-REGISTRATION REQUEST message.

Transmission and reception of a MBMS CN DE-REGISTRATION RESPONSE message terminate the procedure in the UTRAN and in the CN respectively.

8.x5.3 Unsuccessful Operation

The unsuccessful operation for this Class 1 Elementary procedure is described under the Successful Operation chapter.

8.x5.4 Abnormal Conditions

If NNSF is active, the RNC may receive from several CN nodes for a certain MBMS Bearer Service the MBMS CN DE-REGISTRATION REQUEST message. In this case the RNC will only proceed with the first MBMS CN DE-REGISTRATION REQUEST message received and will inform the respective CN nodes accordingly i.e. with MBMS CN DE-REGISTRATION RESPONSE message and cause value "TMGI unknown" to all the CN nodes except the one towards which the RNC confirmed the successful the MBMS CN De-Registration procedure with MBMS CN DE-REGISTRATION RESPONSE message including no cause value.

8.x6 MBMS RAB Establishment Indication

8.x6.1 General

The purpose of the MBMS RAB Establishment Indication procedure is to inform the CN of the establishment of the MBMS RAB corresponding to the MBMS Iu signalling connection used for this procedure.

The procedure uses connection oriented signalling.

8.x6.2 Successful Operation

Figure f12: Initial UE Message procedure. Successful operation.

When the RNC has not yet established the MBMS RAB for a particular Multicast Service and is informed that a given UE joined this particular Multicast Service, the RNC shall initiate the MBMS RAB Establishment Indication procedure and send the MBMS RAB ESTABLISHMENT INDICATION message to the CN. If NNSF is active, the selection of the CN node is implementation dependant.

The MBMS RAB ESTABLISHMENT INDICATION message shall include the *Transport Layer Address* IE and the *Iu Transport Association* IE.

8.x6.3 Abnormal Conditions

Not applicable.

9 Elements for RANAP Communication

9.1 Message Functional Definition and Content

9.1.1 General

Subclause 9.1 presents the contents of RANAP messages in tabular format. The corresponding ASN.1 definition is presented in subclause 9.3. In case there is contradiction between the tabular format in subclause 9.1 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional IEs, where the tabular format shall take precedence.

NOTE: The messages have been defined in accordance to the guidelines specified in [18].

9.1.2 Message Contents

9.1.2.1 Presence

All information elements in the message descriptions below are marked mandatory, optional or conditional according to table 4.

Table 4: Meaning of abbreviations used in RANAP messages

Abbreviation	Meaning
M	IEs marked as Mandatory (M) shall always be included in the message.
O	IEs marked as Optional (O) may or may not be included in the message.
C	IEs marked as Conditional (C) shall be included in a message only if the condition is satisfied. Otherwise the IE shall not be included.

9.1.2.2 Criticality

Each Information Element or Group of Information Elements may have criticality information applied to it. Following cases are possible:

Table 5: Meaning of content within "Criticality" column

Abbreviation	Meaning
–	No criticality information is applied explicitly.
YES	Criticality information is applied. This is usable only for non-repeatable IEs
GLOBAL	The IE and all its repetitions together have one common criticality information. This is usable only for repeatable IEs.
EACH	Each repetition of the IE has its own criticality information. It is not allowed to assign different criticality values to the repetitions. This is usable only for repeatable IEs.

9.1.2.3 Range

The Range column indicates the allowed number of copies of repetitive IEs/IE groups.

9.1.2.4 Assigned Criticality

This column provides the actual criticality information as defined in subclause 10.3.2, if applicable.

Not affected parts of section 9.1 not shown here

9.1.10 RELOCATION REQUEST

This message is sent by the CN to request the target RNC to allocate necessary resources for a relocation.

Direction: CN → RNC.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Permanent NAS UE Identity	O		9.2.3.1		YES	ignore
Cause	M		9.2.1.4		YES	ignore
CN Domain Indicator	M		9.2.1.5		YES	reject
Source RNC To Target RNC Transparent Container	M		9.2.1.28		YES	reject
RABs To Be Setup List	O				YES	reject
>RABs To Be Setup Item IEs		1 to <maxnoofRABs>			EACH	reject
>>RAB ID	M		9.2.1.2		-	
>>NAS Synchronisation Indicator	O		9.2.3.18		-	
>>RAB Parameters	M		9.2.1.3		-	
>>Data Volume Reporting Indication	C – ifPS		9.2.1.17		-	
>> PDP Type Information	C – ifPS		9.2.1.40		-	
>>User Plane Information	M				-	
>>>User Plane Mode	M		9.2.1.18		-	
>>>UP Mode Versions	M		9.2.1.19		-	
>>Transport Layer Address	M		9.2.2.1		-	
>>Iu Transport Association	M		9.2.2.2		-	
>>Service Handover	O		9.2.1.41		-	
>> Alternative RAB Parameter Values	O		9.2.1.43		YES	Ignore
>>GERAN BSC Container	O		9.2.1.58		YES	Ignore
Integrity Protection Information	O		9.2.1.11	Integrity Protection Information includes key and permitted algorithms.	YES	ignore
Encryption Information	O		9.2.1.12	Encryption Information includes key and permitted algorithms.	YES	ignore
Iu Signalling Connection Identifier	M		9.2.1.38		YES	ignore
Global CN-ID	O		9.2.1.46		YES	reject
SNA Access Information	O		9.2.3.24		YES	ignore
UESBI-Iu	O		9.2.1.59		YES	ignore
CN MBMS Linking Information	O				YES	ignore
>Joined MBMS Bearer Service IEs		1 to <maxnoofMulticastServicesPerUE>			EACH	ignore
>>TMGI	M		9.2.3.x3a	The same TMGI must only be present in one group.	-	-

>> PTP RAB ID	M		9.2.1.xx1a		-	-

Condition	Explanation
Row to be deleted	*Row to be deleted*
IfPS	This IE shall be present if the *CN domain indicator* IE is set to "PS domain".

Range bound	Explanation
MaxnoofRABs	Maximum no. of RABs for one UE. Value is 256.
maxnoofMulticastServicesPerUE	Maximum no. of Multicast Services that a UE can join and leave respectively. Value is 128.

9.1.11 RELOCATION REQUEST ACKNOWLEDGE

This message is sent by the target RNC to inform the CN about the result of the resource allocation for the requested relocation.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Target RNC To Source RNC Transparent Container	O		9.2.1.30		YES	ignore
RABs Setup List	O				YES	ignore
>RABs Setup Item IEs		1 to <maxnoofRABs>			EACH	reject
>>RAB ID	M		9.2.1.2		-	
>>Transport Layer Address	O		9.2.2.1	IPv6 or IPv4 address if no other TLA included. IPv4 address if other TLA included.	-	

>>Iu Transport Association	O		9.2.2.2	Related to TLA above.	-	
>>Assigned RAB Parameter Values	O		9.2.1.44		YES	ignore
>>Transport Layer Address	O		9.2.2.1	IPv6 address if included.	YES	ignore
>>Iu Transport Association	O		9.2.2.2	Related to TLA above.	YES	ignore
RABs Failed To Setup List	O				YES	ignore
>RABs Failed To Setup Item IEs		1 to <maxnoofRABs>			EACH	ignore
>>RAB ID	M		9.2.1.2		-	
>>Cause	M		9.2.1.4		-	
Chosen Integrity Protection Algorithm	O		9.2.1.13	Indicates the Integrity Protection algorithm that will be used by the target RNC.	YES	ignore
Chosen Encryption Algorithm	O		9.2.1.14	Indicates the Encryption algorithm that will be used by the target RNC.	YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore
New BSS To Old BSS Information	O		9.2.1.47	Defined in [11].	YES	ignore

Range bound	Explanation
maxnoofRABs	Maximum no. of RABs for one UE. Value is 256.

Not affected parts of section 9.1 not shown here

9.1.55 UPLINK INFORMATION EXCHANGE REQUEST ~~TRANSFER INDICATION~~

This message is sent by the RNC to the CN in order to transfer or request specific information. The nature of the exchange i.e. transfer or request of specific information is indicated within the *Information Exchange Type* IE. The nature of the information to be transferred is indicated within the *Information Transfer Type* IE. The nature of the information requested is indicated within the *Information Request Type* IE.

Direction: RNC → CN.

Signalling bearer mode: Connectionless.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Information ~~Transfer~~ Exchange ID	M		9.2.1.xx11a ~~55~~		YES	reject
Information Exchange Type	M		9.2.1.xx11b		YES	reject
Information Transfer Type	C – iftransfer~~M~~		9.2.1.63		YES	reject
Information Request Type	C – ifrequest		9.2.1.xx11c		YES	reject
CN Domain Indicator	M		9.2.1.5		YES	reject
Global RNC-ID	M		9.2.1.39		YES	reject

Condition	Explanation
Iftransfer	This IE shall be present if the *Information Exchange Type* IE is set to "transfer".
Ifrequest	This IE shall be present if the *Information Exchange Type* IE is set to "request".

9.1.56 UPLINK INFORMATION EXCHANGE RESPONSE~~TRANSFER CONFIRMATION~~

This message is sent by the CN to the RNC as a successful response to the UPLINK INFORMATION EXCHANGE REQUEST~~TRANSFER INDICATION~~ message.

Direction: CN → RNC.

Signalling bearer mode: Connectionless.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Information ~~Transfer~~ Exchange ID	M		9.2.1.~~55~~xx11a		YES	ignore
Information Requested	O		9.2.1.xx11d		YES	ignore
CN Domain Indicator	M		9.2.1.5		YES	Ignore
Global CN-ID	O		9.2.1. ~~39~~46		YES	Ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.57 UPLINK INFORMATION ~~TRANSFER~~ EXCHANGE FAILURE

This message is sent by the CN to the RNC as an unsuccessful response to the UPLINK INFORMATION EXCHANGE REQUEST~~TRANSFER INDICATION~~ message.

Direction: CN → RNC.

Signalling bearer mode: Connectionless.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Information ~~Transfer~~ Exchange ID	M		9.2.1.~~55~~xx11a		YES	Ignore
CN Domain Indicator	M		9.2.1.5		YES	ignore
Global CN-ID	O		9.2.1. ~~39~~46		YES	ignore
Cause	M		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x7 MBMS SESSION START

This message is sent by the CN to establish a MBMS Iu signalling connection and if needed a MBMS RAB.

Direction: CN → RNC.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
TMGI	M		9.2.3.x3a		YES	reject
MBMS Session Identifier	M		9.2.3.x3b		YES	reject
MBMS Bearer Service Type	M		9.2.3.x3c		YES	reject
Iu Signalling Connection Identifier	M		9.2.1.38		YES	reject
RAB parameters	M		9.2.1.3		YES	reject
PDP Type Information	O		9.2.1.40		YES	ignore
MBMS Session Duration	O		9.2.3.x3d		YES	ignore
MBMS Service Area	M		9.2.3.x3e		YES	reject
Frequency Layer Convergence Flag	O		9.2.3.xx1b		YES	ignore
RA List of Idle Mode UEs	O		9.2.3.x3f		YES	ignore
Global CN-ID IE	O		9.2.1.46		YES	reject

9.1.x8 MBMS SESSION START RESPONSE

This message is sent by the RNC to report the successful outcome of the request from the MBMS SESSION START message.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Transport Layer Information	O				YES	ignore
>Transport Layer Address	M		9.2.2.1		YES	ignore
>Iu Transport Association	M		9.2.2.2		YES	ignore
Cause	O		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x9 MBMS SESSION START FAILURE

This message is sent by the RNC to report the unsuccessful outcome of the request from the MBMS SESSION START message.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Cause	M		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x10 MBMS SESSION UPDATE

This message is sent by the CN to inform the RNC whenever the RA List of Idle Mode UEs changes compared to one previously sent.

Direction: CN → RNC.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Session Update ID	M		9.2.3.xx1c		YES	reject
Delta RA List of Idle Mode UEs	M		9.2.3.x3g		YES	reject

9.1.x11 MBMS SESSION UPDATE RESPONSE

This message is sent by the RNC to report the successful outcome of the request from the MBMS SESSION UPDATE message.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Session Update ID	M		9.2.3.xx1c		YES	ignore
Transport Layer Information	O				YES	ignore
>Transport Layer Address	M		9.2.2.1		YES	ignore
>Iu Transport Association	M		9.2.2.2		YES	ignore
Cause	O		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x12 MBMS SESSION UPDATE FAILURE

This message is sent by the RNC to report the unsuccessful outcome of the request from the MBMS SESSION UPDATE message.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Session Update ID	M		9.2.3.xx1c		YES	ignore
Cause	M		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x13 MBMS SESSION STOP

This message is sent by the CN to release a MBMS Iu signalling connection and its associated MBMS RAB.

Direction: CN → RNC.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
MBMS CN De-Registration	M		9.2.3.x3h		YES	reject

9.1.x14 MBMS SESSION STOP RESPONSE

This message is sent by the RNC to report the outcome of the request from the MBMS SESSION STOP message.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Cause	O		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x15 MBMS UE LINKING REQUEST

This message is sent by the CN to make the RNC aware that a given UE, with exiting Iu-ps signalling connection, joined/left one or several Multicast Services.

Direction: CN → RNC.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Joined MBMS Bearer Services List	O				YES	reject
>Joined MBMS Bearer Service IEs		1 to <maxnoofMulticastServicesPerUE>			EACH	reject
>>TMGI	M		9.2.3.x3a	The same TMGI must only be present in one group.	-	-
>> PTP RAB ID	M		9.2.1.xx1a		-	-
Left MBMS Bearer Services List	O				YES	reject
>Left MBMS Bearer Service IEs		1 to <maxnoofMulticastServicesPerUE>			EACH	reject
>>TMGI	M		9.2.3.x3a	The same TMGI must only be present in one group.	-	-

Range bound	Explanation
maxnoofMulticastServicesPerUE	Maximum no. of Multicast Services that a UE can join and leave respectively. Value is 128.

9.1.x16 MBMS UE LINKING RESPONSE

This message is sent by the RNC to report the outcome of the request from the MBMS UE LINKING REQUEST message.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
Unsuccessful Linking List	O				YES	ignore
> Unsuccessful Linking IEs		1 to <maxnoofMulticastServicesPerUE>			EACH	ignore
>>TMGI	M		9.2.3.x3a	The same TMGI must only be present in one group.	-	-
>>Cause	M		9.2.1.4		-	-
Criticality Diagnostics	O		9.2.1.35		YES	ignore

Range bound	Explanation
maxnoofMulticastServicesPerUE	Maximum no. of Multicast Services that a UE can join and leave respectively. Value is 128.

9.1.x17 MBMS REGISTRATION REQUEST

This message is sent by the RNC to request the CN to register or de-register the RNC for a certain Multicast Service.

Direction: RNC → CN.

Signalling bearer mode: Connectionless or connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
MBMS Registration Request Type	M		9.2.3.x3i		YES	reject
TMGI	M		9.2.3.x3a		YES	reject
IP Multicast Address	C-ifRegister		OCTET STRING		YES	reject
APN	C-ifRegister		OCTET STRING		YES	reject
Global RNC-ID	O		9.2.1.39		YES	reject

Condition	Explanation
IfRegister	This IE shall be present if the *MBMS Registration Request Type* IE is set to “register”.

9.1.x18 MBMS REGISTRATION RESPONSE

This message is sent by the CN to the RNC as a successful response to the MBMS REGISTRATION REQUEST message.

Direction: CN → RNC.

Signalling bearer mode: Connectionless or connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
TMGI	O		9.2.3.x3a		YES	ignore
Global CN-ID	O		9.2.1.46		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x19 MBMS REGISTRATION FAILURE

This message is sent by the CN to the RNC as an unsuccessful response to the MBMS REGISTRATION REQUEST message.

Direction: CN → RNC.

Signalling bearer mode: Connectionless.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
TMGI	O		9.2.3.x3a		YES	ignore
Global CN-ID	O		9.2.1.46		YES	ignore
Cause	M		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x20 MBMS CN DE-REGISTRATION REQUEST

This message is sent by the CN to make the RNC aware that a certain Multicast Service is no longer available.

Direction: CN → RNC.

Signalling bearer mode: Connectionless.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
TMGI	M		9.2.3.x3a		YES	reject
Global CN-ID	O		9.2.1.46		YES	reject

9.1.x21 MBMS CN DE-REGISTRATION RESPONSE

This message is sent by the RNC to the CN as a response to the MBMS CN DE-REGISTRATION REQUEST message.

Direction: RNC → CN.

Signalling bearer mode: Connectionless.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	reject
TMGI	M		9.2.3.x3a		YES	ignore
Global RNC-ID	M		9.2.1.39		YES	ignore
Cause	O		9.2.1.4		YES	ignore
Criticality Diagnostics	O		9.2.1.35		YES	ignore

9.1.x22 MBMS RAB ESTABLISHMENT INDICATION

This message is sent by the RNC to the CN to inform the CN of the establishment of the MBMS RAB corresponding to the MBMS Iu signalling connection used by this message.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	ignore
Transport Layer Information	M				YES	ignore
>Transport Layer Address	M		9.2.2.1		YES	ignore
>Iu Transport Association	M		9.2.2.2		YES	ignore

9.2 Information Element Definitions

9.2.0 General

Subclause 9.2 presents the RANAP IE definitions in tabular format. The corresponding ASN.1 definition is presented in subclause 9.3. In case there is contradiction between the tabular format in subclause 9.2 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional elements, where the tabular format shall take precedence.

When specifying information elements which are to be represented by bitstrings, if not otherwise specifically stated in the semantics description of the concerned IE or elsewhere, the following principle applies with regards to the ordering of bits:

- The first bit (leftmost bit) contains the most significant bit (MSB);
- The last bit (rightmost bit) contains the least significant bit (LSB);
- When importing bitstrings from other specifications, the first bit of the bitstring contains the first bit of the concerned information;

9.2.1 Radio Network Layer Related IEs

9.2.1.1 Message Type

The *Message Type* IE uniquely identifies the message being sent. It is mandatory for all messages.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Message Type				Assumed max no of messages is 256.
>Procedure Code	M		(RAB Assignment, RAB Release Request, Iu Release Request, Iu Release, Relocation Preparation, Relocation Resource Allocation, Relocation Detect, Relocation Complete Relocation Cancel, SRNS Context Transfer, SRNS Data Forwarding Initiation, SRNS Context Forwarding from Source RNC to CN, SRNS Context Forwarding to Target RNC from CN, Paging, Common ID, CN Invoke Trace, Security Mode Control, Location Reporting Control Location Report, Data Volume Report, Initial UE Message Direct Transfer, Overload Control, Reset, Error Indication, CN Deactivate Trace, RANAP Relocation Information, Reset Resource, …, RAB Modify Request, Location Related Data, Information Transfer, UE Specific Information, Direct Information Transfer, Uplink Information ~~Transfer~~Exchange, MBMS Session Start, MBMS Session Update, MBMS Session Stop, MBMS UE Linking, MBMS Registration, MBMS CN De-Registration, MBMS RAB Establishment Indication)	
>Type of Message	M		CHOICE (Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome, …)	

Not affected parts of section 9.2.1 not shown here

9.2.1.4 Cause

The purpose of the *Cause* IE is to indicate the reason for a particular event for the RANAP protocol.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
>Radio Network Layer Cause			INTEGER (RAB pre-empted(1), Trelocoverall Expiry(2), Trelocprep Expiry(3), Treloccomplete Expiry(4), Tqueuing Expiry(5), Relocation Triggered(6), Unable to Establish During Relocation(8), Unknown Target RNC(9), Relocation Cancelled(10), Successful Relocation(11), Requested Ciphering and/or Integrity Protection Algorithms not Supported(12), Conflict with already existing Integrity protection and/or Ciphering information (13), Failure in the Radio Interface Procedure(14), Release due to UTRAN Generated Reason(15), User Inactivity(16), Time Critical Relocation(17), Requested Traffic Class not Available(18), Invalid RAB Parameters Value(19),	Value range is 1 – 64.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
			Requested Maximum Bit Rate not Available(20), Requested Maximum Bit Rate for DL not Available(33), Requested Maximum Bit Rate for UL not Available(34), Requested Guaranteed Bit Rate not Available(21), Requested Guaranteed Bit Rate for DL not Available(35), Requested Guaranteed Bit Rate for UL not Available(36), Requested Transfer Delay not Achievable(22), Invalid RAB Parameters Combination(23), Condition Violation for SDU Parameters(24), Condition Violation for Traffic Handling Priority(25), Condition Violation for Guaranteed Bit Rate(26), User Plane Versions not Supported(27), Iu UP Failure(28), TRELOCalloc Expiry (7), Relocation Failure in Target CN/RNC or Target System (29), Invalid RAB	

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
			ID(30), No remaining RAB(31), Interaction with other procedure(32), Repeated Integrity Checking Failure(37), Requested Request Type not supported(38), Request superseded(39), Release due to UE generated signalling connection release(40), Resource Optimisation Relocation(41), Requested Information Not Available(42), Relocation desirable for radio reasons (43), Relocation not supported in Target RNC or Target system(44), Directed Retry (45), Radio Connection With UE Lost(46), RNC unable to establish all RFCs (47), Deciphering Keys Not Available(48), Dedicated Assistance data Not Available(49), Relocation Target not allowed(50), Location Reporting Congestion(51),	

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
			Reduce Load in Serving Cell (52), No Radio Resources Available in Target cell (53), GERAN Iu-mode failure (54), Access Restricted Due to Shared Networks(55), Incoming Relocation Not Supported Due To PUESBINE Feature(56), Traffic Load In The Target Cell Higher Than In The Source Cell(57), MBMS - No Multicast Service For This UE(c58), MBMS - Unknown UE ID(c59), Successful MBMS Session Start - No Data Bearer Necessary(c60), MBMS - Superseded Due To NNSF(c61), MBMS - UE Linking Already Done(c62), MBMS - UE De-Linking Failure - No Existing UE Linking(c63), TMGI Unknown(c64))	

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
>Transport Layer Cause			INTEGER (Signalling Transport Resource Failure(65), Iu Transport Connection Failed to Establish(66))	Value range is 65 – 80.
>NAS Cause			INTEGER (User Restriction Start Indication(81), User Restriction End Indication(82), Normal Release(83))	Value range is 81 – 96.
>Protocol Cause			INTEGER (Transfer Syntax Error(97), Semantic Error (98), Message not compatible with receiver state (99), Abstract Syntax Error (Reject) (100), Abstract Syntax Error (Ignore and Notify) (101), Abstract Syntax Error (Falsely Constructed Message) (102))	Value range is 97 – 112.
>Miscellaneous Cause			INTEGER (O&M Intervention(113), No Resource Available(114), Unspecified Failure(115), Network Optimisation(116))	Value range is 113 – 128.
>Non-standard Cause			INTEGER ()	Value range is 129 – 256. Cause value 256 shall not be used.
>Radio Network Layer Cause Extension			INTEGER (IP Multicast Address And APN Not Valid(c257), MBMS De-	Value range is 257 – 512.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
			Registration Rejected Due To Implicit Registration(c258) , MBMS - Request Superseded(c259) , MBMS De-Registration During Session Not Allowed(c260))	

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the related capability is missing. On the other hand, "not available" cause values indicate that the related capability is present, but insufficient resources were available to perform the requested action.

Radio Network Layer cause	Meaning
Deciphering Keys Not Available	The action failed because RNC is not able to provide requested deciphering keys.
Conflict with already existing Integrity protection and/or Ciphering information	The action was not performed due to that the requested security mode configuration was in conflict with the already existing security mode configuration.
Condition Violation For Guaranteed Bit Rate	The action was not performed due to condition violation for guaranteed bit rate.
Condition Violation For SDU Parameters	The action was not performed due to condition violation for SDU parameters.
Condition Violation For Traffic Handling Priority	The action was not performed due to condition violation for traffic handling priority.
Dedicated Assistance data Not Available	The action failed because RNC is not able to successfully deliver the requested dedicated assistance data to the UE.
Directed Retry	The reason for action is Directed Retry
Failure In The Radio Interface Procedure	Radio interface procedure has failed.
Incoming Relocation Not Supported Due To PUESBINE Feature	The incoming relocation cannot be accepted by the target RNC because of the PUESBINE feature.
Interaction With Other Procedure	Relocation was cancelled due to interaction with other procedure.
Invalid RAB ID	The action failed because the RAB ID is unknown in the RNC.
Invalid RAB Parameters Combination	The action failed due to invalid RAB parameters combination.
Invalid RAB Parameters Value	The action failed due to invalid RAB parameters value.
Iu UP Failure	The action failed due to Iu UP failure.
No remaining RAB	The reason for the action is no remaining RAB.
RAB Pre-empted	The reason for the action is that RAB is pre-empted.
Radio Connection With UE Lost	The action is requested due to losing radio connection to the UE
Release Due To UE Generated Signalling Connection Release	Release requested due to UE generated signalling connection release.
Release Due To UTRAN Generated Reason	Release is initiated due to UTRAN generated reason.
Relocation Cancelled	The reason for the action is relocation cancellation.
Relocation Desirable for Radio Reasons	The reason for requesting relocation is radio related.
Relocation Failure In Target CN/RNC Or Target System	Relocation failed due to a failure in target CN/RNC or target system.
Relocation Not Supported In Target RNC Or Target System	Relocation failed because relocation was not supported in target RNC or target system.
Relocation Target not allowed	Relocation to the indicated target cell is not allowed for the UE in question.
Relocation Triggered	The action failed due to relocation.
Repeated Integrity Checking Failure	The action is requested due to repeated failure in integrity checking.
Request Superseded	The action failed because there was a second request on the same RAB.
Requested Ciphering And/Or Integrity Protection Algorithms Not Supported	The UTRAN or the UE is unable to support the requested ciphering and/or integrity protection algorithms.
Requested Guaranteed Bit Rate For DL Not Available	The action failed because requested guaranteed bit rate for DL is not available.
Requested Guaranteed Bit Rate For UL Not Available	The action failed because requested guaranteed bit rate for UL is not available.
Requested Guaranteed Bit Rate Not Available	The action failed because requested guaranteed bit rate is not available.
Requested Information Not Available	The action failed because requested information is not available.
Requested Maximum Bit Rate For DL Not Available	The action failed because requested maximum bit rate for DL is not available.
Requested Maximum Bit Rate For UL Not Available	The action failed because requested maximum bit rate for UL is not available.
Requested Maximum Bit Rate Not Available	The action failed because requested maximum bit rate is not available.
Requested Request Type Not Supported	The RNC is not supporting the requested location request type either because it doesn't support the requested event or

	it doesn't support the requested report area.
Location Reporting Congestion	The action was not performed due to an inability to support location reporting caused by overload.
Requested Traffic Class Not Available	The action failed because requested traffic class is not available.
Requested Transfer Delay Not Achievable	The action failed because requested transfer delay is not achievable.
Resource Optimisation Relocation	The reason for requesting relocation is resource optimisation.
Successful Relocation	The reason for the action is completion of successful relocation.
Time Critical Relocation	Relocation is requested for time critical reason i.e. this cause value is reserved to represent all critical cases where the connection is likely to be dropped if relocation is not performed.
$T_{QUEUING}$ Expiry	The action failed due to expiry of the timer $T_{QUEUING}$.
$T_{RELOCalloc}$ Expiry	Relocation Resource Allocation procedure failed due to expiry of the timer $T_{RELOCalloc}$.
$T_{RELOCcomplete}$ Expiry	The reason for the action is expiry of timer $T_{RELOCcomplete}$.
$T_{RELOCoverall}$ Expiry	The reason for the action is expiry of timer $T_{RELOCoverall}$.
$T_{RELOCprep}$ Expiry	Relocation Preparation procedure is cancelled when timer $T_{RELOCprep}$ expires.
Unable To Establish During Relocation	RAB failed to establish during relocation because it cannot be supported in the target RNC.
Unknown Target RNC	Relocation rejected because the target RNC is not known to the CN.
User Inactivity	The action is requested due to user inactivity on one or several non real time RABs e.g. in order to optimise radio resource.
User Plane Versions Not Supported	The action failed because requested user plane versions were not supported.
RNC unable to establish all RFCs	RNC couldn't establish all RAB subflow combinations indicated within the *RAB Parameters* IE.
Reduce Load in Serving Cell	Load on serving cell needs to be reduced.
No Radio Resources Available in Target Cell	Load on target cell is too high.
GERAN Iu-mode failure	The RAB establishment/modification/relocation failed because the GERAN BSC cannot provide an appropriate RAB due to limited capabilities within GERAN.
Access Restricted Due to Shared Networks	Access is not permitted in the cell due to Shared Networks.
Traffic Load In The Target Cell Higher Than In The Source Cell	Relocation to reduce load in the source cell is rejected, as the target cell's traffic load is higher than that in the source cell.
MBMS - No Multicast Service For This UE	The request for the Multicase Service list of one UE was not fulfilled because the UE does not have any active multicast service.
MBMS - Unknown UE ID	The request for the Multicase Service list of one UE was not fulfilled because the CN does not know the UE.
Successful MBMS Session Start - No Data Bearer Necessary	The MBMS Session Start procedure was successfully performed, but the RNC does not have any interested UE.
MBMS - Superseded Due To NNSF	The MBMS Session Start procedure was rejected because of successful operation towards another CN node.
MBMS - UE Linking Already Done	The UE linking failed, because the UE has already been linked to the given Multicast service.
MBMS - UE De-Linking Failure - No Existing UE Linking	The UE de-linking failed, because the UE had not been linked to the given Multicast service.
TMGI Unknown	The requested MBMS action failed because the indicated TMGI is unknown.
Radio Network Layer cause extension	**Meaning**
IP Multicast Address And APN Not Valid	The MBMS registration failed because the IP Multicast Address and APN are not valid.
MBMS De-Registration Rejected Due To Implicit Registration	The MBMS De-registration was rejected because of implicit registration.
MBMS - Request Superseded	The MBMS Registration or De-registration was superseded due to another ongoing procedure.
MBMS De-Registration During Session Not Allowed	The MBMS De-registration is not allowed during the MBMS session.

Transport Layer cause	Meaning
Iu Transport Connection Failed to Establish	The action failed because the Iu Transport Network Layer connection could not be established.
Signalling Transport Resource Failure	Signalling transport resources have failed *(e.g. processor reset).*

NAS cause	Meaning
Normal Release	The release is normal.
User Restriction Start Indication	A location report is generated due to entering a classified area set by O&M.
User Restriction End Indication	A location report is generated due to leaving a classified area set by O&M.

Protocol cause	Meaning
Abstract Syntax Error (Reject)	The received message included an abstract syntax error and the concerning criticality indicated "reject".
Abstract Syntax Error (Ignore And Notify)	The received message included an abstract syntax error and the concerning criticality indicated "ignore and notify".
Abstract Syntax Error (Falsely Constructed Message)	The received message contained IEs or IE groups in wrong order or with too many occurrences.
Message Not Compatible With Receiver State	The received message was not compatible with the receiver state.
Semantic Error	The received message included a semantic error.
Transfer Syntax Error	The received message included a transfer syntax error.

Miscellaneous cause	Meaning
Network Optimisation	The action is performed for network optimisation.
No Resource Available	No requested resource is available.
O&M Intervention	The action is due to O&M intervention.
Unspecified Failure	Sent when none of the specified cause values applies.

Not affected parts of section 9.2.1 not shown here

9.2.1.28 Source RNC to Target RNC Transparent Container

The *Source RNC to Target RNC Transparent Container* IE is an information element that is produced by the source RNC and is transmitted to the target RNC. In inter-system handovers, the IE is transmitted from the external relocation source to the target RNC.

This IE is transparent to the CN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
RRC Container	M		OCTET STRING		-	
Number of Iu Instances	M		INTEGER (1..2)		-	
Relocation Type	M		9.2.1.23		-	
Chosen Integrity Protection Algorithm	O		9.2.1.13	Indicates the integrity protection algorithm.	-	
Integrity Protection Key	O		Bit String (128)		-	
Chosen Encryption Algorithm	O		9.2.1.14	Indicates the algorithm for ciphering of signalling data.	-	
Ciphering Key	O		Bit String (128)		-	
Chosen Encryption Algorithm	O		9.2.1.14	Indicates the algorithm for ciphering of CS user data.	-	
Chosen Encryption Algorithm	O		9.2.1.14	Indicates the algorithm for ciphering of PS user data.	-	
d-RNTI	C - ifUEnotinvolved		INTEGER (0..1048575)		-	
Target Cell ID	C - ifUEinvolved		INTEGER (0..268435455)	This information element identifies a cell uniquely within UTRAN and consists of RNC-ID (12 bits) and C-ID (16 bits) as defined in TS 25.401 [3].	-	
Cell Load Information Group	O		9.2.1.60	For “Cell Load-Based Inter-System Handover”	-	
RAB TrCH Mapping	O	1 to <maxnoofRABs>			-	
>RAB ID	M		9.2.1.2		-	
>**RAB Subflow**	M	1 to <maxRAB-Subflows>		The RAB Subflows shall be presented in an order that corresponds to the order in which the RBs are presented per RAB in the RRC container included in this IE.	-	
>> **Transport Channel IDs**					-	
>>> DCH ID	O		INTEGER (0..255)	The DCH ID is the identifier of an active dedicated transport channel. It is unique for each active DCH among the active DCHs simultaneously allocated for the	-	

				same UE.		

>>> DSCH ID	O		INTEGER (0..255)	The DSCH ID is the identifier of an active downlink shared transport channel. It is unique for each DSCH among the active DSCHs simultaneously allocated for the same UE.	-	
>>> USCH ID	O		INTEGER (0..255)	The USCH ID is the identifier of an active uplink shared transport channel. It is unique for each USCH among the active USCHs simultaneously allocated for the same UE.	-	
>>> HS-DSCH MAC-d Flow ID	O		INTEGER (0..7)	The HS-DSCH MAC-d Flow ID is the identifier of an HS-DSCH MAC-d flow over Iur.	YES	Ignore
>CN Domain Indicator	M		9.2.1.5		YES	Ignore
SRB TrCH Mapping	O	1 to <maxnoofSRBs>			GLOBAL	Reject
>SRB ID	M		INTEGER (1..32)	The SRB ID is the absolute value of the SRB.	-	
>DCH ID	O		INTEGER (0..255)	The DCH ID is the identifier of an active dedicated transport channel over Iur. It is unique for each active DCH among the active DCHs simultaneously allocated for the same UE.	-	
>DSCH ID	O		INTEGER (0..255)	The DSCH ID is the identifier of an active downlink shared transport channel over Iur. It is unique for each DSCH among the active DSCHs simultaneously allocated for the same UE.	-	
>USCH ID	O		INTEGER (0..255)	The USCH ID is the identifier of an active uplink shared transport channel over Iur. It is unique for each USCH among the active	-	

				USCHs simultaneously allocated for the same UE.		
Trace Recording Session Information	O		9.2.1.66		YES	ignore
MBMS Linking Information	O		ENUMERATED (UE-has-joined-Multicast-Services, ...)		YES	ignore

Condition	Explanation
IfUEnotinvolved	This IE shall be present if the *Relocation type* IE is set to "UE not involved in relocation of SRNS".
IfUEinvolved	This IE shall be present if the *Relocation type* IE is set to "UE involved in relocation of SRNS".

Range bound	Explanation
maxnoofRABs	Maximum no. of RABs for one UE. Value is 256.
maxRABSubflows	Maximum no. of subflows per RAB. Value is 7.
maxnoofSRBs	Maximum no. of SRBs per RAB. Value is 8.

Not affected parts of section 9.2.1 not shown here

9.2.1.70 List Of Interfaces To Trace

Indicates the interface(s) to be traced by RNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
List Of Interfaces To Trace				
>Interfaces To Trace		1 to <maxInterfaces>		
>>Interface	M		ENUMERATED(Iu-CS, Iu-PS, Iur, Iub, Uu, ...)	

Range bound	Explanation
maxInterfaces	Maximum no. of different UTRAN interfaces to trace. The value for maxInterfaces is 16.

9.2.1.xx11a Information Exchange ID

Indicates the identity of an information exchange.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Information Exchange ID	M		INTEGER (0..2^20-1)	

9.2.1.xx11b Information Exchange Type

Indicates the nature of the information exchange i.e. transfer or request of specific information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Information Exchange Type	M		ENUMERATED(transfer, request, ...)	

9.2.1.xx11c Information Request Type

Indicates the type of information requested by the RNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Information Request Type**				
>MBMS IP Multicast Address and APN Request			9.2.1.xx1e	
>Permanent NAS UE Identity			9.2.3.1	

9.2.1.xx11d Information Requested

Provides the RNC with the requested information.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Information Requested**				
>Requested MBMS IP Multicast Address and APN			9.2.3.x3j	
>Requested Multicast Service List			9.2.3.x3k	

9.2.1. xx1a PTP RAB ID

This element uniquely identifies a MBMS PTP radio bearer for a particular UE.

The value is used in the RNC to relate MBMS PTP Radio Bearers to a MBMS RAB. The content of this information element is transferred unchanged from the SGSN via the RNC to the UE by RANAP messages and RRC messages. For RRC messages refer to [10].

The element contains binary representation of the Network Service Access Point Identifier (NSAPI). This identifier is coded in the PTP RAB ID element in accordance with the coding of the *NSAPI* IE in [8].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PTP RAB ID	M		BIT STRING (8)	

9.2.1.xx1b Frequency Layer Convergence Flag

Indicates to RNC the requirement to not configure Frequency Layer Convergence for a given MBMS Bearer Service.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Frequency Layer Convergence Flag	M		ENUMERATED(no-FLC-flag, ...)	

9.2.1.xx1c Session Update ID

Indicates the identity of a Session Update procedure.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Session Update ID	M		INTEGER (0..2^20-1)	

9.2.1. xx1e MBMS IP Multicast Address and APN Request

Indicates the list of MBMS Bearer Services identified by their respective TMGIs, for which the IP Multicast Address and APN are requested by the RNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBMS IP Multicast Address and APN Request				
>TMGI	M	1 to <maxnoofMulticastServicesPerRNC>	9.2.3.x3a	

Range bound	Explanation
maxnoofMulticastServicesPerRNC	Maximum no. of Multicast Services that a RNC can have context for. Value is 512.

9.2.2 Transport Network Layer Related IEs

9.2.2.1 Transport Layer Address

For the PS domain, or for the CS domain in order to allow transport bearer estalishment without ALCAP, this information element is an IP address to be used for the user plane transport. For the CS domain, in case of transport bearer establishment with ALCAP, this address is to be used for Transport Network Control Plane signalling to set up the transport bearer.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transport Layer Address	M		BIT STRING (1..160, …)	The Radio Network Layer is not supposed to interpret the address information. It should pass it to the transport layer for interpretation. For details on the Transport Layer Address, see ref. [9].

9.2.2.2 Iu Transport Association

This element is used to associate the RAB and the corresponding transport bearer. For the CS domain this information element is either the Binding ID to be used in Transport Network Control Plane signalling during set up of the transport

bearer or it contains the UDP port in order to allow transport bearer establishment without ALCAP. In PS domain this information element is the GTP Tunnel Endpoint Identifier.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Iu Transport Association**				
>GTP TEID			OCTET STRING (4)	
>Binding ID			OCTET STRING (4)	If the Binding ID includes an UDP port, the UDP port is included in octet 1 and 2. The first octet of the UDP port field shall be included in the first octet of the Binding ID.

9.2.2.3 DL GTP-PDU Sequence Number

This IE indicates the sequence number of the GTP-PDU which is the next to be sent to the UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
DL GTP-PDU Sequence Number	M		INTEGER (0 ..65535)	This IE indicates the sequence number of the GTP-PDU which is next to be sent to the UE.

9.2.2.4 UL GTP-PDU Sequence Number

This IE indicates the sequence number of the GTP-PDU which is the next to be sent to the SGSN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UL GTP-PDU Sequence Number	M		INTEGER (0 ..65535)	This IE indicates the sequence number of the GTP-PDU which is next to be sent to the SGSN.

9.2.3 NAS Related IEs

Not affected parts of section 9.2.3 not shown here

9.2.3.32 RIM Routing Address

This IE identifies the destination node where the RIM Information needs to be routed by the CN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice RIM Routing Address				
>Global RNC-ID			9.2.1.39	Applicable to GERAN Iu mode, not applicable to UTRAN
>GERAN-Cell-ID				
>>LAI	M		9.2.3.6	
>>RAC	M		9.2.3.7	
>>CI	M		OCTET STRING (2)	

9.2.3.x3a TMGI

The TMGI uniquely identifies the MBMS Bearer Service.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TMGI				
>PLMN identity	M		OCTET STRING (SIZE (3))	- digits 0 to 9, encoded 0000 to 1001, - 1111 used as filler digit, two digits per octet, - bits 4 to 1 of octet n encoding digit 2n-1 - bits 8 to 5 of octet n encoding digit 2n -The PLMN identity consists of 3 digits from MCC followed by either -a filler digit plus 2 digits from MNC (in case of 2 digit MNC) or -3 digits from MNC (in case of a 3 digit MNC).
>Service ID	M		OCTET STRING (SIZE (3))	

9.2.3.x3b MBMS Session Identifier

This IE is transparent to RAN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBMS Session Identifier	M		OCTET STRING (SIZE (2))	

9.2.3.x3c MBMS Bearer Service Type

Indicates the type of the MBMS Bearer Service.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBMS Bearer Service Type	M		ENUMERATED (multicast, broadcast, …)	

9.2.3.x3d MBMS Session Duration

This IE defines the duration of the MBMS Session.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBMS Session Duration	M			
>Seconds	M		INTEGER (0..86399)	The value represents the estimated elapsed time in seconds corresponding to the duration of the MBMS Session. See [r2]
>Day	O		INTEGER (1..8)	The value represents number of days in addition to the duration in seconds of the MBMS Session.

9.2.3.x3e MBMS Service Area

The MBMS Service Area IE consists of a list of one or several MBMS Service Area Identities where each MBMS Service Area represents one or more cells.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBMS Service Area				
> MBMS Service Area List		1 to <maxMBMSSA>		The same MBMS Service Area Code must only be present once.
>> MBMS Service Area Code	M		INTEGER(0..65535)	The mapping between MBMS Service Area Codes and cells are configured in the RNC via O&M. The MBMS Service Area Code with value 0 shall always be mapped to all the cells of the RNC. If no mapping is configured for a certain MBMS Service Area Code in RNC, it shall simply ignore it. All cells corresponding to a MBMS Service Area Code (except for the specific MBMS Service Area Code with value 0) are MBMS capable and the mapping of MBMS Service Area Codes to cells is supposed to be configured accordingly. A cell may be mapped to one or several MBMS Service Area Codes. The MBMS Service Area Code shall be globally unique.

Range bound	Explanation
maxMBMSSA	Maximum no. of MBMS Service Area Codes. The value for maxMBMSSA is 256.

9.2.3.x3f RA List of Idle Mode UEs

Indicates the list of RAs where idle-mode UEs interested in a given Multicast Service are.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **RA List of Idle Mode UEs**				
> Not Empty RA List of Idle Mode UEs				The same Routing Area Code must only be present once.
>> RA of Idle Mode UEs		1 to <maxMBMSRA>		
>> RAC	M		9.2.3.7	
> Empty RA List of Idle Mode UEs			ENUMERATED (emptylist, ...)	

Range bound	Explanation
maxMBMSRA	Maximum no. of Routing Areas where idle-mode UEs interested in a given Multicast Service are. The value for maxMBMSRA is 65536.

9.2.3.x3g Delta RA List of Idle Mode UEs

Indicates the list of new RAs where idle-mode UEs interested in a given Multicast Service became or moved to, as well as the list of RAs where there is no interested idle-mode UEs in a given Multicast Service any longer.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Delta RA List of Idle Mode UEs				The same Routing Area Code must only be present once.
> New RA List of Idle Mode UEs	O			
>> New RA of Idle Mode UEs		1 to <maxMBMSRA>		
>>> RAC	M		9.2.3.7	
> RA List with No Idle Mode UEs Any More	O			
>> RA with No Idle Mode UEs Any More		1 to <maxMBMSRA>		
>>> RAC	M		9.2.3.7	

Range bound	Explanation
maxMBMSRA	Maximum no. of Routing Areas where idle-mode UEs interested in a given Multicast Service are. The value for maxMBMSRA is 65536.

9.2.3.x3h MBMS CN De-Registration

Indicates whether the MBMS Session Stop procedure is a normal Session Stop or a total de-registration for a given MBMS Bearer Service.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBMS CN De-Registration	M		ENUMERATED(normal session stop, deregister, ...)	

9.2.3.x3i MBMS Registration Request Type

Indicates the type of the MBMS Registration Request.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MBMS Registration Request Type	M		ENUMERATED(register, deregister, ...)	

9.2.3. x3j Requested MBMS IP Multicast Address and APN

Informs the RNC about the requested pairs of IP Multicast Address and APN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Requested MBMS IP Multicast Address and APN				
>MBMS IP Multicast Address and APN list		1 to <maxnoofMulticastServicesPerRNC>		
>>TMGI	M		9.2.3.x3a	
>>IP Multicast Address	M		BIT STRING	
>>APN	M		OCTET STRING	

Range bound	Explanation
maxnoofMulticastServicesPerRNC	Maximum no. of Multicast Services that a RNC can have context for. Value is 512.

9.2.3. x3k Requested Multicast Service List

Informs the RNC about the requested Multicast Service list for a particular UE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Requested Multicast Service List				
>TMGI	M	1 to <maxnoofMulticastServicesJoinedPerUE>	9.2.3.x3a	The same TMGI must only be present once.

Range bound	Explanation
maxnoofMulticastServicesJoinedPerUE	Maximum no. of Multicast Services that a UE can join respectively. Value is 128.

9.3.2 Elementary Procedure Definitions

```
-- **************************************************************
--
-- Elementary Procedure definitions
--
-- **************************************************************

RANAP-PDU-Descriptions  {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-PDU-Descriptions (0)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    Criticality,
    ProcedureCode
FROM RANAP-CommonDataTypes

    Iu-ReleaseCommand,
    Iu-ReleaseComplete,
    RelocationCommand,
    RelocationPreparationFailure,
    RelocationRequired,
    RelocationRequest,
    RelocationRequestAcknowledge,
    RelocationFailure,
    RelocationCancel,
    RelocationCancelAcknowledge,
    SRNS-ContextRequest,
    SRNS-ContextResponse,
    SecurityModeCommand,
    SecurityModeComplete,
    SecurityModeReject,
    DataVolumeReportRequest,
    DataVolumeReport,
    Reset,
    ResetAcknowledge,
    RAB-ReleaseRequest,
    Iu-ReleaseRequest,
    RelocationDetect,
    RelocationComplete,
    Paging,
```

```
    CommonID,
    CN-InvokeTrace,
    CN-DeactivateTrace,
    LocationReportingControl,
    LocationReport,
    InitialUE-Message,
    DirectTransfer,
    Overload,
    ErrorIndication,
    SRNS-DataForwardCommand,
    ForwardSRNS-Context,
    RAB-AssignmentRequest,
    RAB-AssignmentResponse,
    RAB-ModifyRequest,
    PrivateMessage,
    ResetResource,
    ResetResourceAcknowledge,
    RANAP-RelocationInformation,
    LocationRelatedDataRequest,
    LocationRelatedDataResponse,
    LocationRelatedDataFailure,
    InformationTransferIndication,
    InformationTransferConfirmation,
    InformationTransferFailure,
    UESpecificInformationIndication,
    DirectInformationTransfer,
    UplinkInformationExchangeRequestTransferIndication,
    UplinkInformationExchangeResponseTransferConfirmation,
    UplinkInformationExchangeTransferFailure,
    MBMSSessionStart,
    MBMSSessionStartResponse,
    MBMSSessionStartFailure,
    MBMSSessionUpdate,
    MBMSSessionUpdateResponse,
    MBMSSessionUpdateFailure,
    MBMSSessionStop,
    MBMSSessionStopResponse,
    MBMSUELinkingRequest,
    MBMSUELinkingResponse,
    MBMSRegistrationRequest,
    MBMSRegistrationResponse,
    MBMSRegistrationFailure,
    MBMSCNDe-RegistrationRequest,
    MBMSCNDe-RegistrationResponse,
    MBMSRABEstablishmentIndication
FROM RANAP-PDU-Contents

    id-LocationRelatedData,
    id-CN-DeactivateTrace,
    id-CN-InvokeTrace,
    id-CommonID,
    id-DataVolumeReport,
```

```
    id-DirectTransfer,
    id-ErrorIndication,
    id-ForwardSRNS-Context,
    id-InformationTransfer,
    id-InitialUE-Message,
    id-Iu-Release,
    id-Iu-ReleaseRequest,
    id-LocationReport,
    id-LocationReportingControl,
    id-OverloadControl,
    id-Paging,
    id-privateMessage,
    id-RAB-Assignment,
    id-RAB-ReleaseRequest,
    id-RAB-ModifyRequest,
    id-RANAP-Relocation,
    id-RelocationCancel,
    id-RelocationComplete,
    id-RelocationDetect,
    id-RelocationPreparation,
    id-RelocationResourceAllocation,
    id-Reset,
    id-SRNS-ContextTransfer,
    id-SRNS-DataForward,
    id-SecurityModeControl,
    id-ResetResource,
    id-UESpecificInformation,
    id-DirectInformationTransfer,
    id-UplinkInformationExchangeTransfer,
    id-MBMSSessionStart,
    id-MBMSSessionUpdate,
    id-MBMSSessionStop,
    id-MBMSUELinking,
    id-MBMSRegistration,
    id-MBMSCNDe-Registration,
    id-MBMSRABEstablishmentIndication

FROM RANAP-Constants;

-- **************************************************************
--
-- Interface Elementary Procedure Class
--
-- **************************************************************

RANAP-ELEMENTARY-PROCEDURE ::= CLASS {
    &InitiatingMessage              ,
    &SuccessfulOutcome              OPTIONAL,
    &UnsuccessfulOutcome                OPTIONAL,
    &Outcome                    OPTIONAL,
    &procedureCode          ProcedureCode   UNIQUE,
    &criticality            Criticality     DEFAULT ignore
```

```
}
WITH SYNTAX {
    INITIATING MESSAGE      &InitiatingMessage
    [SUCCESSFUL OUTCOME     &SuccessfulOutcome]
    [UNSUCCESSFUL OUTCOME       &UnsuccessfulOutcome]
    [OUTCOME            &Outcome]
    PROCEDURE CODE              &procedureCode
    [CRITICALITY            &criticality]
}

-- **************************************************************
--
-- Interface PDU Definition
--
-- **************************************************************

RANAP-PDU ::= CHOICE {
    initiatingMessage   InitiatingMessage,
    successfulOutcome   SuccessfulOutcome,
    unsuccessfulOutcome UnsuccessfulOutcome,
    outcome         Outcome,
    ...
}

InitiatingMessage ::= SEQUENCE {
    procedureCode   RANAP-ELEMENTARY-PROCEDURE.&procedureCode   ({RANAP-ELEMENTARY-PROCEDURES}),
    criticality RANAP-ELEMENTARY-PROCEDURE.&criticality     ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode}),
    value       RANAP-ELEMENTARY-PROCEDURE.&InitiatingMessage   ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode})
}

SuccessfulOutcome ::= SEQUENCE {
    procedureCode   RANAP-ELEMENTARY-PROCEDURE.&procedureCode   ({RANAP-ELEMENTARY-PROCEDURES}),
    criticality RANAP-ELEMENTARY-PROCEDURE.&criticality     ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode}),
    value       RANAP-ELEMENTARY-PROCEDURE.&SuccessfulOutcome   ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode})
}

UnsuccessfulOutcome ::= SEQUENCE {
    procedureCode   RANAP-ELEMENTARY-PROCEDURE.&procedureCode   ({RANAP-ELEMENTARY-PROCEDURES}),
    criticality RANAP-ELEMENTARY-PROCEDURE.&criticality     ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode}),
    value       RANAP-ELEMENTARY-PROCEDURE.&UnsuccessfulOutcome ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode})
}

Outcome ::= SEQUENCE {
    procedureCode   RANAP-ELEMENTARY-PROCEDURE.&procedureCode   ({RANAP-ELEMENTARY-PROCEDURES}),
    criticality RANAP-ELEMENTARY-PROCEDURE.&criticality     ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode}),
    value       RANAP-ELEMENTARY-PROCEDURE.&Outcome     ({RANAP-ELEMENTARY-PROCEDURES}{@procedureCode})
}

-- **************************************************************
--
-- Interface Elementary Procedure List
--
```

```
-- **************************************************************

RANAP-ELEMENTARY-PROCEDURES RANAP-ELEMENTARY-PROCEDURE ::= {
    RANAP-ELEMENTARY-PROCEDURES-CLASS-1 |
    RANAP-ELEMENTARY-PROCEDURES-CLASS-2 |
    RANAP-ELEMENTARY-PROCEDURES-CLASS-3 ,
    ...
}


RANAP-ELEMENTARY-PROCEDURES-CLASS-1 RANAP-ELEMENTARY-PROCEDURE ::= {
    iu-Release          |
    relocationPreparation       |
    relocationResourceAllocation    |
    relocationCancel        |
    sRNS-ContextTransfer        |
    securityModeControl     |
    dataVolumeReport        |
    reset       |
    resetResource               ,
    ...,
    locationRelatedData     |
    informationTransfer     |
    uplinkInformationExchangeTransfer   |
    mBMSSessionStart            |
    mBMSSessionUpdate           |
    mBMSSessionStop             |
    mBMSUELinking               |
    mBMSRegistration            |
    mBMSCNDe-Registration
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-2 RANAP-ELEMENTARY-PROCEDURE ::= {
    rAB-ReleaseRequest      |
    iu-ReleaseRequest       |
    relocationDetect        |
    relocationComplete      |
    paging                  |
    commonID                |
    cN-InvokeTrace          |
    cN-DeactivateTrace      |
    locationReportingControl    |
    locationReport          |
    initialUE-Message       |
    directTransfer          |
    overloadControl         |
    errorIndication         |
    sRNS-DataForward        |
    forwardSRNS-Context     |
    privateMessage          |
    rANAP-Relocation        ,
    ...,
```

```
    rAB-ModifyRequest       |
    uESpecificInformation   |
    directInformationTransfer___|
    mBMSRABEstablishmentIndication
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-3 RANAP-ELEMENTARY-PROCEDURE ::= {
    rAB-Assignment          ,
    ...
}

-- **************************************************************
--
-- Interface Elementary Procedures
--
-- **************************************************************

iu-Release RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  Iu-ReleaseCommand
    SUCCESSFUL OUTCOME  Iu-ReleaseComplete
    PROCEDURE CODE      id-Iu-Release
    CRITICALITY     reject
}

relocationPreparation RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RelocationRequired
    SUCCESSFUL OUTCOME  RelocationCommand
    UNSUCCESSFUL OUTCOME    RelocationPreparationFailure
    PROCEDURE CODE          id-RelocationPreparation
    CRITICALITY     reject
}

relocationResourceAllocation RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RelocationRequest
    SUCCESSFUL OUTCOME  RelocationRequestAcknowledge
    UNSUCCESSFUL OUTCOME    RelocationFailure
    PROCEDURE CODE          id-RelocationResourceAllocation
    CRITICALITY     reject
}

relocationCancel RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RelocationCancel
    SUCCESSFUL OUTCOME  RelocationCancelAcknowledge
    PROCEDURE CODE      id-RelocationCancel
    CRITICALITY     reject
}

sRNS-ContextTransfer RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  SRNS-ContextRequest
    SUCCESSFUL OUTCOME  SRNS-ContextResponse
    PROCEDURE CODE      id-SRNS-ContextTransfer
    CRITICALITY     reject
```

```
}

securityModeControl RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  SecurityModeCommand
    SUCCESSFUL OUTCOME  SecurityModeComplete
    UNSUCCESSFUL OUTCOME    SecurityModeReject
    PROCEDURE CODE      id-SecurityModeControl
    CRITICALITY     reject
}

dataVolumeReport RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DataVolumeReportRequest
    SUCCESSFUL OUTCOME  DataVolumeReport
    PROCEDURE CODE      id-DataVolumeReport
    CRITICALITY     reject
}


reset RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  Reset
    SUCCESSFUL OUTCOME  ResetAcknowledge
    PROCEDURE CODE      id-Reset
    CRITICALITY     reject
}

rAB-ReleaseRequest RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RAB-ReleaseRequest
    PROCEDURE CODE      id-RAB-ReleaseRequest
    CRITICALITY     ignore
}

iu-ReleaseRequest RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  Iu-ReleaseRequest
    PROCEDURE CODE      id-Iu-ReleaseRequest
    CRITICALITY     ignore
}

relocationDetect RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RelocationDetect
    PROCEDURE CODE      id-RelocationDetect
    CRITICALITY     ignore
}

relocationComplete RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RelocationComplete
    PROCEDURE CODE      id-RelocationComplete
    CRITICALITY     ignore
}

paging RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  Paging
    PROCEDURE CODE      id-Paging
```

```
    CRITICALITY     ignore
}

commonID RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CommonID
    PROCEDURE CODE      id-CommonID
    CRITICALITY     ignore
}

cN-InvokeTrace RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CN-InvokeTrace
    PROCEDURE CODE      id-CN-InvokeTrace
    CRITICALITY     ignore
}

cN-DeactivateTrace RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CN-DeactivateTrace
    PROCEDURE CODE          id-CN-DeactivateTrace
    CRITICALITY     ignore
}

locationReportingControl RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  LocationReportingControl
    PROCEDURE CODE      id-LocationReportingControl
    CRITICALITY     ignore
}

locationReport RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  LocationReport
    PROCEDURE CODE      id-LocationReport
    CRITICALITY     ignore
}

initialUE-Message RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  InitialUE-Message
    PROCEDURE CODE      id-InitialUE-Message
    CRITICALITY     ignore
}

directTransfer RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DirectTransfer
    PROCEDURE CODE      id-DirectTransfer
    CRITICALITY     ignore
}

overloadControl RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  Overload
    PROCEDURE CODE      id-OverloadControl
    CRITICALITY     ignore
}

errorIndication RANAP-ELEMENTARY-PROCEDURE ::= {
```

```
    INITIATING MESSAGE  ErrorIndication
    PROCEDURE CODE      id-ErrorIndication
    CRITICALITY     ignore
}

sRNS-DataForward RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  SRNS-DataForwardCommand
    PROCEDURE CODE      id-SRNS-DataForward
    CRITICALITY     ignore
}

forwardSRNS-Context RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  ForwardSRNS-Context
    PROCEDURE CODE      id-ForwardSRNS-Context
    CRITICALITY     ignore
}

rAB-Assignment RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RAB-AssignmentRequest
    OUTCOME         RAB-AssignmentResponse
    PROCEDURE CODE      id-RAB-Assignment
    CRITICALITY     reject
}

privateMessage RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PrivateMessage

    PROCEDURE CODE  id-privateMessage
    CRITICALITY     ignore
}

resetResource RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  ResetResource
    SUCCESSFUL OUTCOME  ResetResourceAcknowledge
    PROCEDURE CODE          id-ResetResource
    CRITICALITY     reject
}

rANAP-Relocation RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RANAP-RelocationInformation
    PROCEDURE CODE          id-RANAP-Relocation
    CRITICALITY     ignore
}

rAB-ModifyRequest RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RAB-ModifyRequest
    PROCEDURE CODE      id-RAB-ModifyRequest
    CRITICALITY     ignore
}

locationRelatedData RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      LocationRelatedDataRequest
```

```
    SUCCESSFUL OUTCOME      LocationRelatedDataResponse
    UNSUCCESSFUL OUTCOME    LocationRelatedDataFailure
    PROCEDURE CODE          id-LocationRelatedData
    CRITICALITY             reject
}

informationTransfer RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      InformationTransferIndication
    SUCCESSFUL OUTCOME      InformationTransferConfirmation
    UNSUCCESSFUL OUTCOME    InformationTransferFailure
    PROCEDURE CODE          id-InformationTransfer
    CRITICALITY             reject
}

uESpecificInformation RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  UESpecificInformationIndication
    PROCEDURE CODE      id-UESpecificInformation
    CRITICALITY     ignore
}

directInformationTransfer RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      DirectInformationTransfer
    PROCEDURE CODE          id-DirectInformationTransfer
    CRITICALITY             ignore
}

uplinkInformationExchangeTransfer RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      UplinkInformationExchangeRequestTransferIndication
    SUCCESSFUL OUTCOME      UplinkInformationExchangeResponseTransferConfirmation
    UNSUCCESSFUL OUTCOME    UplinkInformationExchangeTransferFailure
    PROCEDURE CODE          id-UplinkInformationExchangeTransfer
    CRITICALITY             reject
}

mBMSSessionStart RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSSessionStart
    SUCCESSFUL OUTCOME      MBMSSessionStartResponse
    UNSUCCESSFUL OUTCOME    MBMSSessionStartFailure
    PROCEDURE CODE          id-MBMSSessionStart
    CRITICALITY             reject
}

mBMSSessionUpdate RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSSessionUpdate
    SUCCESSFUL OUTCOME      MBMSSessionUpdateResponse
    UNSUCCESSFUL OUTCOME    MBMSSessionUpdateFailure
    PROCEDURE CODE          id-MBMSSessionUpdate
    CRITICALITY             reject
}

mBMSSessionStop RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSSessionStop
```

```
    SUCCESSFUL OUTCOME      MBMSSessionStopResponse
    PROCEDURE CODE          id-MBMSSessionStop
    CRITICALITY             reject
}

mBMSUELinking RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSUELinkingRequest
    OUTCOME                 MBMSUELinkingResponse
    PROCEDURE CODE          id-MBMSUELinking
    CRITICALITY             reject
}

mBMSRegistration RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSRegistrationRequest
    SUCCESSFUL OUTCOME      MBMSRegistrationResponse
    UNSUCCESSFUL OUTCOME    MBMSRegistrationFailure
    PROCEDURE CODE          id-MBMSRegistration
    CRITICALITY             reject
}

mBMSCNDe-Registration RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSCNDe-RegistrationRequest
    SUCCESSFUL OUTCOME      MBMSCNDe-RegistrationResponse
    PROCEDURE CODE          id-MBMSCNDe-Registration
    CRITICALITY             reject
}

mBMSRABEstablishmentIndication RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  MBMSRABEstablishmentIndication
    PROCEDURE CODE      id-MBMSRABEstablishmentIndication
    CRITICALITY     ignore
}

END
```

9.3.3 PDU Definitions

```
-- **************************************************************
--
-- PDU definitions for RANAP.
--
-- **************************************************************

RANAP-PDU-Contents {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN
```

```
-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    AccuracyFulfilmentIndicator,
    APN,
    BroadcastAssistanceDataDecipheringKeys,
    LocationRelatedDataRequestType,
    LocationRelatedDataRequestTypeSpecificToGERANIuMode,
    DataVolumeReference,
    CellLoadInformation,
    AreaIdentity,
    CN-DomainIndicator,
    Cause,
    ClientType,
    CriticalityDiagnostics,
    ChosenEncryptionAlgorithm,
    ChosenIntegrityProtectionAlgorithm,
    ClassmarkInformation2,
    ClassmarkInformation3,
    DL-GTP-PDU-SequenceNumber,
    DL-N-PDU-SequenceNumber,
    DataVolumeReportingIndication,
    DeltaRAListofIdleModeUEs,
    DRX-CycleLengthCoefficient,
    EncryptionInformation,
    FrequenceLayerConvergenceFlag,
    GERAN-BSC-Container,
    GERAN-Classmark,
    GlobalCN-ID,
    GlobalRNC-ID,
    InformationExchangeID,
    InformationExchangeType,
    InformationRequested,
    InformationRequestType,
    InformationTransferID,
    InformationTransferType,
    InterSystemInformationTransferType,
    IntegrityProtectionInformation,
    InterSystemInformation-TransparentContainer,
    IPMulticastAddress,
    IuSignallingConnectionIdentifier,
    IuTransportAssociation,
    KeyStatus,
    L3-Information,
    LAI,
    LastKnownServiceArea,
    MBMS-PTP-RAB-ID,
    MBMSBearerServiceType,
```

```
    MBMSCNDe-Registration,
    MBMSRegistrationRequestType,
    MBMSServiceArea,
    MBMSSessionDuration,
    MBMSSessionIdentifier,
    NAS-PDU,
    NAS-SynchronisationIndicator,
    NewBSS-To-OldBSS-Information,
    NonSearchingIndication,
    NumberOfSteps,
    OMC-ID,
    OldBSS-ToNewBSS-Information,
    PagingAreaID,
    PagingCause,
    PDP-TypeInformation,
    PermanentNAS-UE-ID,
    PositionData,
    PositionDataSpecificToGERANIuMode,
    PositioningPriority,
    ProvidedData,
    RAB-ID,
    RAB-Parameters,
    RAC,
    RAListofIdleModeUEs,
    RelocationType,
    RequestType,
    Requested-RAB-Parameter-Values,
    ResponseTime,
    RRC-Container,
    SAI,
    SAPI,
    Service-Handover,
    SessionUpdateID,
    SNA-Access-Information,
    SourceID,
    SourceRNC-ToTargetRNC-TransparentContainer,
    TargetID,
    TargetRNC-ToSourceRNC-TransparentContainer,
    TemporaryUE-ID,
    TMGI,
    TracePropagationParameters,
    TraceReference,
    TraceType,
    UnsuccessfullyTransmittedDataVolume,
    TransportLayerAddress,
    TriggerID,
    UE-ID,
    UESBI-Iu,
    UL-GTP-PDU-SequenceNumber,
    UL-N-PDU-SequenceNumber,
    UP-ModeVersions,
    UserPlaneMode,
```

```
    VerticalAccuracyCode,
    Alt-RAB-Parameters,
    Ass-RAB-Parameters
FROM RANAP-IEs


    PrivateIE-Container{},
    ProtocolExtensionContainer{},
    ProtocolIE-ContainerList{},
    ProtocolIE-ContainerPair{},
    ProtocolIE-ContainerPairList{},
    ProtocolIE-Container{},
    RANAP-PRIVATE-IES,
    RANAP-PROTOCOL-EXTENSION,
    RANAP-PROTOCOL-IES,
    RANAP-PROTOCOL-IES-PAIR
FROM RANAP-Containers

    maxNrOfDTs,
    maxNrOfErrors,
    maxNrOfIuSigConIds,
    maxNrOfRABs,
    maxNrOfVol,
    maxnoofMulticastServicesPerUE,

    id-AccuracyFulfilmentIndicator,
    id-APN,
    id-AreaIdentity,
    id-Alt-RAB-Parameters,
    id-Ass-RAB-Parameters,
    id-BroadcastAssistanceDataDecipheringKeys,
    id-LocationRelatedDataRequestType,
    id-CN-DomainIndicator,
    id-Cause,
    id-ChosenEncryptionAlgorithm,
    id-ChosenIntegrityProtectionAlgorithm,
    id-ClassmarkInformation2,
    id-ClassmarkInformation3,
    id-ClientType,
    id-CNMBMSLinkingInformation,
    id-CriticalityDiagnostics,
    id-DeltaRAListofIdleModeUEs,
    id-DRX-CycleLengthCoefficient,
    id-DirectTransferInformationItem-RANAP-RelocInf,
    id-DirectTransferInformationList-RANAP-RelocInf,
    id-DL-GTP-PDU-SequenceNumber,
    id-EncryptionInformation,
    id-FrequenceLayerConvergenceFlag,
    id-GERAN-BSC-Container,
    id-GERAN-Classmark,
    id-GERAN-Iumode-RAB-Failed-RABAssgntResponse-Item,
    id-GERAN-Iumode-RAB-FailedList-RABAssgntResponse,
```

```
    id-GlobalCN-ID,
    id-GlobalRNC-ID,
    id-InformationExchangeID,
    id-InformationExchangeType,
    id-InformationRequested,
    id-InformationRequestType,
    id-InformationTransferID,
    id-InformationTransferType,
    id-IntegrityProtectionInformation,
    id-InterSystemInformationTransferType,
    id-InterSystemInformation-TransparentContainer,
    id-IPMulticastAddress,
    id-IuSigConId,
    id-IuSigConIdItem,
    id-IuSigConIdList,
    id-IuTransportAssociation,
    id-JoinedMBMSBearerServicesList,
    id-KeyStatus,
    id-L3-Information,
    id-LAI,
    id-LastKnownServiceArea,
    id-LeftMBMSBearerServicesList,
    id-LocationRelatedDataRequestTypeSpecificToGERANIuMode,
    id-MBMSBearerServiceType,
    id-MBMSCNDe-Registration,
    id-MBMSRegistrationRequestType,
    id-MBMSServiceArea,
    id-MBMSSessionDuration,
    id-MBMSSessionIdentifier,
    id-NAS-PDU,
    id-NewBSS-To-OldBSS-Information,
    id-NonSearchingIndication,
    id-NumberOfSteps,
    id-OMC-ID,
    id-OldBSS-ToNewBSS-Information,
    id-PagingAreaID,
    id-PagingCause,
    id-PDP-TypeInformation,
    id-PermanentNAS-UE-ID,
    id-PositionData,
    id-PositionDataSpecificToGERANIuMode,
    id-PositioningPriority,
    id-ProvidedData,
    id-RAB-ContextItem,
    id-RAB-ContextList,
    id-RAB-ContextFailedtoTransferItem,
    id-RAB-ContextFailedtoTransferList,
    id-RAB-ContextItem-RANAP-RelocInf,
    id-RAB-ContextList-RANAP-RelocInf,
    id-RAB-DataForwardingItem,
    id-RAB-DataForwardingItem-SRNS-CtxReq,
    id-RAB-DataForwardingList,
```

```
    id-RAB-DataForwardingList-SRNS-CtxReq,
    id-RAB-DataVolumeReportItem,
    id-RAB-DataVolumeReportList,
    id-RAB-DataVolumeReportRequestItem,
    id-RAB-DataVolumeReportRequestList,
    id-RAB-FailedItem,
    id-RAB-FailedList,
    id-RAB-FailedtoReportItem,
    id-RAB-FailedtoReportList,
    id-RAB-ID,
    id-RAB-ModifyList,
    id-RAB-ModifyItem,
    id-RAB-Parameters,
    id-RAB-QueuedItem,
    id-RAB-QueuedList,
    id-RAB-ReleaseFailedList,
    id-RAB-ReleaseItem,
    id-RAB-ReleasedItem-IuRelComp,
    id-RAB-ReleaseList,
    id-RAB-ReleasedItem,
    id-RAB-ReleasedList,
    id-RAB-ReleasedList-IuRelComp,
    id-RAB-RelocationReleaseItem,
    id-RAB-RelocationReleaseList,
    id-RAB-SetupItem-RelocReq,
    id-RAB-SetupItem-RelocReqAck,
    id-RAB-SetupList-RelocReq,
    id-RAB-SetupList-RelocReqAck,
    id-RAB-SetupOrModifiedItem,
    id-RAB-SetupOrModifiedList,
    id-RAB-SetupOrModifyItem,
    id-RAB-SetupOrModifyList,
    id-RAC,
    id-RAListofIdleModeUEs,
    id-RelocationType,
    id-RequestType,
    id-ResponseTime,
    id-SAI,
    id-SAPI,
    id-SessionUpdateID,
    id-SNA-Access-Information,
    id-SourceID,
    id-SourceRNC-ToTargetRNC-TransparentContainer,
    id-SourceRNC-PDCP-context-info,
    id-TargetID,
    id-TargetRNC-ToSourceRNC-TransparentContainer,
    id-TemporaryUE-ID,
    id-TMGI,
    id-TracePropagationParameters,
    id-TraceReference,
    id-TraceType,
    id-TransportLayerAddress,
```

```
    id-TransportLayerInformation,
    id-TriggerID,
    id-UE-ID,
    id-UESBI-Iu,
    id-UL-GTP-PDU-SequenceNumber,
    id-UnsuccessfulLinkingList,
    id-VerticalAccuracyCode
FROM RANAP-Constants;

-- **************************************************************
--
-- Common Container Lists
--
-- **************************************************************

RAB-IE-ContainerList                { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList     { 1, maxNrOfRABs,   {IEsSetParam} }
RAB-IE-ContainerPairList            { RANAP-PROTOCOL-IES-PAIR : IEsSetParam } ::= ProtocolIE-ContainerPairList { 1, maxNrOfRABs,   {IEsSetParam} }
ProtocolError-IE-ContainerList      { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList     { 1, maxNrOfRABs,   {IEsSetParam} }
IuSigConId-IE-ContainerList         { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList     { 1, maxNrOfIuSigConIds,
{IEsSetParam} }
DirectTransfer-IE-ContainerList   { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList     { 1, maxNrOfDTs,    {IEsSetParam} }
```

Some not impacted parts removed

```
-- **************************************************************
--
-- RELOCATION RESOURCE ALLOCATION ELEMENTARY PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- Relocation Request
--
-- **************************************************************

RelocationRequest ::= SEQUENCE {
    protocolIEs         ProtocolIE-Container       { {RelocationRequestIEs} },
    protocolExtensions      ProtocolExtensionContainer { {RelocationRequestExtensions} }            OPTIONAL,
    ...
}

RelocationRequestIEs RANAP-PROTOCOL-IES ::= {
    { ID id-PermanentNAS-UE-ID          CRITICALITY ignore  TYPE PermanentNAS-UE-ID             PRESENCE optional  } |
    { ID id-Cause                   CRITICALITY ignore  TYPE Cause                  PRESENCE mandatory  } |
    { ID id-CN-DomainIndicator          CRITICALITY reject  TYPE CN-DomainIndicator             PRESENCE mandatory  } |
    { ID id-SourceRNC-ToTargetRNC-TransparentContainer
                            CRITICALITY reject  TYPE SourceRNC-ToTargetRNC-TransparentContainer PRESENCE mandatory  } |
    { ID id-RAB-SetupList-RelocReq          CRITICALITY reject  TYPE RAB-SetupList-RelocReq      PRESENCE optional } |
    { ID id-IntegrityProtectionInformation      CRITICALITY ignore  TYPE IntegrityProtectionInformation      PRESENCE optional } |
```

```
    { ID id-EncryptionInformation          CRITICALITY ignore  TYPE EncryptionInformation       PRESENCE optional } |
    { ID id-IuSigConId  CRITICALITY ignore TYPE IuSignallingConnectionIdentifier  PRESENCE mandatory },
    ...
}

RAB-SetupList-RelocReq                 ::= RAB-IE-ContainerList { {RAB-SetupItem-RelocReq-IEs} }

RAB-SetupItem-RelocReq-IEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-SetupItem-RelocReq         CRITICALITY reject  TYPE RAB-SetupItem-RelocReq      PRESENCE mandatory   },
    ...
}

RAB-SetupItem-RelocReq ::= SEQUENCE {
    rAB-ID                      RAB-ID,
    nAS-SynchronisationIndicator    NAS-SynchronisationIndicator    OPTIONAL,
    rAB-Parameters                  RAB-Parameters,
    dataVolumeReportingIndication          DataVolumeReportingIndication   OPTIONAL
    -- This IE shall be present if the CN domain indicator IE is set to "PS domain" --,
    pDP-TypeInformation             PDP-TypeInformation     OPTIONAL
    -- This IE shall be present if the CN domain indicator IE is set to "PS domain" --,
    userPlaneInformation                UserPlaneInformation,
    transportLayerAddress               TransportLayerAddress,
    iuTransportAssociation              IuTransportAssociation,
    service-Handover                Service-Handover        OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RAB-SetupItem-RelocReq-ExtIEs} }        OPTIONAL,
    ...
}

RAB-SetupItem-RelocReq-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 4 to enable RAB Quality of Service negotiation over Iu --
    {ID id-Alt-RAB-Parameters   CRITICALITY ignore      EXTENSION Alt-RAB-Parameters        PRESENCE optional} |
-- Extension for Release 5 to enable GERAN support over Iu-cs --
    { ID id-GERAN-BSC-Container                CRITICALITY ignore  EXTENSION GERAN-BSC-Container      PRESENCE optional },
    ...
}

UserPlaneInformation ::= SEQUENCE {
    userPlaneMode                   UserPlaneMode,
    uP-ModeVersions                 UP-ModeVersions,
    iE-Extensions                   ProtocolExtensionContainer { {UserPlaneInformation-ExtIEs} }       OPTIONAL,
    ...
}

UserPlaneInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RelocationRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 4 --
    { ID id-GlobalCN-ID             CRITICALITY reject      EXTENSION GlobalCN-ID               PRESENCE optional} |
-- Extension for Release 5 to enable shared networks in connected mode --
    { ID id-SNA-Access-Information  CRITICALITY ignore      EXTENSION SNA-Access-Information    PRESENCE optional} |
```

```
-- Extension for Release 5 to enable specific behaviour by the RNC in relation with early UE handling --
    { ID id-UESBI-Iu    CRITICALITY ignore      EXTENSION UESBI-Iu  PRESENCE optional}|
-- Extension for Release 6 to enable MBMS UE linking at relocation --
    { ID id-CNMBMSLinkingInformation    CRITICALITY ignore      EXTENSION CNMBMSLinkingInformation   PRESENCE optional},
    ...
}

CNMBMSLinkingInformation ::= SEQUENCE {
    joinedMBMSBearerService-IEs     JoinedMBMSBearerService-IEs,
    iE-Extensions                   ProtocolExtensionContainer { {CNMBMSLinkingInformation-ExtIEs} }    OPTIONAL,
    ...
}

CNMBMSLinkingInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

JoinedMBMSBearerService-IEs ::= SEQUENCE (SIZE (1.. maxnoofMulticastServicesPerUE)) OF
    SEQUENCE {
        tMGI                TMGI,
        mBMS-PTP-RAB-ID     MBMS-PTP-RAB-ID,
        iE-Extensions       ProtocolExtensionContainer { {JoinedMBMSBearerService-ExtIEs} } OPTIONAL,
        ...
    }

JoinedMBMSBearerService-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- Relocation Request Acknowledge
--
-- **************************************************************

RelocationRequestAcknowledge ::= SEQUENCE {
    protocolIEs         ProtocolIE-Container       { {RelocationRequestAcknowledgeIEs} },
    protocolExtensions      ProtocolExtensionContainer { {RelocationRequestAcknowledgeExtensions} }       OPTIONAL,
    ...
}

RelocationRequestAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TargetRNC-ToSourceRNC-TransparentContainer
                        CRITICALITY ignore  TYPE TargetRNC-ToSourceRNC-TransparentContainer PRESENCE optional  } |
    { ID id-RAB-SetupList-RelocReqAck       CRITICALITY ignore  TYPE RAB-SetupList-RelocReqAck       PRESENCE optional} |
    { ID id-RAB-FailedList              CRITICALITY ignore  TYPE RAB-FailedList             PRESENCE optional }|
    { ID id-ChosenIntegrityProtectionAlgorithm  CRITICALITY ignore  TYPE ChosenIntegrityProtectionAlgorithm     PRESENCE optional } |
    { ID id-ChosenEncryptionAlgorithm       CRITICALITY ignore  TYPE ChosenEncryptionAlgorithm       PRESENCE optional } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional },
    ...
}
```

```
RAB-SetupList-RelocReqAck              ::= RAB-IE-ContainerList { {RAB-SetupItem-RelocReqAck-IEs} }

RAB-SetupItem-RelocReqAck-IEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-SetupItem-RelocReqAck       CRITICALITY reject  TYPE RAB-SetupItem-RelocReqAck      PRESENCE mandatory   },
    ...
}

RAB-SetupItem-RelocReqAck ::= SEQUENCE {
    rAB-ID                      RAB-ID,
    transportLayerAddress               TransportLayerAddress   OPTIONAL,
    iuTransportAssociation              IuTransportAssociation  OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RAB-SetupItem-RelocReqAck-ExtIEs} }        OPTIONAL,
    ...
}

RAB-SetupItem-RelocReqAck-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 4 to enable RAB Quality of Service negotiation over Iu --
    {ID id-Ass-RAB-Parameters   CRITICALITY ignore      EXTENSION Ass-RAB-Parameters        PRESENCE optional} |
-- Extension for Release 5 to allow transfer of a second pair of TLA and association --
    {ID id-TransportLayerAddress    CRITICALITY ignore  EXTENSION TransportLayerAddress PRESENCE optional} |
    {ID id-IuTransportAssociation   CRITICALITY ignore  EXTENSION IuTransportAssociation    PRESENCE optional},
    ...
}

RAB-FailedList                      ::= RAB-IE-ContainerList { {RAB-FailedItemIEs} }

RAB-FailedItemIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-FailedItem              CRITICALITY ignore  TYPE RAB-FailedItem             PRESENCE mandatory  },
    ...
}

RAB-FailedItem ::= SEQUENCE {
    rAB-ID                      RAB-ID,
    cause                       Cause,
    iE-Extensions                   ProtocolExtensionContainer { {RAB-FailedItem-ExtIEs} }       OPTIONAL,
    ...
}

RAB-FailedItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RelocationRequestAcknowledgeExtensions RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 5 to enable Inter RAN Load Information Exchange over Iu --
    {ID id-NewBSS-To-OldBSS-Information     CRITICALITY ignore  EXTENSION NewBSS-To-OldBSS-Information    PRESENCE optional   },
    ...
}

-- **************************************************************
--
-- Relocation Failure
--
```

```
-- **************************************************************

RelocationFailure ::= SEQUENCE {
    protocolIEs         ProtocolIE-Container       { {RelocationFailureIEs} },
    protocolExtensions      ProtocolExtensionContainer { {RelocationFailureExtensions} }            OPTIONAL,
    ...
}

RelocationFailureIEs RANAP-PROTOCOL-IES ::= {
    { ID id-Cause                   CRITICALITY ignore  TYPE Cause                  PRESENCE mandatory  } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics         PRESENCE optional },
    ...
}

RelocationFailureExtensions RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 5 to enable Inter RAN Load Information Exchange over Iu --
    { ID id-NewBSS-To-OldBSS-Information        CRITICALITY ignore  EXTENSION NewBSS-To-OldBSS-Information    PRESENCE optional } |
-- Extension for Release 5 to enable GERAN support over Iu-cs --
    { ID id-GERAN-Classmark                 CRITICALITY ignore  EXTENSION GERAN-Classmark         PRESENCE optional },
    ...
}
```

Some not impacted parts removed

```
-- **************************************************************
--
-- UPLINK INFORMATION ~~TRANSFER~~ EXCHANGE ELEMENTARY PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- Uplink Information Exchange Request~~Transfer Indication~~
--
-- **************************************************************

UplinkInformationExchangeRequest~~TransferIndication~~ ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { UplinkInformationExchangeRequest~~TransferIndication~~IEs} },
    protocolExtensions      ProtocolExtensionContainer  { { UplinkInformationExchangeRequest~~TransferIndication~~Extensions} }       OPTIONAL,
    ...
}

UplinkInformationExchangeRequest~~TransferIndication~~IEs RANAP-PROTOCOL-IES ::= {
    { ID id-InformationExchange~~Transfer~~ID       CRITICALITY reject  TYPE InformationExchange~~Transfer~~ID    PRESENCE mandatory   } |
    { ID id-InformationExchangeType     CRITICALITY reject  TYPE InformationExchangeType    PRESENCE mandatory   } |
    { ID id-InformationTransferType     CRITICALITY reject  TYPE InformationTransferType    PRESENCE ~~mandatory~~conditional~~} +~~
    -- This IE shall be present if the Information Exchange Type IE is set to "transfer"  --                                  } |
    { ID id-InformationRequestType      CRITICALITY reject  TYPE InformationRequestType PRESENCE conditional
    -- This IE shall be present if the Information Exchange Type IE is set to "request"  --                                  } |
```

```
    { ID id-CN-DomainIndicator          CRITICALITY reject  TYPE CN-DomainIndicator         PRESENCE mandatory  } |
    { ID id-GlobalRNC-ID                CRITICALITY reject  TYPE GlobalRNC-ID               PRESENCE mandatory  },
    ...
}

UplinkInformationExchangeRequestTransferIndicationExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- Uplink Information Exchange ResponseTransfer Confirmation
--
-- **************************************************************

UplinkInformationExchangeResponseTransferConfirmation ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { UplinkInformationExchangeResponseTransferConfirmationIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { UplinkInformationExchangeResponseTransferConfirmationExtensions} }    OPTIONAL,
    ...
}

UplinkInformationExchangeResponseTransferConfirmationIEs RANAP-PROTOCOL-IES ::= {
    { ID id-InformationExchangeTransferID       CRITICALITY ignore  TYPE InformationExchangeTransferID    PRESENCE mandatory  } |
    { ID id-InformationRequested                CRITICALITY ignore  TYPE InformationRequested            PRESENCE optional   } |
    { ID id-CN-DomainIndicator                  CRITICALITY ignore  TYPE CN-DomainIndicator              PRESENCE mandatory  } |
    { ID id-GlobalCN-ID                         CRITICALITY ignore  TYPE GlobalCN-ID                     PRESENCE optional   } |
    { ID id-CriticalityDiagnostics              CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional   } ,
    ...
}

UplinkInformationExchangeResponseTransferConfirmationExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- Uplink Information ExchangeTransfer Failure
--
-- **************************************************************

UplinkInformationExchangeTransferFailure ::= SEQUENCE {
    protocolIEs         ProtocolIE-Container        { { UplinkInformationExchangeTransferFailureIEs} },
    protocolExtensions      ProtocolExtensionContainer { { UplinkInformationExchangeTransferFailureExtensions} }         OPTIONAL,
    ...
}

UplinkInformationExchangeTransferFailureIEs RANAP-PROTOCOL-IES ::= {
    { ID id-InformationExchangeTransferID       CRITICALITY ignore  TYPE InformationExchangeTransferID    PRESENCE mandatory  } |
    { ID id-CN-DomainIndicator                  CRITICALITY ignore  TYPE CN-DomainIndicator              PRESENCE mandatory  } |
    { ID id-GlobalCN-ID                         CRITICALITY ignore  TYPE GlobalCN-ID                     PRESENCE optional   } |
    { ID id-Cause                               CRITICALITY ignore  TYPE Cause                           PRESENCE mandatory  } |
    { ID id-CriticalityDiagnostics              CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional   } ,
```

```
    ...
}

UplinkInformationExchange~~Transfer~~FailureExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS SESSION START PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- MBMS Session Start
--
-- **************************************************************

MBMSSessionStart ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionStartIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionStartExtensions} }         OPTIONAL,
    ...
}

MBMSSessionStartIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TMGI                          CRITICALITY reject  TYPE TMGI                                PRESENCE mandatory   } |
    { ID id-MBMSSessionIdentifier         CRITICALITY reject  TYPE MBMSSessionIdentifier               PRESENCE mandatory   } |
    { ID id-MBMSBearerServiceType         CRITICALITY reject  TYPE MBMSBearerServiceType               PRESENCE mandatory   } |
    { ID id-IuSigConId                    CRITICALITY reject  TYPE IuSignallingConnectionIdentifier    PRESENCE mandatory   } |
    { ID id-RAB-Parameters                CRITICALITY reject  TYPE RAB-Parameters                      PRESENCE mandatory   } |
    { ID id-PDP-TypeInformation           CRITICALITY ignore  TYPE PDP-TypeInformation                 PRESENCE optional    } |
    { ID id-MBMSSessionDuration           CRITICALITY ignore  TYPE MBMSSessionDuration                 PRESENCE optional    } |
    { ID id-MBMSServiceArea               CRITICALITY reject  TYPE MBMSServiceArea                     PRESENCE mandatory   } |
    { ID id-FrequenceLayerConvergenceFlag   CRITICALITY ignore  TYPE FrequenceLayerConvergenceFlag     PRESENCE optional    } |
    { ID id-RAListofIdleModeUEs           CRITICALITY ignore  TYPE RAListofIdleModeUEs                 PRESENCE optional    } |
    { ID id-GlobalCN-ID                   CRITICALITY reject  TYPE GlobalCN-ID                         PRESENCE optional    },
    ...
}

MBMSSessionStartExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS Session Start Response
--
-- **************************************************************

MBMSSessionStartResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionStartResponseIEs} },
```

```
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionStartResponseExtensions} }    OPTIONAL,
    ...
}

MBMSSessionStartResponseIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TransportLayerInformation       CRITICALITY ignore  TYPE TransportLayerInformation    PRESENCE optional    } |
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause                        PRESENCE optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional    } ,
    ...
}

MBMSSessionStartResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS Session Start Failure
--
-- **************************************************************

MBMSSessionStartFailure ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionStartFailureIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionStartFailureExtensions} }     OPTIONAL,
    ...
}

MBMSSessionStartFailureIEs RANAP-PROTOCOL-IES ::= {
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause                        PRESENCE mandatory   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional    } ,
    ...
}

MBMSSessionStartFailureExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS SESSION UPDATE PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- MBMS Session Update
--
-- **************************************************************

MBMSSessionUpdate ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionUpdateIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionUpdateExtensions} }       OPTIONAL,
```

```
    ...
}

MBMSSessionUpdateIEs RANAP-PROTOCOL-IES ::= {
    { ID id-SessionUpdateID              CRITICALITY reject  TYPE SessionUpdateID                    PRESENCE mandatory   } |
    { ID id-DeltaRAListofIdleModeUEs     CRITICALITY reject  TYPE DeltaRAListofIdleModeUEs          PRESENCE mandatory   },
    ...
}

MBMSSessionUpdateExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS Session Update Response
--
-- **************************************************************

MBMSSessionUpdateResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionUpdateResponseIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionUpdateResponseExtensions} }      OPTIONAL,
    ...
}

MBMSSessionUpdateResponseIEs RANAP-PROTOCOL-IES ::= {
    { ID id-SessionUpdateID                 CRITICALITY ignore  TYPE SessionUpdateID              PRESENCE mandatory   } |
    { ID id-TransportLayerInformation       CRITICALITY ignore  TYPE TransportLayerInformation    PRESENCE optional    } |
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause                        PRESENCE optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional    } ,
    ...
}

MBMSSessionUpdateResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS Session Update Failure
--
-- **************************************************************

MBMSSessionUpdateFailure ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionUpdateFailureIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionUpdateFailureExtensions} }    OPTIONAL,
    ...
}

MBMSSessionUpdateFailureIEs RANAP-PROTOCOL-IES ::= {
    { ID id-SessionUpdateID                 CRITICALITY ignore  TYPE SessionUpdateID              PRESENCE mandatory   } |
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause                        PRESENCE mandatory   } |
```

```
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional    } ,
    ...
}

MBMSSessionUpdateFailureExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS SESSION STOP PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- MBMS Session Stop
--
-- **************************************************************

MBMSSessionStop ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionStopIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionStopExtensions} }          OPTIONAL,
    ...
}

MBMSSessionStopIEs RANAP-PROTOCOL-IES ::= {
    { ID id-MBMSCNDe-Registration   CRITICALITY reject  TYPE MBMSCNDe-Registration              PRESENCE mandatory  },
    ...
}

MBMSSessionStopExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS Session Stop Response
--
-- **************************************************************

MBMSSessionStopResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSSessionStopResponseIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSSessionStopResponseExtensions} }     OPTIONAL,
    ...
}

MBMSSessionStopResponseIEs RANAP-PROTOCOL-IES ::= {
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause                      PRESENCE optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics     PRESENCE optional    } ,
    ...
}
```

```
MBMSSessionStopResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS UE LINKING PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- MBMS UE Linking Request
--
-- **************************************************************

MBMSUELinkingRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSUELinkingRequestIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSUELinkingRequestExtensions} }       OPTIONAL,
    ...
}

MBMSUELinkingRequestIEs RANAP-PROTOCOL-IES ::= {
    { ID id-JoinedMBMSBearerServicesList    CRITICALITY reject  TYPE JoinedMBMSBearerService-IEs    PRESENCE optional } |
    { ID id-LeftMBMSBearerServicesList      CRITICALITY reject  TYPE LeftMBMSBearerService-IEs      PRESENCE optional },
    ...
}

LeftMBMSBearerService-IEs ::= SEQUENCE (SIZE (1.. maxnoofMulticastServicesPerUE)) OF
    SEQUENCE {
        tMGI                TMGI,
        iE-Extensions       ProtocolExtensionContainer { {LeftMBMSBearerService-ExtIEs} } OPTIONAL,
        ...
    }

LeftMBMSBearerService-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBMSUELinkingRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS UE Linking Response
--
-- **************************************************************

MBMSUELinkingResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSUELinkingResponseIEs} },
```

```
    protocolExtensions      ProtocolExtensionContainer  { { MBMSUELinkingResponseExtensions} }    OPTIONAL,
    ...
}

MBMSUELinkingResponseIEs RANAP-PROTOCOL-IES ::= {
    { ID id-UnsuccessfulLinkingList         CRITICALITY ignore  TYPE UnsuccessfulLinking-IEs      PRESENCE optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics       PRESENCE optional    } ,
    ...
}

UnsuccessfulLinking-IEs ::= SEQUENCE (SIZE (1.. maxnoofMulticastServicesPerUE)) OF
    SEQUENCE {
        tMGI                TMGI,
        cause               Cause,
        iE-Extensions       ProtocolExtensionContainer { {UnsuccessfulLinking-ExtIEs} } OPTIONAL,
        ...
    }

UnsuccessfulLinking-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBMSUELinkingResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS REGISTRATION PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- MBMS Registration Request
--
-- **************************************************************

MBMSRegistrationRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSRegistrationRequestIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSRegistrationRequestExtensions} }       OPTIONAL,
    ...
}

MBMSRegistrationRequestIEs RANAP-PROTOCOL-IES ::= {
    { ID id-MBMSRegistrationRequestType     CRITICALITY reject  TYPE MBMSRegistrationRequestType          PRESENCE mandatory   } |
    { ID id-TMGI                            CRITICALITY reject  TYPE TMGI                                 PRESENCE mandatory   } |
    { ID id-IPMulticastAddress              CRITICALITY reject  TYPE IPMulticastAddress                   PRESENCE conditional
    -- This IE shall be present if the MBMS Registration Request Type IE is set to "register"  --                          } |
    { ID id-APN                             CRITICALITY reject  TYPE APN                                  PRESENCE conditional
    -- This IE shall be present if the MBMS Registration Request Type IE is set to "register"  --                          } |
    { ID id-GlobalRNC-ID                    CRITICALITY reject  TYPE GlobalRNC-ID                         PRESENCE optional    },
```

```
    ...
}

MBMSRegistrationRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS Registration Response
--
-- **************************************************************

MBMSRegistrationResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSRegistrationResponseIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSRegistrationResponseExtensions} }    OPTIONAL,
    ...
}

MBMSRegistrationResponseIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TMGI                            CRITICALITY ignore  TYPE TMGI                           PRESENCE optional    } |
    { ID id-GlobalCN-ID                     CRITICALITY ignore  TYPE GlobalCN-ID                    PRESENCE optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics         PRESENCE optional    } ,
    ...
}

MBMSRegistrationResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS Registration Failure
--
-- **************************************************************

MBMSRegistrationFailure ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSRegistrationFailureIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSRegistrationFailureExtensions} }     OPTIONAL,
    ...
}

MBMSRegistrationFailureIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TMGI                            CRITICALITY ignore  TYPE TMGI                           PRESENCE optional    } |
    { ID id-GlobalCN-ID                     CRITICALITY ignore  TYPE GlobalCN-ID                    PRESENCE optional    } |
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause                          PRESENCE mandatory   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics         PRESENCE optional    } ,
    ...
}

MBMSRegistrationFailureExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
```

```
}

-- **************************************************************
--
-- MBMS CN DE-REGISTRATION PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- MBMS CN De-Registration Request
--
-- **************************************************************

MBMSCNDe-RegistrationRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSCNDe-RegistrationRequestIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSCNDe-RegistrationRequestExtensions} }        OPTIONAL,
    ...
}

MBMSCNDe-RegistrationRequestIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TMGI                        CRITICALITY reject  TYPE TMGI                               PRESENCE mandatory   } |
    { ID id-GlobalCN-ID                 CRITICALITY reject  TYPE GlobalCN-ID                        PRESENCE optional    },
    ...
}

MBMSCNDe-RegistrationRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS CN De-Registration Response
--
-- **************************************************************

MBMSCNDe-RegistrationResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSCNDe-RegistrationResponseIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSCNDe-RegistrationResponseExtensions} }    OPTIONAL,
    ...
}

MBMSCNDe-RegistrationResponseIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TMGI                            CRITICALITY ignore  TYPE TMGI                           PRESENCE mandatory   } |
    { ID id-GlobalRNC-ID                    CRITICALITY ignore  TYPE GlobalRNC-ID                   PRESENCE mandatory   } |
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause                          PRESENCE optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics         PRESENCE optional    } ,
    ...
}

MBMSCNDe-RegistrationResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
```

```
}

-- **************************************************************
--
-- MBMS RAB ESTABLISHMENT INDICATION PROCEDURE
--
-- **************************************************************

-- **************************************************************
--
-- MBMS RAB Establishment Indication
--
-- **************************************************************

MBMSRABEstablishmentIndication ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container        { { MBMSRABEstablishmentIndicationIEs} },
    protocolExtensions      ProtocolExtensionContainer  { { MBMSRABEstablishmentIndicationExtensions} }      OPTIONAL,
    ...
}

MBMSRABEstablishmentIndicationIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TransportLayerInformation       CRITICALITY ignore  TYPE TransportLayerInformation    PRESENCE mandatory   } |
    ...
}

MBMSRABEstablishmentIndicationExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}


END
```

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************

RANAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    maxNrOfErrors,
    maxNrOfPDPDirections,
```

```
    maxNrOfPoints,
    maxNrOfRABs,
    maxNrOfSRBs,
    maxNrOfSeparateTrafficDirections,
    maxRAB-Subflows,
    maxRAB-SubflowCombination,
    maxNrOfLevels,
    maxNrOfAltValues,
    maxNrOfSNAs,
    maxNrOfLAs,
    maxNrOfPLMNsSN,
    maxSet,
    maxNrOfUEsToBeTraced,
    maxNrOfInterfaces,
    maxnoofMulticastServicesPerRNC,
    maxMBMSSA,
    maxMBMSRA,
    maxnoofMulticastServicesPerUE,

    id-CN-DomainIndicator,
    id-MessageStructure,
    id-SRB-TrCH-Mapping,
    id-TypeOfError,

    id-hS-DSCH-MAC-d-Flow-ID,
    id-SignallingIndication,
    id-CellLoadInformationGroup,
    id-TraceRecordingSessionInformation,
    id-MBMSLinkingInformation
FROM RANAP-Constants

    Criticality,
    ProcedureCode,
    ProtocolIE-ID,
    TriggeringMessage
FROM RANAP-CommonDataTypes

    ProtocolExtensionContainer{},
    RANAP-PROTOCOL-EXTENSION
FROM RANAP-Containers;

-- A

AccuracyFulfilmentIndicator ::= ENUMERATED{
    requested-Accuracy-Fulfilled,
    requested-Accuracy-Not-Fulfilled,
    ...
}

AllocationOrRetentionPriority ::= SEQUENCE {
    priorityLevel           PriorityLevel,
    pre-emptionCapability       Pre-emptionCapability,
```

```
    pre-emptionVulnerability    Pre-emptionVulnerability,
    queuingAllowed          QueuingAllowed,
    iE-Extensions           ProtocolExtensionContainer { {AllocationOrRetentionPriority-ExtIEs} } OPTIONAL,
    ...
}

AllocationOrRetentionPriority-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

Alt-RAB-Parameters ::= SEQUENCE {
    altMaxBitrateInf            Alt-RAB-Parameter-MaxBitrateInf                         OPTIONAL,
    altGuaranteedBitRateInf     Alt-RAB-Parameter-GuaranteedBitrateInf                  OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {Alt-RAB-Parameters-ExtIEs} }  OPTIONAL,
    ...
}

Alt-RAB-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

Alt-RAB-Parameter-GuaranteedBitrateInf ::= SEQUENCE {
    altGuaranteedBitrateType            Alt-RAB-Parameter-GuaranteedBitrateType,
    altGuaranteedBitrates               Alt-RAB-Parameter-GuaranteedBitrates           OPTIONAL
    -- This IE shall be present if  the Type of Guaranteed Bit Rates Information IE is set to "Value range" or "Discrete values" --,
    ...
}

Alt-RAB-Parameter-GuaranteedBitrateType ::= ENUMERATED{
    unspecified,
    value-range,
    discrete-values,
    ...
}

Alt-RAB-Parameter-GuaranteedBitrates ::= SEQUENCE (SIZE (1..maxNrOfAltValues)) OF
    Alt-RAB-Parameter-GuaranteedBitrateList


Alt-RAB-Parameter-GuaranteedBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF GuaranteedBitrate


Alt-RAB-Parameter-MaxBitrateInf ::= SEQUENCE {
    altMaxBitrateType           Alt-RAB-Parameter-MaxBitrateType,
    altMaxBitrates              Alt-RAB-Parameter-MaxBitrates          OPTIONAL
    -- This IE shall be present if  the Type of Alternative Maximun Bit Rates Information IE is set to "Value range" or "Discrete values" --,
    ...
}

Alt-RAB-Parameter-MaxBitrateType ::= ENUMERATED{
    unspecified,
    value-range,
```

```
    discrete-values,
    ...
}

Alt-RAB-Parameter-MaxBitrates ::= SEQUENCE (SIZE (1..maxNrOfAltValues)) OF
    Alt-RAB-Parameter-MaxBitrateList


Alt-RAB-Parameter-MaxBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF MaxBitrate

APN ::= OCTET STRING
-- Reference: 23.003

AreaIdentity ::= CHOICE {
    sAI             SAI,
    geographicalArea        GeographicalArea,
    ...
}

Ass-RAB-Parameters ::= SEQUENCE {
    assMaxBitrateInf            Ass-RAB-Parameter-MaxBitrateList                        OPTIONAL,
    assGuaranteedBitRateInf     Ass-RAB-Parameter-GuaranteedBitrateList                 OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {Ass-RAB-Parameters-ExtIEs} }  OPTIONAL,
    ...
}

Ass-RAB-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}


Ass-RAB-Parameter-GuaranteedBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF GuaranteedBitrate


Ass-RAB-Parameter-MaxBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF MaxBitrate

AuthorisedPLMNs ::= SEQUENCE (SIZE (1..maxNrOfPLMNsSN)) OF
    SEQUENCE {
        pLMNidentity            PLMNidentity,
        authorisedSNAsList      AuthorisedSNAs      OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {AuthorisedPLMNs-ExtIEs} } OPTIONAL,
        ...
    }

AuthorisedPLMNs-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

AuthorisedSNAs  ::= SEQUENCE (SIZE (1..maxNrOfSNAs)) OF  SNAC


-- B
```

```
BindingID               ::= OCTET STRING (SIZE (4))

BroadcastAssistanceDataDecipheringKeys  ::= SEQUENCE {
    cipheringKeyFlag        BIT STRING (SIZE (1)),
    currentDecipheringKey   BIT STRING (SIZE (56)),
    nextDecipheringKey      BIT STRING (SIZE (56)),
    ...
}

-- C


Cause ::= CHOICE {
    radioNetwork            CauseRadioNetwork,
    transmissionNetwork     CauseTransmissionNetwork,
    nAS             CauseNAS,
    protocol            CauseProtocol,
    misc                CauseMisc,
    non-Standard            CauseNon-Standard,
    ...,
    radioNetworkExtension   CauseRadioNetworkExtension
}

CauseMisc ::= INTEGER {
    om-intervention (113),
    no-resource-available (114),
    unspecified-failure (115),
    network-optimisation (116)
} (113..128)

CauseNAS ::= INTEGER {
    user-restriction-start-indication (81),
    user-restriction-end-indication (82),
    normal-release (83)
} (81..96)

CauseProtocol ::= INTEGER {
    transfer-syntax-error (97),
    semantic-error (98),
    message-not-compatible-with-receiver-state (99),
    abstract-syntax-error-reject (100),
    abstract-syntax-error-ignore-and-notify (101),
    abstract-syntax-error-falsely-constructed-message (102)

} (97..112)

CauseRadioNetwork ::= INTEGER {
    rab-pre-empted (1),
    trelocoverall-expiry (2),
    trelocprep-expiry (3),
    treloccomplete-expiry (4),
```

```
    tqueing-expiry (5),
    relocation-triggered (6),
    trellocalloc-expiry(7),
    unable-to-establish-during-relocation (8),
    unknown-target-rnc (9),
    relocation-cancelled (10),
    successful-relocation (11),
    requested-ciphering-and-or-integrity-protection-algorithms-not-supported (12),
    conflict-with-already-existing-integrity-protection-and-or-ciphering-information (13),
    failure-in-the-radio-interface-procedure (14),
    release-due-to-utran-generated-reason (15),
    user-inactivity (16),
    time-critical-relocation (17),
    requested-traffic-class-not-available (18),
    invalid-rab-parameters-value (19),
    requested-maximum-bit-rate-not-available (20),
    requested-guaranteed-bit-rate-not-available (21),
    requested-transfer-delay-not-achievable (22),
    invalid-rab-parameters-combination (23),
    condition-violation-for-sdu-parameters (24),
    condition-violation-for-traffic-handling-priority (25),
    condition-violation-for-guaranteed-bit-rate (26),
    user-plane-versions-not-supported (27),
    iu-up-failure (28),
    relocation-failure-in-target-CN-RNC-or-target-system(29),
    invalid-RAB-ID (30),
    no-remaining-rab (31),
    interaction-with-other-procedure (32),
    requested-maximum-bit-rate-for-dl-not-available (33),
    requested-maximum-bit-rate-for-ul-not-available (34),
    requested-guaranteed-bit-rate-for-dl-not-available (35),
    requested-guaranteed-bit-rate-for-ul-not-available (36),
    repeated-integrity-checking-failure (37),
    requested-request-type-not-supported (38),
    request-superseded (39),
    release-due-to-UE-generated-signalling-connection-release (40),
    resource-optimisation-relocation (41),
    requested-information-not-available (42),
    relocation-desirable-for-radio-reasons (43),
    relocation-not-supported-in-target-RNC-or-target-system (44),
    directed-retry (45),
    radio-connection-with-UE-Lost (46),
    rNC-unable-to-establish-all-RFCs  (47),
    deciphering-keys-not-available(48),
    dedicated-assistance-data-not-available(49),
    relocation-target-not-allowed (50),
    location-reporting-congestion (51),
    reduce-load-in-serving-cell (52),
    no-radio-resources-available-in-target-cell (53),
    gERAN-Iumode-failure (54),
    access-restricted-due-to-shared-networks (55),
    incoming-relocation-not-supported-due-to-PUESBINE-feature (56),
```

```
    traffic-load-in-the-target-cell-higher-than-in-the-source-cell (57),
    mBMS-no-multicast-service-for-this-UE(c58),
    mBMS-unknown-UE-ID(c59),
    successful-MBMS-session-start-no-data-bearer-necessary(c60),
    mBMS-superseded-due-to-NNSF(c61),
    mBMS-UE-linking-already-done(c62),
    mBMS-UE-de-linking-failure-no-existing-UE-linking(c63),
    tMGI-unknown(c64)
} (1..64)

CauseRadioNetworkExtension ::= INTEGER {
    IP-multicast-address-and-APN-not-valid(c257),
    MBMS-de-registration-rejected-due-to-implicit-registration(c258),
    mBMS-request-superseded(c259),
    mBMS-de-registration-during-session-not-allowed(260)
} (257.. 512)

CauseNon-Standard ::= INTEGER (129..256)
-- Cause value 256 shall not be used --

CauseTransmissionNetwork ::= INTEGER {
    signalling-transport-resource-failure (65),
    iu-transport-connection-failed-to-establish (66)
} (65..80)

Cell-Capacity-Class-Value ::= INTEGER (1..100,...)

CellLoadInformation ::= SEQUENCE {
    cell-Capacity-Class-Value   Cell-Capacity-Class-Value,
    loadValue                   LoadValue,
    rTLoadValue                 RTLoadValue                     OPTIONAL,
    nRTLoadInformationValue     NRTLoadInformationValue         OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { CellLoadInformation-ExtIEs } }    OPTIONAL,
    ...
}

CellLoadInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

CellLoadInformationGroup ::= SEQUENCE {
    sourceCellID                    SourceCellID,
    uplinkCellLoadInformation       CellLoadInformation     OPTIONAL,
    downlinkCellLoadInformation     CellLoadInformation     OPTIONAL,
    iE-Extensions   ProtocolExtensionContainer { { CellLoadInformationGroup-ExtIEs } }  OPTIONAL,
    ...
}

CellLoadInformationGroup-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
ClientType ::= ENUMERATED {
    emergency-Services,
    value-Added-Services,
    pLMN-Operator-Services,
    lawful-Intercept-Services,
    pLMN-Operator-Broadcast-Services,
    pLMN-Operator-O-et-M,
    pLMN-Operator-Anonymous-Statistics,
    pLMN-Operator-Target-MS-Service-Support,
    ...
}

CriticalityDiagnostics ::= SEQUENCE {
    procedureCode           ProcedureCode           OPTIONAL,
    triggeringMessage       TriggeringMessage       OPTIONAL,
    procedureCriticality        Criticality         OPTIONAL,
    iEsCriticalityDiagnostics       CriticalityDiagnostics-IE-List  OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {CriticalityDiagnostics-ExtIEs} } OPTIONAL,
    ...
}

CriticalityDiagnostics-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1..maxNrOfErrors)) OF
    SEQUENCE {
        iECriticality       Criticality,
        iE-ID               ProtocolIE-ID,
        repetitionNumber        RepetitionNumber0       OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {CriticalityDiagnostics-IE-List-ExtIEs} } OPTIONAL,
        ...
    }

CriticalityDiagnostics-IE-List-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 99 to enable reporting the message structure down to the erroneous IE --
    {   ID id-MessageStructure  CRITICALITY ignore      EXTENSION MessageStructure  PRESENCE optional   } |
-- Extension for Release 99 to enable reporting if a reported error is due to a not understood or a missing IE --
    {   ID id-TypeOfError       CRITICALITY ignore      EXTENSION TypeOfError       PRESENCE mandatory  },
    ...
}

MessageStructure ::= SEQUENCE (SIZE (1..maxNrOfLevels)) OF
    SEQUENCE {
        iE-ID                   ProtocolIE-ID,
        repetitionNumber        RepetitionNumber1       OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {MessageStructure-ExtIEs} } OPTIONAL,
        ...
    }


MessageStructure-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
```

```
    ...
}

CGI ::= SEQUENCE {
    pLMNidentity               PLMNidentity,
    lAC             LAC,
    cI              CI,
    iE-Extensions           ProtocolExtensionContainer { {CGI-ExtIEs} } OPTIONAL
}

CGI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

ChosenEncryptionAlgorithm       ::= EncryptionAlgorithm

ChosenIntegrityProtectionAlgorithm  ::= IntegrityProtectionAlgorithm

CI                  ::= OCTET STRING (SIZE (2))

ClassmarkInformation2           ::= OCTET STRING

ClassmarkInformation3           ::= OCTET STRING

CN-DomainIndicator ::= ENUMERATED {
    cs-domain,
    ps-domain
}

CN-ID               ::= INTEGER (0..4095)


-- D

DataVolumeReference         ::= INTEGER (0..255)

DataVolumeReportingIndication ::= ENUMERATED {
    do-report,
    do-not-report
}

DCH-ID ::= INTEGER (0..255)

DeliveryOfErroneousSDU ::= ENUMERATED {
    yes,
    no,
    no-error-detection-consideration
}

DeliveryOrder::= ENUMERATED {
    delivery-order-requested,
    delivery-order-not-requested
```

```
}

DeltaRAListofIdleModeUEs ::= SEQUENCE {
    newRAListofIdleModeUEs                  NewRAListofIdleModeUEs  OPTIONAL,
    rAListwithNoIdleModeUEsAnyMore          RAListwithNoIdleModeUEsAnyMore  OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {DeltaRAListofIdleModeUEs-ExtIEs} } OPTIONAL
}

NewRAListofIdleModeUEs ::= SEQUENCE (SIZE (1..maxMBMSRA)) OF
    RAC

RAListwithNoIdleModeUEsAnyMore ::= SEQUENCE (SIZE (1..maxMBMSRA)) OF
    RAC

DeltaRAListofIdleModeUEs-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-GTP-PDU-SequenceNumber       ::= INTEGER (0..65535)

DL-N-PDU-SequenceNumber         ::= INTEGER (0..65535)

D-RNTI                  ::= INTEGER (0..1048575)

DRX-CycleLengthCoefficient          ::= INTEGER (6..9)

DSCH-ID ::= INTEGER (0..255)

-- E

EncryptionAlgorithm             ::= INTEGER { no-encryption (0), standard-UMTS-encryption-algorith-UEA1 (1) } (0..15)

EncryptionInformation ::= SEQUENCE {
    permittedAlgorithms     PermittedEncryptionAlgorithms,
    key             EncryptionKey,
    iE-Extensions           ProtocolExtensionContainer { {EncryptionInformation-ExtIEs} } OPTIONAL
}

EncryptionInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

EncryptionKey               ::= BIT STRING (SIZE (128))
-- Reference: 33.102

EquipmentsToBeTraced ::= CHOICE {
    iMEIlist                IMEIList,
    iMEISVlist              IMEISVList,
    iMEIgroup               IMEIGroup,
    iMEISVgroup             IMEISVGroup,
    ...
}
```

```
Event ::= ENUMERATED {
    stop-change-of-service-area,
    direct,
    change-of-servicearea,
    ...,
    stop-direct
}

-- F

FrequenceLayerConvergenceFlag ::= ENUMERATED {
    no-FLC-flag,
    ...
}

-- G

GeographicalArea ::= CHOICE {
    point               GA-Point,
    pointWithUnCertainty        GA-PointWithUnCertainty,
    polygon             GA-Polygon,
    ...,
    pointWithUncertaintyEllipse     GA-PointWithUnCertaintyEllipse,
    pointWithAltitude       GA-PointWithAltitude,
    pointWithAltitudeAndUncertaintyEllipsoid        GA-PointWithAltitudeAndUncertaintyEllipsoid,
    ellipsoidArc        GA-EllipsoidArc
}

GeographicalCoordinates ::= SEQUENCE {
    latitudeSign            ENUMERATED { north, south },
    latitude            INTEGER (0..8388607),
    longitude           INTEGER (-8388608..8388607),
    iE-Extensions           ProtocolExtensionContainer { {GeographicalCoordinates-ExtIEs} } OPTIONAL,
    ...
}

GeographicalCoordinates-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-AltitudeAndDirection ::= SEQUENCE {
    directionOfAltitude     ENUMERATED {height, depth},
    altitude        INTEGER (0..32767),
    ...
}

GA-EllipsoidArc ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    innerRadius                 INTEGER (0..65535),
    uncertaintyRadius           INTEGER (0..127),
    offsetAngle                 INTEGER (0..179),
```

```
    includedAngle               INTEGER (0..179),
    confidence                  INTEGER (0..127),
    iE-Extensions               ProtocolExtensionContainer { { GA-EllipsoidArc-ExtIEs} } OPTIONAL,
    ...
}

GA-EllipsoidArc-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-Point ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    iE-Extensions           ProtocolExtensionContainer { {GA-Point-ExtIEs} } OPTIONAL,
    ...
}

GA-Point-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-PointWithAltitude ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    altitudeAndDirection        GA-AltitudeAndDirection,
    iE-Extensions               ProtocolExtensionContainer { { GA-PointWithAltitude-ExtIEs} } OPTIONAL,
    ...
}

GA-PointWithAltitude-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-PointWithAltitudeAndUncertaintyEllipsoid ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    altitudeAndDirection        GA-AltitudeAndDirection,
    uncertaintyEllipse          GA-UncertaintyEllipse,
    uncertaintyAltitude         INTEGER (0..127),
    confidence                  INTEGER (0..127),
    iE-Extensions               ProtocolExtensionContainer { { GA-PointWithAltitudeAndUncertaintyEllipsoid-ExtIEs} } OPTIONAL,
    ...
}

GA-PointWithAltitudeAndUncertaintyEllipsoid-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-PointWithUnCertainty ::=SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    iE-Extensions           ProtocolExtensionContainer { {GA-PointWithUnCertainty-ExtIEs} } OPTIONAL,
    uncertaintyCode         INTEGER (0..127)
}

GA-PointWithUnCertainty-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
```

```
    ...
}

GA-PointWithUnCertaintyEllipse ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    uncertaintyEllipse          GA-UncertaintyEllipse,
    confidence                  INTEGER (0..127),
    iE-Extensions               ProtocolExtensionContainer { { GA-PointWithUnCertaintyEllipse-ExtIEs} } OPTIONAL,
    ...
}

GA-PointWithUnCertaintyEllipse-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-Polygon ::= SEQUENCE (SIZE (1..maxNrOfPoints)) OF
    SEQUENCE {
        geographicalCoordinates     GeographicalCoordinates,
        iE-Extensions           ProtocolExtensionContainer { {GA-Polygon-ExtIEs} } OPTIONAL,
        ...
    }

GA-Polygon-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-UncertaintyEllipse ::= SEQUENCE {
    uncertaintySemi-major       INTEGER (0..127),
    uncertaintySemi-minor       INTEGER (0..127),
    orientationOfMajorAxis      INTEGER (0..179),   -- The values 90..179 shall not be used.
    ...
}

GERAN-BSC-Container             ::= OCTET STRING
        -- GERAN BSC Container as defined in [11] --


GERAN-Cell-ID ::= SEQUENCE {
    lAI             LAI,
    rAC             RAC,
    cI              CI,
    iE-Extensions           ProtocolExtensionContainer { {GERAN-Cell-ID-ExtIEs} } OPTIONAL
}

GERAN-Cell-ID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GERAN-Classmark                 ::= OCTET STRING
        -- GERAN Classmark as defined in [11] --

GlobalCN-ID ::= SEQUENCE {
```

```
    pLMNidentity                PLMNidentity,
    cN-ID               CN-ID
}


GlobalRNC-ID ::= SEQUENCE {
    pLMNidentity                PLMNidentity,
    rNC-ID              RNC-ID
}

GTP-TEI                 ::= OCTET STRING (SIZE (4))

GuaranteedBitrate           ::= INTEGER (0..16000000)
-- Unit is bits per sec

-- H

HS-DSCH-MAC-d-Flow-ID       ::= INTEGER (0..7)

-- I


IMEI                    ::= OCTET STRING (SIZE (8))
-- Reference: 23.003

IMEIGroup   ::= SEQUENCE {
    iMEI                IMEI,
    iMEIMask            BIT STRING (SIZE (7)),
    iE-Extensions       ProtocolExtensionContainer { { IMEIGroup-ExtIEs} } OPTIONAL
}

IMEIGroup-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

IMEIList    ::= SEQUENCE (SIZE (1..maxNrOfUEsToBeTraced)) OF IMEI

IMEISV                  ::= OCTET STRING (SIZE (8))
-- Reference: 23.003

IMEISVGroup ::= SEQUENCE {
    iMEISV              IMEISV,
    iMEISVMask          BIT STRING (SIZE (7)),
    iE-Extensions       ProtocolExtensionContainer { { IMEISVGroup-ExtIEs} } OPTIONAL
}

IMEISVGroup-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

IMEISVList  ::= SEQUENCE (SIZE (1..maxNrOfUEsToBeTraced)) OF IMEISV
```

```
IMSI                    ::= TBCD-STRING (SIZE (3..8))
-- Reference: 23.003

InformationExchangeID ::= INTEGER (0.. 1048575)

InformationExchangeType ::= ENUMERATED {
    transfer,
    request,
    ...
}

InformationRequested ::= CHOICE {
    requestedMBMSIPMulticastAddressandAPNRequest        RequestedMBMSIPMulticastAddressandAPNRequest,
    requestedMulticastServiceList                       RequestedMulticastServiceList,
    ...
}


InformationRequestType ::= CHOICE {
    mBMSIPMulticastAddressandAPNRequest     MBMSIPMulticastAddressandAPNRequest,
    permanentNAS-UE-ID                      PermanentNAS-UE-ID,
    ...
}

InformationTransferID  ::= INTEGER (0.. 1048575)

InformationTransferType ::= CHOICE {
    rNCTraceInformation         RNCTraceInformation,
    ...
}

IntegrityProtectionAlgorithm        ::= INTEGER {
    standard-UMTS-integrity-algorithm-UIA1 (0),
    no-value (15)
} (0..15)

IntegrityProtectionInformation ::= SEQUENCE {
    permittedAlgorithms     PermittedIntegrityProtectionAlgorithms,
    key             IntegrityProtectionKey,
    iE-Extensions           ProtocolExtensionContainer { {IntegrityProtectionInformation-ExtIEs} } OPTIONAL
}

IntegrityProtectionInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

IntegrityProtectionKey          ::= BIT STRING (SIZE (128))

InterSystemInformationTransferType ::= CHOICE {
    rIM-Transfer                    RIM-Transfer,
    ...
}
```

```
InterSystemInformation-TransparentContainer ::= SEQUENCE {
    downlinkCellLoadInformation         CellLoadInformation     OPTIONAL,
    uplinkCellLoadInformation           CellLoadInformation     OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { InterSystemInformation-TransparentContainer-ExtIEs} } OPTIONAL,
    ...
}

InterSystemInformation-TransparentContainer-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

IPMulticastAddress ::= BIT STRING
-- Reference: 23.003

IuSignallingConnectionIdentifier    ::= BIT STRING (SIZE (24))

IuTransportAssociation ::= CHOICE {
    gTP-TEI             GTP-TEI,
    bindingID           BindingID,
    ...
}

-- J
-- K

KeyStatus   ::= ENUMERATED {
    old,
    new,
    ...
}
-- L

LA-LIST  ::= SEQUENCE (SIZE (1..maxNrOfLAs)) OF
    SEQUENCE {
        lAC                     LAC,
        listOF-SNAs             ListOF-SNAs,
        iE-Extensions           ProtocolExtensionContainer { { LA-LIST-ExtIEs} } OPTIONAL,
        ...
    }

LA-LIST-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

LAC                 ::= OCTET STRING (SIZE (2))

LAI ::= SEQUENCE {
    pLMNidentity                PLMNidentity,
    lAC             LAC,
    iE-Extensions           ProtocolExtensionContainer { {LAI-ExtIEs} } OPTIONAL
}
```

```
LAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

LastKnownServiceArea    ::= SEQUENCE {
    sAI         SAI,
    ageOfSAI    INTEGER (0..32767),
    iE-Extensions   ProtocolExtensionContainer { {LastKnownServiceArea-ExtIEs} } OPTIONAL,
    ...
}

LastKnownServiceArea-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
ListOF-SNAs ::= SEQUENCE (SIZE (1..maxNrOfSNAs)) OF SNAC

ListOfInterfacesToTrace ::= SEQUENCE (SIZE (1..maxNrOfInterfaces)) OF InterfacesToTraceItem

InterfacesToTraceItem ::= SEQUENCE {
    interface               ENUMERATED {iu-cs, iu-ps, iur, iub, uu, ...},
    iE-Extensions           ProtocolExtensionContainer { {InterfacesToTraceItem-ExtIEs} }   OPTIONAL,
    ...
}

InterfacesToTraceItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

LoadValue   ::= INTEGER (0..100)

LocationRelatedDataRequestType  ::= SEQUENCE {
    requestedLocationRelatedDataType            RequestedLocationRelatedDataType,
    requestedGPSAssistanceData                  RequestedGPSAssistanceData  OPTIONAL,
    -- This IE shall be present if the Requested Location Related Data Type IE is set to 'Dedicated Assistance Data for Assisted GPS' --
    ...
}

LocationRelatedDataRequestTypeSpecificToGERANIuMode ::= ENUMERATED {
    decipheringKeysEOTD,
    dedicatedMobileAssistedEOTDAssistanceData,
    dedicatedMobileBasedEOTDAssistanceData,
    ...
}

L3-Information              ::= OCTET STRING

-- M

MaxBitrate              ::= INTEGER (1..16000000)
-- Unit is bits per sec
```

```
MaxSDU-Size             ::= INTEGER (0..32768)
-- MaxSDU-Size
-- Unit is bit

MBMS-PTP-RAB-ID ::= BIT STRING (SIZE (8))

MBMSBearerServiceType ::= ENUMERATED {
    multicast,
    broadcast,
    ...
}

MBMSCNDe-Registration ::= ENUMERATED {
    normalsessionstop,
    deregister,
    ...
}

MBMSIPMulticastAddressandAPNRequest ::= SEQUENCE (SIZE (1..maxnoofMulticastServicesPerRNC)) OF
    TMGI

MBMSLinkingInformation ::= ENUMERATED {
    uE-has-joined-multicast-services,
    ...
}

MBMSRegistrationRequestType ::= ENUMERATED {
    register,
    deregister,
    ...
}

MBMSServiceArea ::= SEQUENCE {
    mBMSServiceAreaList     MBMSServiceAreaList,
    iE-Extensions           ProtocolExtensionContainer { {MBMSServiceArea-ExtIEs} } OPTIONAL
}

MBMSServiceAreaList ::= SEQUENCE (SIZE (1..maxMBMSSA)) OF
    MBMSServiceAreaCode

MBMSServiceAreaCode ::= INTEGER (0..65535)

MBMSServiceArea-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBMSSessionDuration ::= SEQUENCE {
    seconds     INTEGER (0..86399),
    day         INTEGER (1..8)  OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {MBMSSessionDuration-ExtIEs} } OPTIONAL
}
```

```
MBMSSessionDuration-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

MBMSSessionIdentifier ::= OCTET STRING (SIZE (2))

-- N


NAS-PDU                 ::= OCTET STRING

NAS-SynchronisationIndicator    ::= BIT STRING (SIZE (4))

NewBSS-To-OldBSS-Information        ::= OCTET STRING

NonSearchingIndication ::= ENUMERATED {
    non-searching,
    searching
}

NRTLoadInformationValue ::= INTEGER (0..3)

NumberOfIuInstances         ::= INTEGER (1..2)

NumberOfSteps               ::= INTEGER (1..16)

-- O

OldBSS-ToNewBSS-Information     ::= OCTET STRING

OMC-ID                  ::= OCTET STRING (SIZE (3..22))
-- Reference: GSM [25]

-- P

PagingAreaID ::= CHOICE {
    lAI             LAI,
    rAI             RAI,
    ...
}

PagingCause ::= ENUMERATED {
    terminating-conversational-call,
    terminating-streaming-call,
    terminating-interactive-call,
    terminating-background-call,
    terminating-low-priority-signalling,
    ...,
    terminating-high-priority-signalling
}

PDP-TypeInformation ::= SEQUENCE (SIZE (1..maxNrOfPDPDirections)) OF
```

```
    PDP-Type

PDP-Type ::= ENUMERATED {
    empty,
    ppp,
    osp-ihoss  -- this value shall not be used -- ,
    ipv4,
    ipv6,
    ...
}

PermanentNAS-UE-ID ::= CHOICE {
    iMSI               IMSI,
    ...
}

PermittedEncryptionAlgorithms ::= SEQUENCE (SIZE (1..16)) OF
    EncryptionAlgorithm

PermittedIntegrityProtectionAlgorithms ::= SEQUENCE (SIZE (1..16)) OF
    IntegrityProtectionAlgorithm

PLMNidentity               ::= TBCD-STRING (SIZE (3))

PLMNs-in-shared-network ::= SEQUENCE (SIZE (1..maxNrOfPLMNsSN)) OF
    SEQUENCE {
        pLMNidentity            PLMNidentity,
        lA-LIST                 LA-LIST,
        iE-Extensions           ProtocolExtensionContainer { { PLMNs-in-shared-network-ExtIEs} } OPTIONAL,
        ...
    }

PLMNs-in-shared-network-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

PositioningDataDiscriminator ::= BIT STRING (SIZE(4))

PositioningDataSet ::= SEQUENCE(SIZE(1..maxSet)) OF PositioningMethodAndUsage

PositioningMethodAndUsage ::= OCTET STRING (SIZE(1))

PositioningPriority ::= ENUMERATED {
    high-Priority,
    normal-Priority,
...
}

PositionData ::= SEQUENCE {
    positioningDataDiscriminator       PositioningDataDiscriminator,
    positioningDataSet                 PositioningDataSet         OPTIONAL,
-- This IE shall be present if the PositioningDataDiscriminator IE is set to the value "0000"  --
```

```
    iE-Extensions       ProtocolExtensionContainer { {PositionData-ExtIEs} } OPTIONAL,
    ...
}

PositionData-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

PositionDataSpecificToGERANIuMode ::= OCTET STRING

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PriorityLevel               ::= INTEGER { spare (0), highest (1), lowest (14), no-priority (15) } (0..15)

ProvidedData ::= CHOICE {
    shared-network-information              Shared-Network-Information,
    ...
}

P-TMSI                  ::= OCTET STRING (SIZE (4))

-- Q

QueuingAllowed ::= ENUMERATED {
    queueing-not-allowed,
    queueing-allowed
}

-- R
RAB-AsymmetryIndicator::= ENUMERATED {
    symmetric-bidirectional,
    asymmetric-unidirectional-downlink,
    asymmetric-unidirectional-uplink,
    asymmetric-bidirectional,
    ...
}

RAB-ID                  ::= BIT STRING (SIZE (8))

RAB-Parameter-GuaranteedBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF GuaranteedBitrate

RAB-Parameter-MaxBitrateList        ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF MaxBitrate

RAB-Parameters ::= SEQUENCE {
```

```
    trafficClass            TrafficClass,
    rAB-AsymmetryIndicator          RAB-AsymmetryIndicator,
    maxBitrate          RAB-Parameter-MaxBitrateList,
    guaranteedBitRate       RAB-Parameter-GuaranteedBitrateList OPTIONAL
    -- This IE shall be present the traffic class IE is set to "Conversational" or "Streaming" --,
    deliveryOrder           DeliveryOrder,
    maxSDU-Size         MaxSDU-Size,
    sDU-Parameters          SDU-Parameters,
    transferDelay           TransferDelay OPTIONAL
    -- This IE shall be present the traffic class IE is set to "Conversational" or "Streaming" --,
    trafficHandlingPriority     TrafficHandlingPriority OPTIONAL
    -- This IE shall be present the traffic class IE is set to "Interactive" --,
    allocationOrRetentionPriority   AllocationOrRetentionPriority OPTIONAL,
    sourceStatisticsDescriptor  SourceStatisticsDescriptor OPTIONAL
    -- This IE shall be present the traffic class IE is set to "Conversational" or "Streaming" --,
    relocationRequirement   RelocationRequirement OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {RAB-Parameters-ExtIEs} } OPTIONAL,
    ...
}

RAB-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 5 to enable indication that Interactive User Plane data is of a signalling nature --
    { ID id-SignallingIndication    CRITICALITY ignore EXTENSION SignallingIndication PRESENCE optional },
    ...
}

RAB-SubflowCombinationBitRate   ::= INTEGER (0..16000000)

RAB-TrCH-Mapping ::=    SEQUENCE ( SIZE (1..maxNrOfRABs)) OF
    RAB-TrCH-MappingItem

RAB-TrCH-MappingItem ::= SEQUENCE {
    rAB-ID          RAB-ID,
    trCH-ID-List    TrCH-ID-List,
    iE-Extensions           ProtocolExtensionContainer { { RAB-TrCH-MappingItem-ExtIEs} } OPTIONAL,
    ...
}

RAB-TrCH-MappingItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 99 to enable transfer of RAB Subflow mapping onto Iur transport channel Ids for a given indicated domain --
    {   ID id-CN-DomainIndicator    CRITICALITY ignore      EXTENSION CN-DomainIndicator    PRESENCE optional},
    ...
}

RAC                 ::= OCTET STRING (SIZE (1))

RAI ::= SEQUENCE {
    lAI             LAI,
    rAC             RAC,
    iE-Extensions           ProtocolExtensionContainer { {RAI-ExtIEs} } OPTIONAL,
    ...
}
```

```
RAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAListofIdleModeUEs ::= CHOICE {
    notEmptyRAListofIdleModeUEs         NotEmptyRAListofIdleModeUEs,
    emptyRAListofIdleModeUEs            ENUMERATED {emptylist},
    ...
}

NotEmptyRAListofIdleModeUEs ::= SEQUENCE {
    rAofIdleModeUEs         RAofIdleModeUEs,
    iE-Extensions           ProtocolExtensionContainer { {NotEmptyRAListofIdleModeUEs-ExtIEs} } OPTIONAL
}

RAofIdleModeUEs ::= SEQUENCE (SIZE (1..maxMBMSRA)) OF
    RAC

NotEmptyRAListofIdleModeUEs-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RateControlAllowed ::= ENUMERATED {
    not-allowed,
    allowed
}

RelocationRequirement ::= ENUMERATED {
    lossless,
    none,
    ...,
    realtime
}

RelocationType ::= ENUMERATED {
    ue-not-involved,
    ue-involved,
    ...
}

RepetitionNumber0 ::= INTEGER (0..255)

RepetitionNumber1 ::= INTEGER (1..256)


ReportArea ::= ENUMERATED {
    service-area,
    geographical-area,
    ...
}
```

```
RequestedGPSAssistanceData  ::= OCTET STRING (SIZE (1 .. 38 ))
        -- gpsAssistanceData as defined in 24.080 --

RequestedLocationRelatedDataType ::= ENUMERATED {
    decipheringKeysUEBasedOTDOA,
    decipheringKeysAssistedGPS,
    dedicatedAssistanceDataUEBasedOTDOA,
    dedicatedAssistanceDataAssistedGPS,
    ...
}

RequestedMBMSIPMulticastAddressandAPNRequest ::= SEQUENCE (SIZE (1..maxnoofMulticastServicesPerRNC)) OF
    MBMSIPMulticastAddressandAPNlist

MBMSIPMulticastAddressandAPNlist ::= SEQUENCE {
    tMGI                    TMGI,
    iPMulticastAddress      IPMulticastAddress,
    aPN                     APN,
    iE-Extensions           ProtocolExtensionContainer { {MBMSIPMulticastAddressandAPNlist-ExtIEs} }    OPTIONAL,
    ...
}

MBMSIPMulticastAddressandAPNlist-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RequestedMulticastServiceList ::= SEQUENCE (SIZE (1.. maxnoofMulticastServicesPerUE)) OF
    TNGI

Requested-RAB-Parameter-Values ::= SEQUENCE {
    requestedMaxBitrates                Requested-RAB-Parameter-MaxBitrateList          OPTIONAL,
    requestedGuaranteedBitrates             Requested-RAB-Parameter-GuaranteedBitrateList        OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { Requested-RAB-Parameter-Values-ExtIEs} }  OPTIONAL,
    ...
}

Requested-RAB-Parameter-Values-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

Requested-RAB-Parameter-MaxBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF MaxBitrate

Requested-RAB-Parameter-GuaranteedBitrateList   ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF GuaranteedBitrate


RequestType ::= SEQUENCE {
    event               Event,
    reportArea          ReportArea,
    accuracyCode        INTEGER (0..127)    OPTIONAL,
    ...
}
```

```
ResidualBitErrorRatio ::= SEQUENCE {
    mantissa            INTEGER (1..9),
    exponent            INTEGER (1..8),
    iE-Extensions           ProtocolExtensionContainer { {ResidualBitErrorRatio-ExtIEs} } OPTIONAL
}
-- ResidualBitErrorRatio = mantissa * 10^-exponent

ResidualBitErrorRatio-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResponseTime    ::= ENUMERATED {
    lowdelay,
    delaytolerant,
...
}

RIMInformation                  ::= OCTET STRING

RIM-Transfer ::= SEQUENCE {
    rIMInformation              RIMInformation,
    rIMRoutingAddress           RIMRoutingAddress   OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {RIM-Transfer-ExtIEs} } OPTIONAL
}

RIM-Transfer-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RIMRoutingAddress ::= CHOICE {
    globalRNC-ID                    GlobalRNC-ID,
    gERAN-Cell-ID                   GERAN-Cell-ID,
    ...
}


RNC-ID                  ::= INTEGER (0..4095)
-- RNC-ID                   ::= BIT STRING (SIZE (12))
-- Harmonized with RNSAP and NBAP definitions


RNCTraceInformation::= SEQUENCE {
    traceReference                  TraceReference,
    traceActivationIndicator        ENUMERATED {activated,deactivated},
    equipmentsToBeTraced            EquipmentsToBeTraced                                        OPTIONAL,
    -- This IE shall be present if the Trace Activation Indicator IE is set to "Activated".
    iE-Extensions                   ProtocolExtensionContainer { { RNCTraceInformation-ExtIEs} }    OPTIONAL
}

RNCTraceInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
RRC-Container               ::= OCTET STRING

RTLoadValue ::= INTEGER (0..100)

-- S

SAC                 ::= OCTET STRING (SIZE (2))

SAI ::= SEQUENCE {
    pLMNidentity                PLMNidentity,
    lAC             LAC,
    sAC             SAC,
    iE-Extensions           ProtocolExtensionContainer { {SAI-ExtIEs} } OPTIONAL
}

SAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SAPI ::= ENUMERATED {
    sapi-0,
    sapi-3,
    ...
}

SessionUpdateID ::= INTEGER (0.. 1048575)

Shared-Network-Information ::= SEQUENCE {
        pLMNs-in-shared-network         PLMNs-in-shared-network,
        iE-Extensions           ProtocolExtensionContainer { {Shared-Network-Information-ExtIEs} } OPTIONAL,
        ...
    }

Shared-Network-Information-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SignallingIndication ::= ENUMERATED {
    signalling,
    ...
}

SDU-ErrorRatio ::= SEQUENCE {
    mantissa            INTEGER (1..9),
    exponent            INTEGER (1..6),
    iE-Extensions           ProtocolExtensionContainer { {SDU-ErrorRatio-ExtIEs} } OPTIONAL
}
-- SDU-ErrorRatio = mantissa * 10^-exponent

SDU-ErrorRatio-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
```

```
}
SDU-FormatInformationParameters ::= SEQUENCE (SIZE (1..maxRAB-SubflowCombination)) OF
    SEQUENCE {
        subflowSDU-Size         SubflowSDU-Size     OPTIONAL,
        rAB-SubflowCombinationBitRate   RAB-SubflowCombinationBitRate   OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {SDU-FormatInformationParameters-ExtIEs} } OPTIONAL,
        ...
    }

SDU-FormatInformationParameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SDU-Parameters ::= SEQUENCE (SIZE (1..maxRAB-Subflows)) OF
    SEQUENCE {
        sDU-ErrorRatio          SDU-ErrorRatio OPTIONAL
        -- This IE shall be present if the Delivery Of Erroneous SDU IE is set to "Yes" or "No" --,
        residualBitErrorRatio       ResidualBitErrorRatio,
        deliveryOfErroneousSDU      DeliveryOfErroneousSDU,
        sDU-FormatInformationParameters SDU-FormatInformationParameters OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {SDU-Parameters-ExtIEs} } OPTIONAL,
        ...
    }

SDU-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SNA-Access-Information ::= SEQUENCE {
        authorisedPLMNs         AuthorisedPLMNs,
        iE-Extensions           ProtocolExtensionContainer { {SNA-Access-Information-ExtIEs} } OPTIONAL,
        ...
    }

SNA-Access-Information-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SNAC                ::= INTEGER (0..65535)

Service-Handover ::= ENUMERATED {
    handover-to-GSM-should-be-performed,
    handover-to-GSM-should-not-be-performed,
    handover-to-GSM-shall-not-be-performed,
    ...
}

SourceCellID ::= CHOICE {
    sourceUTRANCellID           SourceUTRANCellID,
    sourceGERANCellID           CGI,
    ...
}
```

```
SourceID ::= CHOICE {
    sourceRNC-ID            SourceRNC-ID,
    sAI             SAI,
    ...
}


SourceRNC-ID ::= SEQUENCE {
    pLMNidentity                PLMNidentity,
    rNC-ID              RNC-ID,
    iE-Extensions           ProtocolExtensionContainer { {SourceRNC-ID-ExtIEs} } OPTIONAL
}

SourceRNC-ID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SourceRNC-ToTargetRNC-TransparentContainer ::= SEQUENCE {
    rRC-Container           RRC-Container,
    numberOfIuInstances     NumberOfIuInstances,
    relocationType          RelocationType,
    chosenIntegrityProtectionAlgorithm ChosenIntegrityProtectionAlgorithm   OPTIONAL,
    integrityProtectionKey      IntegrityProtectionKey          OPTIONAL,
    chosenEncryptionAlgorithmForSignalling ChosenEncryptionAlgorithm     OPTIONAL,
    cipheringKey            EncryptionKey               OPTIONAL,
    chosenEncryptionAlgorithmForCS   ChosenEncryptionAlgorithm       OPTIONAL,
    chosenEncryptionAlgorithmForPS   ChosenEncryptionAlgorithm       OPTIONAL,
    d-RNTI              D-RNTI                  OPTIONAL
    -- This IE shall be present if the Relocation type IE is set to "UE not involved in relocation of SRNS" --,
    targetCellId            TargetCellId                OPTIONAL
    -- This IE shall be present if the Relocation type IE is set to "UE involved in relocation of SRNS" --,
    rAB-TrCH-Mapping            RAB-TrCH-Mapping                OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {SourceRNC-ToTargetRNC-TransparentContainer-ExtIEs} } OPTIONAL,
    ...
}

SourceRNC-ToTargetRNC-TransparentContainer-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 99 to enable transfer of SRB mapping onto Iur transport channel Ids --
    {   ID id-SRB-TrCH-Mapping  CRITICALITY reject      EXTENSION SRB-TrCH-Mapping  PRESENCE optional  }|
-- Extension for Release 5 to enable Inter RAN Load Information Exchange over Iu --
    {ID id-CellLoadInformationGroup CRITICALITY ignore      EXTENSION CellLoadInformationGroup    PRESENCE optional}|
-- Extension for Release 6 to provide Trace Recording Session Information to the Target RNC --
    {ID id-TraceRecordingSessionInformation     CRITICALITY ignore      EXTENSION TraceRecordingSessionInformation    PRESENCE optional}|
-- Extension for Release 6 to indicate to the Target RNC that the UE has activated Multicast Service --
    {ID id-MBMSLinkingInformation       CRITICALITY ignore      EXTENSION MBMSLinkingInformation  PRESENCE optional},
    ...
}

SourceStatisticsDescriptor ::= ENUMERATED {
    speech,
    unknown,
```

```
    ...
}

SourceUTRANCellID ::= SEQUENCE {
    pLMNidentity            PLMNidentity,
    uTRANcellID             TargetCellId,
    iE-Extensions           ProtocolExtensionContainer { {SourceUTRANCellID-ExtIEs} } OPTIONAL
}

SourceUTRANCellID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SRB-ID ::= INTEGER (1..32)

SRB-TrCH-Mapping ::=    SEQUENCE ( SIZE (1..maxNrOfSRBs)) OF
    SRB-TrCH-MappingItem

SRB-TrCH-MappingItem ::= SEQUENCE {
    sRB-ID          SRB-ID,
    trCH-ID         TrCH-ID,
    iE-Extensions           ProtocolExtensionContainer { { SRB-TrCH-MappingItem-ExtIEs} } OPTIONAL,
    ...
}


SRB-TrCH-MappingItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SubflowSDU-Size             ::= INTEGER (0..4095)
-- Unit is bit


-- T

TargetCellId                ::= INTEGER (0..268435455)

TargetID ::= CHOICE {
    targetRNC-ID            TargetRNC-ID,
    cGI             CGI,
    ...
}




TargetRNC-ID ::= SEQUENCE {
    lAI             LAI,
    rAC             RAC         OPTIONAL
    -- Must always be present towards the PS domain and never towards the CS domain --,
    rNC-ID              RNC-ID,
```

```
    iE-Extensions           ProtocolExtensionContainer { {TargetRNC-ID-ExtIEs} } OPTIONAL
}

TargetRNC-ID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

TargetRNC-ToSourceRNC-TransparentContainer ::= SEQUENCE {
    rRC-Container           RRC-Container,
    d-RNTI                  D-RNTI                  OPTIONAL
    -- May be included to allow the triggering of the Relocation Detect procedure from the Iur Interface --,
    iE-Extensions           ProtocolExtensionContainer { {TargetRNC-ToSourceRNC-TransparentContainer-ExtIEs} } OPTIONAL,
    ...
}

TargetRNC-ToSourceRNC-TransparentContainer-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

TBCD-STRING                 ::= OCTET STRING

TemporaryUE-ID ::= CHOICE {
    tMSI                TMSI,
    p-TMSI              P-TMSI,
    ...
}

TMGI ::= SEQUENCE {
    pLMNidentity            PLMNidentity,
    serviceID               OCTET STRING (SIZE (3)),
    iE-Extensions           ProtocolExtensionContainer { {TMGI-ExtIEs} } OPTIONAL
}

TMGI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

TMSI                    ::= OCTET STRING (SIZE (4))

TraceDepth ::= ENUMERATED {
    minimum,
    medium,
    maximum,
    ...
}

TracePropagationParameters ::= SEQUENCE {
    traceRecordingSessionReference      TraceRecordingSessionReference,
    traceDepth                          TraceDepth,
    listOfInterfacesToTrace             ListOfInterfacesToTrace     OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { TracePropagationParameters-ExtIEs} } OPTIONAL,
    ...
```

```
}

TracePropagationParameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

TraceRecordingSessionInformation    ::= SEQUENCE {
    traceReference                      TraceReference,
    traceRecordingSessionReference      TraceRecordingSessionReference,
    iE-Extensions                       ProtocolExtensionContainer { { TraceRecordingSessionInformation-ExtIEs} } OPTIONAL,
    ...
}

TraceRecordingSessionInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

TraceRecordingSessionReference      ::= INTEGER (0..65535)

TraceReference              ::= OCTET STRING (SIZE (2..3))

TraceType               ::= OCTET STRING (SIZE (1))
-- Reference: GSM TS 12.08

TrafficClass ::= ENUMERATED {
    conversational,
    streaming,
    interactive,
    background,
    ...
}

TrafficHandlingPriority         ::= INTEGER { spare (0), highest (1), lowest (14), no-priority-used (15) } (0..15)

TransferDelay               ::= INTEGER (0..65535)
-- Unit is millisecond

UnsuccessfullyTransmittedDataVolume ::= INTEGER (0..4294967295)

TransportLayerAddress           ::= BIT STRING (SIZE (1..160, ...))

TrCH-ID ::= SEQUENCE {
    dCH-ID              DCH-ID      OPTIONAL,
    dSCH-ID             DSCH-ID     OPTIONAL,
    uSCH-ID             USCH-ID     OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { TrCH-ID-ExtIEs} } OPTIONAL,
    ...
}

TrCH-ID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- Extension for Release 5 to enable transfer of HS-DSCH-MAC-d-Flow-ID onto Iur transport channel ID --
    {ID id-hS-DSCH-MAC-d-Flow-ID    CRITICALITY ignore      EXTENSION HS-DSCH-MAC-d-Flow-ID     PRESENCE optional},
```

```
    ...
}

TrCH-ID-List ::=  SEQUENCE (SIZE (1..maxRAB-Subflows)) OF
    TrCH-ID

TriggerID               ::= OCTET STRING (SIZE (3..22))

TypeOfError ::= ENUMERATED {
    not-understood,
    missing,
    ...
}


-- U

UE-ID ::= CHOICE {
    imsi                IMSI,
    imei                IMEI,
    ...,
    imeisv              IMEISV

}

UESBI-Iu ::= SEQUENCE {
    uESBI-IuA       UESBI-IuA   OPTIONAL,
    uESBI-IuB       UESBI-IuB   OPTIONAL,
    iE-Extensions       ProtocolExtensionContainer { {UESBI-Iu-ExtIEs} } OPTIONAL,
    ...
}

UESBI-Iu-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

UESBI-IuA               ::= BIT STRING (SIZE(1..128))
-- Reference: TR25.994 --
UESBI-IuB               ::= BIT STRING (SIZE(1..128))
-- Reference: TR25.995 --

UL-GTP-PDU-SequenceNumber       ::= INTEGER (0..65535)

UL-N-PDU-SequenceNumber         ::= INTEGER (0..65535)

UP-ModeVersions             ::= BIT STRING (SIZE (16))

USCH-ID                     ::= INTEGER (0..255)

UserPlaneMode ::= ENUMERATED {
    transparent-mode,
    support-mode-for-predefined-SDU-sizes,
```

```
    ...
}

-- V

VerticalAccuracyCode            ::= INTEGER (0..127)

END
```

Not affected section 9.3.5 not shown here

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

RANAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- Elementary Procedures
--
-- **************************************************************

id-RAB-Assignment                   INTEGER ::= 0
id-Iu-Release                       INTEGER ::= 1
id-RelocationPreparation            INTEGER ::= 2
id-RelocationResourceAllocation     INTEGER ::= 3
id-RelocationCancel                 INTEGER ::= 4
id-SRNS-ContextTransfer             INTEGER ::= 5
id-SecurityModeControl              INTEGER ::= 6
id-DataVolumeReport                 INTEGER ::= 7
id-Reset                            INTEGER ::= 9
id-RAB-ReleaseRequest               INTEGER ::= 10
id-Iu-ReleaseRequest                INTEGER ::= 11
id-RelocationDetect                 INTEGER ::= 12
id-RelocationComplete               INTEGER ::= 13
id-Paging                           INTEGER ::= 14
id-CommonID                         INTEGER ::= 15
id-CN-InvokeTrace                   INTEGER ::= 16
id-LocationReportingControl         INTEGER ::= 17
```

```
id-LocationReport                   INTEGER ::= 18
id-InitialUE-Message                INTEGER ::= 19
id-DirectTransfer                   INTEGER ::= 20
id-OverloadControl                  INTEGER ::= 21
id-ErrorIndication                  INTEGER ::= 22
id-SRNS-DataForward                 INTEGER ::= 23
id-ForwardSRNS-Context              INTEGER ::= 24
id-privateMessage                   INTEGER ::= 25
id-CN-DeactivateTrace               INTEGER ::= 26
id-ResetResource                    INTEGER ::= 27
id-RANAP-Relocation                 INTEGER ::= 28
id-RAB-ModifyRequest                INTEGER ::= 29
id-LocationRelatedData              INTEGER ::= 30
id-InformationTransfer              INTEGER ::= 31
id-UESpecificInformation            INTEGER ::= 32
id-UplinkInformationExchangeTransfer        INTEGER ::= 33
id-DirectInformationTransfer        INTEGER ::= 34
id-MBMSSessionStart                 INTEGER ::= x35
id-MBMSSessionUpdate                INTEGER ::= x36
id-MBMSSessionStop                  INTEGER ::= x37
id-MBMSUELinking                    INTEGER ::= x38
id-MBMSRegistration                 INTEGER ::= x39
id-MBMSCNDe-Registration            INTEGER ::= x40
id-MBMSRABEstablishmentIndication   INTEGER ::= x41



-- **************************************************************
--
-- Extension constants
--
-- **************************************************************

maxPrivateIEs                       INTEGER ::= 65535
maxProtocolExtensions               INTEGER ::= 65535
maxProtocolIEs                      INTEGER ::= 65535

-- **************************************************************
--
-- Lists
--
-- **************************************************************

maxNrOfDTs                          INTEGER ::= 15
maxNrOfErrors                       INTEGER ::= 256
maxNrOfIuSigConIds                  INTEGER ::= 250
maxNrOfPDPDirections                INTEGER ::= 2
maxNrOfPoints                       INTEGER ::= 15
maxNrOfRABs                         INTEGER ::= 256
maxNrOfSeparateTrafficDirections    INTEGER ::= 2
maxNrOfSRBs                         INTEGER ::= 8
maxNrOfVol                          INTEGER ::= 2
```

```
maxNrOfLevels                       INTEGER ::= 256
maxNrOfAltValues                    INTEGER ::= 16
maxNrOfPLMNsSN                      INTEGER ::= 32
maxNrOfLAs                          INTEGER ::= 65536
maxNrOfSNAs                         INTEGER ::= 65536
maxNrOfUEsToBeTraced                INTEGER ::= 64
maxNrOfInterfaces                   INTEGER ::= 16

maxRAB-Subflows                     INTEGER ::= 7
maxRAB-SubflowCombination           INTEGER ::= 64
maxSet                              INTEGER ::= 9
maxnoofMulticastServicesPerUE       INTEGER ::= 128
maxnoofMulticastServicesPerRNC      INTEGER ::= 512
maxMBMSSA                           INTEGER ::= 256
maxMBMSRA                           INTEGER ::= 65536

-- **************************************************************
--
-- IEs
--
-- **************************************************************

id-AreaIdentity                                 INTEGER ::= 0
id-CN-DomainIndicator                           INTEGER ::= 3
id-Cause                                        INTEGER ::= 4
id-ChosenEncryptionAlgorithm                    INTEGER ::= 5
id-ChosenIntegrityProtectionAlgorithm           INTEGER ::= 6
id-ClassmarkInformation2                        INTEGER ::= 7
id-ClassmarkInformation3                        INTEGER ::= 8
id-CriticalityDiagnostics                       INTEGER ::= 9
id-DL-GTP-PDU-SequenceNumber                    INTEGER ::= 10
id-EncryptionInformation                        INTEGER ::= 11
id-IntegrityProtectionInformation               INTEGER ::= 12
id-IuTransportAssociation                       INTEGER ::= 13
id-L3-Information                               INTEGER ::= 14
id-LAI                                          INTEGER ::= 15
id-NAS-PDU                                      INTEGER ::= 16
id-NonSearchingIndication                       INTEGER ::= 17
id-NumberOfSteps                                INTEGER ::= 18
id-OMC-ID                                       INTEGER ::= 19
id-OldBSS-ToNewBSS-Information                  INTEGER ::= 20
id-PagingAreaID                                 INTEGER ::= 21
id-PagingCause                                  INTEGER ::= 22
id-PermanentNAS-UE-ID                           INTEGER ::= 23
id-RAB-ContextItem                              INTEGER ::= 24
id-RAB-ContextList                              INTEGER ::= 25
id-RAB-DataForwardingItem                       INTEGER ::= 26
id-RAB-DataForwardingItem-SRNS-CtxReq           INTEGER ::= 27
id-RAB-DataForwardingList                       INTEGER ::= 28
id-RAB-DataForwardingList-SRNS-CtxReq           INTEGER ::= 29
id-RAB-DataVolumeReportItem                     INTEGER ::= 30
id-RAB-DataVolumeReportList                     INTEGER ::= 31
```

```
id-RAB-DataVolumeReportRequestItem              INTEGER ::= 32
id-RAB-DataVolumeReportRequestList              INTEGER ::= 33
id-RAB-FailedItem                               INTEGER ::= 34
id-RAB-FailedList                               INTEGER ::= 35
id-RAB-ID                                       INTEGER ::= 36
id-RAB-QueuedItem                               INTEGER ::= 37
id-RAB-QueuedList                               INTEGER ::= 38
id-RAB-ReleaseFailedList                        INTEGER ::= 39
id-RAB-ReleaseItem                              INTEGER ::= 40
id-RAB-ReleaseList                              INTEGER ::= 41
id-RAB-ReleasedItem                             INTEGER ::= 42
id-RAB-ReleasedList                             INTEGER ::= 43
id-RAB-ReleasedList-IuRelComp                   INTEGER ::= 44
id-RAB-RelocationReleaseItem                    INTEGER ::= 45
id-RAB-RelocationReleaseList                    INTEGER ::= 46
id-RAB-SetupItem-RelocReq                       INTEGER ::= 47
id-RAB-SetupItem-RelocReqAck                    INTEGER ::= 48
id-RAB-SetupList-RelocReq                       INTEGER ::= 49
id-RAB-SetupList-RelocReqAck                    INTEGER ::= 50
id-RAB-SetupOrModifiedItem                      INTEGER ::= 51
id-RAB-SetupOrModifiedList                      INTEGER ::= 52
id-RAB-SetupOrModifyItem                        INTEGER ::= 53
id-RAB-SetupOrModifyList                        INTEGER ::= 54
id-RAC                                          INTEGER ::= 55
id-RelocationType                               INTEGER ::= 56
id-RequestType                                  INTEGER ::= 57
id-SAI                                          INTEGER ::= 58
id-SAPI                                         INTEGER ::= 59
id-SourceID                                     INTEGER ::= 60
id-SourceRNC-ToTargetRNC-TransparentContainer   INTEGER ::= 61
id-TargetID                                     INTEGER ::= 62
id-TargetRNC-ToSourceRNC-TransparentContainer   INTEGER ::= 63
id-TemporaryUE-ID                               INTEGER ::= 64
id-TraceReference                               INTEGER ::= 65
id-TraceType                                    INTEGER ::= 66
id-TransportLayerAddress                        INTEGER ::= 67
id-TriggerID                                    INTEGER ::= 68
id-UE-ID                                        INTEGER ::= 69
id-UL-GTP-PDU-SequenceNumber                    INTEGER ::= 70
id-RAB-FailedtoReportItem                       INTEGER ::= 71
id-RAB-FailedtoReportList                       INTEGER ::= 72
id-KeyStatus                                    INTEGER ::= 75
id-DRX-CycleLengthCoefficient                   INTEGER ::= 76
id-IuSigConIdList                               INTEGER ::= 77
id-IuSigConIdItem                               INTEGER ::= 78
id-IuSigConId                                   INTEGER ::= 79
id-DirectTransferInformationItem-RANAP-RelocInf INTEGER ::= 80
id-DirectTransferInformationList-RANAP-RelocInf INTEGER ::= 81
id-RAB-ContextItem-RANAP-RelocInf               INTEGER ::= 82
id-RAB-ContextList-RANAP-RelocInf               INTEGER ::= 83
id-RAB-ContextFailedtoTransferItem              INTEGER ::= 84
id-RAB-ContextFailedtoTransferList              INTEGER ::= 85
```

```
id-GlobalRNC-ID                                 INTEGER ::= 86
id-RAB-ReleasedItem-IuRelComp                   INTEGER ::= 87
id-MessageStructure                             INTEGER ::= 88
id-Alt-RAB-Parameters                           INTEGER ::= 89
id-Ass-RAB-Parameters                           INTEGER ::= 90
id-RAB-ModifyList                               INTEGER ::= 91
id-RAB-ModifyItem                               INTEGER ::= 92
id-TypeOfError                                  INTEGER ::= 93
id-BroadcastAssistanceDataDecipheringKeys       INTEGER ::= 94
id-LocationRelatedDataRequestType               INTEGER ::= 95
id-GlobalCN-ID                                  INTEGER ::= 96
id-LastKnownServiceArea                         INTEGER ::= 97
id-SRB-TrCH-Mapping                             INTEGER ::= 98
id-InterSystemInformation-TransparentContainer  INTEGER ::= 99
id-NewBSS-To-OldBSS-Information                         INTEGER ::= 100
id-SourceRNC-PDCP-context-info                          INTEGER ::= 103
id-InformationTransferID                                INTEGER ::= 104
id-SNA-Access-Information                               INTEGER ::= 105
id-ProvidedData                                         INTEGER ::= 106
id-GERAN-BSC-Container                                  INTEGER ::= 107
id-GERAN-Classmark                                      INTEGER ::= 108
id-GERAN-Iumode-RAB-Failed-RABAssgntResponse-Item       INTEGER ::= 109
id-GERAN-Iumode-RAB-FailedList-RABAssgntResponse        INTEGER ::= 110
id-VerticalAccuracyCode                                 INTEGER ::= 111
id-ResponseTime                                         INTEGER ::= 112
id-PositioningPriority                                  INTEGER ::= 113
id-ClientType                                           INTEGER ::= 114
id-LocationRelatedDataRequestTypeSpecificToGERANIuMode  INTEGER ::= 115
id-SignallingIndication                                 INTEGER ::= 116
id-hS-DSCH-MAC-d-Flow-ID                                INTEGER ::= 117
id-UESBI-Iu                                             INTEGER ::= 118
id-PositionData                                         INTEGER ::= 119
id-PositionDataSpecificToGERANIuMode                    INTEGER ::= 120
id-CellLoadInformationGroup                             INTEGER ::= 121
id-AccuracyFulfilmentIndicator                          INTEGER ::= 122
id-InformationTransferType                              INTEGER ::= 123
id-TraceRecordingSessionInformation                     INTEGER ::= 124
id-TracePropagationParameters                           INTEGER ::= 125
id-InterSystemInformationTransferType                   INTEGER ::= 126

id-APN                                                  INTEGER ::= x127
id-CNMBMSLinkingInformation                             INTEGER ::= x128
id-DeltaRAListofIdleModeUEs                             INTEGER ::= x129
id-FrequenceLayerConvergenceFlag                        INTEGER ::= x130
id-InformationTransferType                              INTEGER ::= x131
id-InformationExchangeType                              INTEGER ::= x132
id-InformationRequested                                 INTEGER ::= x133
id-InformationRequestType                               INTEGER ::= x134
id-IPMulticastAddress                                   INTEGER ::= x135
id-JoinedMBMSBearerServicesList                         INTEGER ::= x136
id-LeftMBMSBearerServicesList                           INTEGER ::= x137
id-MBMSBearerServiceType                                INTEGER ::= x138
```

```
id-MBMSCNDe-Registration                    INTEGER ::= x139
id-MBMSServiceArea                          INTEGER ::= x140
id-MBMSSessionDuration                      INTEGER ::= x141
id-MBMSSessionIdentifier                    INTEGER ::= x142
id-PDP-TypeInformation                      INTEGER ::= x143
id-RAB-Parameters                           INTEGER ::= x144
id-RAListofIdleModeUEs                      INTEGER ::= x145
id-MBMSRegistrationRequestType              INTEGER ::= x146
id-SessionUpdateID                          INTEGER ::= x147
id-TMGI                                     INTEGER ::= x148
id-TransportLayerInformation                INTEGER ::= x149
id-UnsuccessfulLinkingList                  INTEGER ::= x150
id-MBMSLinkingInformation                   INTEGER ::= x151

END
```

3GPP TSG-RAN3 Meeting #45
Shin-Yokohama, Japan, 2004

Tdoc ⌘R3-041727

CR-Form-v7

CHANGE REQUEST

⌘ **25.420** **CR** **44** ⌘ **rev** **2** ⌘ Current version: **6.1.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Introduction of MBMS
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	09/11/2004
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Include MBMS in the Iur interface functionality.
Summary of change:	⌘	Added MBMS functionality in the Iur list. Section 2: MBMS reference added Section 3: MBMS definitions added Section 4.4.1: MBMS mentioned in RNSAP signalling Section 5.1: MBMS functionality added to the list Section 5.2.x: MBMS bearer type control functionality split over Iur added. R1: Editorial changes. R2: Editorial changes. Inclusion of MBMS procedures module in section 6.2.1. Impact assessment towards the previous version of the specification (same release): There is no impact due to MBMS being a new feature.
Consequences if not approved:	⌘	MBMS will not be listed as a function of the Iur.

Clauses affected:	⌘	2, 3.2, 4.4.1, 5.1, 5.2.x (new)

Y **N**

Other specs	⌘	**X**	Other core specifications	⌘	TS 25.401 v6.4.0 CR 95 TS 25.402 v6.0.0 CR 45 TS 25.410 v6.1.0 CR 59 TS 25.413 v6.3.0 CR 706 TS 25.423 v6.3.0 CR 999 TS 25.430 v6.2.0 CR 57 TS 25.433 v6.3.0 CR 1049
affected:		**X**	Test specifications		
		X	O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

Foreword

This Technical Specification (TS) has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document is an introduction to the TSG RAN TS 25.42x series of UMTS Technical Specifications that define the Iur Interface. It is a logical interface for the interconnection of two Radio Network Controller (RNC) components of the UMTS Terrestrial Radio Access Network (UTRAN) for the UMTS system.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 25.427: "UTRAN Iub/Iur Interface User Plane Protocol for DCH Data Streams".

[2] 3GPP TS 25.425: "UTRAN Iur Interface: User Plane Protocols for Common Transport Channel Data Streams".

[3] 3GPP TS 25.421: "UTRAN Iur Interface: Layer 1".

[4] 3GPP TS 25.422: "UTRAN Iur Interface: Signalling Transport".

[5] 3GPP TS 25.423: "UTRAN Iur Interface: RNSAP Signalling ".

[6] 3GPP TS 25.424: "UTRAN Iur Interface: Data Transport & Transport Signalling ".

[7] 3GPP TS 25.401: "UTRAN Overall Description".

[8] 3GPP TS 25.426: "UTRAN Iur & Iub Interface: Data Transport & Transport Signalling for DCH Data Streams".

[9] ITU-T Recommendation Q.711 (7/96): "Functional description of the signalling connection control part".

[10] ITU-T Recommendation Q.712 (7/96): "Definition and function of signalling connection control part messages".

[11] ITU-T Recommendation Q.713 (7/96): "Signalling connection control part formats and codes".

[12] ITU-T Recommendation Q.714 (7/96): "Signalling connection control part procedures".

[13] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[14] ITU-T Recommendation Q.2630.1 (12/99): "AAL type 2 Signalling Protocol (Capability Set 1)".

[15] Void

[16] Void

[17] 3GPP TR 43.930: "Iur-g interface; Stage 2".

[x] 3GPP TS 25.346: "Introduction of the Multimedia Broadcast Multicast Service".

3 Definitions and abbreviations

3.1 Definitions

None

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaptation Layer type 2
AAL5	ATM Adaptation Layer type 5
ALCAP	Access Link Control Application Part
ATM	Asynchronous Transfer Mode
BSS	Base Station Subsystem
CPCH	Common Packet Channel
CRNC	Controlling RNC
CTP	Common Transport Protocol
DCH	Dedicated Transport Channel
DL	Downlink
DRNC	Drift Radio Network Controller
DRNS	Drift Radio Network Subsystem
DSCH	Downlink Shared Channel
EDGE	Enhanced Data rates for GSM Evolution
FACH	Forward Access Channel
FFS	For Further Study
GERAN	GSM/EDGE Radio Access Network
GSM	Global System for Mobile communications
GT	Global Title
HS-DSCH	High Speed Downlink Shared Channel
IP	Internet Protocol
MAC	Medium Access Control
MBMS	Multimedia Broadcast Multicast Service
MTP3-B	Message Transfer Part level 3 (for Q.2140)
PLMN	Public Land Mobile Network
PTM	Point To Multipoint
PTP	Point To Point
QoS	Quality of Service
RACH	Random Access Channel
RF	Radio Frequency
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RRC	Radio Resource Control
SCCP	Signalling Connection Control Part
SPC	Signalling Point Code
SRNC	Serving Radio Network Controller
SRNS	Serving Radio Network Subsystem
SS7	Signalling System N° 7
SSCF-NNI	Service Specific Co-ordination Function – Network Node Interface
SSCOP	Service Specific Connection Oriented Protocol
SSN	Sub-System Number
STC	Signalling Transport Converter
UDP	User Datagram Protocol
UE	User Equipment
UL	Up-link
UMTS	Universal Mobile Telecommunication System
URA	UTRAN Registration Area
USCH	Uplink Shared Channel

UTRAN UMTS Terrestrial Radio Access Network

3.3 Specification Notations

For the purposes of the present document, the following notations apply:

[FDD] This tagging of a word indicates that the word preceding the tag "[FDD]" applies only to FDD. This tagging of a heading indicates that the heading preceding the tag "[FDD]" and the section following the heading applies only to FDD.

[TDD] This tagging of a word indicates that the word preceding the tag "[TDD]" applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[TDD]" and the section following the heading applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD.

[3.84Mcps TDD] This tagging of a word indicates that the word preceding the tag “[3.84Mcps TDD]” applies only to 3.84Mcps TDD. This tagging of a heading indicates that the heading preceding the tag “[3.84Mcps TDD]” and the section following the heading applies only to 3.84Mcps TDD.

[1.28Mcps TDD] This tagging of a word indicates that the word preceding the tag "[1.28Mcps TDD]" applies only to 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[1.28Mcps TDD]" and the section following the heading applies only to 1.28Mcps TDD.

[FDD - …] This tagging indicates that the enclosed text following the "[FDD - " applies only to FDD. Multiple sequential paragraphs applying only to FDD are enclosed separately to enable insertion of TDD specific (or common) paragraphs between the FDD specific paragraphs.

[TDD - …] This tagging indicates that the enclosed text following the "[TDD - " applies only to TDD including 3.84Mcps TDD and 1.28Mcps TDD. Multiple sequential paragraphs applying only to TDD are enclosed separately to enable insertion of FDD specific (or common) paragraphs between the TDD specific paragraphs.

[3.84Mcps TDD - …] This tagging indicates that the enclosed text following the "[3.84Mcps TDD - " applies only to 3.84Mcps TDD. Multiple sequential paragraphs applying only to 3.84Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 3.84Mcps TDD specific paragraphs.

[1.28Mcps TDD - …] This tagging indicates that the enclosed text following the "[1.28Mcps TDD – " applies only to 1.28Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 1.28Mcps TDD specific paragraphs.

Procedure When referring to a procedure in the specification, the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. RNSAP Basic Mobility Procedures.

Message When referring to a message in the specification, the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. RADIO LINK SETUP REQUEST message.

Frame When referring to a control or data frame in the specification, the CONTROL/DATA FRAME NAME is written with all letters in upper case characters followed by the words "control/data frame", e.g. DCH data frame.

4 General Aspects

4.1 Introduction

The logical connection that exists between any two RNCs within the UTRAN is referred to as the Iur interface.

4.2 Iur Interface General Principles

The general principles for the specification of the Iur interface are as follows:

- The Iur interface should be open;
- The Iur interface shall support the exchange of signalling information between two RNCs, in addition the interface may need to support one or more Iur data streams;
- From a logical standpoint, the Iur is a point-to-point interface between two RNCs within the UTRAN. A point-to-point logical interface should be feasible even in the absence of a physical direct connection between the two RNCs.

4.3 Iur Interface Specification Objectives

4.3.1 General

The I_{ur} interface specifications shall facilitate the following:

- inter-connection of RNCs supplied by different manufacturers;
- support of continuation between RNSs of the UTRAN services offered via the Iu interface;
- separation of I_{ur} interface Radio Network functionality and Transport Network functionality to facilitate introduction of future technology.

4.3.2 Addressing of RNSs over the Iur Interface

- For an RRC connection using a dedicated channel, the Iur standard shall allow the addition / deletion of radio links supported by cells belonging to any RNS within the PLMN.
- The specification of the Iur interface shall allow an RNC to address any other RNC within the PLMN for establishing a signalling bearer over Iur.
- The specification of the Iur interface shall allow an RNC to address any other RNC within the PLMN for establishing user data bearers for Iur data streams.

RNSAP shall allow different kinds of addressing schemes to be used for the signalling bearer.

4.4 Iur Interface Capabilities

4.4.1 Radio application related signalling

The Iur interface provides capability to support radio interface mobility between RNSs, of UEs having a connection with UTRAN. This capability includes the support of handover, radio resource handling, -MBMS handling and synchronisation between RNSs.

4.4.2 Iub/Iur DCH data streams

The Iur interface provides the means for transport of uplink and downlink Iub/Iur DCH frames carrying user data and control information between SRNC and Node B (DRNS), via the DRNC.

In the UTRAN, one DCH data stream always corresponds to a bi-directional transport channel. Although the TFS is configured separately for each DCH direction and a DCH could be configured with e.g. only a zero-bit transport format in one direction, the DCH is always treated as a bi-directional transport channel in the UTRAN. As a result, two uni-directional Uu DCH transport channels with opposite directions can be mapped to either one or two DCH transport channels in the UTRAN.

4.4.3 Iur RACH/CPCH [FDD] data streams

The Iur interface provides the means for transport of uplink RACH and [FDD - CPCH] transport frames between DRNC and SRNC.

4.4.4 Iur DSCH data streams

An Iur DSCH data stream corresponds to the data carried on one DSCH transport channel for one UE. A UE may have multiple Iur DSCH data streams.

The Iur interface provides a means of transporting down link MAC-c/sh SDUs. In addition, the interface provides a means to the SRNC for queue reporting and a means for the DRNC to allocate capacity to the SRNC.

4.4.5 Iur USCH data streams [TDD]

An Iur USCH data stream corresponds to the data carried on one USCH transport channel for one UE. A UE may have multiple Iur USCH data streams.

4.4.6 Iur FACH data streams

The Iur interface provides the means for transport of downlink FACH transport frames between SRNC and DRNC.

4.4.7 Iur HS-DSCH data streams

An Iur HS-DSCH data stream corresponds to the data carried on one MAC-d flow for one UE. A UE may have multiple Iur HS-DSCH data streams.

The Iur interface provides a means of transporting down link MAC-d PDUs. In addition, the interface provides a means to the SRNC for queue reporting and a means for the DRNC to allocate capacity to the SRNC.

4.5 Iur Interface Characteristics

4.5.1 Uses of SCCP

4.5.1.1 General

The SCCP is used to support signalling messages between two RNCs. One user function of the SCCP, called Radio Network Subsystem Application Part (RNSAP), is defined. The RNSAP uses one signalling connection per DRNC and UE where a UE is having one or more active radio links for the transfer of layer 3 messages. RNSAP also uses one signalling connection per RNC providing common measurements and information to a particular RNC (i.e. if measurements and information are transferred in both directions between a pair of RNCs, then two SCCP connections are used).

Both connectionless and connection-oriented procedures are used to support the RNSAP. TS 25.423 explain whether connection oriented or connectionless services should be used for a layer 3 procedure.

The following subclauses describe the use of SCCP connections for RNSAP transactions. Subclause 4.5.1.2 describes the connection establishment procedures. Subclause 4.5.1.3 describes the connection establishment procedures initiated from SRNC. Subclause 4.5.1.4 describes the connection release procedures. Subclause 4.5.1.5 describes abnormal conditions.

4.5.1.2 SCCP connection establishment

A new SCCP connection is established when information related to the communication between a UE and the network has to be exchanged between two RNCs, and no SCCP connection exists between the two RNCs involved, for the concerned UE.

In this case, the SCCP connection is established by the SRNC.

A new SCCP connection is established when a request for common measurements or information is made towards a particular RNC and no SCCP connection for common measurements and information transfer has been established from the RNC requesting the measurements or information towards the one providing the measurements or the information.

In this case, the SCCP connection is established by the RNC requesting the measurements or the information.

4.5.1.3 Establishment procedure initiated from the SRNC

The SCCP signalling connection establishment is initiated, by the SRNC, when the SRNC needs to request dedicated resources, i.e. a DCH, from a DRNC.

Initiation

- The SRNC sends the SCCP: CR message to the DRNC. The RADIO LINK SETUP REQUEST message may be included in the user data field of an SCCP Connection Request message.

Termination

1. Successful outcome:

   - The SCCP Connection Confirm message, which may optionally contain a connection oriented RNSAP message in the user data field, is returned to the SRNC.

2. Unsuccessful outcome:

   - If the SCCP signalling connection establishment fails, an SCCP Connection Refusal message will be sent back to the SRNC. This message may optionally contain a connection oriented RNSAP message.

For more information on how the RNSAP procedure Radio Link Setup is handled, please see the procedure Radio Link Setup in TS 25.423 [5].

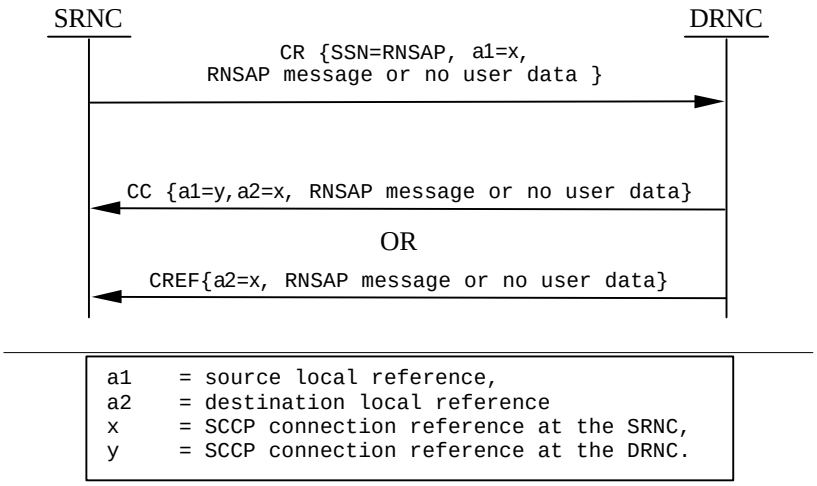

Figure 1: Setting-up of SCCP Signalling Connection

4.5.1.3A Establishment procedure initiated from an RNC requesting common measurements or information

The SCCP signalling connection establishment is initiated, by an RNC, when the RNC needs to request common measurements or provision of information from another RNC and there is no signalling bearer existing for this purpose. For the description below, the RNC requesting the measurements or the information is called RNC1 and the RNC being requested to provide the measurements or the information is called RNC2.

Initiation

- The RNC1 sends the SCCP: CR message to the RNC2. The COMMON MEASUREMENT INITIATION REQUEST or the INFORMATION EXCHANGE INITIATION REQUEST message shall be included in the user data field of the SCCP Connection Request message.

Termination

1. Successful outcome:

   - The SCCP Connection Confirm message, which may optionally contain a connection oriented RNSAP message in the user data field, is returned to the RNC1.

2. Unsuccessful outcome:

   - If the SCCP signalling connection establishment fails, an SCCP Connection Refusal message will be sent back to the RNC1. This message may optionally contain a connection oriented RNSAP message.

RNSAP Common Measurement Initiation and Information Exchange Initiation procedures are described in [5].

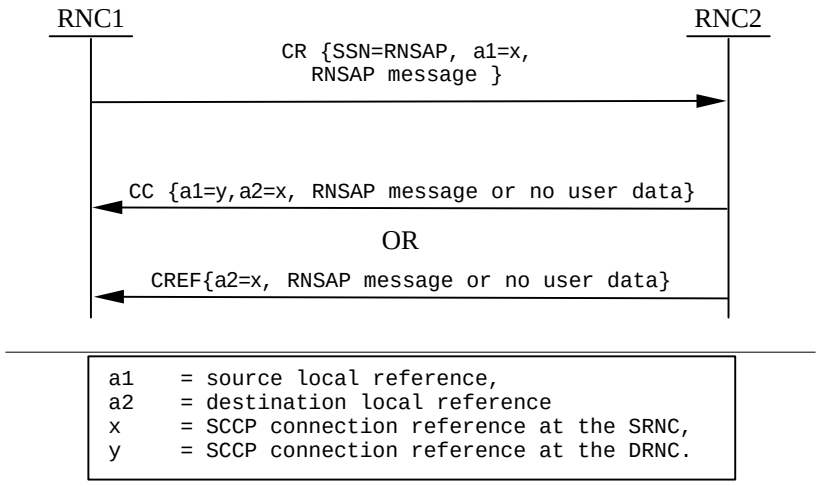

Figure 1a: Setting-up of SCCP Signalling Connection

4.5.1.4 SCCP connection release

An SCCP connection related to a specific UE is released in all normal release cases when the SRNC realises that a given signalling connection is no longer required.

The SRNC sends an SCCP Released message.

The procedure may be initiated at the SRNC side and the DRNC side in any abnormal release case.

An SCCP connection used for common measurements and information exchanges is released in all normal release cases when the RNC1 (see 4.5.1.3A) determines that a given signalling connection is no longer required. The RNC1 sends an SCCP Released message.

The procedure may be initiated at the RNC 1 side and the RNC 2 side in any abnormal release case.

4.5.1.5 General SCCP Abnormal Conditions

4.5.1.5.1 SCCP bearer failure

If a user-out-of-service information or signalling-point-inaccessible information is received by the RNSAP, no new attempt to establish SCCP connections or to send SCCP Connectionless messages towards the affected signalling point (indicated by the affected signalling point code) will be started until the corresponding user-in-service information or signalling-point-accessible information is received.

When a user-out-of-service information or signalling-point-inaccessible is received by an RNC, an optional timer may be started. When the timer expires, the RNC shall take actions as described in [5] Annex X. When the user-in-service or signalling-point-accessible is received, the timer is stopped.

4.5.1.5.2 SCCP connection failure

If for any reason an SCCP connection is released, the optional timer expires or a connection refusal is received while any of the RNSAP procedures are being performed or while a dedicated resource is still allocated, this shall be handled by the RNC as described in [5] Annex X.2.

4.5.2 SCCP Addressing Scheme

4.5.2.1 General

RNSAP may use SSN, SPC and/or GT and any combination of them as addressing schemes for the SCCP. Which of the available addressing schemes to use for the SCCP is an operator matter.

When GT addressing is utilised, the following settings shall be used:

- SSN Indicator = 1 (RNSAP SSN as defined in [13] shall always be included);
- Global Title Indicator = 0100 (GT includes translation type, numbering plan, encoding scheme and nature of address indicator);
- Translation Type = 0000 0000 (not used);
- Numbering Plan = 0001 (E.163/4);
- Nature of Address Indicator = 000 0100 (International Significant Number);
- Encoding Scheme = 0001 or 0010 (BCD, odd or even);
- Routing indicator = 0 or 1 (route on GT or PC/SSN).

When used, the GT shall be the E.164 address of the relevant node.

5 Functions of the I_{ur} Interface Protocols

5.1 Functional List

The list of functions on the Iur interface is the following:

1. Transport Network Management.
2. Traffic management of Common Transport Channels:
   - Preparation of Common Transport Channel resources;
   - Paging.
3. Traffic Management of Dedicated Transport Channels:
   - Radio Link Setup/ Addition/ Deletion;
   - Measurement Reporting.
4. Traffic Management of Downlink Shared Transport Channels and [TDD - Uplink Shared Transport Channels]:
   - Radio Link Setup/ Addition/ Deletion;
   - Capacity Allocation.
5. Measurement reporting for common and dedicated measurement objects.
6. Information exchange of UTRAN, ~~and~~ GERAN and MBMS bearer service information.

7. Tracing of various events related to a UE.

8. MBMS related functions

   - MBMS UE Linking/De-linking

   - MBMS URA linking/De-linking

   - MBMS Channel type Indication

5.2 Functional Split over Iur

5.2.1 Combining/Splitting

DRNS may perform combining/splitting of data streams communicated via its cells. SRNS performs combining/splitting of Iur data streams received from/sent to DRNS(s), and data streams communicated via its own cells.

The UL combining of information streams may be performed using any suitable algorithm, for example:

- [FDD - based on maximum ratio algorithm (maximum ratio combining)];
- [FDD - based on quality information associated to each TBS (selection-combining)];
- [TDD - based on the presence/absence of the signal (selection)].

The internal DRNS handling of combining (respectively splitting) of Iub (respectively Iur) DCH frames is controlled by the DRNS.

5.2.2 Control of Combining/Splitting Topology

When requesting the addition of a new cell for a UE-UTRAN connection, the RNC of the SRNS (i.e. the SRNC) can explicitly request to the RNC of the DRNS (i.e. the DRNC) a new Iur data stream, in which case the combining and splitting function within the DRNS is not used for that cell. The SRNC can also explicitly request from the DRNC the use of the combining and splitting function inside the DRNS for that cell. Otherwise, the DRNS takes the decision whether combining and splitting function is used inside the DRNS for that cell i.e. whether a new Iur data stream shall be added or not.

5.2.3 Handling of DRNS Hardware Resources

Allocation and control of DRNS hardware resources, used for Iur data streams and radio interface transmission/reception in DRNS is performed by DRNS.

5.2.4 Allocation of Physical Channels

Allocation of physical channels in cells belonging to DRNS is performed in DRNS.

5.2.5 UpLink Power Control

This group of functions controls the level of the uplink transmitted power in order to minimise uplink interference and keep the quality of the connections. If the connection involves both a SRNS and a DRNS the function UL Outer Loop Power Control (located in the SRNC) sets the target quality for the UL Inner Loop Power Control function (located in Node B [FDD]).

5.2.6 Down-Link Power Control

This group of functions controls the level of the downlink transmitted power. In FDD it is also used to correct the downlink power drifting between several radio links. SRNC regularly (or under some algorithms) sends the target down link power reference based on the measurement report from UE.

5.2.7 Admission Control

Admission control in a DRNC is implicitly invoked during radio link setup/modify.

Information on UL interference and DL power on cells controlled by the DRNC should be available across Iur.

Additional information exchanges between admission control functions located in different RNCs are for further study.

5.2.8 Radio Protocol Functional Split

Iur supports the radio protocol functional split between SRNC and DRNC.

5.2.x MBMS Bearer Type Control

MBMS Bearer type control is split between SRNC and DRNC. The CRNC is in control of an MBMS Bearer of PTM type. The MBMS bearer services activated by the UE are transferred over Iur from SRNC to DRNC. In case the CRNC is a DRNC for one or several UEs, it indicates the selected bearer type to SRNC but it is SRNC decision to set up or release MBMS bearers of PTP type for a given UE as described in [x].

6 I_{ur} Interface Protocols

6.1 General

There shall exist a clear separation between the Radio Network Layer and the Transport Layer. Therefore, the radio network signalling and Iur data streams are separated from the data transport resource and traffic handling as shown in Figure 2. Data transport resource and traffic handling is controlled by Transport Signalling. The Transport Signalling is carried by a Signalling Bearer over the Iur interface.

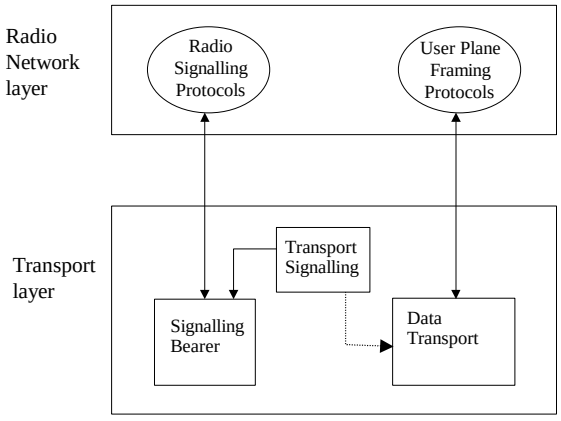

Figure 2: Separation of Radio Network Protocols and transport over Iur

6.2 Radio Signalling Protocols

6.2.1 RNSAP Protocol

The protocol responsible for providing signalling information across the Iur interface is called the Radio Network Subsystem Application Part (RNSAP). A subset of RNSAP is used over the Iur-g interface.

The RNSAP is terminated by the two RNCs inter-connected via the Iur interface RNSAP Procedure Modules. In addition, the RNSAP is terminated by a RNC and a BSS supporting Iu mode inter-connected via the Iur-g interface.

RNSAP procedures are divided into four modules as follows:

1. RNSAP Basic Mobility Procedures;
2. RNSAP DCH Procedures;
3. RNSAP Common Transport Channel Procedures;
4. RNSAP Global Procedures;
5. RNSAP MBMS Procedures.

The Basic Mobility Procedures module contains procedures used to handle the mobility within UTRAN as well as to handle mobility in case of UTRAN/GERAN interworking.

The DCH Procedures module contains procedures that are used to handle DCHs, DSCH, HS-DSCH and [TDD - USCHs] between two RNSs. If procedures from this module are not used in a specific Iur, then the usage of DCH, DSCH, HS-DSCH and [TDD - USCH] traffic between corresponding RNSs is not possible.

The Common Transport Channel Procedures module contains procedures that are used to control common transport channel data streams (excluding the DSCH, HS-DSCH and USCH) over Iur interface.

The Global Procedures module contains procedures that are not related to a specific UE. The procedures in this module are in contrast to the above modules involving two peer CRNCs. The procedures in this module are also used in cases involving one RNC and one BSS.

The MBMS Procedures module contains procedures that are specific to MBMS and used for cases that cannot be handled by other modules.

6.3 User Plane Frame Protocols

6.3.1 Iub/Iur DCH Frame Protocol

There are two types of Iub/Iur DCH FP frames:

- DCH data frame;
- DCH control frame.

The contents of the Iub/Iur DCH data frame include:

- Transport Block Sets;
- Quality estimate.

The contents of the Iur DCH control frame include:

- Measurement reports;
- Power control information;
- Synchronisation information.

For a more detailed description of the Iur/Iub DCH frame protocol refer to 'UTRAN Iur & Iub Interface User Plane Protocol for DCH Data Streams' [1].

6.3.2 Iur DSCH Frame Protocol

There are two types of Iur DSCH FP frames:

- DSCH data frame;
- DSCH control frames.

The contents of the Iur DSCH data frame include:

- MAC-c/sh SDUs;
- User Buffer Status.

The contents of the Iur DSCH control frame include:

- Flow control Information (UL);
- Capacity Request Information (DL).

For a more detailed description of the Iur DSCH frame protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

6.3.3 Iur USCH Frame Protocol [TDD]

There is one type of Iur USCH FP frames:

- USCH data frame.

The contents of the Iur USCH data frame include:

- MAC-c/sh SDUs.

For a more detailed description of the Iur USCH frame protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

6.3.4 Iur RACH/CPCH [FDD] Frame Protocol

For a more detailed description of the Iur RACH framing protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

6.3.5 Iur FACH Frame Protocol

For a more detailed description of the Iur FACH framing protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

6.3.6 Iur HS-DSCH Frame Protocol

There are two types of Iur HS-DSCH FP frames:

- HS-DSCH data frame;
- HS-DSCH control frames.

The contents of the Iur HS-DSCH data frame include:

- MAC-d PDUs;
- User Buffer Status.

The contents of the Iur HS-DSCH control frame include:

- Flow control Information (UL);
- Capacity Request Information (DL).

For a more detailed description of the Iur HS-DSCH frame protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

6.4 Mapping of Frame Protocols onto transport bearers

DCH	One Iur DCH data stream is carried on one transport bearer except in the case of co-ordinated DCHs in which case a set of co-ordinated DCHs are multiplexed onto the same transport bearer.
DSCH	One Iur DSCH data stream is carried on one transport bearer
HS-DSCH	One Iur HS-DSCH data stream is carried on one transport bearer
[TDD - USCH	One Iur USCH data stream is carried on one transport bearer.]
RACH/CPCH[FDD]	Multiple RACH/CPCH[FDD] data streams may be carried on one transport bearer.
FACH	Multiple FACH data streams may be carried on one transport bearer.

RACH/CPCH[FDD] and FACH data streams for one UE are carried on same transport bearer.

7 DRNS logical Model over I_{ur}

7.1 Overview

The model in Figure 3 shows the Drift Radio Network System as seen from the SRNC. It is modelled as a «black box» with a set of Radio Links on the Uu side of the box and another set of User Plane access ports on the Iur side of the box. The Radio Links are connected to the Iur user ports via the internal transport mechanisms of the DRNS. Operations for controlling the connections between ports are sent from the SRNC to the DRNC via an Iur Control Plane port.

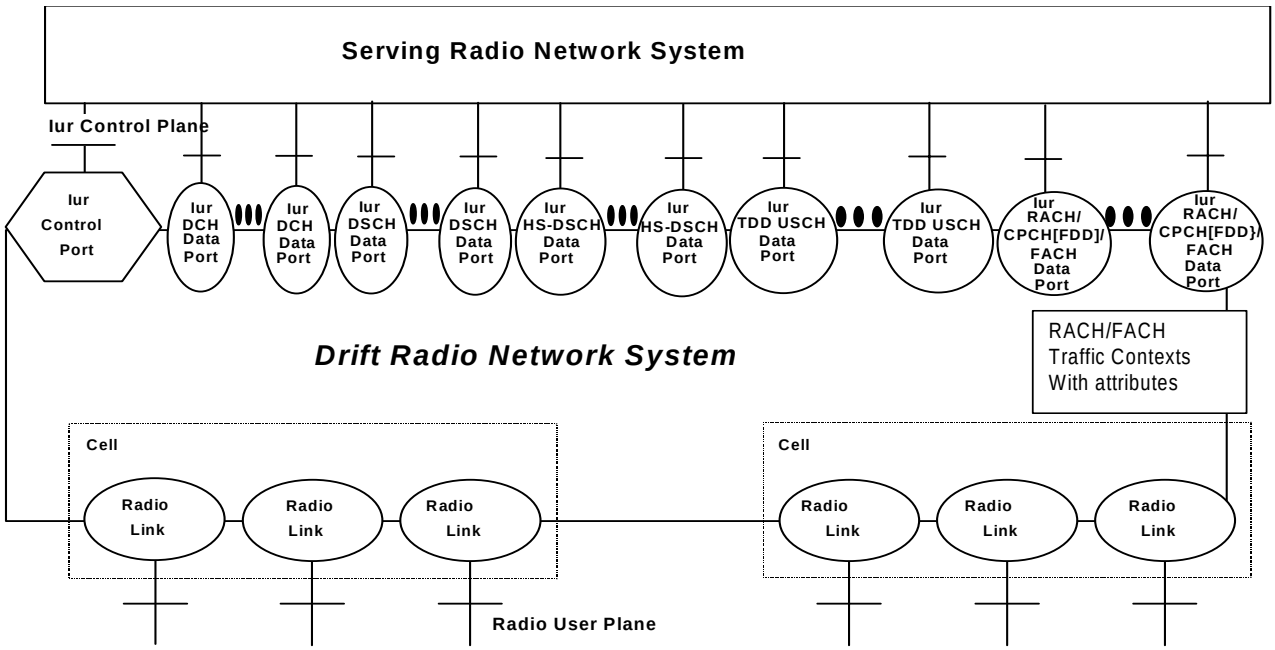

Figure 3: Drift RNS Logical Model

7.2 Logical Model Elements

7.2.1 Radio Link

A Radio Link represents a User Plane access point on the UTRAN side of the Uu interface between the User Equipment and the UTRAN.

The semantics of a Radio Link include the following:

- It is created, destroyed, and added by SRNC.
- It can be attached to one or more Iur Data Ports at any given time.
- Its resources are allocated and controlled by the DRNS.

7.2.2 Cell

It is defined by:

- A Cell identifier.

The semantics of a Cell include the following:

- It is created and destroyed by administrative procedures.

7.2.3 Iur DCH Data Port

One Iur DCH Data port represents one user plane transport bearer. One user plane transport bearer will carry only one DCH data stream except in the case of co-ordinated DCHs, in which case the data streams of all co-ordinated DCHs shall be multiplexed on one and the same user plane transport bearer.

The semantics of an Iur DCH Data Port include the following:

- It is created and destroyed by administrative procedures when transport facilities are added to, or deleted from, the Iur interface between the SRNS and DRNS. It can also be created and destroyed dynamically using dynamically setup transport bearers to add or remove transport facilities.
- It is assigned and released by the SRNC in reaction to requests for bearer services from the UE.
- It may be attached to one or more Radio Links. When attached to Radio Links in the downlink direction, it acts as a point-to-multipoint connection for diversity transmission. When attached to multiple Radio Links in the uplink direction, it acts as a multipoint-to-point connection for diversity reception [FDD].
- The transmit and receive combining/splitting resources required to implement the point-to-multipoint and multipoint-to-point connections are controlled by the DRNS [FDD].
- The Iur DCH Data Stream emanating from the Iur DCH Data Port terminates in the SRNS connected to DRNS.

7.2.4 Iur DSCH Data Port

One Iur DSCH Data port represents one bi-directional Iur user plane transport bearer. One Iur user plane transport bearer will carry only one DSCH data stream.

7.2.5 Iur USCH Data Port [TDD]

One Iur USCH Data port represents one Iur user plane transport bearer. One Iur user plane transport bearer will carry only one USCH data stream.

7.2.6 Iur RACH/CPCH [FDD]/FACH Data Port

The Iur RACH/CPCH [FDD]/FACH data port represents a transport bearer and is identified with a transport bearer identity.

7.2.7 Iur Control Port

An Iur Control Port represents the Control Plane access point on the Iur interface between the SRNS and the DRNS. It is defined by:

- A transport bearer channel identifier.

The semantics of an Iur Control Port include the following:

- It is created via administrative procedures when the Iur interface is created.

7.2.8 Iur HS-DSCH Data Port

One Iur HS-DSCH Data port represents one bi-directional Iur user plane transport bearer. One Iur user plane transport bearer will carry only one HS-DSCH data stream.

8 I_{ur} Interface Protocol Structure

The Iur interface protocol architecture consists of two functional layers:

- Radio Network Layer, defines the procedures related to the interaction of two RNCs within a PLMN. The radio network layer consists of a Radio Network Control Plane and a Radio Network User Plane.

- Transport layer, defines procedures for establishing physical connections between two RNCs within a PLMN.

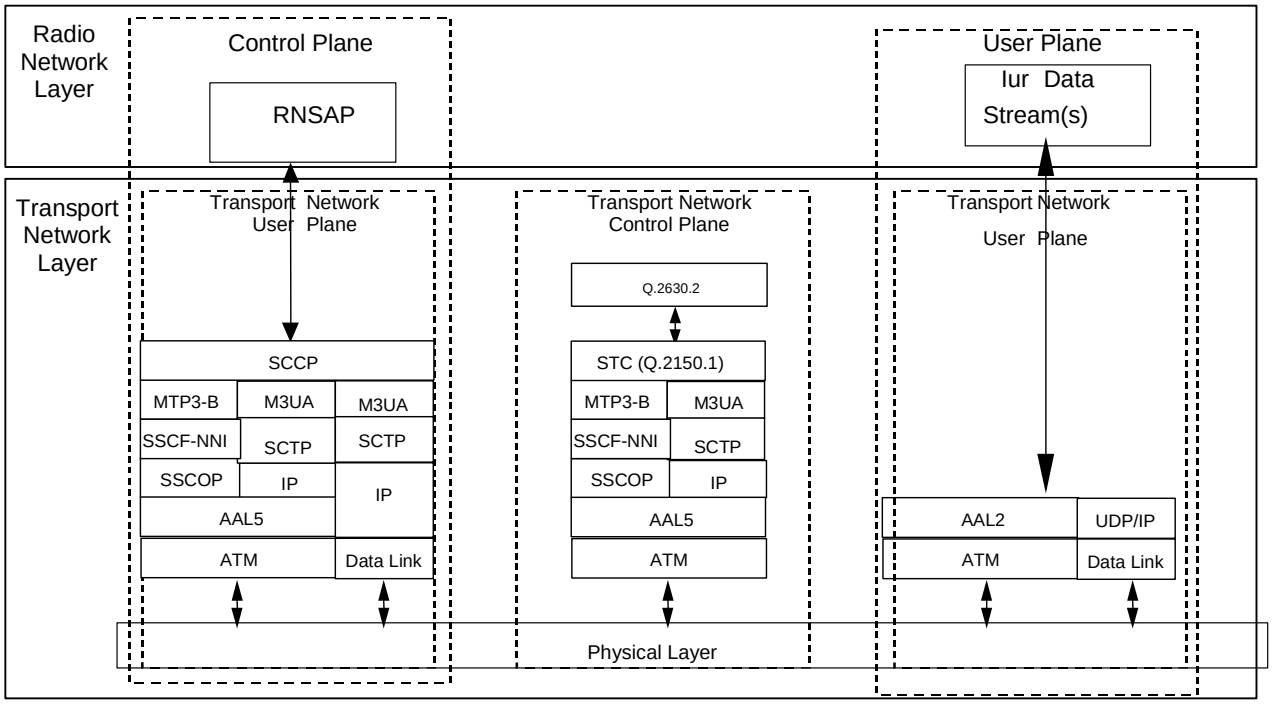

Figure 4: Iur Interface Protocol Structure

9 Other I_{ur} Interface Specifications

9.1 UTRAN Iur Interface: Layer 1 (TS 25.421)

3GPP TS 25.421 specifies the range of physical layer technologies that may be used to support the Iur interface and the Iur-g interface.

9.2 UTRAN Iur Interface: Signalling Transport (TS 25.422)

3GPP TS 25.422 specifies the signalling bearers for the RNSAP for Iur Interface and for Iur-g interface.

9.3 UTRAN Iur Interface: RNSAP Specification (TS 25.423)

3GPP TS 25.423 specifies the RNSAP protocol for radio network control plane signalling over the Iur interface and over the Iur-g interface.

9.4 UTRAN Iur Interface: Data Transport and Transport Signalling for Common Transport Channel Data Streams (TS 25.424)

3GPP TS 25.424 specifies the transport bearers for the user plane of the Iur interface. It also specifies the ALCAP protocol used to control these transport bearers.

9.5 UTRAN Iur Interface: User Plane Protocols for Common Transport Channel Data Streams (TS 25.425)

3GPP TS 25.425 specifies the user plane frame handling protocol for the common channels on Iur interface.

9.6 UTRAN Iur & Iub Interface: Data Transport and Transport Signalling for DCH Data Streams (TS 25.426)

3GPP TS 25.426 specifies the transport bearers for the user plane of the Iub/Iur interface. It also specifies the ALCAP protocol used to control these transport bearers.

9.7 UTRAN Iur & Iub Interface: User Plane Protocols for DCH Data Streams (TS 25.427)

3GPP TS 25.427 specifies the user plane frame handling protocol for the dedicated channels on Iub/Iur interface.

9.8 Summary of UTRAN Iur Interface Technical Specifications

The relationship between the technical specifications that define the UTRAN Iur interface is shown in Figure 5.

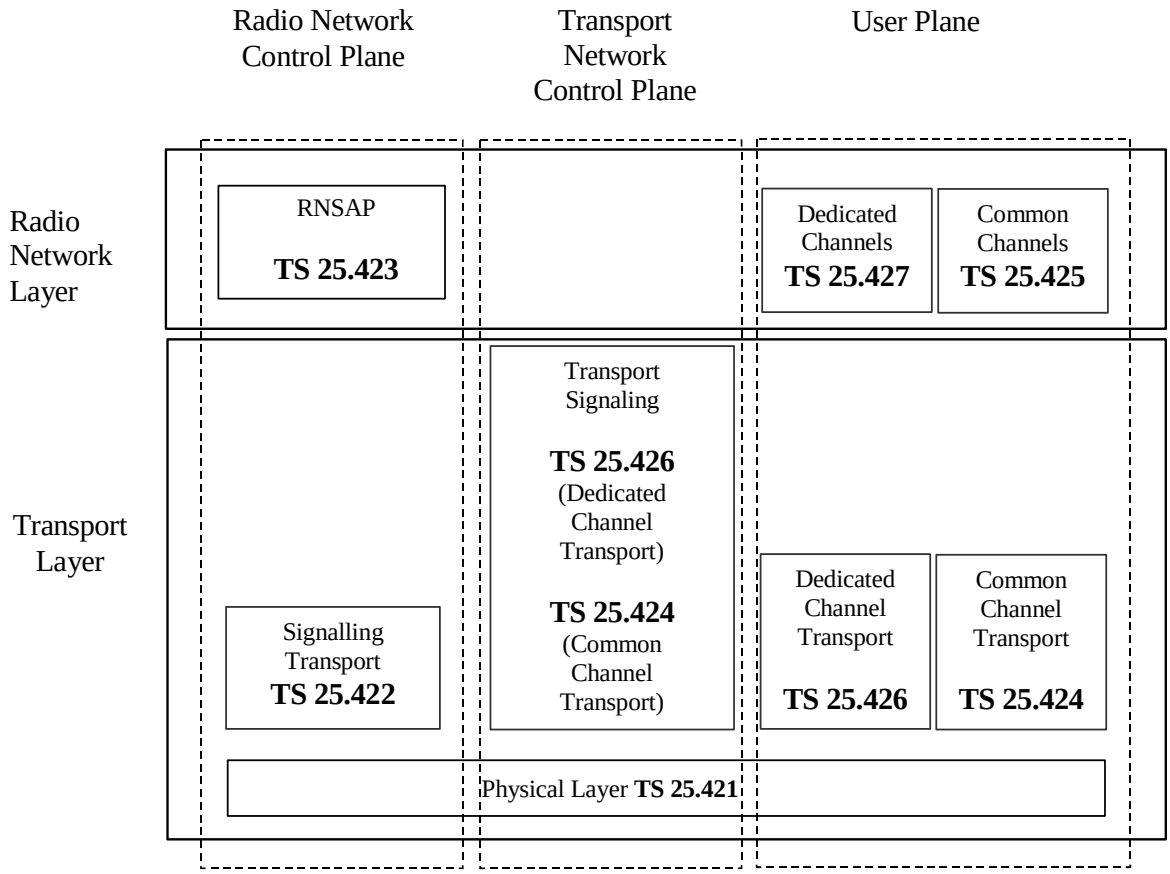

Figure 5: Iur Interface Technical Specifications

Annex A (informative): Change history

Change history					
TSG RAN#	Version	CR	Tdoc RAN	New Version	Subject/Comment
RAN_06	-	-	RP-99796	3.0.0	Approved at TSG RAN #6 and placed under Change Control
RAN_07	3.0.0	-	RP-000097	3.1.0	Approved at TSG RAN #7 (6 approved CRs)
RAN_09	3.1.0	008	RP-000378	3.2.0	Approved at TSG RAN #9
RAN_11	3.2.0	009	RP-010115	3.3.0	Approved at TSG RAN #11

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
March 01	11	RP-010160	012		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
March 01	11	RP-010162	011		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
March 01	11	RP-010163	010		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
March 01	11	RP-010159	014		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
12/2001	14	RP-010853	016		Reference corrections	4.0.0	4.1.0
12/2001	14	RP-010853	018		25.420 v4.0.0 CR Clarification of the Combining/Splitting function	4.0.0	4.1.0
12/2001	14	RP-010853	020	1	Addition of “Specification Notations” Section	4.0.0	4.1.0
12/2001	14	RP-010853	022	2	Behaviour of the RNC in case of Iur transmission failure	4.0.0	4.1.0
03/2002	15	RP-020168	026	1	SCCP Connection Release Initiated by RNC in Abnormal case	4.1.0	4.2.0
03/2002	15	RP-020190	023	1	HSDPA Additions for REL-5	4.2.0	5.0.0
03/2002	15	RP-020189	024	4	Introduction of IP transport to UTRAN	4.2.0	5.0.0
09/2002	17	RP-020627	028	1	Introduction of Iur-g	5.0.0	5.1.0
12/2003	22	-	-	-	Introduction of Release 6 specification	5.1.0	6.0.0
06/2004	24	RP-040182	040		Inclusion of Information Transfer as an Iur function	6.0.0	6.1.0
06/2004	24	RP-040183	041	1	Trace Parameter Propagation over the Iur	6.0.0	6.1.0
06/2004	24	RP-040254	043		Completion of the Rel-5 IP transport WI	6.0.0	6.1.0

3GPP TSG-RAN3 Meeting #45
Shin-Yokohama, Japan, 15th - 19th November 2004

Tdoc R3-041705

CR-Form-v7.1

CHANGE REQUEST

⌘ **25.423** **CR** **999** ⌘ **rev** **2** ⌘ Current version: **6.3.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	MBMS changes for RNSAP
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	15/11/2004
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	This CR contains the proposed changes to the RNSAP protocol caused by the Release-6 WI Multimedia Multicast Broadcast Service.
Summary of change:	⌘	r2: Update the indentation for tabular format and revise the ASN.1 and other editorial errors. r1: replace MBMS service with MBMS bearer service, clarification on Uplink Signalling Transfer procedure, update of general description of MBMS Attach/Detach procedure r0: New functinalities such as MBMS Attach, MBMS Detach and MBMS Channel Type Indication are added. Corresponding ASN.1 is added.
Consequences if not approved:	⌘	The MBMS feature will not be supported.

Clauses affected:	⌘	2, 3, 7, 8.1, 8.2.1, 8.2.2, 8.3.1, 8.4.1, 8.5.6, 8.x[new], 9.1.3, 9.1.24, 9.1.25, 9.1.35, 9.1.49, 9.1.x1-x3[new], 9.2.1.40, 9.2.1.x1-x4[new], 9.3

Other specs	⌘	Y	N	Other core specifications	⌘	CR 095 on 25.401 v 6.4.0 CR 045 on 25.402 v 6.0.0 CR 059 on 25.410 v 6.1.0 CR 706 on 25.413 v 6.3.0
		X				

			CR 044 on 25.420 v 6.1.0 CR 057 on 25.430 v 6.2.0 CR 1049 on 25.433 v 6.3.0
affected:		X	Test specifications
		X	O&M Specifications
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

1 Scope

The present document specifies the radio network layer signalling procedures of the control plane between RNCs in UTRAN, between RNC in UTRAN and BSS in GERAN Iu mode and between BSSs in GERAN Iu mode.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

For a specific reference, subsequent revisions do not apply.

For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 23.003: "Numbering, addressing and identification".

[2] 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".

[3] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Layer Signalling for DCH Data Streams".

[4] 3GPP TS 25.427: "UTRAN Iur and Iub Interface User Plane Protocols for DCH Data Streams".

[5] 3GPP TS 25.435: "UTRAN Iub interface User Plane Protocols for Common Transport Channel Data Streams".

[6] 3GPP TS 25.104: "UTRA (BS) FDD; Radio transmission and Reception".

[7] 3GPP TS 25.105: "UTRA (BS) TDD; Radio Transmission and Reception".

[8] 3GPP TS 25.211: "Physical Channels and Mapping of Transport Channels onto Physical Channels (FDD)".

[9] 3GPP TS 25.212: "Multiplexing and Channel Coding (FDD)".

[10] 3GPP TS 25.214: "Physical Layer Procedures (FDD)".

[11] 3GPP TS 25.215: "Physical Layer – Measurements (FDD)".

[12] 3GPP TS 25.221: "Physical Channels and Mapping of Transport Channels onto Physical Channels (TDD)".

[13] 3GPP TS 25.223: "Spreading and Modulation (TDD)".

[14] 3GPP TS 25.225: "Physical Layer – Measurements (TDD)".

[15] 3GPP TS 25.304: "UE Procedures in Idle Mode"

[16] 3GPP TS 25.331: "RRC Protocol Specification".

[17] 3GPP TS 25.402: "Synchronisation in UTRAN, Stage 2".

[18] ITU-T Recommendation X.680 (12/97): "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".

[19] ITU-T Recommendation X.681 (12/97): "Information technology - Abstract Syntax Notation One (ASN.1): Information object specification".

[20] ITU-T Recommendation X.691 (12/97): "Information technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".

[21] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[22] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".

[23] 3GPP TS 25.133: "Requirements for support of Radio Resource management (FDD)".

[24] 3GPP TS 25.123: "Requirements for support of Radio Resource management (TDD)".

[25] 3GPP TS 23.032: "Universal Graphical Area Description (GAD)".

[26] 3GPP TS 25.302: "Services Provided by the Physical Layer".

[27] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[28] 3GPP TR 25.921: "Guidelines and Principles for Protocol Description and Error Handling".

[29] GSM TS 05.05: "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception".

[30] ICD-GPS-200: "Navstar GPS Space Segment/Navigation User Interface".

[31] RTCM-SC104: "RTCM Recommended Standards for Differential GNSS Service (v.2.2)".

[32] 3GPP TS 25.425: "UTRAN Iur and Iub Interface User Plane Protocols for Common Transport Channel data streams ".

[33] IETF RFC 2460 "Internet Protocol, Version 6 (IPv6) Specification".

[34] IETF RFC 768 "User Datagram Protocol", (8/1980)

[35] 3GPP TS 25.424: " UTRAN Iur Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams ".

[36] 3GPP TS 44.118: "Mobile radio interface layer 3 specification; Radio Resource Control (RRC) Protocol Iu mode".

[37] 3GPP TR 43.930: "Iur-g interface; Stage 2".

[38] 3GPP TS 48.008: "Mobile-services Switching Centre - Base Station System (MSC - BSS) interface; Layer 3 specification".

[39] 3GPP TS 43.051: "GSM/EGDE Radio Access Network; Overall description - Stage 2".

[40] 3GPP TS 25.401: "UTRAN Overall Description".

[41] 3GPP TS 25.321: "MAC protocol specification".

[42] 3GPP TS 25.306: "UE Radio Access capabilities".

[43] 3GPP TS 25.101: " User Equipment (UE) radio transmission and reception (FDD)".

[44] IETF RFC 2474 "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".

[45] IETF RFC 2475 "An Architecture for Differentiated Services".

[46] 3GPP TS 25.222: "Multiplexing and Channel Coding (TDD)".

[xx] 3GPP TS 25.346: "Introduction of the Multimedia Broadcast Multicast Service (MBMS) in the Radio Access Network (Stage-2) "

[yy] 3GPP TS 23.246: "Multimedia Broadcast Multicast Service; Architecture and Functional Description".

3 Definitions, Symbols and Abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:
Elementary Procedure: RNSAP protocol consists of Elementary Procedures (EPs). An Elementary Procedure is a unit of interaction between two RNCs. An EP consists of an initiating message and possibly a response message. Two kinds of EPs are used:

- **Class 1:** Elementary Procedures with response (success or failure);
- **Class 2:** Elementary Procedures without response.

For Class 1 EPs, the types of responses can be as follows:
Successful

- A signalling message explicitly indicates that the elementary procedure has been successfully completed with the receipt of the response.

Unsuccessful

- A signalling message explicitly indicates that the EP failed.

Class 2 EPs are considered always successful.
Prepared Reconfiguration: A Prepared Reconfiguration exists when the Synchronised Radio Link Reconfiguration Preparation procedure has been completed successfully. The Prepared Reconfiguration does not exist any more after either of the procedures Synchronised Radio Link Reconfiguration Commit or Synchronised Radio Link Reconfiguration Cancellation has been completed.
UE Context: The UE Context contains the necessary information for the DRNC/DBSS to communicate with a specific UE. The UE Context is created by the Radio Link Setup procedure or by the Uplink Signalling Transfer procedure when the UE makes its first access in a cell controlled by the DRNS/DBSS. The UE Context is deleted by the Radio Link Deletion procedure, by the Common Transport Channel Resources Release procedure, or by the Downlink Signalling Transfer procedure when neither any Radio Links nor any common transport channels are established towards the concerned UE. The UE Context is identified by the SCCP Connection for messages using connection oriented mode of the signalling bearer and the D-RNTI for messages using connectionless mode of the signalling bearer, unless specified otherwise in the procedure text.
Distant RNC Context: The Distant RNC context is created by the first Common Measurement Initiation Procedure or Information Exchange Initiation Procedure initiated by one RNC/BSS and requested from another RNC/BSS. The Distant RNC Context is deleted after the Common Measurement Termination, the Common Measurement Failure, the Information Exchange Termination or the Information Exchange Failure procedure when there is no more Common Measurement and no more Information to be provided by the requested RNC/BSS to the requesting RNC/BSS. The Distant RNC Context is identified by an SCCP connection as, for common measurements and information exchange, only the connection oriented mode of the signalling bearer is used.
Signalling radio bearer 2: The signalling radio bearer 2 is used by the UE to access a GERAN cell in order to perform RRC procedures [36].
UE Link: see definition in [xx].
URA Link: see definition in [xx].
MBMS Bearer Service: see defintion in [yy].
MBMS session: see defintion in [xx].
MBMS session start: see defintion in [xx].
MBMS session stop: see defintion in [xx].

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

A-GPS	Assisted-GPS
ALCAP	Access Link Control Application Part
APN	Access Point Name
ASN.1	Abstract Syntax Notation One
BER	Bit Error Rate
BLER	Block Error Rate
BSS	Base Station Subsystem
CBSS	Controlling BSS
CCCH	Common Control Channel
CCPCH	Common Control Physical Channel
CCTrCH	Coded Composite Transport Channel
CFN	Connection Frame Number
C-ID	Cell Identifier
CM	Compressed Mode
CN	Core Network
CPCH	Common Packet Channel
CPICH	Common Pilot Channel
CRNC	Controlling RNC
DBSS	Drift BSS
C-RNTI	Cell Radio Network Temporary Identifier
CS	Circuit Switched
CTFC	Calculated Transport Format Combination DCH Dedicated Channel
DGPS	Differential GPS
DL	Downlink
DPC	Downlink Power Control
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DPDCH	Dedicated Physical Data Channel
DRAC	Dynamic Radio Access Control
DRNC	Drift RNC
DRNS	Drift RNS
D-RNTI	Drift Radio Network Temporary Identifier
DRX	Discontinuous Reception
DSCH	Downlink Shared Channel
Ec	Energy in single Code
EDSCHPC	Enhanced Downlink Shared Channel Power Control
EP	Elementary Procedure
FACH	Forward Access Channel
FDD	Frequency Division Duplex
FN	Frame Number
FP	Frame Protocol
GERAN	GSM EDGE Radio Access Network
GA	Geographical Area
GAI	Geographical Area Identifier
GPS	Global Positioning System
GRA	GERAN Registration Area
GSM	Global System Mobile
HSDPA	High Speed Downlink Packet Access
HW	Hardware
IB	Information Block
ID	Identity or Identifier
IE	Information Element
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
IPDL	Idle Period DownLink
ISCP	Interference Signal Code Power
LAC	Location Area Code
LCR	Low Chip Rate (1.28 Mcps)

LCS	Location Services
MAC	Medium Access Control
MBMS	Multimedia Broadcast Multicast Service
MS	Mobile Station
NAS	Non Access Stratum
No	Reference Noise
NRT	Non Real Time
O&M	Operation and Maintenance
P(-)CCPCH	Primary CCPCH
PCH	Paging Channel
OTD	Observed Time Difference
P(-)CPICH	Primary CPICH
PCPCH	Physical Common Packet Channel
PCS	Personal Communication Services
PDSCH	Physical Downlink Shared Channel
PDU	Protocol Data Unit
PhCH	Physical Channel
PICH	Paging Indication Channel
Pos	Position or Positioning
PRACH	Physical Random Access Channel
PTP	Point To Point
PTM	Point To Multipoint
PS	Packet Switched
QE	Quality Estimate
RAC	Routing Area Code
RACH	Random Access Channel
RAN	Radio Access Network
RANAP	Radio Access Network Application Part
RB	Radio Bearer
RL	Radio Link
RLC	Radio Link Control
RLS	Radio Link Set
RM	Rate Matching
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTI	Radio Network Temporary Identifier
RRC	Radio Resource Control
RT	Real Time
RSCP	Received Signal Code Power
SBSS	Serving BSS
Rx	Receive or Reception
Sat	Satellite
SCCP	Signalling Connection Control Part
S(-)CCPCH	Secondary CCPCH
SCH	Synchronisation Channel
SCTD	Space Code Transmit Diversity
SDU	Service Data Unit
SF	System Frame
SFN	System Frame Number
SHCCH	Shared Control Channel
SIR	Signal-to-Interference Ratio
SNA	Shared Network Area
SRB2	Signalling radio bearer 2
SRNC	Serving RNC
SRNS	Serving RNS
S-RNTI	Serving Radio Network Temporary Identifier
SSDT	Site Selection Diversity Transmission
STTD	Space Time Transmit Diversity
TDD	Time Division Duplex
TF	Transport Format

TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set
TFS	Transport Format Set
TGCFN	Transmission Gap Connection Frame Number
TMGI	Temporary Mobile Group Identity
ToAWE	Time of Arrival Window Endpoint
ToAWS	Time of Arrival Window Startpoint
TPC	Transmit Power Control
TrCH	Transport Channel
TS	Time Slot
TSG	Technical Specification Group
TSTD	Time Switched Transmit Diversity
TTI	Transmission Time Interval
TX	Transmit or Transmission
UARFCN	UTRA Absolute Radio Frequency Channel Number
UDP	User Datagram Protocol
UC-ID	UTRAN Cell Identifier
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunications System
URA	UTRAN Registration Area
U-RNTI	UTRAN Radio Network Temporary Identifier
USCH	Uplink Shared Channel
UTRA	Universal Terrestrial Radio Access
UTRAN	Universal Terrestrial Radio Access Network

4 General

4.1 Procedure Specification Principles

The principle for specifying the procedure logic is to specify the functional behaviour of the DRNC/CRNC exactly and completely. The SRNC functional behaviour is left unspecified. The Physical Channel Reconfiguration procedure and Reset procedure are an exception from this principle.
The following specification principles have been applied for the procedure text in subclause 8:

- The procedure text discriminates between:

  1) Functionality which "shall" be executed
  The procedure text indicates that the receiving node "shall" perform a certain function Y under a certain condition. If the receiving node supports procedure X but cannot perform functionality Y requested in the REQUEST message of a Class 1 EP, the receiving node shall respond with the message used to report unsuccessful outcome for this procedure, containing an appropriate cause value.
  2) Functionality which "shall, if supported" be executed
  The procedure text indicates that the receiving node "shall, if supported," perform a certain function Y under a certain condition. If the receiving node supports procedure X, but does not support functionality Y, the receiving node shall proceed with the execution of the EP, possibly informing the requesting node about the not supported functionality.

  - Any required inclusion of an optional IE in a response message is explicitly indicated in the procedure text. If the procedure text does not explicitly indicate that an optional IE shall be included in a response message, the optional IE shall not be included. For requirements for including *Criticality Diagnostics* IE, see section 10. For examples on how to use the *Criticality Diagnostics* IE, see Annex C.

4.2 Forwards and Backwards Compatibility

The forwards and backwards compatibility of the protocol is assured by a mechanism in which all current and future messages, and IEs or groups of related IEs, include ID and criticality fields that are coded in a standard format that will not be changed in the future. These parts can always be decoded regardless of the standard version.

4.3 Source Signalling Address Handling

The sender of an RNSAP messages shall include the Source Signalling Address, i.e. the Signalling Address of the sending node.

4.4 Specification Notations

For the purposes of the present document, the following notations apply:

[FDD] This tagging of a word indicates that the word preceding the tag "[FDD]" applies only to FDD. This tagging of a heading indicates that the heading preceding the tag "[FDD]" and the section following the heading applies only to FDD.

[TDD] This tagging of a word indicates that the word preceding the tag "[TDD]" applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[TDD]" and the section following the heading applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD.

[3.84Mcps TDD] This tagging of a word indicates that the word preceding the tag "[3.84Mcps TDD]" applies only to 3.84Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[3.84Mcps TDD]" and the section following the heading applies only to 3.84Mcps TDD.

[1.28Mcps TDD] This tagging of a word indicates that the word preceding the tag "[1.28Mcps TDD]" applies only to 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[1.28Mcps TDD]" and the section following the heading applies only to 1.28Mcps TDD.

[FDD - …] This tagging indicates that the enclosed text following the "[FDD - " applies only to FDD. Multiple sequential paragraphs applying only to FDD are enclosed separately to enable insertion of TDD specific (or common) paragraphs between the FDD specific paragraphs.

[TDD - …] This tagging indicates that the enclosed text following the "[TDD - " applies only to TDD including 3.84Mcps TDD and 1.28Mcps TDD. Multiple sequential paragraphs applying only to TDD are enclosed separately to enable insertion of FDD specific (or common) paragraphs between the TDD specific paragraphs.

[3.84Mcps TDD - …] This tagging indicates that the enclosed text following the "[3.84Mcps TDD - " applies only to 3.84Mcps TDD. Multiple sequential paragraphs applying only to 3.84Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 3.84Mcps TDD specific paragraphs.

[1.28Mcps TDD - …] This tagging indicates that the enclosed text following the "[1.28Mcps TDD - " applies only to 1.28Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 1.28Mcps TDD specific paragraphs.

Procedure When referring to an elementary procedure in the specification, the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. Radio Link Setup procedure.

Message When referring to a message in the specification, the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. RADIO LINK SETUP REQUEST message.

IE When referring to an information element (IE) in the specification, the *Information Element Name* is written with the first letters in each word in upper case characters and all letters in Italic font followed by the abbreviation "IE", e.g. *Transport Format Set* IE.

Value of an IE When referring to the value of an information element (IE) in the specification, the "Value" is written as it is specified in subclause 9.2 enclosed by quotation marks, e.g. "Abstract Syntax Error (Reject)" or "SSDT Active in the UE".

5 RNSAP Services

5.1 RNSAP Procedure Modules

The Iur interface RNSAP procedures are divided into four modules as follows:

1. RNSAP Basic Mobility Procedures;
2. RNSAP DCH Procedures;
3. RNSAP Common Transport Channel Procedures;
4. RNSAP Global Procedures~~.~~;
5. RNSAP MBMS Procedures.

The Basic Mobility Procedures module contains procedures used to handle the mobility within UTRAN, within GERAN and between UTRAN and GERAN.
The DCH Procedures module contains procedures that are used to handle DCHs, DSCHs, and USCHs between two RNSs. If procedures from this module are not used in a specific Iur, then the usage of DCH, DSCH, and USCH traffic between corresponding RNSs is not possible.
The Common Transport Channel Procedures module contains procedures that are used to control common transport channel data streams (excluding the DSCH and USCH) over Iur interface.
The Global Procedures module contains procedures that are not related to a specific UE. The procedures in this module are in contrast to the above modules involving two peer CRNCs/CBSSs.
The MBMS Procedures module contains procedures that are specific to MBMS and used for cases that cannot be handled by other modules.

5.2 Parallel Transactions

Unless explicitly indicated in the procedure specification, at any instance in time one protocol peer shall have a maximum of one ongoing RNSAP DCH procedure related to a certain UE.

6 Services Expected from Signalling Transport

The signalling transport shall provide two different service modes for the RNSAP.

1. Connection oriented data transfer service. This service is supported by a signalling connection between two RNCs. It shall be possible to dynamically establish and release signalling connections based on the need. Each active UE shall have its own signalling connection. The signalling connection shall provide in sequence delivery of RNSAP messages. RNSAP shall be notified if the signalling connection breaks.
2. Connectionless data transfer service. RNSAP shall be notified in case a RNSAP message did not reach the intended peer RNSAP entity.

7 Functions of RNSAP

The RNSAP protocol provides the following functions:

- Radio Link Management. This function allows the SRNC to manage radio links using dedicated resources in a DRNS;
- Physical Channel Reconfiguration. This function allows the DRNC to reallocate the physical channel resources for a Radio Link;
- Radio Link Supervision. This function allows the DRNC to report failures and restorations of a Radio Link;
- Compressed Mode Control [FDD]. This function allows the SRNC to control the usage of compressed mode within a DRNS;
- Measurements on Dedicated Resources. This function allows the SRNC to initiate measurements on dedicated resources in the DRNS. The function also allows the DRNC to report the result of the measurements;

- DL Power Drifting Correction [FDD]. This function allows the SRNC to adjust the DL power level of one or more Radio Links in order to avoid DL power drifting between the Radio Links;

- DCH Rate Control. This function allows the DRNC to limit the rate of each DCH configured for the Radio Link(s) of a UE in order to avoid congestion situations in a cell;

- CCCH Signalling Transfer. This function allows the SRNC and DRNC to pass information between the UE and the SRNC on a CCCH controlled by the DRNS;

- GERAN Signalling Transfer. This function allows the SBSS and DBSS, the SRNC and DBSS or the SBSS and DRNC to pass information between the UE/MS and the SRNC/SBSS on an SRB2/CCCH controlled by the DBSS/DRNC;

- Paging. This function allows the SRNC/SBSS to page a UE in a URA/GRA or a cell in the DRNS;

- Common Transport Channel Resources Management. This function allows the SRNC to utilise Common Transport Channel Resources within the DRNS (excluding DSCH resources for FDD);

- Relocation Execution. This function allows the SRNC/SBSS to finalise a Relocation previously prepared via other interfaces;

- Reporting of General Error Situations. This function allows reporting of general error situations, for which function specific error messages have not been defined.

- DL Power Timeslot Correction [TDD]. This function enables the DRNS to apply an individual offset to the transmission power in each timeslot according to the downlink interference level at the UE.

- Measurements on Common Resources. This function allows an RNC/BSS to request from another RNC/BSS to initiate measurements on Common Resources. The function also allows the requested RNC/BSS to report the result of the measurements.

- Information Exchange. This function allows an RNC to request from another RNC the transfer of information. The function also allows the requested RNC to report the requested information.

- Resetting the Iur. This function is used to completely or partly reset the Iur interface.

- MBMS UE Linking/De-linking. This function allows the SRNC to provide/update/remove the UE Link to/in/from the DRNC.

- MBMS URA Linking/De-linking. This function allows the SRNC to provide/update/remove the URA Link to/in/from the DRNC.

- MBMS Channel Type Indication. This function allows the DRNC to indicate to the SRNC the selected channel type for an MBMS bearer service within a certain cell.

The mapping between the above functions and RNSAP elementary procedures is shown in the Table 1.

Table 1: Mapping between functions and RNSAP elementary procedures

Function	Elementary Procedure(s)
Radio Link Management	a) Radio Link Setup b) Radio Link Addition c) Radio Link Deletion d) Unsynchronised Radio Link Reconfiguration e) Synchronised Radio Link Reconfiguration Preparation f) Synchronised Radio Link Reconfiguration Commit g) Synchronised Radio Link Reconfiguration Cancellation h) Radio Link Pre-emptioni) Radio Link Activation j) Radio Link Parameter Update
Physical Channel Reconfiguration	Physical Channel Reconfiguration
Radio Link Supervision	a) Radio Link Failure b) Radio Link Restoration
Compressed Mode Control [FDD]	a) Radio Link Setup b) Radio Link Addition c) Compressed Mode Command d) Unsynchronised Radio Link Reconfiguration e) Synchronised Radio Link Reconfiguration Preparation f) Synchronised Radio Link Reconfiguration Commit g) Synchronised Radio Link Reconfiguration Cancellation
Measurements on Dedicated Resources	a) Dedicated Measurement Initiation b) Dedicated Measurement Reporting c) Dedicated Measurement Termination d) Dedicated Measurement Failure
DL Power Drifting Correction [FDD]	Downlink Power Control
DCH Rate Control	a) Radio Link Setup b) Radio Link Addition c) Unsynchronised Radio Link Reconfiguration d) Synchronised Radio Link Reconfiguration Preparation e) Radio Link Congestion
CCCH Signalling Transfer	a) Uplink Signalling Transfer b) Downlink Signalling Transfer
GERAN Signalling Transfer	a) GERAN Uplink Signalling Transfer b) Downlink Signalling Transfer
Paging	Paging
Common Transport Channel Resources Management	a) Common Transport Channel Resources Initiation b) Common Transport Channel Resources Release
Relocation Execution	Relocation Commit
Reporting of General Error Situations	Error Indication
Measurements on Common Resources	a) Common Measurement Initiation b) Common Measurement Reporting c) Common Measurement Termination d) Common Measurement Failure
Information Exchange	a) Information Exchange Initiation b) Information Reporting c) Information Exchange Termination d) Information Exchange Failure
DL Power Timeslot Correction [TDD]	Downlink Power Timeslot Control
Reset	Reset
MBMS UE Linking/De-linking	a) Common Transport Channel Resources Initiation b) Radio Link Setup c) Downlink Signalling Transfer d) MBMS Attach Command e) MBMS Detach Command

Function	Elementary Procedure(s)
MBMS Channel Type Indication	a) MBMS Channel Type Reconfiguration b) Uplink Signalling Transfer
MBMS URA Linking/De-linking	a) Downlink Signalling Transfer b) MBMS Attach Command c) MBMS Detach Command

7.1 RNSAP functions and elementary procedures for Iur-g.

The functions and RNSAP elementary procedures, which are applicable on the Iur-g interface are shown in the Table 1A.

Table 1A: RNSAP elementary procedures applicable on the Iur-g interface

Function	Elementary Procedure(s)
GERAN Signalling Transfer	a) GERAN Uplink Signalling Transfer b) Downlink Signalling Transfer
Paging	Paging
Relocation Execution	Relocation Commit
Reporting of General Error Situations	Error Indication
Measurements on Common Resources	a) Common Measurement Initiation b) Common Measurement Reporting c) Common Measurement Termination d) Common Measurement Failure
Information Exchange	a) Information Exchange Initiation b) Information Reporting c) Information Exchange Termination d) Information Exchange Failure

Note: In the connection with the functions related to the GERAN and UTRAN, the term RNC shall refer to RNC/BSS.

8 8 RNSAP Procedures

8.1 Elementary Procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

Table 2: Class 1 Elementary Procedures

Elementary Procedure	Initiating Message	Successful Outcome	Unsuccessful Outcome
		Response message	Response message
Radio Link Setup	RADIO LINK SETUP REQUEST	RADIO LINK SETUP RESPONSE	RADIO LINK SETUP FAILURE
Radio Link Addition	RADIO LINK ADDITION REQUEST	RADIO LINK ADDITION RESPONSE	RADIO LINK ADDITION FAILURE
Radio Link Deletion	RADIO LINK DELETION REQUEST	RADIO LINK DELETION RESPONSE	
Synchronised Radio Link Reconfiguration Preparation	RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION FAILURE
Unsynchronised Radio Link Reconfiguration	RADIO LINK RECONFIGURATION REQUEST	RADIO LINK RECONFIGURATION RESPONSE	RADIO LINK RECONFIGURATION FAILURE
Physical Channel Reconfiguration	PHYSICAL CHANNEL RECONFIGURATION REQUEST	PHYSICAL CHANNEL RECONFIGURATION COMMAND	PHYSICAL CHANNEL RECONFIGURATION FAILURE
Dedicated Measurement Initiation	DEDICATED MEASUREMENT INITIATION REQUEST	DEDICATED MEASUREMENT INITIATION RESPONSE	DEDICATED MEASUREMENT INITIATION FAILURE
Common Transport Channel Resources Initialisation	COMMON TRANSPORT CHANNEL RESOURCES REQUEST	COMMON TRANSPORT CHANNEL RESOURCES RESPONSE	COMMON TRANSPORT CHANNEL RESOURCES FAILURE
Common Measurement Initiation	COMMON MEASUREMENT INITIATION REQUEST	COMMON MEASUREMENT INITIATION RESPONSE	COMMON MEASUREMENT INITIATION FAILURE
Information Exchange Initiation	INFORMATION EXCHANGE INITIATION REQUEST	INFORMATION EXCHANGE INITIATION RESPONSE	INFORMATION EXCHANGE INITIATION FAILURE
Reset	RESET REQUEST	RESET RESPONSE	

Table 3: Class 2 Elementary Procedures

Elementary Procedure	Initiating Message
Uplink Signalling Transfer	UPLINK SIGNALLING TRANSFER INDICATION
GERAN Uplink Signalling Transfer	GERAN UPLINK SIGNALLING TRANSFER INDICATION
Downlink Signalling Transfer	DOWNLINK SIGNALLING TRANSFER REQUEST
Relocation Commit	RELOCATION COMMIT
Paging	PAGING REQUEST
Synchronised Radio Link Reconfiguration Commit	RADIO LINK RECONFIGURATION COMMIT
Synchronised Radio Link Reconfiguration Cancellation	RADIO LINK RECONFIGURATION CANCEL
Radio Link Failure	RADIO LINK FAILURE INDICATION
Radio Link Restoration	RADIO LINK RESTORE INDICATION
Dedicated Measurement Reporting	DEDICATED MEASUREMENT REPORT
Dedicated Measurement Termination	DEDICATED MEASUREMENT TERMINATION REQUEST
Dedicated Measurement Failure	DEDICATED MEASUREMENT FAILURE INDICATION
Downlink Power Control [FDD]	DL POWER CONTROL REQUEST
Compressed Mode Command [FDD]	COMPRESSED MODE COMMAND
Common Transport Channel Resources Release	COMMON TRANSPORT CHANNEL RESOURCES RELEASE REQUEST
Error Indication	ERROR INDICATION
Downlink Power Timeslot Control [TDD]	DL POWER TIMESLOT CONTROL REQUEST
Radio Link Pre-emption	RADIO LINK PREEMPTION REQUIRED INDICATION
Radio Link Congestion	RADIO LINK CONGESTION INDICATION
Common Measurement Reporting	COMMON MEASUREMENT REPORT
Common Measurement Termination	COMMON MEASUREMENT TERMINATION REQUEST
Common Measurement Failure	COMMON MEASUREMENT FAILURE INDICATION
Information Reporting	INFORMATION REPORT
Information Exchange Termination	INFORMATION EXCHANGE TERMINATION REQUEST
Information Exchange Failure	INFORMATION EXCHANGE FAILURE INDICATION
MBMS Attach	MBMS ATTACH COMMAND
MBMS Detach	MBMS DETACH COMMAND
MBMS Channel Type Reconfiguration	MBMS CHANNEL TYPE RECONFIGURATION INDICATION
Radio Link Parameter Update	RADIO LINK PARAMETER UPDATE INDICATION

8.2 Basic Mobility Procedures

8.2.1 Uplink Signalling Transfer

8.2.1.1 General

The procedure is used by the DRNC to forward a Uu message received on the CCCH to the SRNC. This procedure shall use the connectionless mode of the signalling bearer.

8.2.1.2 Successful Operation

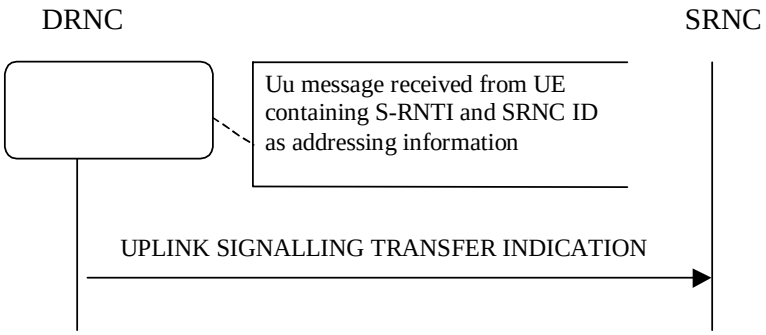

Figure 1: Uplink Signalling Transfer procedure, Successful Operation

When the DRNC receives an Uu message on the CCCH in which the UE addressing information is U-RNTI, i.e. S-RNTI and SRNC-ID, DRNC shall send the UPLINK SIGNALLING TRANSFER INDICATION message to the SRNC identified by the SRNC-ID received from the UE.

If at least one URA Identity is being broadcast in the cell where the Uu message was received (the accessed cell), the DRNC shall include a URA Identity for this cell in the *URA ID* IE, the *Multiple URAs Indicator* IE indicating whether or not multiple URA Identities are being broadcast in the accessed cell, and the RNC Identity of all other RNCs that are having at least one cell within the URA where the Uu message was received in the *URA Information* IE in the UPLINK SIGNALLING TRANSFER INDICATION message.

The DRNC shall include in the message the C-RNTI that it allocates to identify the UE in the radio interface in the accessed cell. If there is no valid C-RNTI for the UE in the accessed cell, the DRNS shall allocate a new C-RNTI for the UE. If the DRNS allocates a new C-RNTI it shall also release any C-RNTI previously allocated for the UE.

If the DRNS has any RACH, [FDD - CPCH], and/or FACH resources allocated for the UE identified by the U-RNTI in another cell than the accessed cell in which the Mac SDU sizes, flow control settings (including credits) and/or transport bearer are different from those in the old cell, then the DRNS shall not include the *Common Transport Channel Resources Initialisation Not Required* IE in the UPLINK SIGNALLING TRANSFER INDICATION message. In addition the DRNS shall release these RACH, [FDD - CPCH,] and/or FACH resources in old cell.

If the DRNS has any RACH, [FDD - CPCH], and/or FACH resources allocated for the UE identified by the U-RNTI in another cell than the accessed cell in which the Mac SDU sizes, flow control settings (including credits) and transport bearer are the same as in the old cell, there is no need for Common Transport Channel Resources Initialisation to be initiated. In that case, DRNC may include the *Common Transport Channel Resources Initialisation Not Required* IE in the UPLINK SIGNALLING TRANSFER INDICATION message. In addition, the DRNS shall move these RACH, [FDD - CPCH,] and/or FACH resources to the new cell. If no Common Transfer Channel Resources Initialisation procedure is executed, the currently applicable Mac SDU sizes, flow control settings (including credits) and transport bearer shall continue to be used while the UE is in the new cell.

If no context exists for this UE in the DRNC, the DRNC shall create a UE Context for this UE, allocate a D-RNTI for the UE Context, and include the *D-RNTI* IE and the identifiers for the CN CS Domain and CN PS Domain that the DRNC is connected to in the UPLINK SIGNALLING TRANSFER INDICATION message. These CN Domain Identifiers shall be based on the LAC and RAC respectively of the cell where the message was received from the UE.

Depending on local configuration in the DRNS, it may include the geographical co-ordinates of the cell, represented either by the *Cell GAI* IE or by the *Cell GA Additional Shapes* IE, in which the Uu message was received in the UPLINK SIGNALLING TRANSFER INDICATION message. If the DRNC includes the *Cell GA Additional Shapes* IE in the UPLINK SIGNALLING TRANSFER INDICATION message, it shall also include the *Cell GAI* IE.

[FDD - The DRNC shall include the *DPC Mode Change Support Indicator* IE in the UPLINK SIGNALLING TRANSFER INDICATION message if the accessed cell supports DPC mode change.]

[FDD- The DRNC shall include the *Flexible Hard Split Support Indicator* IE in the UPLINK SIGNALLING TRANSFER INDICATION message if the accessed cell supports TFCI flexible hard split mode.]

The DRNC shall include [FDD - the *Cell Capability Container FDD* IE] [3.84Mcps TDD - the *Cell Capability Container TDD* IE] [1.28Mcps TDD - the *Cell Capability Container TDD LCR* IE] in the UPLINK SIGNALLING TRANSFER INDICATION message if the accessed cell supports any functionalities listed in

[FDD - 9.2.2.D] [3.84Mcps TDD - 9.2.3.1a] [1.28Mcps TDD - 9.2.3.1b].
If available, the DRNC shall include the *SNA Information* IE for the concerned cell.
When receiving the *SNA Information* IE, the SRNC should use it to restrict cell access based on SNA information. See also [40] for a broader description of the SNA access control.
If the *D-RNTI* IE is not to be included in the UPLINK SIGNALLING TRANSFER INDICATION message and the UE Link is currently stored in the UE Context in the DRNC, the DRNC shall assume that the UE changes the cell under which it camps in the DRNS (see ref. [xx], section 5.1.6 on intra-DRNC cell change). In this case, if an MBMS session for some MBMS bearer services contained in the UE Link is ongoing in the cell identified by the *UC-ID* IE, the DRNC shall include in the *MBMS Bearer Service List* IE the *Transmission Mode* IE for each of these active MBMS bearer services.

8.2.1.3 Abnormal Conditions

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8.2.2 Downlink Signalling Transfer

8.2.2.1 General

The procedure is used by the SRNC to request to the DRNC the transfer of a Uu message on the CCCH in a cell. When used, the procedure is in response to a received Uplink Signalling Transfer procedure.
This procedure shall use the connectionless mode of the signalling bearer.

8.2.2.1.1 Downlink Signalling Transfer for Iur-g

The procedure is used by the SRNC/SBSS to request to the DBSS the transfer of an Um message on the SRB2 in a cell.
The procedure is used by the SBSS to request to the DRNC the transfer of a Uu message on the CCCH in a cell.

8.2.2.2 Successful Operation

Figure 2: Downlink Signalling Transfer procedure, Successful Operation

The procedure consists of the DOWNLINK SIGNALLING TRANSFER REQUEST message sent by the SRNC to the DRNC.
The message contains the Cell Identifier (C-ID) contained in the received UPLINK SIGNALLING TRANSFER INDICATION message and the D-RNTI.
Upon receipt of the message, the DRNC shall send the L3 Information on the CCCH in the cell indicated by the *C-ID* IE to the UE identified by the *D-RNTI* IE.
If the *D-RNTI Release Indication* IE is set to "Release D-RNTI" and the DRNS has no dedicated resources (DCH, [TDD - USCH,] and/or DSCH) allocated for the UE, the DRNS shall release the D-RNTI, the UE Context and any RACH, [FDD - CPCH,] and FACH resources and any C-RNTI allocated to the UE Context upon receipt of the DOWNLINK SIGNALLING TRANSFER REQUEST message. If a UE Link is currently stored in the UE Context, the DRNC shall perform UE De-linking as specified in [xx], section 5.1.6.
If the *D-RNTI Release Indication* IE is set to "Release D-RNTI" and the DRNS has dedicated resources allocated for the UE, the DRNS shall only release any RACH, [FDD - CPCH,] and FACH resources and any C-RNTI allocated to the UE Context upon receipt of the DOWNLINK SIGNALLING TRANSFER REQUEST message.
If the *MBMS Bearer Service List* IE is included and *URA-ID* IE is not included in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the DRNC shall perform the UE Linking as specified in [xx], section 5.1.6.
If the *MBMS Bearer Service List* IE is included and the *URA-ID* IE is included in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the DRNC shall perform the URA Linking as specified in [xx],

section 5.1.x.
If the *MBMS Bearer Service List* IE is included and the *Old URA-ID* IE is included in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the DRNC shall perform URA De-linking for the URA identified by the *Old URA-ID* IE as specified in [xx], section 5.1.x.

8.2.2.2.1 Successful Operation for Iur-g

The procedure consists of the DOWNLINK SIGNALLING TRANSFER REQUEST message sent by the SRNC/SBSS to the DBSS or by the SBSS to the DRNC.
The message contains the Cell Identifier (C-*ID*) contained in the received UPLINK SIGNALLING TRANSFER INDICATION message and the D-RNTI.
Upon receipt of the message, the DBSS shall send the L3 Information on the SRB2 in the cell indicated by the *C-ID* IE to the UE/MS identified by the *D-RNTI* IE.
Upon receipt of the message, the DRNC shall send the L3 Information on the CCCH in the cell indicated by the *C-ID* IE to the UE/MS identified by the *D-RNTI* IE.

8.2.2.3 Abnormal Conditions

If the user identified by the *D-RNTI* IE has already accessed another cell controlled by the DRNC than the cell identified by the *C-ID* IE in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the message shall be ignored.

8.2.2.3.1 Abnormal Conditions for Iur-g

If the user identified by the *D-RNTI* IE has already accessed another cell controlled by the DRNC/DBSS than the cell identified by the *C-ID* IE in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the message shall be ignored.
If the DRNC receives from the SBSS the DOWNLINK SIGNALLING TRANSFER REQUEST message, in which the *D-RNTI Release Indication* IE is set to "not Release D-RNTI", the DRNC shall ignore this IE and release the D-RNTI.
If the DBSS receives from the SBSS/SRNC the DOWNLINK SIGNALLING TRANSFER REQUEST message, in which the *D-RNTI Release Indication* IE is set to "not Release D-RNTI", the DBSS shall ignore this IE and release the D-RNTI.
********* unaffected parts are omitted *********

8.3 DCH Procedures

8.3.1 Radio Link Setup

8.3.1.1 General

This procedure is used for establishing the necessary resources in the DRNS for one or more radio links.
The connection-oriented service of the signalling bearer shall be established in conjunction with this procedure.

8.3.1.2 Successful Operation

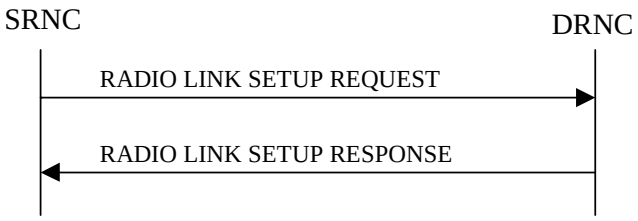

Figure 5: Radio Link Setup procedure: Successful Operation

When the SRNC makes an algorithmic decision to add the first cell or set of cells from a DRNS to the active set of a specific UE-UTRAN connection, the RADIO LINK SETUP REQUEST message is sent to the corresponding DRNC to request establishment of the radio link(s). The Radio Link Setup procedure is initiated with this RADIO LINK SETUP REQUEST message sent from the SRNC to the DRNC.

Upon receipt of the RADIO LINK SETUP REQUEST message, the DRNS shall reserve the necessary resources and configure the new RL(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.
The DRNS shall prioritise resource allocation for the RL(s) to be established according to Annex A.
If the RADIO LINK SETUP REQUEST message includes the *Allowed Queuing Time* IE the DRNS may queue the request for a time period not to exceed the value of the *Allowed Queuing Time* IE before starting to execute the request.

----------ommitted partly----------

MBMS Handling:
If the *MBMS Bearer Service List* IE is included in the RADIO LINK SETUP REQUEST message, the DRNC shall perform the UE Linking as specified in [xx], section 5.1.6.

General:

If the RADIO LINK SETUP REQUEST message includes the *RL Specific DCH Information* IE, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity* IE and the *S-Field Length* IE, the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity* IE, *S-Field Length* IE and *SSDT Cell Identity Length* IE.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Qth Parameter* IE in addition to the *SSDT Cell Identity* IE, the DRNS shall use the *Qth Parameter* IE, if Qth signalling is supported, when SSDT is activated in the concerned new RL.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity for EDSCHPC* IE, the DRNS shall activate enhanced DSCH power control, if supported, using the *SSDT Cell Identity for EDSCHPC* IE and *SSDT Cell Identity Length* IE as well as *Enhanced DSCH PC* IE in accordance with ref. [10] subclause 5.2.2. If the RADIO LINK SETUP REQUEST message includes both *SSDT Cell Identity* IE and *SSDT Cell Identity for EDSCHPC* IE, then the DRNS shall ignore the *SSDT Cell Identity for EDSCHPC* IE. If the enhanced DSCH power control is activated and the *TFCI PC Support Indicator* IE is set to "TFCI PC Mode 2 Supported", the primary/secondary status determination in the enhanced DSCH power control shall be applied to the TFCI power control in DSCH hard split mode.]

[FDD - If the *DRAC Control* IE is set to "requested" in the RADIO LINK SETUP REQUEST message for at least one DCH and if the DRNS supports the DRAC, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Secondary CCPCH Info* IE for the FACH in which the DRAC information is sent, for each Radio Link established in a cell where DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK SETUP RESPONSE message.]

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *D-RNTI* IE, the *CN PS Domain Identifier* IE and/or the *CN CS Domain Identifier* IE for the CN domains (using LAC and RAC of the current cell) to which the DRNC is connected.

[FDD - If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Primary Scrambling Code* IE, the *UL UARFCN* IE and the *DL UARFCN* IE.]

[TDD - If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *UARFCN* IE, the *Cell Parameter ID* IE and the *SCTD Indicator* IE.]

[3.84Mcps TDD - If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Sync Case* IE and if the *Sync Case* IE is set to "Case 2", the DRNC shall also include the *SCH Time Slot* IE in the RADIO LINK SETUP RESPONSE message. If the included *Sync Case* IE is set to "Case1", the DRNC shall also include the *Time Slot For SCH* IE]

[3.84Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

[1.28 Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

For each Radio Link established in a cell in which at least one URA Identity is being broadcast, the DRNC shall include in the *URA Information* IE within the RADIO LINK SETUP RESPONSE message URA Innformation for this cell including the *URA ID* IE, the *Multiple URAs Indicator* IE indicating whether or not multiple URA Identities are being broadcast in the cell, and the *RNC-ID* IEsof all other RNCs that have at least one cell within the URA identified by the *URA ID* IE.

Depending on local configuration in the DRNS, the DRNC may include in the RADIO LINK SETUP RESPONSE message the *UTRAN Access Point Position* IE and the geographical co-ordinates of the cell, represented either by the *Cell GAI* IE or by the *Cell GA Additional Shapes* IE. If the DRNC includes the *Cell GA Additional Shapes* IE in the RADIO LINK SETUP RESPONSE message, it shall also include the *Cell GAI* IE.

If the DRNS need to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) when starting to utilise a new Radio Link, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Allowed UL Rate* IE in the *DCH Information Response* IE for this Radio Link.

If the DRNS need to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) when starting to utilise a new Radio Link, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Allowed DL Rate* IE in the *DCH Information Response* IE for this Radio Link.

If the *Permanent NAS UE Identity* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall store the information for the considered UE Context for the life-time of the UE Context.
If the RADIO LINK SETUP REQUEST message includes the *Permanent NAS UE Identity* IE and a *C-ID* IE corresponding to a cell reserved for operator use, the DRNS shall use this information to determine whether it can set up a Radio Link on this cell or not for the considered UE Context.

If the HCS priority information is available in the DRNS, it shall include the *HCS Prio* IE for each of the established RLs in the RADIO LINK SETUP RESPONSE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK SETUP RESPONSE message.]

The DRNS shall start receiving on the new RL(s) after the RLs are successfully established.

8.3.2 Radio Link Addition

8.3.2.1 General

This procedure is used for establishing the necessary resources in the DRNS for one or more additional RLs towards a UE when there is already at least one RL established to the concerned UE via this DRNS.
This procedure shall use the signalling bearer connection for the relevant UE Context.
The Radio Link Addition procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.
[FDD - The Radio Link Addition procedure serves to establish one or more new Radio Links which do not contain the DSCH. If the DSCH shall be moved into a new Radio Link, the Radio Link reconfiguration procedure shall be

applied.]
[TDD - The Radio Link Addition procedure serves to establish a new Radio Link with the DSCH and USCH included, if they existed before.]

8.3.2.2 Successful Operation

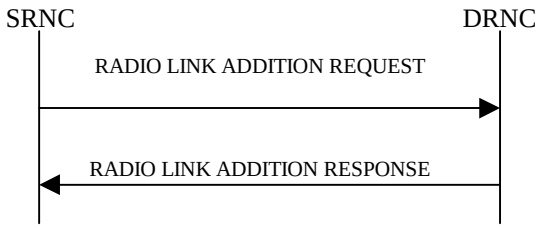

Figure 7: Radio Link Addition procedure: Successful Operation

The procedure is initiated with a RADIO LINK ADDITION REQUEST message sent from the SRNC to the DRNC.
Upon receipt, the DRNS shall reserve the necessary resources and configure the new RL(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.
The DRNS shall prioritise resource allocation for the RL(s) to be established according to Annex A.

[1.28Mcps TDD - The DRNC shall include the *Uplink Timing Advance Control LCR* IE in the RADIO LINK ADDITION RESPONSE message.]

General:
If the RADIO LINK ADDITION REQUEST message includes the *RL Specific DCH Information* IE, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.
[FDD - If the RADIO LINK ADDITION REQUEST message contains an *SSDT Cell Identity* IE, the DRNS shall, if supported, activate SSDT for the concerned new RL using the indicated SSDT Cell Identity.]
[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Qth Parameter* IE in addition to the *SSDT Cell Identity* IE, the DRNS shall use the *Qth Parameter* IE, if Qth signalling is supported, when SSDT is activated in the concerned new RL.]

Depending on local configuration in the DRNS, the DRNC may include in the RADIO LINK ADDITION RESPONSE message the *UTRAN Access Point Position* IE and the geographical co-ordinates of the cell, represented either by the *Cell GAI* IE or by the *Cell GA Additional Shapes* IE. If the DRNC includes the *Cell GA Additional Shapes* IE in the RADIO LINK ADDITION RESPONSE message, it shall also include the *Cell GAI* IE.

For each Radio Link established in a cell in which at least one URA Identity is being broadcast, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message a URA Information for this cell including the *URA ID* IE, the *Multiple URAs Indicator* IE indicating whether or not multiple URA Identities are being broadcast in the cell, and the *RNC-ID* IEs of all other RNCs that have at least one cell within the URA identified by the *URA ID* IE.

[FDD - If the UE has been allocated one or several DCH controlled by DRAC and if the DRNS supports the DRAC, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *Secondary CCPCH Info* IE for the FACH in which the DRAC information is sent, for each Radio Link established in a cell in which DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK ADDITION RESPONSE message.]

[3.84Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

[1.28 Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

If the *Permanent NAS UE Identity* IE is present in the RADIO LINK ADDITION REQUEST message, the DRNS shall store the information for the considered UE Context for the lifetime of the UE Context. If the RADIO LINK ADDITION REQUEST message includes a *C-ID* IE corresponding to a cell reserved for operator use and the Permanent NAS UE Identity is available in the DRNC for the considered UE Context, the DRNC shall use this information to determine whether it can add the Radio Link on this cell or not.

If the HCS priority information is available in the DRNS, it shall include the *HCS Prio* IE for each of the established RLs in the RADIO LINK ADDITION RESPONSE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK ADDITION RESPONSE message.]

The DRNS shall start receiving on the new RL(s) after the RLs are successfully established.

[FDD-Radio Link Set Handling]:

[FDD - For each RL not having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign to the RL a unique value for the *RL Set ID* IE which uniquely identifies the RL as an RL Set within the UE Context.]

[FDD - For all RLs having a common generation of the TPC commands in the DL with another new or existing RL, the DRNS shall assign to each RL the same value for the *RL Set ID* IE which uniquely identifies these RLs as members of the same RL Set within the UE Context.]

[FDD - After addition of the new RL(s), the UL out-of-sync algorithm defined in ref. [10] shall, for each of the previously existing and newly established RL Set(s), use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE that are configured in the cells supporting the radio links of the RL Set. The UL in-sync algorithm defined in [10] shall, for each of the established RL Set(s), use the minimum value of the parameters N_INSYNC_IND that are configured in the cells supporting the radio links of the RL Set.]

Response message:

If all requested RLs are successfully added, the DRNC shall respond with a RADIO LINK ADDITION RESPONSE message.
After sending the RADIO LINK ADDITION RESPONSE message the DRNS shall continuously attempt to obtain UL synchronisation on the Uu interface.
For each RL for which the *Delayed Activation* IE is not included in the RADIO LINK ADDITION REQUEST message the DRNS shall:

- [FDD -start transmission on the DL DPDCH(s) of the new RL as specified in ref. [4].]
- [TDD - start transmission on the new RL immediately as specified in ref. [4].]

For each RL for which the *Delayed Activation* IE is included in the RADIO LINK ADDITION REQUEST message, the DRNS shall:

- if the *Delayed Activation* IE indicates "Separate Indication":
  - not start any DL transmission for the concerning RL on the Uu interface;
- if the *Delayed Activation* IE indicates "CFN":
  - [FDD - start transmission on the DL DPDCH(s) of the new RL as specified in ref. [4], however never before the CFN indicated in the *Activation CFN* IE.]
- [TDD - start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in ref. [4].]

8.3.3 Radio Link Deletion

8.3.3.1 General

The Radio Link Deletion procedure is used to release the resources in a DRNS for one or more established radio links towards a UE.
This procedure shall use the signalling bearer connection for the relevant UE Context.
The Radio Link Deletion procedure may be initiated by the SRNC at any time after establishing a Radio Link.

8.3.3.2 Successful Operation

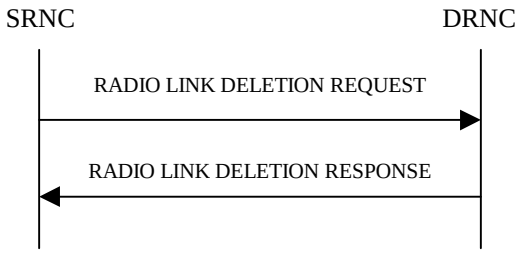

Figure 9: Radio Link Deletion procedure, Successful Operation

The procedure is initiated with a RADIO LINK DELETION REQUEST message sent from the SRNC to the DRNC.
Upon receipt of this message, the DRNS shall delete the radio link(s) identified by the *RL ID* IE(s) in the message, shall release all associated resource sand shall respond to the SRNC with a RADIO LINK DELETION RESPONSE message.
If the radio link(s) to be deleted represent the last radio link(s) for the UE in the DRNS and if the UE is not using any common resources in the DRNS, then the DRNC shall release the UE Context.
[FDD - After deletion of the RL(s), the UL out-of-sync algorithm defined in ref. [10] shall for each of the remaining RL Set(s) use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE that are configured in the cells supporting the radio links of the RL Set. The UL in-sync algorithm defined in ref. [10] shall for each of the remaining RL Set(s) use the minimum value of the parameters N_INSYNC_IND that are configured in the cells supporting the radio links of the RL Set.]

8.3.3.3 Unsuccessful Operation

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8.3.3.4 Abnormal Conditions

If the RL indicated by the *RL ID* IE does not exist, the DRNC shall respond with the RADIO LINK DELETION RESPONSE message.
-
********* unaffected parts are omitted *********

8.4 Common Transport Channel Procedures

8.4.1 Common Transport Channel Resources Initialisation

8.4.1.1 General

The Common Transport Channel Resources Initialisation procedure is used by the SRNC for the initialisation of the Common Transport Channel user plane towards the DRNC and/or for the initialisation of the Common Transport Channel resources in the DRNC to be used by a UE.
This procedure shall use the connectionless mode of the signalling bearer.

8.4.1.2 Successful Operation

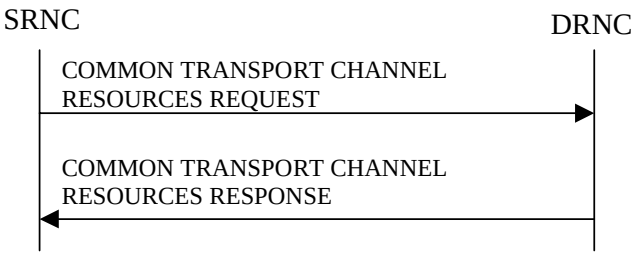

Figure 27: Common Transport Channel Resources Initialisation procedure, Successful Operation

The SRNC initiates the procedure by sending the message COMMON TRANSPORT CHANNEL RESOURCES REQUEST message to the DRNC.
If the value of the *Transport Bearer Request Indicator* IE is set to "Bearer Requested", the DRNC shall store the received *Transport Bearer ID* IE. The DRNC may use the *Transport Layer Address* and *Binding ID* IEs included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message received from the SRNC when establishing a transport bearer for the common transport channel. In addition, the DRNC shall include its own *Binding ID* IE and *Transport Layer Address* IE in the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message.
If the value of the *Transport Bearer Request Indicator* IE is set to" Bearer not Requested", the DRNC shall use the transport bearer indicated by the *Transport Bearer ID* IE.
If the *C-ID* IE is included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall allocate a C-RNTI for the indicated cell and include the *C-RNTI* IE in the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message.
If the *C-ID* IE is included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall include the *FACH Info for UE Selected S-CCPCH* IE valid for the cell indicated by the *C-ID* IE and the corresponding *C-ID* IE in the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message. If the *C-ID* IE is not included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall include the *FACH Info for UE Selected S-CCPCH* IE valid for the cell where the UE is located and the corresponding *C-ID* IE. The DRNC shall include the *FACH Scheduling Priority* IE and *FACH Initial Window Size* IE in the *FACH Flow Control Information* IE of the *FACH Info for UE Selected S-CCPCH* IE for each priority class that the DRNC has determined shall be used. The DRNC may include several *MAC-c/sh SDU Length* IEs for each priority class.
If the DRNS has any RACH, [FDD - CPCH,] and/or FACH resources previously allocated for the UE in another cell than the cell in which resources are currently being allocated, the DRNS shall release the previously allocated RACH, [FDD - CPCH,] and/or FACH resources.
If the DRNS has successfully reserved the required resources, the DRNC shall respond to the SRNC with the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message.
If the *Permanent NAS UE Identity* IE is present in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNS shall store the information for the considered UE Context for the lifetime of the UE Context.
If the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message includes a *C-ID* IE corresponding to a cell reserved for operator use and the Permanent NAS UE Identity is available in the DRNC for the considered UE Context, the DRNC shall use this information to determine whether it can reserve resources on a common transport channel in this cell or not.
If the *MBMS Bearer Service List* IE is included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall perform the UE Linking as specified in [xx], section 5.1.6.

8.4.1.3 Unsuccessful Operation

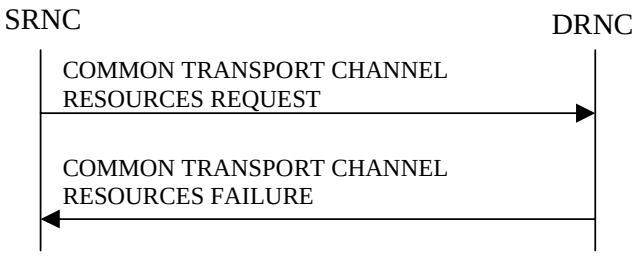

Figure 28: Common Transport Channel Resources Initialisation procedure, Unsuccessful Operation

If the *Transport Bearer Request Indicator* IE is set to "Bearer Requested" and the DRNC is not able to provide a Transport Bearer, the DRNC shall reject the procedure and respond to the SRNC with the COMMON TRANSPORT CHANNEL RESOURCES FAILURE message, including the reason for the failure in the *Cause* IE.
If the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message contains a *C-ID* IE corresponding to a cell reserved for operator use and the Permanent NAS UE Identity is not available for the considered UE Context, the DRNC shall reject the procedure and send the COMMON TRANSPORT CHANNEL RESOURCES FAILURE message, including the reason for the failure in the *Cause* IE.
Typical cause values are:
Radio Network Layer Causes:
- Common Transport Channel Type not Supported;
- Cell reserved for operator use.

Transport Layer Causes:
- Transport Resource Unavailable.

8.4.1.4 Abnormal Conditions

If the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport channel intended to be established, the DRNC shall reject the procedure using the COMMON TRANSPORT CHANNEL RESOURCES FAILURE message.

8.4.2 Common Transport Channel Resources Release

8.4.2.1 General

This procedure is used by the SRNC to request release of Common Transport Channel Resources for a given UE in the DRNS. The SRNC uses this procedure either to release the UE Context from the DRNC (and thus both the D-RNTI and the C-RNTI) or to release only the C-RNTI.
This procedure shall use the connectionless mode of the signalling bearer.

8.4.2.2 Successful Operation

Figure 29: Common Transport Channel Resources Release procedure, Successful Operation

The SRNC initiates the Common Transport Channel Resources Release procedure by sending the COMMON TRANSPORT CHANNEL RESOURCES RELEASE REQUEST message to the DRNC. Upon receipt of the message the DRNC shall release the UE Context identified by the D-RNTI and all its related RACH, [FDD - CPCH,] and/or FACH resources, unless the UE is using dedicated resources (DCH, [TDD - USCH,] and/or DSCH)

in the DRNS in which case the DRNC shall release only the C-RNTI and all its related RACH, [FDD - CPCH,] and/or FACH resources allocated for the UE.

8.4.2.3 Abnormal Conditions

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********* unaffected parts are omitted *********

8.5.6 Information Exchange Initiation

8.5.6.1 General

This procedure is used by an RNC to request the initiation of an information exchange with another RNC.
This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

8.5.6.2 Successful Operation

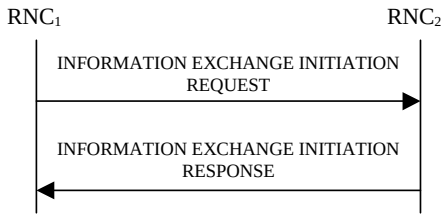

Figure 30F: Information Exchange Initiation procedure, Successful Operation

The procedure is initiated with an INFORMATION EXCHANGE INITIATION REQUEST message sent from RNC_1 to RNC_2.
Upon receipt, the RNC_2 shall provide the requested information according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.
If the *Information Exchange Object Type* is set to "MBMS Bearer Service", the RNC2 shall ignore the value in *Information Type* IE.

Information Report Characteristics:
The *Information Report Characteristics* IE indicates how the reporting of the information shall be performed.
If the *Information Report Characteristics* IE is set to "On Demand", the RNC_2 shall report the requested information immediately.
If the *Information Report Characteristics* IE is set to "Periodic", the RNC_2 shall report the requested information immediately and then shall periodically initiate the Information Reporting procedure for all the requested information, with the report frequency indicated by the *Information Report Periodicity* IE.
If the *Information Report Characteristics* IE is set to "On Modification", the RNC_2 shall report the requested information immediately if available. If the requested information is not available at the moment of receiving the INFORMATION EXCHANGE INITIATION REQUEST message, but expected to become available after some acquisition time, the RNC_2 shall initiate the Information Reporting procedure when the requested information becomes available. The RNC_2 shall then initiate the Information Reporting procedure in accordance to the following conditions:

- If the *Information Type Item* IE is set to "IPDL Parameters", the RNC_2 shall initiate the Information Reporting procedure when any change in the parameters occurs.

- If the *Information Type Item* IE is set to "DGPS Corrections", the RNC_2 shall initiate the Information Reporting procedure for this specific Information Type when either the PRC has drifted from the previously reported value more than the threshold indicated in the *PRC Deviation* IE in the *Information Threshold* IE or a change has occurred in the IODE.

- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Navigation Model & Recovery Assistance", the RNC_2 shall initiate the Information Reporting procedure for this specific GPS Information Item when a change has occurred regarding either the IODC or the list of visible satellites, identified by the *Sat ID* IEs.

- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Ionospheric Model", the RNC_2 shall initiate the Information Reporting procedure for this specific GPS Information Item when any change has occurred.

- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS UTC Model", the RNC_2 shall initiate the Information Reporting procedure for this specific GPS Information Item when a change has occurred in the t_{ot} or WN_t parameter.

- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Almanac", the RNC_2 shall initiate the Information Reporting procedure for this specific GPS Information Item when a change in the t_{oa} or WN_a parameter has occurred.

- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Real-Time Integrity", the RNC_2 shall initiate the Information Reporting procedure for this specific GPS Information Item when any change has occurred.

- If the *Information Type* IE is set to "Cell Capacity Class", the RNC_2 shall initiate the Information Reporting procedure for uplink and downlink cell capacity class when any change has occurred. If either uplink or downlink cell capacity class satisfies the requested report characteristics, the RNC_2 shall report the result of both uplink and downlink cell capacity information.

- If any of the above *Information Type* IEs becomes temporarily unavailable, the RNC_2 shall initiate the Information Reporting procedure for this specific Information Item by indicating "Information Not Available" in the *Requested Data Value Information* IE. If the Information becomes available again, the RNC_2 shall initiate the Information Reporting procedure for this specific Information.

- If the *Information Type* IE is set to "NACC related data", the RNC_2 shall initiate the Information Reporting procedure for NACC related data if any change has occurred.

Response message:
If the RNC_2 is able to determine the information requested by the RNC_1, it shall respond with the INFORMATION EXCHANGE INITIATION RESPONSE message. The message shall include the *Information Exchange ID* IE set to the same value that was included in the INFORMATION EXCHANGE INITIATION REQUEST message. When the *Report Characteristics* IE is set to or "On Modification" or "Periodic", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE if the data are available. When the *Report Characteristics* IE is set to "On Demand", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE.

8.5.6.2.1 Successful Operation for Iur-g

The procedure is initiated with an INFORMATION EXCHANGE INITIATION REQUEST message sent from BSS_1 to BSS_2/RNC_2 or by RNC_1 to BSS_2.
Upon receipt, the BSS_2/RNC_2 shall provide the requested information according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.
Information Report Characteristics on Iur-g:
If the *Information Type Item* IE is set to "Cell Capacity Class", the RNC_2/BSS_2 shall initiate measurements and report results as described in section 8.5.6.2.
The *Information Report Characteristics* IE indicates how the reporting of the information shall be performed. This IE is used as described in section 8.5.6.2.

8.5.6.3 Unsuccessful Operation

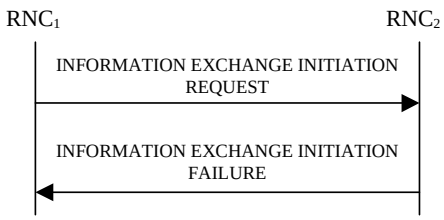

Figure 30G: Information Exchange Initiation procedure, Unsuccessful Operation

If the requested Information Type received in the *Information Type* IE indicates a type of information that RNC_2 cannot provide, the RNC_2 shall reject the Information Exchange Initiation procedure.
If the requested information provision cannot be accessed, the RNC_2 shall reject the procedure and shall send the INFORMATION EXCHANGE INITIATION FAILURE message.
The message shall include the *Information Exchange ID* IE set to the same value that was used in the INFORMATION EXCHANGE INITIATION REQUEST message and the *Cause* IE set to an appropriate value.
Typical cause values are as follows:
Radio Network Layer Cause:

- Information temporarily not available.

- Information Provision not supported for the object.

8.5.6.4 Abnormal Conditions

If the *Information Report Characteristics* IE is set to "On Modification", and the *Information Type Item* IE is set to "DGPS Corrections", but the *Information Threshold* IE is not received in the INFORMATION EXCHANGE INITIATION REQUEST message, the RNC_2 shall reject the Information Exchange Initiation procedure and shall send the INFORMATION EXCHANGE INITIATION FAILURE message.
If the *Information Exchange Object Type* IE is set to "Cell" and the *Information Type Item* IE set to "NACC related data" the RNC_2 shall reject the Information Exchange Initiation procedure and shall send the INFORMATION EXCHANGE INITIATION FAILURE message.
If the *Information Exchange Object Type* IE is set to "MBMS Bearer Service" and the *Information Report Characteristics* IE is set to value other than "On Demand" the RNC_2 shall reject the Information Exchange Initiation procedure and shall send the INFORMATION EXCHANGE INITIATION FAILURE message.
The allowed combinations of the Information type and Information Report Characteristics type are shown in the table below marked with "X". For not allowed combinations, the RNC_2 shall reject the Information Exchange Initiation procedure using the INFORMATION EXCHANGE INITIATION FAILURE message.

Table 6a: Allowed Information Type and Information Report Characteristics type combinations

Type	Information Report Characteristics Type		
	On Demand	Periodic	On Modification
UTRAN Access Point Position with Altitude Information	X		
UTRAN Access Point Position	X		
IPDL Parameters	X	X	X
GPS Information	X	X	X
DGPS Corrections	X	X	X
GPS RX Pos	X		
SFN-SFN Measurement Reference Point Position	X		
Cell Capacity Class	X		X
NACC related data	X		X

8.5.6.4.1 Abnormal Conditions for Iur-g

The information types that can be requested on the Iur and Iur-g interfaces are shown in the table below marked with “X”. For information types that are not applicable on the Iur-g interface, the BSS shall reject the Information Exchange Initiation procedure.

Table 7: Allowed Information types on Iur and Iur-g interfaces

Information Type	Interface	
	Iur	Iur-g
UTRAN Access Point Position with Altitude Information	X	
UTRAN Access Point Position	X	
IPDL Parameters	X	
DGPS Corrections	X	
GPS Information	X	
GPS RX Pos	X	
SFN-SFN Measurement Reference Point Position	X	
Cell Capacity Class	X	X
NACC related data	X	

********* unaffected parts are omitted *********

8.x MBMS Procedures

8.x.1 MBMS Attach

8.x.1.1 General

The MBMS Attach procedure is used by the SRNC to either create a UE Link/URA Link in the DRNC or inform the DRNC about any addition of one or several MBMS bearer services in an already stored UE Link or URA Link. This procedure shall use the signalling bearer mode specified below.

8.x.1.2 Successful Operation

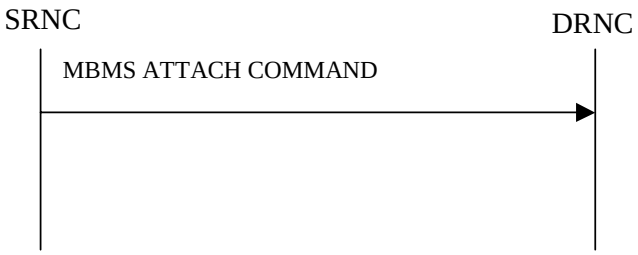

Figure x1: MBMS Attach procedure, Successful Operation

The SRNC initiates the procedure by sending the message MBMS ATTACH COMMAND message to the DRNC.
When the UE is utilising one or more radio links in the DRNC, the message shall be sent using the connection oriented service of the signalling bearer and no further identification of the UE Context in the DRNC is required.
If the UE is not utilising any radio link, the message shall be sent using the connectionless service of the signalling bearer.
If no *UE State* IE is included in the message or the *UE State* IE is set to "CELL_FACH/CELL_PCH", the DRNC shall perform the UE Linking as specified in [xx], section 5.1.6.
If the *UE State* IE is set to "URA_PCH", the DRNC shall perform the URA Linking as specified in [xx], section 5.1.x.

8.x.1.3 Abnormal Conditions

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8.x.2 MBMS Detach

8.x.2.1 General

The MBMS Detach procedure is used by the SRNC to either delete a UE Link/URA Link in the DRNC or to

inform DRNC about any removal of one or several MBMS bearer services in an already stored UE link or URA Link.
This procedure shall use the signalling bearer mode specified below.

8.x.2.2 Successful Operation

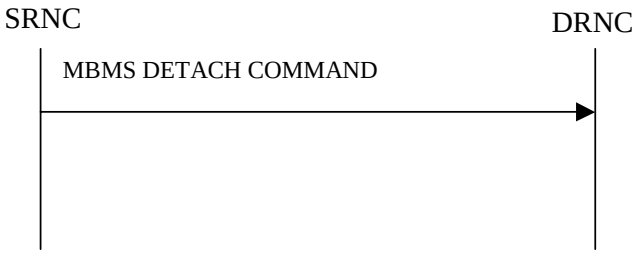

Figure x2: MBMS Detach procedure, Successful Operation

The SRNC initiates the procedure by sending the message MBMS DETACH COMMAND message to the DRNC.
When the UE is utilising one or more radio links in the DRNC, the message shall be sent using the connection oriented service of the signalling bearer and no further identification of the UE Context in the DRNC is required.
If the UE is not utilising any radio link, the message shall be sent using the connectionless service of the signalling bearer.
If no *UE State* IE is included in the message or the *UE State* IE is set to "CELL_FACH/CELL_PCH", the DRNC shall perform the UE De-linking as specified in [xx], section 5.1.6.
If the *UE State* IE is set to "URA_PCH", the DRNC shall perform the URA De-linking as specified in [xx], section 5.1.x.

8.x.2.3 Abnormal Conditions

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8.x.3 MBMS Channel Type Reconfiguration

8.x.3.1 General

The MBMS Channel Type Reconfiguration procedure is used by the DRNC to indicate the SRNC the channel type for the MBMS bearer service within a certain cell.
This procedure shall use the connectionless mode of the signalling bearer.

8.x.3.2 Successful Operation

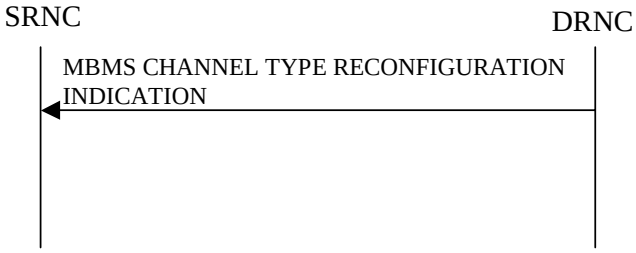

Figure x3: MBMS Channel Type Reconfiguration procedure, Successful Operation

The DRNC initiates the procedure by sending the message MBMS CHANNEL TYPE RECONFIGURATION INDICATION to the SRNC.
If the procedure is initiated by the DRNC due to the channel type change for the MBMS bearer service, the DRNC shall include *Affected UE Information for MBMS* IE in the message MBMS CHANNEL TYPE RECONFIGURATION INDICATION to the SRNC.
If at the start time of a session for the MBMS bearer service "PTP" or "Not Provided" transmission mode is determined by the DRNC, the procedure shall be initiated. The SRNC shall assume "PTM" transmission mode if

no MBMS CHANNEL TYPE RECONFIGURATION INDICATION is received from the DRNC.

8.x.3.3 Abnormal Conditions

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********* unaffected parts are omitted *********

9.1.3 RADIO LINK SETUP REQUEST

9.1.3.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
SRNC-ID	M		RNC-ID 9.2.1.50		YES	reject
S-RNTI	M		9.2.1.53		YES	reject
D-RNTI	O		9.2.1.24		YES	reject
Allowed Queuing Time	O		9.2.1.2		YES	reject
UL DPCH Information		*1*			YES	reject
>UL Scrambling Code	M		9.2.2.53		–	
>Min UL Channelisation Code Length	M		9.2.2.25		–	
>Max Number of UL DPDCHs	C – CodeLen		9.2.2.24		–	
>Puncture Limit	M		9.2.1.46	For the UL.	–	
>TFCS	M		9.2.1.63		–	
>UL DPCCH Slot Format	M		9.2.2.52		–	
>Uplink SIR Target	O		Uplink SIR 9.2.1.69		–	
>Diversity mode	M		9.2.2.8		–	
>SSDT Cell Identity Length	O		9.2.2.41		–	
>S Field Length	O		9.2.2.36		–	
>DPC Mode	O		9.2.2.12A		YES	reject
DL DPCH Information		*1*			YES	reject
>TFCS	M		9.2.1.63		–	
>DL DPCH Slot Format	M		9.2.2.9		–	
>Number of DL Channelisation Codes	M		9.2.2.26A		–	
>TFCI Signalling Mode	M		9.2.2.46		–	
>TFCI Presence	C-SlotFormat		9.2.1.55		–	
>Multiplexing Position	M		9.2.2.26		–	
>Power Offset Information		*1*			–	
>>PO1	M		Power Offset 9.2.2.30	Power offset for the TFCI bits.	–	
>>PO2	M		Power Offset 9.2.2.30	Power offset for the TPC bits.	–	
>>PO3	M		Power Offset 9.2.2.30	Power offset for the pilot bits.	–	
>FDD TPC Downlink Step Size	M		9.2.2.16		–	
>Limited Power Increase	M		9.2.2.21A		–	
>Inner Loop DL PC Status	M		9.2.2.21a		–	
>Split Type	O		9.2.2.39a		YES	reject
>Length of TFCI2	O		9.2.2.21C		YES	reject
DCH Information	M		DCH FDD Information 9.2.2.4A		YES	reject
DSCH Information	O		DSCH FDD Information 9.2.2.13A		YES	reject
RL Information		*1…<maxnoofRLs>*			EACH	notify
>RL ID	M		9.2.1.49		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>C-ID	M		9.2.1.6		–	
>First RLS Indicator	M		9.2.2.16A		–	
>Frame Offset	M		9.2.1.30		–	
>Chip Offset	M		9.2.2.1		–	
>Propagation Delay	O		9.2.2.33		–	
>Diversity Control Field	C – NotFirstRL		9.2.1.20		–	
>Initial DL TX Power	O		DL Power 9.2.1.21A		–	
>Primary CPICH Ec/No	O		9.2.2.32		–	
>SSDT Cell Identity	O		9.2.2.40		–	
>Transmit Diversity Indicator	C – Diversity mode		9.2.2.48		–	
>SSDT Cell Identity for EDSCHPC	C-EDSCHPC		9.2.2.40A		YES	ignore
>Enhanced Primary CPICH Ec/No	O		9.2.2.13I		YES	ignore
>RL Specific DCH Information	O		9.2.1.49A		YES	ignore
>Delayed Activation	O		9.2.1.19Aa		YES	reject
>Qth Parameter	O		9.2.2.34a		YES	ignore
>Cell Portion ID	O		9.2.2.E		YES	ignore
Transmission Gap Pattern Sequence Information	O		9.2.2.47A		YES	reject
Active Pattern Sequence Information	O		9.2.2.A		YES	reject
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
DL Power Balancing Information	O		9.2.2.10A		YES	ignore
HS-DSCH Information	O		HS-DSCH FDD Information 9.2.2.19a		YES	reject
HS-PDSCH RL ID	C – InfoHSDSCH		RL ID 9.2.1.49		YES	reject
UE Support Of Dedicated Pilots For Channel Estimation	O		9.2.2.50A		YES	ignore
UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH	O		9.2.2.50B		YES	ignore
MBMS Bearer Service List		*0…<maxnoofMBMS>*			GLOBAL	notify
>TMGI	M		9.2.1.x1		–	

Condition	Explanation
CodeLen	The IE shall be present if *Min UL Channelisation Code length* IE equals to 4
SlotFormat	The IE shall be present if the *DL DPCH Slot Format* IE is equal to any of the values from 12 to 16.
NotFirstRL	The IE shall be present if the RL is not the first one in the *RL Information* IE.
Diversity mode	The IE shall be present if *Diversity Mode* IE in *UL DPCH Information* IE is not equal to "none".
EDSCHPC	This IE shall be present if *Enhanced DSCH PC* IE is present in the *DSCH Information* IE.
InfoHSDSCH	This IE shall be present if *HS-DSCH Information* IE is present.

Range bound	Explanation
maxnoofRLs	Maximum number of RLs for one UE.
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

9.1.3.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
SRNC-ID	M		RNC-ID 9.2.1.50		YES	reject
S-RNTI	M		9.2.1.53		YES	reject
D-RNTI	O		9.2.1.24		YES	reject
UL Physical Channel Information		*1*			YES	reject
>Maximum Number of Timeslots	M		9.2.3.3A	For the UL	–	
>Minimum Spreading Factor	M		9.2.3.4A	For the UL	–	
>Maximum Number of UL Physical Channels per Timeslot	M		9.2.3.3B		–	
>Support of 8PSK	O		9.2.3.7H	Applicable to 1.28Mcps TDD only	YES	ignore
DL Physical Channel Information		*1*			YES	reject
>Maximum Number of Timeslots	M		9.2.3.3A	For the DL	–	
>Minimum Spreading Factor	M		9.2.3.4A	For the DL	–	
>Maximum Number of DL Physical Channels	M		9.2.3.3C		–	
>Maximum Number of DL Physical Channels per Timeslot	O		9.2.3.3D		YES	ignore
>Support of 8PSK	O		9.2.3.7H	Applicable to 1.28Mcps TDD only	YES	ignore
Allowed Queuing Time	O		9.2.1.2		YES	reject
UL CCTrCH Information		*0..<maxnoofCCTrCHs>*		For DCH and USCH	EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	M		9.2.1.63	For the UL.	–	
>TFCI Coding	M		9.2.3.11		–	
>Puncture Limit	M		9.2.1.46		–	
>TDD TPC Uplink Step Size	O		9.2.3.10a	Mandatory for 1.28Mcps TDD, not applicable to 3.84Mcps TDD	YES	reject
DL CCTrCH Information		*0..<maxnoofCCTrCHs>*		For DCH and DSCH	EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	M		9.2.1.63	For the DL.	–	
>TFCI Coding	M		9.2.3.11		–	
>Puncture Limit	M		9.2.1.46		–	
>TDD TPC Downlink Step Size	M		9.2.3.10		–	
>TPC CCTrCH List		*0..<maxnoCCTrCHs>*		List of uplink CCTrCH which provide TPC	–	

>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.2		–	
DCH Information	O		DCH TDD Information 9.2.3.2A		YES	reject
DSCH Information	O		DSCH TDD Information 9.2.3.3a		YES	reject
USCH Information	O		9.2.3.15		YES	reject
RL Information		*1*			YES	reject
>RL ID	M		9.2.1.49		–	
>C-ID	M		9.2.1.6		–	
>Frame Offset	M		9.2.1.30		–	
>Special Burst Scheduling	M		9.2.3.7D		–	
>Primary CCPCH RSCP	O		9.2.3.5		–	
>DL Time Slot ISCP Info	O		9.2.3.2D	Applicable to 3.84Mcps TDD only	–	
>DL Time Slot ISCP Info LCR	O		9.2.3.2F	Applicable to 1.28Mcps TDD only	YES	reject
>TSTD Support Indicator	O		9.2.3.13F	Applicable to 1.28Mcps TDD only	YES	ignore
>RL Specific DCH Information	O		9.2.1.49A		YES	ignore
>Delayed Activation	O		9.2.1.19Aa		YES	reject
>UL Synchronisation Parameters LCR		*0..1*		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>Uplink Synchronisation Step Size	M		9.2.3.13J		–	
>>Uplink Synchronisation Frequency	M		9.2.3.13I		–	
>Primary CCPCH RSCP Delta	O		9.2.3.5a		YES	ignore
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
HS-DSCH Information	O		HS-DSCH TDD Information 9.2.3.3aa		YES	reject
HS-PDSCH RL ID	C - InfoHSDSCH		RL ID 9.2.1.49		YES	reject
PDSCH-RL-ID	O		RL ID 9.2.1.49		YES	ignore
MBMS Bearer Service List		*0..<maxnoofMBMS>*			GLOBAL	notify
>TMGI	M		9.2.1.x1		–	

Condition	Explanation
InfoHSDSCH	This IE shall be present if *HS-DSCH Information* IE is present.

Range bound	Explanation
maxnoofCCTrCHs	Maximum number of CCTrCH for one UE.
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

********* unaffected parts are omitted *********

9.1.24 UPLINK SIGNALLING TRANSFER INDICATION

9.1.24.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
UC-ID	M		9.2.1.71		YES	ignore
SAI	M		9.2.1.52		YES	ignore
Cell GAI	O		9.2.1.5A		YES	ignore
C-RNTI	M		9.2.1.14		YES	ignore
S-RNTI	M		9.2.1.54		YES	ignore
D-RNTI	O		9.2.1.24		YES	ignore
Propagation Delay	M		9.2.2.33		YES	ignore
STTD Support Indicator	M		9.2.2.45		YES	ignore
Closed Loop Mode1 Support Indicator	M		9.2.2.2		YES	ignore
Closed Loop Mode2 Support Indicator	M		9.2.2.3		YES	ignore
L3 Information	M		9.2.1.32		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
URA Information	O		9.2.1.70B		YES	ignore
Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
DPC Mode Change Support Indicator	O		9.2.2.56		YES	ignore
Common Transport Channel Resources Initialisation Not Required	O		9.2.1.12F		YES	Ignore
Cell Capability Container FDD	O		9.2.2.D		YES	ignore
SNA Information	O		9.2.1.52Ca		YES	ignore
Active MBMS Bearer Service List		*0..<maxnoofActiveMBMS>*			GLOBAL	ignore
>TMGI	M		9.2.1.x1		–	
>Transmission Mode	M		9.2.1.x2		–	

Range bound	Explanation
maxnoofActiveMBMS	Maximum number of MBMS bearer services that are active in parallel.

9.1.24.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
UC-ID	M		9.2.1.71		YES	ignore
SAI	M		9.2.1.52		YES	ignore
Cell GAI	O		9.2.1.5A		YES	Ignore
C-RNTI	M		9.2.1.14		YES	ignore
S-RNTI	M		9.2.1.54		YES	ignore
D-RNTI	O		9.2.1.24		YES	ignore
Rx Timing Deviation	M		9.2.3.7A		YES	ignore
L3 Information	M		9.2.1.32		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
URA Information	O		9.2.1.70B		YES	ignore
Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
Common Transport Channel Resources Initialisation Not Required	O		9.2.1.12F		YES	ignore
Cell Capability Container TDD	O		9.2.3.1a	Applicable to 3.84Mcps TDD only	YES	ignore
Cell Capability Container TDD LCR	O		9.2.3.1b	Applicable to 1.28Mcps TDD only	YES	ignore
SNA Information	O		9.2.1.52Ca		YES	ignore
Active MBMS Bearer Service List		*0..<maxnoofActiveMBMS>*			GLOBAL	ignore
>TMGI	M		9.2.1.x1		–	
>Transmission Mode	M		9.2.1.x2		–	

Range bound	Explanation
maxnoofActiveMBMS	Maximum number of MBMS bearer services that are active in parallel.

********** unaffected parts are omitted **********

9.1.25 DOWNLINK SIGNALLING TRANSFER REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
C-ID	M		9.2.1.6	May be a GERAN cell identifier	YES	ignore
D-RNTI	M		9.2.1.24		YES	ignore
L3 Information	M		9.2.1.32		YES	ignore
D-RNTI Release Indication	M		9.2.1.25		YES	ignore
URA-ID	O		9.2.1.70		YES	ignore
MBMS Bearer Service List		*0..<maxnoofMBMS>*			GLOBAL	ignore
>TMGI	M		9.2.1.x1		–	
Old URA-ID	O		URA-ID 9.2.1.70		YES	ignore
SRNC-ID	C-URA		RNC-ID 9.2.1.50		YES	ignore

Condition	Explanation
URA	The IE shall be present if the *URA-ID* IE or *Old URA-ID* IE is present.

Range bound	Explanation
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

********* unaffected parts are omitted *********

9.1.35 COMMON TRANSPORT CHANNEL RESOURCES REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
D-RNTI	M		9.2.1.24		YES	reject
C-ID	O		9.2.1.6		YES	reject
Transport Bearer Request Indicator	M		9.2.1.61	Request a new transport bearer or to use an existing bearer for the user plane.	YES	reject
Transport Bearer ID	M		9.2.1.60	Indicates the Iur transport bearer to be used for the user plane.	YES	reject
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
MBMS Bearer Service List		*0..<maxnoofMBMS>*			GLOBAL	notify
>TMGI	M		9.2.1. x1		–	

Range bound	Explanation
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

********* unaffected parts are omitted *********

9.1.49 INFORMATION EXCHANGE INITIATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Information Exchange ID	M		9.2.1.31A		YES	reject
CHOICE *Information Exchange Object Type*	M				YES	reject
>Cell					–	
>>C-ID	M		9.2.1.6	May be a GERAN cell identifier	–	
>Additional Information Exchange Object Types					–	
>>GSM Cell					–	
>>>CGI	M		9.2.1.5D		–	
>>MBMS Bearer Service					–	
>>>MBMS Bearer Service List		*1..<maxnoofMBMS>*			GLOBAL	reject
>>>>TMGI	M		9.2.1.x1		–	
Information Type	M		9.2.1.31E		YES	reject
Information Report Characteristics	M		9.2.1.31C		YES	reject

Range bound	Explanation
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

9.1.50 INFORMATION EXCHANGE INITIATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Information Exchange ID	M		9.2.1.31A		YES	ignore
CHOICE *Information Exchange Object Type*	O				YES	ignore
>Cell					-	
>>Requested Data Value	M		9.2.1.48A		-	
>Additional Information Exchange Object Types					–	
>>MBMS Bearer Service					–	
>>>MBMS Bearer Service List		*1..<maxnoofMBMS>*			GLOBAL	ignore
>>>>TMGI	M		9.2.1.x1		–	
>>>>Access Point Name	M		9.2.1.x3		–	
>>>>IP Multicast Address	M		9.2.1.x4		–	
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

********* unaffected parts are omitted *********

9.1.x1 MBMS ATTACH COMMAND

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
MBMS Bearer Service List		*1..<maxnoofMBMS>*			GLOBAL	ignore
>TMGI	M		9.2.1.x1		–	
CHOICE *UE State*	O				YES	ignore
>CELL_FACH/CELL_PCH					–	
>>D-RNTI	M		9.2.1.14		–	
>URA_PCH					–	
>>SRNC-ID	M		RNC-ID 9.2.1.50		–	
>>URA-ID	M		9.2.1.70		–	

Range bound	Explanation
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

9.1.x2 MBMS DETACH COMMAND

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
MBMS Bearer Service List		*1..<maxnoofMBMS>*			GLOBAL	ignore
>TMGI	M		9.2.1.x1		–	
CHOICE *UE State*	O				YES	ignore
>CELL_FACH/CELL_PCH					–	
>>D-RNTI	M		9.2.1.14		–	
>URA_PCH					–	
>>SRNC-ID	M		RNC-ID 9.2.1.50		–	
>>URA-ID	M		9.2.1.70		–	

Range bound	Explanation
maxnoofMBMS	Maximum number of MBMS bearer services that a UE can join.

9.1.x3 MBMS CHANNEL TYPE RECONFIGURATION INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
DRNC-ID	M		RNC-ID 9.2.1.50		YES	ignore
C-ID	M		9.2.1.6		YES	ignore
TMGI	M		9.2.1.x1		YES	ignore
Transmission Mode	M		9.2.1.x2		YES	ignore
Affected UE Information for MBMS		*0..<maxnoofUEs>*			GLOBAL	ignore
>S-RNTI	M		9.2.1.53		–	

Range Bound	Explanation
maxnoofUEs	Maximum number of UEs to determine channel type switching

********* unaffected parts are omitted *********

9.2.1.40 Message Type

The Message Type uniquely identifies the message being sent.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Procedure ID		1		
>Procedure Code	M		INTEGER (0..255)	"0" = Common Transport Channel Resources Initialisation "1" = Common Transport Channel Resources Release "2" = Compressed Mode Command "3" = Downlink Power Control "4" = Downlink Power Timeslot Control "5" = Downlink Signalling Transfer "6" = Error Indication "7" = Dedicated Measurement Failure "8" = Dedicated Measurement Initiation "9" = Dedicated Measurement Reporting "10" = Dedicated Measurement Termination "11" = Paging "12" = Physical Channel Reconfiguration "14" = Radio Link Addition "15" = Radio Link Deletion "16" = Radio Link Failure "17" = Radio Link Preemption "18" = Radio Link Restoration "19" = Radio Link Setup "20" = Relocation Commit "21" = Synchronised Radio Link Reconfiguration Cancellation "22" = Synchronised Radio Link Reconfiguration Commit "23" = Synchronised Radio Link Reconfiguration Preparation "24" = UnSynchronised Radio Link Reconfiguration "25" = Uplink Signalling Transfer "26" = Common Measurement Failure "27" = Common Measurement Initiation "28" = Common Measurement Reporting "29" = Common Measurement Termination "30" = Information Exchange Failure "31" = Information Exchange Initiation "32" = Information Reporting "33" = Information Exchange Termination "34" = Radio Link Congestion "35" = Reset "36" = Radio Link Activation “38” = Radio Link Parameter Update "39" = UE Measurement Failure "40" = UE Measurement Initiation "41" = UE Measurement Reporting "42" = UE Measurement Termination “xx” = MBMS Attach “xx” = MBMS Detach “xx” = MBMS Channel Type Reconfiguration
>Ddmode	M		ENUMERATED(FDD, TDD, Common, …)	Common = common to FDD and TDD.
Type of Message	M		ENUMERATED(Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome)	

********* unaffected parts are omitted *********

9.2.1.79 Congestion Cause

The *Congestion Cause* IE indicates the cause of a congestion situation:

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Congestion Cause			ENUMERATED (UTRAN Dynamic Resources, UTRAN Semistatic Resources, …)	

The meaning of the different congestion cause values is described in the following table:

Congestion cause	Meaning
UTRAN Dynamic Resources	UL and/or DL resource congestion situation mainly caused by the UL and/or DL UTRAN Dynamic Resources. This type of congestion situation is, e.g. related to the limitation of the DL transmitted carrier power of the cell(s), or the UL Interference situation in the concerned cell(s).
UTRAN Semistatic Resources	UL and/or DL resource congestion situation mainly related to UTRAN Semistatic Resources (e.g. channelisation codes, Node-B resources, ..).

9.2.1.x1 TMGI

The TMGI is the unique identifier for an MBMS bearer service, see ref.[1].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PLMN Identity	M		OCTET STRING (3)	- digits 0 to 9, two digits per octet, - each digit encoded 0000 to 1001, - 1111 used as filler - bit 4 to 1 of octet n encoding digit 2n-1 - bit 8 to 5 of octet n encoding digit 2n -The PLMN Identity consists of 3 digits from MCC followed by either -a filler plus 2 digits from MNC (in case of 2 digit MNC) or -3 digits from MNC (in case of a 3 digit MNC).
Service ID	M		OCTET STRING (3)	

9.2.1.x2 Transmission Mode

The *Transmission Mode* IE indicates the transmission mode used for MBMS data transmission in one cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transmission Mode			ENUMERATED(PTP, PTM, Not Provided).	PTP: The MBMS data is transmitted through point to point channel. PTM: The MBMS data is transmitted through point to multipoint channel. Not Provided: The MBMS data is not transmitted in the DRNC.

9.2.1.x3 Access Point Name

The APN and IP Multicast Address uniquely identify an MBMS bearer service.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
APN	M		OCTET STRING (1..100,...)	

9.2.1.x4 IP Multicast Address

The APN and IP Multicast Address uniquely identify an MBMS bearer service.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IP Multicast Address	M		BIT STRING (128)	

9.3 Message and Information Element Abstract Syntax (with ASN.1)

9.3.0 General

Subclause 9.3 presents the Abstract Syntax of RNSAP protocol with ASN.1. In case there is contradiction between the ASN.1 definition in this subclause and the tabular format in subclause 9.1 and 9.2, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional elements, in which the tabular format shall take precedence.

The ASN.1 definition specifies the structure and content of RNSAP messages. RNSAP messages can contain any IEs specified in the object set definitions for that message without the order or number of occurrence being restricted by ASN.1. However, for this version of the standard, a sending entity shall construct a RNSAP message according to the PDU definitions module and with the following additional rules (Note that in the following IE means an IE in the object set with an explicit id. If one IE needed to appear more than once in one object set, then the different occurrences have different IE ids):

- IEs shall be ordered (in an IE container) in the order they appear in object set definitions.
- Object set definitions specify how many times IEs may appear. An IE shall appear exactly once if the presence field in an object has value "mandatory". An IE may appear at most once if the presence field in an object has value "optional" or "conditional". If in a tabular format there is multiplicity specified for an IE (i.e. an IE list) then in the corresponding ASN.1 definition the list definition is separated into two parts. The first part defines an IE container list in which the list elements reside. The second part defines list elements. The IE container list appears as an IE of its own. For this version of the standard an IE container list may contain only one kind of list elements.

If a RNSAP message that is not constructed as defined above is received, this shall be considered as Abstract Syntax Error, and the message shall be handled as defined for Abstract Syntax Error in subclause 10.3.6.

9.3.1 Usage of Private Message Mechanism for Non-standard Use

The private message mechanism for non-standard use may be used:

- for special operator (and/or vendor) specific features considered not to be part of the basic functionality, i.e. the functionality required for a complete and high-quality specification in order to guarantee multivendor inter-operability.

- by vendors for research purposes, e.g. to implement and evaluate new algorithms/features before such features are proposed for standardisation.

The private message mechanism shall not be used for basic functionality. Such functionality shall be standardised.

9.3.2 Elementary Procedure Definitions

```
-- **************************************************************
--
-- Elementary Procedure definitions
--
-- **************************************************************

RNSAP-PDU-Descriptions {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) rnsap (1) version1 (1) rnsap-PDU-Descriptions (0) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    Criticality,
    ProcedureID,
    TransactionID
FROM RNSAP-CommonDataTypes

    CommonMeasurementFailureIndication,
    CommonMeasurementInitiationFailure,
    CommonMeasurementInitiationRequest,
    CommonMeasurementInitiationResponse,
    CommonMeasurementReport,
    CommonMeasurementTerminationRequest,
    CommonTransportChannelResourcesFailure,
    CommonTransportChannelResourcesRequest,
    CommonTransportChannelResourcesReleaseRequest,
    CommonTransportChannelResourcesResponseFDD,
    CommonTransportChannelResourcesResponseTDD,
    CompressedModeCommand,
    DedicatedMeasurementFailureIndication,
    DedicatedMeasurementInitiationFailure,
    DedicatedMeasurementInitiationRequest,
    DedicatedMeasurementInitiationResponse,
    DedicatedMeasurementReport,
    DedicatedMeasurementTerminationRequest,
    DL-PowerControlRequest,
    DL-PowerTimeslotControlRequest,
    DownlinkSignallingTransferRequest,
    ErrorIndication,
    InformationExchangeFailureIndication,
    InformationExchangeInitiationFailure,
    InformationExchangeInitiationRequest,
    InformationExchangeInitiationResponse,
    InformationExchangeTerminationRequest,
    InformationReport,
    IurDeactivateTrace,
    IurInvokeTrace,
    MBMSAttachCommand,
    MBMSDetachCommand,
    MBMSChannelTypeReconfigurationIndication,
    PagingRequest,
    PhysicalChannelReconfigurationCommand,
```

```
    PhysicalChannelReconfigurationFailure,
    PhysicalChannelReconfigurationRequestFDD,
    PhysicalChannelReconfigurationRequestTDD,
    PrivateMessage,
    RadioLinkActivationCommandFDD,
    RadioLinkActivationCommandTDD,
    RadioLinkAdditionFailureFDD,
    RadioLinkAdditionFailureTDD,
    RadioLinkAdditionRequestFDD,
    RadioLinkAdditionRequestTDD,
    RadioLinkAdditionResponseFDD,
    RadioLinkAdditionResponseTDD,
    RadioLinkCongestionIndication,
    RadioLinkDeletionRequest,
    RadioLinkDeletionResponse,
    RadioLinkFailureIndication,
    RadioLinkParameterUpdateIndicationFDD,
    RadioLinkParameterUpdateIndicationTDD,
    RadioLinkPreemptionRequiredIndication,
    RadioLinkReconfigurationCancel,
    RadioLinkReconfigurationCommit,
    RadioLinkReconfigurationFailure,
    RadioLinkReconfigurationPrepareFDD,
    RadioLinkReconfigurationPrepareTDD,
    RadioLinkReconfigurationReadyFDD,
    RadioLinkReconfigurationReadyTDD,
    RadioLinkReconfigurationRequestFDD,
    RadioLinkReconfigurationRequestTDD,
    RadioLinkReconfigurationResponseFDD,
    RadioLinkReconfigurationResponseTDD,
    RadioLinkRestoreIndication,
    RadioLinkSetupFailureFDD,
    RadioLinkSetupFailureTDD,
    RadioLinkSetupRequestFDD,
    RadioLinkSetupRequestTDD,
    RadioLinkSetupResponseFDD,
    RadioLinkSetupResponseTDD,
    RelocationCommit,
    ResetRequest,
    ResetResponse,
    UEMeasurementFailureIndication,
    UEMeasurementInitiationFailure,
    UEMeasurementInitiationRequest,
    UEMeasurementInitiationResponse,
    UEMeasurementReport,
    UEMeasurementTerminationRequest,
    UplinkSignallingTransferIndicationFDD,
    UplinkSignallingTransferIndicationTDD,
    GERANUplinkSignallingTransferIndication
FROM RNSAP-PDU-Contents

    id-commonMeasurementFailure,
    id-commonMeasurementInitiation,
    id-commonMeasurementReporting,
    id-commonMeasurementTermination,
    id-commonTransportChannelResourcesInitialisation,
    id-commonTransportChannelResourcesRelease,
    id-compressedModeCommand,
    id-downlinkPowerControl,
    id-downlinkSignallingTransfer,
    id-downlinkPowerTimeslotControl,
    id-errorIndication,
    id-informationExchangeFailure,
    id-informationExchangeInitiation,
    id-informationReporting,
    id-informationExchangeTermination,
    id-iurDeactivateTrace,
    id-iurInvokeTrace,
    id-dedicatedMeasurementFailure,
    id-dedicatedMeasurementInitiation,
    id-dedicatedMeasurementReporting,
    id-dedicatedMeasurementTermination,
    id-mBMSAttach,
    id-mBMSDetach,
    id-mBMSChannelTypeReconfiguration,
    id-paging,
    id-physicalChannelReconfiguration,
    id-privateMessage,
```

```
    id-radioLinkActivation,
    id-radioLinkAddition,
    id-radioLinkCongestion,
    id-radioLinkDeletion,
    id-radioLinkFailure,
    id-radioLinkParameterUpdate,
    id-radioLinkPreemption,
    id-radioLinkRestoration,
    id-radioLinkSetup,
    id-relocationCommit,
    id-reset,
    id-synchronisedRadioLinkReconfigurationCancellation,
    id-synchronisedRadioLinkReconfigurationCommit,
    id-synchronisedRadioLinkReconfigurationPreparation,
    id-uEMeasurementFailure,
    id-uEMeasurementInitiation,
    id-uEMeasurementReporting,
    id-uEMeasurementTermination,
id-unSynchronisedRadioLinkReconfiguration,
    id-uplinkSignallingTransfer,
    id-gERANuplinkSignallingTransfer
FROM RNSAP-Constants;

-- **************************************************************
--
-- Interface Elementary Procedure Class
--
-- **************************************************************

RNSAP-ELEMENTARY-PROCEDURE ::= CLASS {
    &InitiatingMessage              ,
    &SuccessfulOutcome              OPTIONAL,
    &UnsuccessfulOutcome                OPTIONAL,
    &Outcome                    OPTIONAL,
    &procedureID            ProcedureID UNIQUE,
    &criticality            Criticality DEFAULT ignore
}
WITH SYNTAX {
    INITIATING MESSAGE      &InitiatingMessage
    [SUCCESSFUL OUTCOME     &SuccessfulOutcome]
    [UNSUCCESSFUL OUTCOME       &UnsuccessfulOutcome]
    [OUTCOME            &Outcome]
    PROCEDURE ID            &procedureID
    [CRITICALITY            &criticality]
}

-- **************************************************************
--
-- Interface PDU Definition
--
-- **************************************************************

RNSAP-PDU ::= CHOICE {
    initiatingMessage   InitiatingMessage,
    successfulOutcome   SuccessfulOutcome,
    unsuccessfulOutcome UnsuccessfulOutcome,
    outcome         Outcome,
    ...
}

InitiatingMessage ::= SEQUENCE {
    procedureID RNSAP-ELEMENTARY-PROCEDURE.&procedureID     ({RNSAP-ELEMENTARY-PROCEDURES}),
    criticality RNSAP-ELEMENTARY-PROCEDURE.&criticality     ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID}),
    transactionID   TransactionID,
    value       RNSAP-ELEMENTARY-PROCEDURE.&InitiatingMessage   ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID})
}

SuccessfulOutcome ::= SEQUENCE {
    procedureID RNSAP-ELEMENTARY-PROCEDURE.&procedureID     ({RNSAP-ELEMENTARY-PROCEDURES}),
    criticality RNSAP-ELEMENTARY-PROCEDURE.&criticality     ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID}),
    transactionID   TransactionID,
    value       RNSAP-ELEMENTARY-PROCEDURE.&SuccessfulOutcome   ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID})
}
```

```
UnsuccessfulOutcome ::= SEQUENCE {
    procedureID RNSAP-ELEMENTARY-PROCEDURE.&procedureID     ({RNSAP-ELEMENTARY-PROCEDURES}),
    criticality RNSAP-ELEMENTARY-PROCEDURE.&criticality     ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID}),
    transactionID   TransactionID,
    value       RNSAP-ELEMENTARY-PROCEDURE.&UnsuccessfulOutcome ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID})
}

Outcome ::= SEQUENCE {
    procedureID RNSAP-ELEMENTARY-PROCEDURE.&procedureID     ({RNSAP-ELEMENTARY-PROCEDURES}),
    criticality RNSAP-ELEMENTARY-PROCEDURE.&criticality     ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID}),
    transactionID   TransactionID,
    value       RNSAP-ELEMENTARY-PROCEDURE.&Outcome     ({RNSAP-ELEMENTARY-
PROCEDURES}{@procedureID})
}

-- **************************************************************
--
-- Interface Elementary Procedure List
--
-- **************************************************************

RNSAP-ELEMENTARY-PROCEDURES RNSAP-ELEMENTARY-PROCEDURE ::= {
    RNSAP-ELEMENTARY-PROCEDURES-CLASS-1         |
    RNSAP-ELEMENTARY-PROCEDURES-CLASS-2         |
    RNSAP-ELEMENTARY-PROCEDURES-CLASS-3         ,
    ...
}

RNSAP-ELEMENTARY-PROCEDURES-CLASS-1 RNSAP-ELEMENTARY-PROCEDURE ::= {
    radioLinkSetupFDD                                       |
    radioLinkSetupTDD                                       |
    radioLinkAdditionFDD                                    |
    radioLinkAdditionTDD                                    |
    radioLinkDeletion                                       |
    synchronisedRadioLinkReconfigurationPreparationFDD      |
    synchronisedRadioLinkReconfigurationPreparationTDD      |
    unSynchronisedRadioLinkReconfigurationFDD               |
    unSynchronisedRadioLinkReconfigurationTDD               |
    physicalChannelReconfigurationFDD                       |
    physicalChannelReconfigurationTDD                       |
    dedicatedMeasurementInitiation                          |
    commonTransportChannelResourcesInitialisationFDD        |
    commonTransportChannelResourcesInitialisationTDD        ,
    ...,
    commonMeasurementInitiation                             |
    informationExchangeInitiation                           |
    reset                                                   |
    uEMeasurementInitiation
}

RNSAP-ELEMENTARY-PROCEDURES-CLASS-2 RNSAP-ELEMENTARY-PROCEDURE ::= {
    uplinkSignallingTransferFDD                         |
    uplinkSignallingTransferTDD                         |
    downlinkSignallingTransfer                          |
    relocationCommit                                    |
    paging                                              |
    synchronisedRadioLinkReconfigurationCommit          |
    synchronisedRadioLinkReconfigurationCancellation    |
    radioLinkFailure                                    |
    radioLinkPreemption                                 |
    radioLinkRestoration                                |
    dedicatedMeasurementReporting                       |
    dedicatedMeasurementTermination                     |
    dedicatedMeasurementFailure                         |
    downlinkPowerControlFDD                             |
    downlinkPowerTimeslotControl                        |
    compressedModeCommandFDD                            |
    commonTransportChannelResourcesRelease              |
    errorIndication                                     |
    privateMessage                                      ,
    ...,
    radioLinkCongestion                                 |
    commonMeasurementFailure                            |
    commonMeasurementReporting                          |
    commonMeasurementTermination                        |
```

```
    informationExchangeFailure                          |
    informationExchangeTermination                      |
    informationReporting                                |
    radioLinkActivationFDD                              |
    radioLinkActivationTDD                              |
    gERANuplinkSignallingTransfer                       |
    radioLinkParameterUpdateFDD                         |
    radioLinkParameterUpdateTDD                         |
    uEMeasurementReporting                              |
    uEMeasurementTermination                            |
    uEMeasurementFailure                                |
    iurInvokeTrace                                      |
    iurDeactivateTrace                                  |
    mBMSAttach                                          |
    mBMSDetach                                          |
    mBMSChannelTypeReconfiguration

}

RNSAP-ELEMENTARY-PROCEDURES-CLASS-3 RNSAP-ELEMENTARY-PROCEDURE ::= {
    ...
}

-- **************************************************************
--
-- Interface Elementary Procedures
--
-- **************************************************************

radioLinkSetupFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkSetupRequestFDD
    SUCCESSFUL OUTCOME  RadioLinkSetupResponseFDD
    UNSUCCESSFUL OUTCOME    RadioLinkSetupFailureFDD
    PROCEDURE ID        { procedureCode id-radioLinkSetup, ddMode fdd }
    CRITICALITY     reject
}

radioLinkSetupTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkSetupRequestTDD
    SUCCESSFUL OUTCOME  RadioLinkSetupResponseTDD
    UNSUCCESSFUL OUTCOME    RadioLinkSetupFailureTDD
    PROCEDURE ID        { procedureCode id-radioLinkSetup, ddMode tdd }
    CRITICALITY     reject
}

radioLinkAdditionFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkAdditionRequestFDD
    SUCCESSFUL OUTCOME  RadioLinkAdditionResponseFDD
    UNSUCCESSFUL OUTCOME    RadioLinkAdditionFailureFDD
    PROCEDURE ID        { procedureCode id-radioLinkAddition , ddMode fdd }
    CRITICALITY     reject
}

radioLinkAdditionTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkAdditionRequestTDD
    SUCCESSFUL OUTCOME  RadioLinkAdditionResponseTDD
    UNSUCCESSFUL OUTCOME    RadioLinkAdditionFailureTDD
    PROCEDURE ID        { procedureCode id-radioLinkAddition , ddMode tdd }
    CRITICALITY     reject
}

radioLinkDeletion RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkDeletionRequest
    SUCCESSFUL OUTCOME  RadioLinkDeletionResponse
    PROCEDURE ID        { procedureCode id-radioLinkDeletion, ddMode common }
    CRITICALITY     reject
}

synchronisedRadioLinkReconfigurationPreparationFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkReconfigurationPrepareFDD
    SUCCESSFUL OUTCOME  RadioLinkReconfigurationReadyFDD
    UNSUCCESSFUL OUTCOME    RadioLinkReconfigurationFailure
    PROCEDURE ID        { procedureCode id-synchronisedRadioLinkReconfigurationPreparation, ddMode
fdd }
    CRITICALITY     reject
}

synchronisedRadioLinkReconfigurationPreparationTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
```

```
    INITIATING MESSAGE  RadioLinkReconfigurationPrepareTDD
    SUCCESSFUL OUTCOME  RadioLinkReconfigurationReadyTDD
    UNSUCCESSFUL OUTCOME    RadioLinkReconfigurationFailure
    PROCEDURE ID        { procedureCode id-synchronisedRadioLinkReconfigurationPreparation, ddMode
tdd }
    CRITICALITY     reject
}

unSynchronisedRadioLinkReconfigurationFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkReconfigurationRequestFDD
    SUCCESSFUL OUTCOME  RadioLinkReconfigurationResponseFDD
    UNSUCCESSFUL OUTCOME    RadioLinkReconfigurationFailure
    PROCEDURE ID        { procedureCode id-unSynchronisedRadioLinkReconfiguration, ddMode fdd }
    CRITICALITY     reject
}

unSynchronisedRadioLinkReconfigurationTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkReconfigurationRequestTDD
    SUCCESSFUL OUTCOME  RadioLinkReconfigurationResponseTDD
    UNSUCCESSFUL OUTCOME    RadioLinkReconfigurationFailure
    PROCEDURE ID        { procedureCode id-unSynchronisedRadioLinkReconfiguration, ddMode tdd }
    CRITICALITY     reject
}

physicalChannelReconfigurationFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PhysicalChannelReconfigurationRequestFDD
    SUCCESSFUL OUTCOME  PhysicalChannelReconfigurationCommand
    UNSUCCESSFUL OUTCOME    PhysicalChannelReconfigurationFailure
    PROCEDURE ID        { procedureCode id-physicalChannelReconfiguration, ddMode fdd }
    CRITICALITY     reject
}

physicalChannelReconfigurationTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PhysicalChannelReconfigurationRequestTDD
    SUCCESSFUL OUTCOME  PhysicalChannelReconfigurationCommand
    UNSUCCESSFUL OUTCOME    PhysicalChannelReconfigurationFailure
    PROCEDURE ID        { procedureCode id-physicalChannelReconfiguration, ddMode tdd }
    CRITICALITY     reject
}

dedicatedMeasurementInitiation RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DedicatedMeasurementInitiationRequest
    SUCCESSFUL OUTCOME  DedicatedMeasurementInitiationResponse
    UNSUCCESSFUL OUTCOME    DedicatedMeasurementInitiationFailure
    PROCEDURE ID        { procedureCode id-dedicatedMeasurementInitiation, ddMode common }
    CRITICALITY     reject
}

commonTransportChannelResourcesInitialisationFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CommonTransportChannelResourcesRequest
    SUCCESSFUL OUTCOME  CommonTransportChannelResourcesResponseFDD
    UNSUCCESSFUL OUTCOME    CommonTransportChannelResourcesFailure
    PROCEDURE ID        { procedureCode id-commonTransportChannelResourcesInitialisation, ddMode fdd
}
    CRITICALITY     reject
}

commonTransportChannelResourcesInitialisationTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CommonTransportChannelResourcesRequest
    SUCCESSFUL OUTCOME  CommonTransportChannelResourcesResponseTDD
    UNSUCCESSFUL OUTCOME    CommonTransportChannelResourcesFailure
    PROCEDURE ID        { procedureCode id-commonTransportChannelResourcesInitialisation, ddMode tdd
}
    CRITICALITY     reject
}

uplinkSignallingTransferFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  UplinkSignallingTransferIndicationFDD
    PROCEDURE ID        { procedureCode id-uplinkSignallingTransfer, ddMode fdd }
    CRITICALITY     ignore
}

uplinkSignallingTransferTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  UplinkSignallingTransferIndicationTDD
    PROCEDURE ID        { procedureCode id-uplinkSignallingTransfer, ddMode tdd }
    CRITICALITY     ignore
}
```

```
downlinkSignallingTransfer RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DownlinkSignallingTransferRequest
    PROCEDURE ID        { procedureCode id-downlinkSignallingTransfer, ddMode common }
    CRITICALITY     ignore
}

relocationCommit RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RelocationCommit
    PROCEDURE ID        { procedureCode id-relocationCommit, ddMode common }
    CRITICALITY     ignore
}

paging RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PagingRequest
    PROCEDURE ID        { procedureCode id-paging, ddMode common }
    CRITICALITY     ignore
}

synchronisedRadioLinkReconfigurationCommit RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkReconfigurationCommit
    PROCEDURE ID        { procedureCode id-synchronisedRadioLinkReconfigurationCommit, ddMode common
}
    CRITICALITY     ignore
}

synchronisedRadioLinkReconfigurationCancellation RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkReconfigurationCancel
    PROCEDURE ID        { procedureCode id-synchronisedRadioLinkReconfigurationCancellation, ddMode
common }
    CRITICALITY     ignore
}

radioLinkFailure RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkFailureIndication
    PROCEDURE ID        { procedureCode id-radioLinkFailure, ddMode common }
    CRITICALITY     ignore
}

radioLinkPreemption RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkPreemptionRequiredIndication
    PROCEDURE ID        { procedureCode id-radioLinkPreemption, ddMode common }
    CRITICALITY     ignore
}

radioLinkRestoration RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkRestoreIndication
    PROCEDURE ID        { procedureCode id-radioLinkRestoration, ddMode common }
    CRITICALITY     ignore
}

dedicatedMeasurementReporting RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DedicatedMeasurementReport
    PROCEDURE ID        { procedureCode id-dedicatedMeasurementReporting, ddMode common }
    CRITICALITY     ignore
}

dedicatedMeasurementTermination RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DedicatedMeasurementTerminationRequest
    PROCEDURE ID        { procedureCode id-dedicatedMeasurementTermination, ddMode common }
    CRITICALITY     ignore
}

dedicatedMeasurementFailure RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DedicatedMeasurementFailureIndication
    PROCEDURE ID        { procedureCode id-dedicatedMeasurementFailure, ddMode common }
    CRITICALITY     ignore
}

radioLinkCongestion RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  RadioLinkCongestionIndication
    PROCEDURE ID        { procedureCode id-radioLinkCongestion, ddMode common }
    CRITICALITY     ignore
}

downlinkPowerControlFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DL-PowerControlRequest
    PROCEDURE ID        { procedureCode id-downlinkPowerControl, ddMode fdd }
    CRITICALITY     ignore
```

```
}

downlinkPowerTimeslotControl RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  DL-PowerTimeslotControlRequest
    PROCEDURE ID        { procedureCode id-downlinkPowerTimeslotControl, ddMode tdd }
    CRITICALITY     ignore
}

compressedModeCommandFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CompressedModeCommand
    PROCEDURE ID        { procedureCode id-compressedModeCommand, ddMode fdd }
    CRITICALITY     ignore
}

commonTransportChannelResourcesRelease RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CommonTransportChannelResourcesReleaseRequest
    PROCEDURE ID        { procedureCode id-commonTransportChannelResourcesRelease, ddMode common }
    CRITICALITY     ignore
}

errorIndication RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  ErrorIndication
    PROCEDURE ID        { procedureCode id-errorIndication, ddMode common }
    CRITICALITY     ignore
}

commonMeasurementInitiation RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      CommonMeasurementInitiationRequest
    SUCCESSFUL OUTCOME      CommonMeasurementInitiationResponse
    UNSUCCESSFUL OUTCOME    CommonMeasurementInitiationFailure
    PROCEDURE ID            { procedureCode id-commonMeasurementInitiation, ddMode common }
    CRITICALITY             reject
}

commonMeasurementReporting RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CommonMeasurementReport
    PROCEDURE ID        { procedureCode id-commonMeasurementReporting, ddMode common }
    CRITICALITY         ignore
}

commonMeasurementTermination RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CommonMeasurementTerminationRequest
    PROCEDURE ID        { procedureCode id-commonMeasurementTermination, ddMode common }
    CRITICALITY     ignore
}

commonMeasurementFailure RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  CommonMeasurementFailureIndication
    PROCEDURE ID        { procedureCode id-commonMeasurementFailure, ddMode common }
    CRITICALITY     ignore
}

informationExchangeInitiation RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      InformationExchangeInitiationRequest
    SUCCESSFUL OUTCOME      InformationExchangeInitiationResponse
    UNSUCCESSFUL OUTCOME    InformationExchangeInitiationFailure
    PROCEDURE ID            { procedureCode id-informationExchangeInitiation, ddMode common }
    CRITICALITY             reject
}

informationReporting RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      InformationReport
    PROCEDURE ID            { procedureCode id-informationReporting, ddMode common }
    CRITICALITY             ignore
}

informationExchangeTermination RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      InformationExchangeTerminationRequest
    PROCEDURE ID            { procedureCode id-informationExchangeTermination, ddMode common }
    CRITICALITY             ignore
}

informationExchangeFailure RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      InformationExchangeFailureIndication
    PROCEDURE ID            { procedureCode id-informationExchangeFailure, ddMode common }
    CRITICALITY             ignore
}
```

```
privateMessage RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  PrivateMessage
    PROCEDURE ID        { procedureCode id-privateMessage, ddMode common }
    CRITICALITY     ignore
}

reset RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ResetRequest
    SUCCESSFUL OUTCOME      ResetResponse
    PROCEDURE ID            { procedureCode id-reset, ddMode common }
    CRITICALITY         reject
}

radioLinkActivationFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      RadioLinkActivationCommandFDD
    PROCEDURE ID            { procedureCode id-radioLinkActivation, ddMode fdd }
    CRITICALITY             ignore
}

radioLinkActivationTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      RadioLinkActivationCommandTDD
    PROCEDURE ID            { procedureCode id-radioLinkActivation, ddMode tdd }
    CRITICALITY             ignore
}

gERANuplinkSignallingTransfer RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  GERANUplinkSignallingTransferIndication
    PROCEDURE ID        { procedureCode id-gERANuplinkSignallingTransfer, ddMode common }
    CRITICALITY     ignore
}

radioLinkParameterUpdateFDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      RadioLinkParameterUpdateIndicationFDD
    PROCEDURE ID            { procedureCode id-radioLinkParameterUpdate, ddMode fdd }
    CRITICALITY         ignore
}

radioLinkParameterUpdateTDD RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      RadioLinkParameterUpdateIndicationTDD
    PROCEDURE ID            { procedureCode id-radioLinkParameterUpdate, ddMode tdd }
    CRITICALITY         ignore
}

uEMeasurementInitiation RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  UEMeasurementInitiationRequest
    SUCCESSFUL OUTCOME  UEMeasurementInitiationResponse
    UNSUCCESSFUL OUTCOME    UEMeasurementInitiationFailure
    PROCEDURE ID        { procedureCode id-uEMeasurementInitiation, ddMode tdd }
    CRITICALITY     reject
}

uEMeasurementReporting RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  UEMeasurementReport
    PROCEDURE ID        { procedureCode id-uEMeasurementReporting, ddMode tdd }
    CRITICALITY     ignore
}

uEMeasurementTermination RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  UEMeasurementTerminationRequest
    PROCEDURE ID        { procedureCode id-uEMeasurementTermination, ddMode tdd }
    CRITICALITY     ignore
}

uEMeasurementFailure RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  UEMeasurementFailureIndication
    PROCEDURE ID        { procedureCode id-uEMeasurementFailure, ddMode tdd }
    CRITICALITY     ignore
}

iurInvokeTrace RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE  IurInvokeTrace
    PROCEDURE ID        { procedureCode id-iurInvokeTrace, ddMode common }
    CRITICALITY         ignore
}

iurDeactivateTrace RNSAP-ELEMENTARY-PROCEDURE ::= {
```

```
    INITIATING MESSAGE  IurDeactivateTrace
    PROCEDURE ID        { procedureCode id-iurDeactivateTrace, ddMode common }
    CRITICALITY         ignore
}

mBMSAttach RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSAttachCommand
    PROCEDURE ID            { procedureCode id-mBMSAttach, ddMode common }
    CRITICALITY             ignore
}

mBMSDetach RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSDetachCommand
    PROCEDURE ID            { procedureCode id-mBMSDetach, ddMode common }
    CRITICALITY             ignore
}

mBMSChannelTypeReconfiguration RNSAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSChannelTypeReconfigurationIndication
    PROCEDURE ID            { procedureCode id-mBMSChannelTypeReconfiguration, ddMode common }
    CRITICALITY             ignore
}

END
```

9.3.3 PDU Definitions

```
-- **************************************************************
--
-- PDU definitions for RNSAP.
--
-- **************************************************************

RNSAP-PDU-Contents {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) rnsap (1) version1 (1) rnsap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    Active-Pattern-Sequence-Information,
    AccessPointName,
    AllocationRetentionPriority,
    AllowedQueuingTime,
    Allowed-Rate-Information,
    AlphaValue,
    AntennaColocationIndicator,
    BLER,
    SCTD-Indicator,
    BindingID,
    C-ID,
    C-RNTI,
    CCTrCH-ID,
    CFN,
    CGI,
    ClosedLoopMode1-SupportIndicator,
    ClosedLoopMode2-SupportIndicator,
    Closedlooptimingadjustmentmode,
    CN-CS-DomainIdentifier,
    CN-PS-DomainIdentifier,
    CNDomainType,
    Cause,
    CellCapabilityContainer-FDD,
    CellCapabilityContainer-TDD,
    CellCapabilityContainer-TDD-LCR,
    CellParameterID,
    CellPortionID,
    ChipOffset,
```

```
CommonMeasurementAccuracy,
CommonMeasurementType,
CommonMeasurementValue,
CommonMeasurementValueInformation,
CommonTransportChannelResourcesInitialisationNotRequired,
CongestionCause,
CoverageIndicator,
CriticalityDiagnostics,
D-RNTI,
D-RNTI-ReleaseIndication,
DCH-FDD-Information,
DCH-ID,
DCH-InformationResponse,
DCH-TDD-Information,
DL-DPCH-SlotFormat,
DL-TimeslotISCP,
DL-Power,
DL-PowerBalancing-Information,
DL-PowerBalancing-ActivationIndicator,
DL-PowerBalancing-UpdatedIndicator,
DL-ReferencePowerInformation,
DL-ScramblingCode,
DL-Timeslot-Information,
DL-TimeslotLCR-Information,
DL-TimeSlot-ISCP-Info,
DL-TimeSlot-ISCP-LCR-Information,
DPC-Mode,
DPC-Mode-Change-SupportIndicator,
DPCH-ID,
DL-DPCH-TimingAdjustment,
DRACControl,
DRXCycleLengthCoefficient,
DedicatedMeasurementType,
DedicatedMeasurementValue,
DedicatedMeasurementValueInformation,
DelayedActivation,
DelayedActivationUpdate,
DiversityControlField,
DiversityMode,
DSCH-FDD-Information,
DSCH-FDD-InformationResponse,
DSCH-FlowControlInformation,
DSCH-FlowControlItem,
DSCH-TDD-Information,
DSCH-ID,
DSCH-RNTI,
SchedulingPriorityIndicator,
EnhancedDSCHPC,
EnhancedDSCHPCCounter,
EnhancedDSCHPCIndicator,
EnhancedDSCHPCWnd,
EnhancedDSCHPowerOffset,
Enhanced-PrimaryCPICH-EcNo,
FACH-FlowControlInformation,
FDD-DCHs-to-Modify,
FDD-DL-ChannelisationCodeNumber,
FDD-DL-CodeInformation,
FDD-S-CCPCH-Offset,
FDD-TPC-DownlinkStepSize,
FirstRLS-Indicator,
FNReportingIndicator,
FrameHandlingPriority,
FrameOffset,
GA-AccessPointPosition,
GA-Cell,
GA-CellAdditionalShapes,
HCS-Prio,
HSDSCH-FDD-Information,
HSDSCH-FDD-Information-Response,
HSDSCH-FDD-Update-Information,
HSDSCH-TDD-Update-Information,
HSDSCH-Information-to-Modify,
HSDSCH-Information-to-Modify-Unsynchronised,
HSDSCH-MACdFlow-ID,
HSDSCH-MACdFlows-Information,
HSDSCH-MACdFlows-to-Delete,
HSDSCH-RNTI,
```

```
    HSDSCH-TDD-Information,
    HSDSCH-TDD-Information-Response,
    HS-SICH-ID,
    IMSI,
    InformationExchangeID,
    InformationReportCharacteristics,
    InformationType,
    InnerLoopDLPCStatus,
    IPMulticastAddress,
    L3-Information,
    SplitType,
    LengthOfTFCI2,
    LimitedPowerIncrease,
    MaximumAllowedULTxPower,
    MaxNrDLPhysicalchannels,
    MaxNrDLPhysicalchannelsTS,
    MaxNrOfUL-DPCHs,
    MaxNrTimeslots,
    MaxNrULPhysicalchannels,
    MeasurementFilterCoefficient,
    MeasurementID,
    MeasurementRecoveryBehavior,
    MeasurementRecoveryReportingIndicator,
    MeasurementRecoverySupportIndicator,
    MBMS-Bearer-Service-List,
    MidambleAllocationMode,
    MidambleShiftAndBurstType,
    MidambleShiftLCR,
    MinimumSpreadingFactor,
    MinUL-ChannelisationCodeLength,
    MultiplexingPosition,
    NeighbouringFDDCellMeasurementInformation,
    NeighbouringTDDCellMeasurementInformation,
    Neighbouring-GSM-CellInformation,
    Neighbouring-UMTS-CellInformation,
    NeighbouringTDDCellMeasurementInformationLCR,
    NrOfDLchannelisationcodes,
    PagingCause,
    PagingRecordType,
    PartialReportingIndicator,
    PDSCHCodeMapping,
    PayloadCRC-PresenceIndicator,
    PCCPCH-Power,
    PC-Preamble,
    Permanent-NAS-UE-Identity,
    Phase-Reference-Update-Indicator,
    PowerAdjustmentType,
    PowerOffset,
    PrimaryCCPCH-RSCP,
    PrimaryCPICH-EcNo,
    PrimaryCPICH-Power,
    Primary-CPICH-Usage-For-Channel-Estimation,
    PrimaryScramblingCode,
    PropagationDelay,
    PunctureLimit,
    QE-Selector,
    Qth-Parameter,
    RANAP-RelocationInformation,
    RB-Info,
    RL-ID,
    RL-Set-ID,
    RNC-ID,
    RepetitionLength,
    RepetitionPeriod,
    ReportCharacteristics,
    Received-total-wide-band-power,
    RequestedDataValue,
    RequestedDataValueInformation,
    RL-Specific-DCH-Info,
    RxTimingDeviationForTA,
    S-FieldLength,
    S-RNTI,
    S-RNTI-Group,
    SCH-TimeSlot,
    SAI,
    SFN,
    Secondary-CCPCH-Info,
    Secondary-CCPCH-Info-TDD,
```

```
    Secondary-CPICH-Information,
    Secondary-CPICH-Information-Change,
    Secondary-LCR-CCPCH-Info-TDD,
    SNA-Information,
    SpecialBurstScheduling,
    SSDT-CellID,
    SSDT-CellID-Length,
    SSDT-Indication,
    SSDT-SupportIndicator,
    STTD-Indicator,
    STTD-SupportIndicator,
    AdjustmentPeriod,
    ScaledAdjustmentRatio,
    MaxAdjustmentStep,
    SecondaryCCPCH-SlotFormat,
    SRB-Delay,
    Support-8PSK,
    SyncCase,
    SynchronisationConfiguration,
    TDD-ChannelisationCode,
    TDD-DCHs-to-Modify,
    TDD-DL-Code-Information,
    TDD-DPCHOffset,
    TDD-PhysicalChannelOffset,
    TDD-TPC-DownlinkStepSize,
    TDD-ChannelisationCodeLCR,
    TDD-DL-Code-LCR-Information,
    TDD-UL-Code-Information,
    TDD-UL-Code-LCR-Information,
    TFCI-Coding,
    TFCI-PC-SupportIndicator,
    TFCI-Presence,
    TFCI-SignallingMode,
    TimeSlot,
    TimeSlotLCR,
    TimingAdvanceApplied,
    TMGI,
    TnlQos,
    ToAWE,
    ToAWS,
    TraceDepth,
    TraceRecordingSessionReference,
    TraceReference,
    TrafficClass,
    TransmitDiversityIndicator,
    TransportBearerID,
    TransportBearerRequestIndicator,
    TFCS,
    Transmission-Gap-Pattern-Sequence-Information,
    TransmissionMode,
    TransportFormatManagement,
    TransportFormatSet,
    TransportLayerAddress,
    TrCH-SrcStatisticsDescr,
    TSTD-Indicator,
    TSTD-Support-Indicator,
    UARFCN,
    UC-ID,
    UEIdentity,
    UEMeasurementType,
    UEMeasurementTimeslotInfoHCR,
    UEMeasurementTimeslotInfoLCR,
    UEMeasurementReportCharacteristics,
    UEMeasurementParameterModAllow,
    UEMeasurementValueInformation,
    UE-State,
    UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation,
    UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH,
    UL-DPCCH-SlotFormat,
    UL-SIR,
    UL-FP-Mode,
    UL-PhysCH-SF-Variation,
    UL-ScramblingCode,
    UL-Timeslot-Information,
    UL-TimeslotLCR-Information,
    UL-TimeSlot-ISCP-Info,
    UL-TimeSlot-ISCP-LCR-Info,
    URA-ID,
```

```
    URA-Information,
    USCH-ID,
    USCH-Information,
    UL-Synchronisation-Parameters-LCR,
    TDD-DL-DPCH-TimeSlotFormat-LCR,
    TDD-UL-DPCH-TimeSlotFormat-LCR,
    MAChs-ResetIndicator,
    UL-TimingAdvanceCtrl-LCR,
    TDD-TPC-UplinkStepSize-LCR,
    PrimaryCCPCH-RSCP-Delta
FROM RNSAP-IEs

    PrivateIE-Container{},
    ProtocolExtensionContainer{},
    ProtocolIE-ContainerList{},
    ProtocolIE-ContainerPair{},
    ProtocolIE-ContainerPairList{},
    ProtocolIE-Container{},
    ProtocolIE-Single-Container{},
    RNSAP-PRIVATE-IES,
    RNSAP-PROTOCOL-EXTENSION,
    RNSAP-PROTOCOL-IES,
    RNSAP-PROTOCOL-IES-PAIR
FROM RNSAP-Containers

    maxNoOfDSCHs,
    maxNoOfUSCHs,
    maxNrOfCCTrCHs,
    maxNrOfDCHs,
    maxNrOfTS,
    maxNrOfDPCHs,
    maxNrOfInterfaces,
    maxNrOfRLs,
    maxNrOfRLSets,
    maxNrOfRLSets-1,
    maxNrOfRLs-1,
    maxNrOfRLs-2,
    maxNrOfULTs,
    maxNrOfDLTs,
    maxResetContext,
    maxResetContextGroup,
    maxNoOfDSCHsLCR,
    maxNoOfUSCHsLCR,
    maxNrOfCCTrCHsLCR,
    maxNrOfTsLCR,
    maxNrOfDLTsLCR,
    maxNrOfULTsLCR,
    maxNrOfDPCHsLCR,
    maxNrOfLCRTDDNeighboursPerRNC,
    maxNrOfMeasNCell,
    maxNrOfMACdFlows,
    maxNrOfHSSICHs,
    maxNrOfActiveMBMSServices,
    maxNrOfMBMSServices,
    maxNrOfUEs,

    id-Active-MBMS-Bearer-Service-UplinkSigTrFDD,
    id-Active-MBMS-Bearer-Service-UplinkSigTrTDD,
    id-Active-Pattern-Sequence-Information,
    id-AdjustmentRatio,
    id-AffectedUEInformationForMBMS,
    id-AllowedQueuingTime,
    id-AntennaColocationIndicator,
    id-BindingID,
    id-C-ID,
    id-C-RNTI,
    id-CFN,
   id-CFNReportingIndicator,
    id-CN-CS-DomainIdentifier,
    id-CN-PS-DomainIdentifier,
    id-Cause,
    id-CauseLevel-RL-AdditionFailureFDD,
    id-CauseLevel-RL-AdditionFailureTDD,
    id-CauseLevel-RL-ReconfFailure,
    id-CauseLevel-RL-SetupFailureFDD,
    id-CauseLevel-RL-SetupFailureTDD,
    id-CCTrCH-InformationItem-RL-FailureInd,
    id-CCTrCH-InformationItem-RL-RestoreInd,
```

```
id-CellCapabilityContainer-FDD,
id-CellCapabilityContainer-TDD,
id-CellCapabilityContainer-TDD-LCR,
id-CellPortionID,
id-ClosedLoopMode1-SupportIndicator,
id-ClosedLoopMode2-SupportIndicator,
id-CNOriginatedPage-PagingRqst,
id-CommonMeasurementAccuracy,
id-CommonMeasurementObjectType-CM-Rprt,
id-CommonMeasurementObjectType-CM-Rqst,
id-CommonMeasurementObjectType-CM-Rsp,
id-CommonMeasurementType,
id-CommonTransportChannelResourcesInitialisationNotRequired,
id-CongestionCause,
id-CoverageIndicator,
id-CriticalityDiagnostics,
id-D-RNTI,
id-D-RNTI-ReleaseIndication,
id-DCHs-to-Add-FDD,
id-DCHs-to-Add-TDD,
id-DCH-DeleteList-RL-ReconfPrepFDD,
id-DCH-DeleteList-RL-ReconfPrepTDD,
id-DCH-DeleteList-RL-ReconfRqstFDD,
id-DCH-DeleteList-RL-ReconfRqstTDD,
id-DCH-FDD-Information,
id-DCH-TDD-Information,
id-FDD-DCHs-to-Modify,
id-TDD-DCHs-to-Modify,
id-DCH-InformationResponse,
id-DCH-Rate-InformationItem-RL-CongestInd,
id-DL-CCTrCH-InformationAddItem-RL-ReconfPrepTDD,
id-DL-CCTrCH-InformationDeleteItem-RL-ReconfPrepTDD,
id-DL-CCTrCH-InformationModifyItem-RL-ReconfPrepTDD,
id-DL-CCTrCH-InformationListIE-RL-ReconfReadyTDD,
id-DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD,
id-DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD,
id-DL-CCTrCH-InformationItem-RL-SetupRqstTDD,
id-DL-CCTrCH-InformationListIE-PhyChReconfRqstTDD,
id-DL-CCTrCH-InformationListIE-RL-AdditionRspTDD,
id-DL-CCTrCH-InformationListIE-RL-SetupRspTDD,
id-DL-CCTrCH-InformationAddList-RL-ReconfPrepTDD,
id-DL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD,
id-DL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD,
id-DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD,
id-DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD,
id-DL-CCTrCH-InformationList-RL-SetupRqstTDD,
id-FDD-DL-CodeInformation,
id-DL-DPCH-Information-RL-ReconfPrepFDD,
id-DL-DPCH-Information-RL-SetupRqstFDD,
id-DL-DPCH-Information-RL-ReconfRqstFDD,
id-DL-DPCH-InformationItem-PhyChReconfRqstTDD,
id-DL-DPCH-InformationItem-RL-AdditionRspTDD,
id-DL-DPCH-InformationItem-RL-SetupRspTDD,
id-DL-DPCH-InformationAddListIE-RL-ReconfReadyTDD,
id-DL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD,
id-DL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD,
id-DL-DPCH-TimingAdjustment,
id-DL-Physical-Channel-Information-RL-SetupRqstTDD,
id-DL-PowerBalancing-Information,
id-DL-PowerBalancing-ActivationIndicator,
id-DL-PowerBalancing-UpdatedIndicator,
id-DL-ReferencePowerInformation,
id-DLReferencePower,
id-DLReferencePowerList-DL-PC-Rqst,
id-DL-ReferencePowerInformation-DL-PC-Rqst,
id-DRXCycleLengthCoefficient,
id-DedicatedMeasurementObjectType-DM-Fail,
id-DedicatedMeasurementObjectType-DM-Fail-Ind,
id-DedicatedMeasurementObjectType-DM-Rprt,
id-DedicatedMeasurementObjectType-DM-Rqst,
id-DedicatedMeasurementObjectType-DM-Rsp,
id-DedicatedMeasurementType,
id-DelayedActivation,
id-DelayedActivationList-RL-ActivationCmdFDD,
id-DelayedActivationList-RL-ActivationCmdTDD,
id-DelayedActivationInformation-RL-ActivationCmdFDD,
id-DelayedActivationInformation-RL-ActivationCmdTDD,
id-DPC-Mode,
```

```
    id-DPC-Mode-Change-SupportIndicator,
    id-DRNC-ID,
    id-DSCHs-to-Add-FDD,
    id-DSCHs-to-Add-TDD,
    id-DSCH-DeleteList-RL-ReconfPrepTDD,
    id-DSCH-Delete-RL-ReconfPrepFDD,
    id-DSCH-FDD-Information,
    id-DSCH-InformationListIE-RL-AdditionRspTDD,
    id-DSCH-InformationListIEs-RL-SetupRspTDD,
    id-DSCH-TDD-Information,
    id-DSCH-FDD-InformationResponse,
    id-DSCH-ModifyList-RL-ReconfPrepTDD,
    id-DSCH-Modify-RL-ReconfPrepFDD,
    id-DSCH-RNTI,
    id-DSCHsToBeAddedOrModified-FDD,
    id-DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD,
    id-EnhancedDSCHPC,
    id-EnhancedDSCHPCIndicator,
    id-Enhanced-PrimaryCPICH-EcNo,
    id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD,
    id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD,
    id-GA-Cell,
    id-GA-CellAdditionalShapes,
    id-GSM-Cell-InfEx-Rqst,
    id-HCS-Prio,
    id-HSDSCH-FDD-Information,
    id-HSDSCH-FDD-Information-Response,
    id-HSDSCH-FDD-Update-Information,
    id-HSDSCH-TDD-Update-Information,
    id-HSDSCH-Information-to-Modify,
    id-HSDSCH-Information-to-Modify-Unsynchronised,
    id-HSDSCH-MACdFlows-to-Add,
    id-HSDSCH-MACdFlows-to-Delete,
    id-HSDSCHMacdFlowSpecificInformationList-RL-PreemptRequiredInd,
    id-HSDSCHMacdFlowSpecificInformationItem-RL-PreemptRequiredInd,
    id-HSDSCH-RNTI,
    id-HSDSCH-TDD-Information,
    id-HSDSCH-TDD-Information-Response,
    id-HSPDSCH-RL-ID,
    id-HSPDSCH-Timeslot-InformationList-PhyChReconfRqstTDD,
    id-HSPDSCH-Timeslot-InformationListLCR-PhyChReconfRqstTDD,
    id-HSSICH-Info-DM-Rprt,
    id-HSSICH-Info-DM-Rqst,
    id-HSSICH-Info-DM,
    id-IMSI,
    id-InformationExchangeID,
    id-InformationExchangeObjectType-InfEx-Rprt,
    id-InformationExchangeObjectType-InfEx-Rqst,
    id-InformationExchangeObjectType-InfEx-Rsp,
    id-InformationReportCharacteristics,
    id-InformationType,
    id-InnerLoopDLPCStatus,
    id-InterfacesToTraceItem,
    id-SplitType,
    id-LengthOfTFCI2,
    id-L3-Information,
    id-AdjustmentPeriod,
    id-ListOfInterfacesToTrace,
    id-MaxAdjustmentStep,
    id-MBMS-Bearer-Service-List,
    id-MBMS-Bearer-Service-List-InfEx-Rsp,
    id-MeasurementFilterCoefficient,
    id-MeasurementID,
    id-MeasurementRecoveryBehavior,
    id-MeasurementRecoveryReportingIndicator,
    id-MeasurementRecoverySupportIndicator,
    id-Multiple-RL-InformationResponse-RL-ReconfReadyTDD,
    id-NACC-Related-Data,
    id-Old-URA-ID,
    id-PagingArea-PagingRqst,
    id-PartialReportingIndicator,
    id-PDSCH-RL-ID,
    id-Permanent-NAS-UE-Identity,
    id-Phase-Reference-Update-Indicator,
    id-FACH-FlowControlInformation,
    id-PowerAdjustmentType,
    id-PrimCCPCH-RSCP-DL-PC-RqstTDD,
    id-Primary-CPICH-Usage-For-Channel-Estimation,
```

```
 id-PropagationDelay,
 id-Qth-Parameter,
 id-RANAP-RelocationInformation,
 id-ResetIndicator,
 id-RL-Information-PhyChReconfRqstFDD,
 id-RL-Information-PhyChReconfRqstTDD,
 id-RL-Information-RL-AdditionRqstFDD,
 id-RL-Information-RL-AdditionRqstTDD,
 id-RL-Information-RL-DeletionRqst,
 id-RL-Information-RL-FailureInd,
 id-RL-Information-RL-ReconfPrepFDD,
 id-RL-Information-RL-ReconfPrepTDD,
 id-RL-Information-RL-RestoreInd,
 id-RL-Information-RL-SetupRqstFDD,
 id-RL-Information-RL-SetupRqstTDD,
 id-RL-InformationItem-RL-CongestInd,
 id-RL-InformationItem-DM-Rprt,
 id-RL-InformationItem-DM-Rqst,
 id-RL-InformationItem-DM-Rsp,
 id-RL-InformationItem-RL-PreemptRequiredInd,
 id-RL-InformationItem-RL-SetupRqstFDD,
 id-RL-InformationList-RL-CongestInd,
 id-RL-InformationList-RL-AdditionRqstFDD,
 id-RL-InformationList-RL-DeletionRqst,
 id-RL-InformationList-RL-PreemptRequiredInd,
 id-RL-InformationList-RL-ReconfPrepFDD,
 id-RL-InformationResponse-RL-AdditionRspTDD,
 id-RL-InformationResponse-RL-ReconfReadyTDD,
 id-RL-InformationResponse-RL-ReconfRspTDD,
 id-RL-InformationResponse-RL-SetupRspTDD,
 id-RL-InformationResponseItem-RL-AdditionRspFDD,
 id-RL-InformationResponseItem-RL-ReconfReadyFDD,
 id-RL-InformationResponseItem-RL-ReconfRspFDD,
 id-RL-InformationResponseItem-RL-SetupRspFDD,
 id-RL-InformationResponseList-RL-AdditionRspFDD,
 id-RL-InformationResponseList-RL-ReconfReadyFDD,
 id-RL-InformationResponseList-RL-ReconfRspFDD,
 id-RL-InformationResponseList-RL-SetupRspFDD,
 id-RL-ParameterUpdateIndicationFDD-RL-Information-Item,
 id-RL-ParameterUpdateIndicationFDD-RL-InformationList,
 id-RL-ReconfigurationFailure-RL-ReconfFail,
 id-RL-ReconfigurationRequestFDD-RL-InformationList,
id-RL-ReconfigurationRequestFDD-RL-Information-IEs,
 id-RL-ReconfigurationRequestTDD-RL-Information,
 id-RL-ReconfigurationResponseTDD-RL-Information,
 id-RL-Specific-DCH-Info,
 id-RL-Set-InformationItem-DM-Rprt,
 id-RL-Set-InformationItem-DM-Rqst,
 id-RL-Set-InformationItem-DM-Rsp,
 id-RL-Set-Information-RL-FailureInd,
 id-RL-Set-Information-RL-RestoreInd,
 id-RL-Set-Successful-InformationItem-DM-Fail,
 id-RL-Set-Unsuccessful-InformationItem-DM-Fail,
 id-RL-Set-Unsuccessful-InformationItem-DM-Fail-Ind,
 id-RL-Successful-InformationItem-DM-Fail,
 id-RL-Unsuccessful-InformationItem-DM-Fail,
 id-RL-Unsuccessful-InformationItem-DM-Fail-Ind,
 id-ReportCharacteristics,
 id-Reporting-Object-RL-FailureInd,
 id-Reporing-Object-RL-RestoreInd,
 id-RNC-ID,
 id-RxTimingDeviationForTA,
 id-S-RNTI,
 id-SAI,
 id-Secondary-CPICH-Information,
 id-Secondary-CPICH-Information-Change,
 id-SFN,
 id-SFNReportingIndicator,
 id-SNA-Information,
 id-SRNC-ID,
 id-SSDT-CellIDforEDSCHPC,
 id-STTD-SupportIndicator,
 id-SuccessfulRL-InformationResponse-RL-AdditionFailureFDD,
 id-SuccessfulRL-InformationResponse-RL-SetupFailureFDD,
 id-TDD-maxNrDLPhysicalchannels,
 id-TDD-Support-8PSK,
 id-TFCI-PC-SupportIndicator,
 id-timeSlot-ISCP,
```

```
    id-TimeSlot-RL-SetupRspTDD,
    id-TMGI,
    id-TnlQos,
    id-TraceDepth,
    id-TraceRecordingSessionReference,
    id-TraceReference,
    id-TransmissionMode,
    id-TransportBearerID,
    id-TransportBearerRequestIndicator,
    id-TransportLayerAddress,
    id-UC-ID,
    id-ContextInfoItem-Reset,
    id-ContextGroupInfoItem-Reset,
    id-Transmission-Gap-Pattern-Sequence-Information,
    id-UEIdentity,
    id-UEMeasurementType,
    id-UEMeasurementTimeslotInfoHCR,
    id-UEMeasurementTimeslotInfoLCR,
    id-UEMeasurementReportCharacteristics,
    id-UEMeasurementParameterModAllow,
    id-UEMeasurementValueInformation,
    id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation,
    id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH,
    id-UE-State,
    id-UL-CCTrCH-AddInformation-RL-ReconfPrepTDD,
    id-UL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD,
    id-UL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationItem-RL-SetupRqstTDD,
    id-UL-CCTrCH-InformationList-RL-SetupRqstTDD,
    id-UL-CCTrCH-InformationListIE-PhyChReconfRqstTDD,
    id-UL-CCTrCH-InformationListIE-RL-AdditionRspTDD,
    id-UL-CCTrCH-InformationListIE-RL-ReconfReadyTDD,
    id-UL-CCTrCH-InformationListIE-RL-SetupRspTDD,
    id-UL-DPCH-Information-RL-ReconfPrepFDD,
    id-UL-DPCH-Information-RL-ReconfRqstFDD,
    id-UL-DPCH-Information-RL-SetupRqstFDD,
    id-UL-DPCH-InformationItem-PhyChReconfRqstTDD,
    id-UL-DPCH-InformationItem-RL-AdditionRspTDD,
    id-UL-DPCH-InformationItem-RL-SetupRspTDD,
    id-UL-DPCH-InformationAddListIE-RL-ReconfReadyTDD,
    id-UL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD,
    id-UL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD,
    id-UL-Physical-Channel-Information-RL-SetupRqstTDD,
    id-UL-SIRTarget,
    id-URA-ID,
    id-URA-Information,
    id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD,
    id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD,
    id-UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD,
    id-UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD,
    id-USCHs-to-Add,
    id-USCH-DeleteList-RL-ReconfPrepTDD,
    id-USCH-InformationListIE-RL-AdditionRspTDD,
    id-USCH-InformationListIEs-RL-SetupRspTDD,
    id-USCH-Information,
    id-USCH-ModifyList-RL-ReconfPrepTDD,
    id-USCHToBeAddedOrModifiedList-RL-ReconfReadyTDD,
    id-DL-Timeslot-ISCP-LCR-Information-RL-SetupRqstTDD,
    id-RL-LCR-InformationResponse-RL-SetupRspTDD,
    id-UL-CCTrCH-LCR-InformationListIE-RL-SetupRspTDD,
    id-UL-DPCH-LCR-InformationItem-RL-SetupRspTDD,
    id-DL-CCTrCH-LCR-InformationListIE-RL-SetupRspTDD,
    id-DL-DPCH-LCR-InformationItem-RL-SetupRspTDD,
    id-DSCH-LCR-InformationListIEs-RL-SetupRspTDD,
    id-USCH-LCR-InformationListIEs-RL-SetupRspTDD,
    id-DL-Timeslot-ISCP-LCR-Information-RL-AdditionRqstTDD,
    id-RL-LCR-InformationResponse-RL-AdditionRspTDD,
    id-UL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD,
    id-UL-DPCH-LCR-InformationItem-RL-AdditionRspTDD,
    id-DL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD,
    id-DL-DPCH-LCR-InformationItem-RL-AdditionRspTDD,
```

```
    id-DSCH-LCR-InformationListIEs-RL-AdditionRspTDD,
    id-USCH-LCR-InformationListIEs-RL-AdditionRspTDD,
    id-UL-DPCH-LCR-InformationAddListIE-RL-ReconfReadyTDD,
    id-UL-Timeslot-LCR-InformationModifyList-RL-ReconfReadyTDD,
    id-DL-DPCH-LCR-InformationAddListIE-RL-ReconfReadyTDD,
    id-DL-Timeslot-LCR-InformationModifyList-RL-ReconfReadyTDD,
    id-UL-Timeslot-LCR-InformationList-PhyChReconfRqstTDD,
    id-DL-Timeslot-LCR-InformationList-PhyChReconfRqstTDD,
    id-timeSlot-ISCP-LCR-List-DL-PC-Rqst-TDD,
    id-TSTD-Support-Indicator-RL-SetupRqstTDD,
    id-PrimaryCCPCH-RSCP-RL-ReconfPrepTDD,
    id-DL-TimeSlot-ISCP-Info-RL-ReconfPrepTDD,
    id-DL-Timeslot-ISCP-LCR-Information-RL-ReconfPrepTDD,
    id-neighbouringTDDCellMeasurementInformationLCR,
    id-UL-SIR-Target-CCTrCH-InformationItem-RL-SetupRspTDD,
    id-UL-SIR-Target-CCTrCH-LCR-InformationItem-RL-SetupRspTDD,
    id-TrafficClass,
    id-UL-Synchronisation-Parameters-LCR,
    id-TDD-DL-DPCH-TimeSlotFormatModifyItem-LCR-RL-ReconfReadyTDD,
    id-TDD-UL-DPCH-TimeSlotFormatModifyItem-LCR-RL-ReconfReadyTDD,
    id-MAChs-ResetIndicator,
    id-UL-TimingAdvanceCtrl-LCR,
    id-CCTrCH-Maximum-DL-Power-RL-SetupRspTDD,
    id-CCTrCH-Minimum-DL-Power-RL-SetupRspTDD,
    id-CCTrCH-Maximum-DL-Power-RL-AdditionRspTDD,
    id-CCTrCH-Minimum-DL-Power-RL-AdditionRspTDD,
    id-CCTrCH-Maximum-DL-Power-RL-ReconfReadyTDD,
    id-CCTrCH-Minimum-DL-Power-RL-ReconfReadyTDD,
    id-Maximum-DL-Power-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD,
    id-Minimum-DL-Power-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD,
    id-DL-CCTrCH-InformationList-RL-ReconfRspTDD,
    id-DL-DPCH-InformationModifyItem-LCR-RL-ReconfRspTDD,
    id-TDD-TPC-UplinkStepSize-LCR-RL-SetupRqstTDD,
    id-UL-CCTrCH-InformationList-RL-AdditionRqstTDD,
    id-UL-CCTrCH-InformationItem-RL-AdditionRqstTDD,
    id-DL-CCTrCH-InformationList-RL-AdditionRqstTDD,
    id-DL-CCTrCH-InformationItem-RL-AdditionRqstTDD,
    id-TDD-TPC-UplinkStepSize-InformationAdd-LCR-RL-ReconfPrepTDD,
    id-TDD-TPC-UplinkStepSize-InformationModify-LCR-RL-ReconfPrepTDD,
    id-TDD-TPC-DownlinkStepSize-InformationAdd-RL-ReconfPrepTDD,
    id-TDD-TPC-DownlinkStepSize-InformationModify-RL-ReconfPrepTDD,
    id-PrimaryCCPCH-RSCP-Delta

FROM RNSAP-Constants;

-- **************************************************************
--
-- RADIO LINK SETUP REQUEST FDD
--
-- **************************************************************

RadioLinkSetupRequestFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkSetupRequestFDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkSetupRequestFDD-Extensions}}
OPTIONAL,
    ...
}

RadioLinkSetupRequestFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-SRNC-ID                 CRITICALITY reject  TYPE RNC-ID                     PRESENCE
mandatory} |
    { ID id-S-RNTI                  CRITICALITY reject  TYPE S-RNTI                 PRESENCE
mandatory   } |
    { ID id-D-RNTI                  CRITICALITY reject  TYPE D-RNTI                 PRESENCE
optional    } |
    { ID id-AllowedQueuingTime          CRITICALITY reject  TYPE AllowedQueuingTime         PRESENCE
optional    } |
    { ID id-UL-DPCH-Information-RL-SetupRqstFDD CRITICALITY reject  TYPE UL-DPCH-Information-RL-
SetupRqstFDD        PRESENCE mandatory  } |
    { ID id-DL-DPCH-Information-RL-SetupRqstFDD CRITICALITY reject  TYPE DL-DPCH-Information-RL-
SetupRqstFDD        PRESENCE mandatory  } |
    { ID id-DCH-FDD-Information     CRITICALITY reject  TYPE DCH-FDD-Information        PRESENCE
mandatory   } |
    { ID id-DSCH-FDD-Information    CRITICALITY reject  TYPE DSCH-FDD-Information           PRESENCE
optional        } |
    { ID id-RL-Information-RL-SetupRqstFDD      CRITICALITY notify  TYPE RL-InformationList-RL-
SetupRqstFDD        PRESENCE mandatory  }|
```

```
    { ID id-Transmission-Gap-Pattern-Sequence-Information       CRITICALITY reject  TYPE
    Transmission-Gap-Pattern-Sequence-Information    PRESENCE optional } |
    { ID id-Active-Pattern-Sequence-Information CRITICALITY reject  TYPE Active-Pattern-Sequence-
    Information  PRESENCE optional },
    ...
}

UL-DPCH-Information-RL-SetupRqstFDD ::= SEQUENCE {
    ul-ScramblingCode               UL-ScramblingCode,
    minUL-ChannelisationCodeLength          MinUL-ChannelisationCodeLength,
    maxNrOfUL-DPCHs                 MaxNrOfUL-DPCHs         OPTIONAL
    -- This IE shall be present if minUL-ChannelisationCodeLength equals to 4 -- ,
    ul-PunctureLimit                PunctureLimit,
    ul-TFCS                         TFCS,
    ul-DPCCH-SlotFormat             UL-DPCCH-SlotFormat,
    ul-SIRTarget                    UL-SIR          OPTIONAL,
    diversityMode                   DiversityMode,
    sSDT-CellIdLength               SSDT-CellID-Length      OPTIONAL,
    s-FieldLength                   S-FieldLength           OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-Information-RL-
SetupRqstFDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-Information-RL-SetupRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DPC-Mode                CRITICALITY reject      EXTENSION DPC-Mode  PRESENCE optional
},
    ...
}

DL-DPCH-Information-RL-SetupRqstFDD ::= SEQUENCE {
    tFCS                            TFCS,
    dl-DPCH-SlotFormat              DL-DPCH-SlotFormat,
    nrOfDLchannelisationcodes       NrOfDLchannelisationcodes,
    tFCI-SignallingMode             TFCI-SignallingMode,
    tFCI-Presence                   TFCI-Presence           OPTIONAL
    -- This IE shall be present if DL DPCH Slot Format IE is equal to any of the values from 12 to
16 --,
    multiplexingPosition                MultiplexingPosition,
    powerOffsetInformation              PowerOffsetInformation-RL-SetupRqstFDD,
    fdd-dl-TPC-DownlinkStepSize     FDD-TPC-DownlinkStepSize,
    limitedPowerIncrease            LimitedPowerIncrease,
    innerLoopDLPCStatus             InnerLoopDLPCStatus,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-Information-RL-
SetupRqstFDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-Information-RL-SetupRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-SplitType   CRITICALITY reject  EXTENSION   SplitType   PRESENCE optional   }|
    { ID id-LengthOfTFCI2   CRITICALITY reject  EXTENSION   LengthOfTFCI2   PRESENCE optional   },
    ...
}

PowerOffsetInformation-RL-SetupRqstFDD ::= SEQUENCE {
        po1-ForTFCI-Bits                PowerOffset,
        po2-ForTPC-Bits                 PowerOffset,
        po3-ForPilotBits                PowerOffset,
        iE-Extensions                   ProtocolExtensionContainer { { PowerOffsetInformation-RL-
SetupRqstFDD-ExtIEs} } OPTIONAL,
        ...
}

PowerOffsetInformation-RL-SetupRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-InformationList-RL-SetupRqstFDD          ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-InformationItemIEs-RL-SetupRqstFDD} }

RL-InformationItemIEs-RL-SetupRqstFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationItem-RL-SetupRqstFDD  CRITICALITY notify  TYPE RL-InformationItem-RL-
SetupRqstFDD        PRESENCE mandatory  }
}

RL-InformationItem-RL-SetupRqstFDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    c-ID                            C-ID,
```

```
    firstRLS-indicator              FirstRLS-Indicator,
    frameOffset                     FrameOffset,
    chipOffset                      ChipOffset,
    propagationDelay                PropagationDelay        OPTIONAL,
    diversityControlField           DiversityControlField       OPTIONAL
    -- This IE shall be present if the RL is not the first one in the RL-InformationList-RL-
SetupRqstFDD --,
    dl-InitialTX-Power              DL-Power            OPTIONAL,
    primaryCPICH-EcNo               PrimaryCPICH-EcNo           OPTIONAL,
    sSDT-CellID                     SSDT-CellID         OPTIONAL,
    transmitDiversityIndicator      TransmitDiversityIndicator      OPTIONAL,
    -- This IE shall be present unless Diversity Mode IE in UL DPCH Information group is "none"
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationItem-RL-
SetupRqstFDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationItem-RL-SetupRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-SSDT-CellIDforEDSCHPC       CRITICALITY ignore  EXTENSION SSDT-CellID
    PRESENCE conditional }|
    -- This IE shall be present if Enhanced DSCH PC IE is present in the DSCH Information IE.
    { ID id-Enhanced-PrimaryCPICH-EcNo  CRITICALITY ignore  EXTENSION Enhanced-PrimaryCPICH-EcNo
    PRESENCE optional   }|
    { ID id-RL-Specific-DCH-Info        CRITICALITY ignore  EXTENSION RL-Specific-DCH-Info
    PRESENCE optional   }|
    { ID id-DelayedActivation           CRITICALITY reject  EXTENSION DelayedActivation
    PRESENCE optional }|
    { ID id-Qth-Parameter               CRITICALITY ignore  EXTENSION Qth-Parameter
    PRESENCE optional }|
    { ID id-CellPortionID               CRITICALITY ignore  EXTENSION CellPortionID
    PRESENCE optional },
    ...
}

RadioLinkSetupRequestFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Permanent-NAS-UE-Identity               CRITICALITY ignore          EXTENSION Permanent-
NAS-UE-Identity     PRESENCE optional   }|
    { ID id-DL-PowerBalancing-Information       CRITICALITY ignore      EXTENSION   DL-
PowerBalancing-Information      PRESENCE optional}|
    { ID id-HSDSCH-FDD-Information                  CRITICALITY reject          EXTENSION HSDSCH-
FDD-Information     PRESENCE optional   }|
    { ID id-HSPDSCH-RL-ID                           CRITICALITY reject          EXTENSION RL-ID
                        PRESENCE conditional    }|
    -- This IE shall be present if HS-DSCH Information IE is present.
    { ID id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation       CRITICALITY ignore
    EXTENSION   UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation       PRESENCE optional}|
    { ID id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH        CRITICALITY
ignore      EXTENSION   UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH
    PRESENCE optional}|
    { ID id-MBMS-Bearer-Service-List        CRITICALITY notify  EXTENSION MBMS-Bearer-Service-List
        PRESENCE optional},
    ...
}



-- **************************************************************
--
-- RADIO LINK SETUP REQUEST TDD
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-- **************************************************************

RadioLinkSetupRequestTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkSetupRequestTDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkSetupRequestTDD-Extensions}}
OPTIONAL,
    ...
}

RadioLinkSetupRequestTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-SRNC-ID                                 CRITICALITY reject  TYPE RNC-ID
                            PRESENCE mandatory} |
    { ID id-S-RNTI                                  CRITICALITY reject  TYPE S-RNTI
                        PRESENCE mandatory} |
    { ID id-D-RNTI                                  CRITICALITY reject  TYPE D-RNTI
                            PRESENCE optional   } |
    { ID id-UL-Physical-Channel-Information-RL-SetupRqstTDD CRITICALITY reject  TYPE UL-Physical-
Channel-Information-RL-SetupRqstTDD     PRESENCE mandatory  } |
```

```
    { ID id-DL-Physical-Channel-Information-RL-SetupRqstTDD CRITICALITY reject  TYPE DL-Physical-
Channel-Information-RL-SetupRqstTDD     PRESENCE mandatory  } |
    { ID id-AllowedQueuingTime                          CRITICALITY reject  TYPE AllowedQueuingTime
                                PRESENCE optional   } |
    { ID id-UL-CCTrCH-InformationList-RL-SetupRqstTDD   CRITICALITY notify  TYPE UL-CCTrCH-
InformationList-RL-SetupRqstTDD PRESENCE optional   } |
    { ID id-DL-CCTrCH-InformationList-RL-SetupRqstTDD   CRITICALITY notify  TYPE DL-CCTrCH-
InformationList-RL-SetupRqstTDD PRESENCE optional   } |
    { ID id-DCH-TDD-Information         CRITICALITY reject  TYPE DCH-TDD-Information
    PRESENCE optional   } |
    { ID id-DSCH-TDD-Information        CRITICALITY reject  TYPE DSCH-TDD-Information
    PRESENCE optional   } |
    { ID id-USCH-Information        CRITICALITY reject  TYPE USCH-Information           PRESENCE
optional    } |
    { ID id-RL-Information-RL-SetupRqstTDD              CRITICALITY reject  TYPE RL-Information-RL-
SetupRqstTDD                    PRESENCE mandatory},
    ...
}

UL-Physical-Channel-Information-RL-SetupRqstTDD ::= SEQUENCE {
    maxNrTimeslots-UL               MaxNrTimeslots,
    minimumSpreadingFactor-UL       MinimumSpreadingFactor,
    maxNrULPhysicalchannels         MaxNrULPhysicalchannels,
    iE-Extensions                   ProtocolExtensionContainer { {UL-Physical-Channel-
InformationItem-RL-SetupRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-Physical-Channel-InformationItem-RL-SetupRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TDD-Support-8PSK        CRITICALITY ignore      EXTENSION Support-8PSK      PRESENCE
optional    },
    -- Applicable to 1.28Mcps TDD only
    ...
}

DL-Physical-Channel-Information-RL-SetupRqstTDD ::= SEQUENCE {
    maxNrTimeslots-DL               MaxNrTimeslots,
    minimumSpreadingFactor-DL       MinimumSpreadingFactor,
    maxNrDLPhysicalchannels         MaxNrDLPhysicalchannels,
    iE-Extensions                   ProtocolExtensionContainer { {DL-Physical-Channel-
InformationItem-RL-SetupRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-Physical-Channel-InformationItem-RL-SetupRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TDD-maxNrDLPhysicalchannels     CRITICALITY ignore          EXTENSION
MaxNrDLPhysicalchannelsTS       PRESENCE optional   }|
    { ID id-TDD-Support-8PSK                CRITICALITY ignore          EXTENSION Support-8PSK
                PRESENCE optional   },
    -- Applicable to 1.28Mcps TDD only
    ...
}

UL-CCTrCH-InformationList-RL-SetupRqstTDD           ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {UL-CCTrCH-InformationItemIEs-RL-SetupRqstTDD} }

UL-CCTrCH-InformationItemIEs-RL-SetupRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationItem-RL-SetupRqstTDD   CRITICALITY notify  TYPE UL-CCTrCH-
InformationItem-RL-SetupRqstTDD PRESENCE mandatory  }
}

UL-CCTrCH-InformationItem-RL-SetupRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    ul-TFCS                     TFCS,
    tFCI-Coding                 TFCI-Coding,
    ul-PunctureLimit                PunctureLimit,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-InformationItem-RL-
SetupRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-InformationItem-RL-SetupRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TDD-TPC-UplinkStepSize-LCR-RL-SetupRqstTDD      CRITICALITY reject      EXTENSION   TDD-
TPC-UplinkStepSize-LCR      PRESENCE optional   },
    -- Mandatory for 1.28Mcps TDD, not applicable to 3.84Mcps TDD
    ...
}
```

```
DL-CCTrCH-InformationList-RL-SetupRqstTDD           ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {DL-CCTrCH-InformationItemIEs-RL-SetupRqstTDD} }

DL-CCTrCH-InformationItemIEs-RL-SetupRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationItem-RL-SetupRqstTDD   CRITICALITY notify  TYPE DL-CCTrCH-
InformationItem-RL-SetupRqstTDD PRESENCE mandatory   }
}

DL-CCTrCH-InformationItem-RL-SetupRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    dl-TFCS                     TFCS,
    tFCI-Coding                 TFCI-Coding,
    dl-PunctureLimit                PunctureLimit,
    tdd-TPC-DownlinkStepSize        TDD-TPC-DownlinkStepSize,
    cCTrCH-TPCList                  CCTrCH-TPCList-RL-SetupRqstTDD  OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationItem-RL-
SetupRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationItem-RL-SetupRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CCTrCH-TPCList-RL-SetupRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF CCTrCH-TPCItem-RL-
SetupRqstTDD

CCTrCH-TPCItem-RL-SetupRqstTDD   ::= SEQUENCE {
    cCTrCH-ID                       CCTrCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { { CCTrCH-TPCItem-RL-
SetupRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

CCTrCH-TPCItem-RL-SetupRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Information-RL-SetupRqstTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    c-ID                        C-ID,
    frameOffset                 FrameOffset,
    specialBurstScheduling      SpecialBurstScheduling,
    primaryCCPCH-RSCP               PrimaryCCPCH-RSCP       OPTIONAL,
    dL-TimeSlot-ISCP                DL-TimeSlot-ISCP-Info   OPTIONAL,
    --for 3.84Mcps TDD only
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-RL-SetupRqstTDD-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-RL-SetupRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DL-Timeslot-ISCP-LCR-Information-RL-SetupRqstTDD    CRITICALITY reject      EXTENSION
    DL-TimeSlot-ISCP-LCR-Information    PRESENCE optional   }|
    { ID id-TSTD-Support-Indicator-RL-SetupRqstTDD              CRITICALITY ignore      EXTENSION
    TSTD-Support-Indicator              PRESENCE optional   }|
    --for 1.28Mcps TDD only
    { ID id-RL-Specific-DCH-Info    CRITICALITY ignore      EXTENSION   RL-Specific-DCH-Info
    PRESENCE    optional    }|
    { ID id-DelayedActivation CRITICALITY reject EXTENSION DelayedActivation PRESENCE optional }|
    { ID id-UL-Synchronisation-Parameters-LCR           CRITICALITY ignore      EXTENSION   UL-
Synchronisation-Parameters-LCR      PRESENCE    optional    }|  -- Mandatory for 1.28Mcps TDD, Not
Applicable to 3.84Mcps TDD
    { ID id-PrimaryCCPCH-RSCP-Delta     CRITICALITY ignore      EXTENSION   PrimaryCCPCH-RSCP-Delta
    PRESENCE    optional    },
    ...
}

RadioLinkSetupRequestTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Permanent-NAS-UE-Identity               CRITICALITY ignore          EXTENSION Permanent-
NAS-UE-Identity     PRESENCE optional   }|
    { ID id-HSDSCH-TDD-Information                  CRITICALITY reject          EXTENSION HSDSCH-
TDD-Information     PRESENCE optional   }|
    { ID id-HSPDSCH-RL-ID                           CRITICALITY reject          EXTENSION RL-ID
                        PRESENCE conditional    }|
    -- This IE shall be present if HS-DSCH Information IE is present.
    { ID id-PDSCH-RL-ID             CRITICALITY ignore          EXTENSION RL-ID     PRESENCE
optional }|
```

```
    { ID id-MBMS-Bearer-Service-List        CRITICALITY notify  EXTENSION MBMS-Bearer-Service-List
        PRESENCE optional},
    ...
}



-- **************************************************************
--
-- RADIO LINK SETUP RESPONSE FDD
--
-- **************************************************************

RadioLinkSetupResponseFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkSetupResponseFDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkSetupResponseFDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkSetupResponseFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                          CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
optional    } |
    { ID id-CN-PS-DomainIdentifier          CRITICALITY ignore  TYPE CN-PS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-CN-CS-DomainIdentifier          CRITICALITY ignore  TYPE CN-CS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-RL-InformationResponseList-RL-SetupRspFDD   CRITICALITY ignore  TYPE RL-
InformationResponseList-RL-SetupRspFDD  PRESENCE mandatory  } |
    { ID id-UL-SIRTarget                    CRITICALITY ignore  TYPE UL-SIR             PRESENCE
optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RL-InformationResponseList-RL-SetupRspFDD       ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-InformationResponseItemIEs-RL-SetupRspFDD} }

RL-InformationResponseItemIEs-RL-SetupRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponseItem-RL-SetupRspFDD   CRITICALITY ignore  TYPE RL-
InformationResponseItem-RL-SetupRspFDD  PRESENCE mandatory  }
}

RL-InformationResponseItem-RL-SetupRspFDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    rL-Set-ID                       RL-Set-ID,
    uRA-Information                 URA-Information     OPTIONAL,
    sAI                             SAI,
    gA-Cell                         GA-Cell     OPTIONAL,
    gA-AccessPointPosition          GA-AccessPointPosition      OPTIONAL,
    received-total-wide-band-power  Received-total-wide-band-power,
    secondary-CCPCH-Info            Secondary-CCPCH-Info        OPTIONAL,
    dl-CodeInformation              FDD-DL-CodeInformation,
    diversityIndication             DiversityIndication-RL-SetupRspFDD,

    sSDT-SupportIndicator           SSDT-SupportIndicator,
    maxUL-SIR                       UL-SIR,
    minUL-SIR                       UL-SIR,
    closedlooptimingadjustmentmode  Closedlooptimingadjustmentmode  OPTIONAL,
    maximumAllowedULTxPower         MaximumAllowedULTxPower,
    maximumDLTxPower                DL-Power,
    minimumDLTxPower                DL-Power,
    primaryScramblingCode           PrimaryScramblingCode   OPTIONAL,
    uL-UARFCN                       UARFCN                  OPTIONAL,
    dL-UARFCN                       UARFCN                  OPTIONAL,
    primaryCPICH-Power              PrimaryCPICH-Power,
    dSCHInformationResponse         DSCH-InformationResponse-RL-SetupRspFDD OPTIONAL,
    neighbouring-UMTS-CellInformation   Neighbouring-UMTS-CellInformation OPTIONAL,
    neighbouring-GSM-CellInformation    Neighbouring-GSM-CellInformation OPTIONAL,
    pC-Preamble                     PC-Preamble,
    sRB-Delay                       SRB-Delay,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationResponseItem-RL-
SetupRspFDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponseItem-RL-SetupRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
```

```
    { ID id-GA-CellAdditionalShapes                    CRITICALITY ignore  EXTENSION GA-
CellAdditionalShapes                                PRESENCE optional }|
    { ID id-DL-PowerBalancing-ActivationIndicator      CRITICALITY ignore  EXTENSION DL-
PowerBalancing-ActivationIndicator          PRESENCE optional }|
    { ID id-TFCI-PC-SupportIndicator                   CRITICALITY ignore  EXTENSION TFCI-PC-
SupportIndicator                            PRESENCE optional }|
    { ID id-HCS-Prio                                   CRITICALITY ignore  EXTENSION HCS-Prio
                                            PRESENCE optional }|
    { ID id-Primary-CPICH-Usage-For-Channel-Estimation  CRITICALITY ignore  EXTENSION Primary-CPICH-
Usage-For-Channel-Estimation    PRESENCE optional }|
    { ID id-Secondary-CPICH-Information                 CRITICALITY ignore  EXTENSION Secondary-
CPICH-Information                       PRESENCE optional },
    ...
}

DiversityIndication-RL-SetupRspFDD ::= CHOICE {
    combining                       Combining-RL-SetupRspFDD,
    nonCombiningOrFirstRL           NonCombiningOrFirstRL-RL-SetupRspFDD
}

Combining-RL-SetupRspFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    iE-Extensions               ProtocolExtensionContainer { { CombiningItem-RL-SetupRspFDD-ExtIEs}
} OPTIONAL,
    ...
}

CombiningItem-RL-SetupRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DCH-InformationResponse         CRITICALITY ignore  EXTENSION DCH-InformationResponse
        PRESENCE optional   },
    ...
}

NonCombiningOrFirstRL-RL-SetupRspFDD ::= SEQUENCE {
    dCH-InformationResponse     DCH-InformationResponse,
    iE-Extensions               ProtocolExtensionContainer { { NonCombiningOrFirstRLItem-RL-
SetupRspFDD-ExtIEs} } OPTIONAL,
    ...
}

NonCombiningOrFirstRLItem-RL-SetupRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-InformationResponse-RL-SetupRspFDD ::= ProtocolIE-Single-Container {{ DSCH-
InformationResponseIE-RL-SetupRspFDD }}

DSCH-InformationResponseIE-RL-SetupRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCH-FDD-InformationResponse   CRITICALITY ignore    TYPE    DSCH-FDD-InformationResponse
PRESENCE    mandatory }
}

RadioLinkSetupResponseFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DSCH-RNTI                           CRITICALITY ignore      EXTENSION DSCH-RNTI
                        PRESENCE optional }|
    { ID id-HSDSCH-RNTI                         CRITICALITY ignore      EXTENSION HSDSCH-RNTI
                        PRESENCE optional }|
    { ID id-HSDSCH-FDD-Information-Response     CRITICALITY ignore      EXTENSION HSDSCH-FDD-
Information-Response        PRESENCE optional },
    ...
}

-- **************************************************************
--
-- RADIO LINK SETUP RESPONSE TDD
--
-- **************************************************************

RadioLinkSetupResponseTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkSetupResponseTDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkSetupResponseTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkSetupResponseTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                  CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
optional    } |
```

```
    { ID id-CN-PS-DomainIdentifier          CRITICALITY ignore  TYPE CN-PS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-CN-CS-DomainIdentifier          CRITICALITY ignore  TYPE CN-CS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-RL-InformationResponse-RL-SetupRspTDD   CRITICALITY ignore  TYPE RL-InformationResponse-
RL-SetupRspTDD  PRESENCE optional   } |
    --Mandatory for 3.84Mcps TDD only
    { ID id-UL-SIRTarget                CRITICALITY ignore  TYPE UL-SIR             PRESENCE
mandatory   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RL-InformationResponse-RL-SetupRspTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    uRA-Information             URA-Information     OPTIONAL,
    sAI                         SAI,
    gA-Cell                     GA-Cell     OPTIONAL,
    gA-AccessPointPosition      GA-AccessPointPosition  OPTIONAL,
    ul-TimeSlot-ISCP-Info       UL-TimeSlot-ISCP-Info,
    maxUL-SIR                   UL-SIR,
    minUL-SIR                   UL-SIR,
    maximumAllowedULTxPower     MaximumAllowedULTxPower,
    maximumDLTxPower            DL-Power,
    minimumDLTxPower            DL-Power,
    uARFCNforNt                 UARFCN              OPTIONAL,
    cellParameterID             CellParameterID     OPTIONAL,
    syncCase                    SyncCase            OPTIONAL,
    sCH-TimeSlot                SCH-TimeSlot        OPTIONAL,
    -- This IE shall be present if Sync Case IE is equal to "Case2". --
    sCTD-Indicator              SCTD-Indicator  OPTIONAL,
    pCCPCH-Power                PCCPCH-Power,
    timingAdvanceApplied        TimingAdvanceApplied,
    alphaValue                  AlphaValue,
    ul-PhysCH-SF-Variation      UL-PhysCH-SF-Variation,
    synchronisationConfiguration        SynchronisationConfiguration,
    secondary-CCPCH-Info-TDD            Secondary-CCPCH-Info-TDD    OPTIONAL,
    ul-CCTrCHInformation                UL-CCTrCHInformationList-RL-SetupRspTDD     OPTIONAL,
    dl-CCTrCHInformation                DL-CCTrCHInformationList-RL-SetupRspTDD     OPTIONAL,
    dCH-InformationResponse             DCH-InformationResponseList-RL-SetupRspTDD  OPTIONAL,
    dsch-InformationResponse            DSCH-InformationResponse-RL-SetupRspTDD OPTIONAL,
    usch-InformationResponse            USCH-InformationResponse-RL-SetupRspTDD OPTIONAL,
    neighbouring-UMTS-CellInformation           Neighbouring-UMTS-CellInformation OPTIONAL,
    neighbouring-GSM-CellInformation            Neighbouring-GSM-CellInformation OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationResponse-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponse-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes         CRITICALITY ignore  EXTENSION   GA-CellAdditionalShapes
    PRESENCE optional }|
    { ID id-HCS-Prio            CRITICALITY ignore  EXTENSION   HCS-Prio        PRESENCE optional }|
    { ID id-TimeSlot-RL-SetupRspTDD     CRITICALITY ignore  EXTENSION   TimeSlot    PRESENCE
conditional },
    -- This IE shall be present if Sync Case IE is Case1. --
    ...
}

UL-CCTrCHInformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{UL-
CCTrCHInformationListIEs-RL-SetupRspTDD}}

UL-CCTrCHInformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationListIE-RL-SetupRspTDD  CRITICALITY ignore  TYPE UL-
CCTrCHInformationListIE-RL-SetupRspTDD      PRESENCE mandatory }
}

UL-CCTrCHInformationListIE-RL-SetupRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF UL-
CCTrCHInformationItem-RL-SetupRspTDD

UL-CCTrCHInformationItem-RL-SetupRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    ul-DPCH-Information             UL-DPCH-InformationList-RL-SetupRspTDD      OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCHInformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}
```

```
UL-CCTrCHInformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    {ID id-UL-SIR-Target-CCTrCH-InformationItem-RL-SetupRspTDD      CRITICALITY ignore
    EXTENSION UL-SIR        PRESENCE optional},
    ...
}

UL-DPCH-InformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container { {UL-DPCH-
InformationListIEs-RL-SetupRspTDD} }

UL-DPCH-InformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-InformationItem-RL-SetupRspTDD      CRITICALITY ignore  TYPE UL-DPCH-
InformationItem-RL-SetupRspTDD  PRESENCE mandatory  }
}


UL-DPCH-InformationItem-RL-SetupRspTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    uL-Timeslot-Information         UL-Timeslot-Information,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-InformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-InformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCHInformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{DL-
CCTrCHInformationListIEs-RL-SetupRspTDD}}

DL-CCTrCHInformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationListIE-RL-SetupRspTDD  CRITICALITY ignore  TYPE DL-
CCTrCHInformationListIE-RL-SetupRspTDD  PRESENCE mandatory }
}

DL-CCTrCHInformationListIE-RL-SetupRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF DL-
CCTrCHInformationItem-RL-SetupRspTDD

DL-CCTrCHInformationItem-RL-SetupRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    dl-DPCH-Information             DL-DPCH-InformationList-RL-SetupRspTDD      OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCHInformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCHInformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-CCTrCH-Maximum-DL-Power-RL-SetupRspTDD      CRITICALITY ignore      EXTENSION  DL-Power
PRESENCE optional   }| -- this is a DCH type CCTrCH power
    { ID id-CCTrCH-Minimum-DL-Power-RL-SetupRspTDD      CRITICALITY ignore      EXTENSION  DL-Power
PRESENCE optional   }, -- this is a DCH type CCTrCH power
    ...
}

DL-DPCH-InformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container { {DL-DPCH-
InformationListIEs-RL-SetupRspTDD} }

DL-DPCH-InformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-InformationItem-RL-SetupRspTDD      CRITICALITY ignore  TYPE DL-DPCH-
InformationItem-RL-SetupRspTDD  PRESENCE mandatory  }
}

DL-DPCH-InformationItem-RL-SetupRspTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    dL-Timeslot-Information         DL-Timeslot-Information,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-InformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-InformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
DCH-InformationResponseList-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{DCH-
InformationResponseListIEs-RL-SetupRspTDD}}

DCH-InformationResponseListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DCH-InformationResponse   CRITICALITY ignore TYPE DCH-InformationResponse  PRESENCE
mandatory }
}

DSCH-InformationResponse-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{DSCH-InformationList-RL-
SetupRspTDD}}

DSCH-InformationList-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCH-InformationListIEs-RL-SetupRspTDD      CRITICALITY ignore  TYPE DSCH-
InformationListIEs-RL-SetupRspTDD PRESENCE mandatory }
}

DSCH-InformationListIEs-RL-SetupRspTDD ::= SEQUENCE (SIZE(0..maxNoOfDSCHs)) OF DSCHInformationItem-
RL-SetupRspTDD

DSCHInformationItem-RL-SetupRspTDD ::= SEQUENCE {
    dsch-ID                 DSCH-ID,
    dSCH-FlowControlInformation     DSCH-FlowControlInformation,
    bindingID               BindingID   OPTIONAL,
    transportLayerAddress   TransportLayerAddress   OPTIONAL,
    transportFormatManagement   TransportFormatManagement,
    iE-Extensions           ProtocolExtensionContainer { {DSCHInformationItem-RL-SetupRspTDD-ExtIEs}
} OPTIONAL,
    ...
}

DSCHInformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCH-InformationResponse-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{USCH-InformationList-RL-
SetupRspTDD}}

USCH-InformationList-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-USCH-InformationListIEs-RL-SetupRspTDD      CRITICALITY ignore  TYPE USCH-
InformationListIEs-RL-SetupRspTDD PRESENCE mandatory }
}

USCH-InformationListIEs-RL-SetupRspTDD ::= SEQUENCE (SIZE(0..maxNoOfUSCHs)) OF USCHInformationItem-
RL-SetupRspTDD

USCHInformationItem-RL-SetupRspTDD ::= SEQUENCE {
    usch-ID                     USCH-ID,
    bindingID                   BindingID   OPTIONAL,
    transportLayerAddress       TransportLayerAddress   OPTIONAL,
    transportFormatManagement   TransportFormatManagement,
    iE-Extensions               ProtocolExtensionContainer { {USCHInformationItem-RL-SetupRspTDD-
ExtIEs} } OPTIONAL,
    ...
}

USCHInformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkSetupResponseTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-RL-LCR-InformationResponse-RL-SetupRspTDD   CRITICALITY ignore  EXTENSION   RL-LCR-
InformationResponse-RL-SetupRspTDD      PRESENCE optional}|
    --Mandatory for 1.28Mcps TDD only
    { ID id-HSDSCH-RNTI                         CRITICALITY ignore      EXTENSION HSDSCH-RNTI
                            PRESENCE optional }|
    { ID id-HSDSCH-TDD-Information-Response     CRITICALITY ignore      EXTENSION HSDSCH-TDD-
Information-Response        PRESENCE optional }|
    { ID id-DSCH-RNTI                           CRITICALITY ignore      EXTENSION DSCH-RNTI
                            PRESENCE optional },
    ...
}

RL-LCR-InformationResponse-RL-SetupRspTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    uRA-Information             URA-Information,
    sAI                         SAI,
    gA-Cell                     GA-Cell     OPTIONAL,
```

```
    gA-AccessPointPosition      GA-AccessPointPosition  OPTIONAL,
    ul-TimeSlot-ISCP-LCR-Info   UL-TimeSlot-ISCP-LCR-Info,
    maxUL-SIR                   UL-SIR,
    minUL-SIR                   UL-SIR,
    maximumAllowedULTxPower     MaximumAllowedULTxPower,
    maximumDLTxPower            DL-Power,
    minimumDLTxPower            DL-Power,
    uARFCNforNt                 UARFCN                  OPTIONAL,
    cellParameterID             CellParameterID         OPTIONAL,
    sCTD-Indicator      SCTD-Indicator  OPTIONAL,
    pCCPCH-Power                PCCPCH-Power,
    alphaValue                  AlphaValue,
    ul-PhysCH-SF-Variation      UL-PhysCH-SF-Variation,
    synchronisationConfiguration            SynchronisationConfiguration,
    secondary-LCR-CCPCH-Info-TDD            Secondary-LCR-CCPCH-Info-TDD
    OPTIONAL,
    ul-LCR-CCTrCHInformation                UL-LCR-CCTrCHInformationList-RL-SetupRspTDD
    OPTIONAL,
    dl-LCR-CCTrCHInformation                DL-LCR-CCTrCHInformationList-RL-SetupRspTDD
    OPTIONAL,
    dCH-InformationResponse                 DCH-InformationResponseList-RL-SetupRspTDD
    OPTIONAL,
    dsch-LCR-InformationResponse            DSCH-LCR-InformationResponse-RL-SetupRspTDD
    OPTIONAL,
    usch-LCR-InformationResponse            USCH-LCR-InformationResponse-RL-SetupRspTDD    OPTIONAL,
    neighbouring-UMTS-CellInformation       Neighbouring-UMTS-CellInformation            OPTIONAL,
    neighbouring-GSM-CellInformation        Neighbouring-GSM-CellInformation
    OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { RL-LCR-
InformationResponseList-RL-SetupRspTDD-ExtIEs} }        OPTIONAL,
    ...
}

RL-LCR-InformationResponseList-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes                 CRITICALITY ignore  EXTENSION   GA-
CellAdditionalShapes        PRESENCE optional }|
    { ID id-HCS-Prio                                CRITICALITY ignore  EXTENSION   HCS-Prio
                    PRESENCE optional }|
    { ID id-UL-TimingAdvanceCtrl-LCR                CRITICALITY ignore  EXTENSION   UL-
TimingAdvanceCtrl-LCR       PRESENCE optional },
    --Mandatory for 1.28Mcps TDD only
    ...
}

UL-LCR-CCTrCHInformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{UL-LCR-
CCTrCHInformationListIEs-RL-SetupRspTDD}}

UL-LCR-CCTrCHInformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-LCR-InformationListIE-RL-SetupRspTDD  CRITICALITY ignore  TYPE UL-LCR-
CCTrCHInformationListIE-RL-SetupRspTDD      PRESENCE mandatory }
}

UL-LCR-CCTrCHInformationListIE-RL-SetupRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHsLCR)) OF UL-LCR-
CCTrCHInformationItem-RL-SetupRspTDD

UL-LCR-CCTrCHInformationItem-RL-SetupRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    ul-DPCH-LCR-Information     UL-DPCH-LCR-InformationList-RL-SetupRspTDD      OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {UL-LCR-CCTrCHInformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-LCR-CCTrCHInformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    {ID id-UL-SIR-Target-CCTrCH-LCR-InformationItem-RL-SetupRspTDD      CRITICALITY ignore
    EXTENSION UL-SIR        PRESENCE optional},
    ...
}

UL-DPCH-LCR-InformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container { {UL-DPCH-LCR-
InformationListIEs-RL-SetupRspTDD} }

UL-DPCH-LCR-InformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-LCR-InformationItem-RL-SetupRspTDD      CRITICALITY ignore  TYPE UL-DPCH-LCR-
InformationItem-RL-SetupRspTDD  PRESENCE mandatory  }
}

UL-DPCH-LCR-InformationItem-RL-SetupRspTDD ::= SEQUENCE {
```

```
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    uL-TimeslotLCR-Information      UL-TimeslotLCR-Information,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-LCR-InformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-LCR-InformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
DL-LCR-CCTrCHInformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{DL-LCR-
CCTrCHInformationListIEs-RL-SetupRspTDD}}

DL-LCR-CCTrCHInformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-LCR-InformationListIE-RL-SetupRspTDD  CRITICALITY ignore  TYPE DL-CCTrCH-LCR-
InformationListIE-RL-SetupRspTDD  PRESENCE mandatory }
}

DL-CCTrCH-LCR-InformationListIE-RL-SetupRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHsLCR)) OF DL-
CCTrCH-LCR-InformationItem-RL-SetupRspTDD

DL-CCTrCH-LCR-InformationItem-RL-SetupRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    dl-DPCH-LCR-Information     DL-DPCH-LCR-InformationList-RL-SetupRspTDD      OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {DL-CCTrCH-LCR-InformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-LCR-InformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-LCR-InformationList-RL-SetupRspTDD ::= ProtocolIE-Single-Container { {DL-DPCH-LCR-
InformationListIEs-RL-SetupRspTDD} }

DL-DPCH-LCR-InformationListIEs-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-LCR-InformationItem-RL-SetupRspTDD      CRITICALITY ignore  TYPE DL-DPCH-LCR-
InformationItem-RL-SetupRspTDD  PRESENCE mandatory  }
}

DL-DPCH-LCR-InformationItem-RL-SetupRspTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    dL-Timeslot-LCR-Information     DL-TimeslotLCR-Information,
    tSTD-Indicator                  TSTD-Indicator,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-LCR-InformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-LCR-InformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-LCR-InformationResponse-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{DSCH-LCR-
InformationList-RL-SetupRspTDD}}

DSCH-LCR-InformationList-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCH-LCR-InformationListIEs-RL-SetupRspTDD      CRITICALITY ignore  TYPE DSCH-LCR-
InformationListIEs-RL-SetupRspTDD PRESENCE mandatory }
}

DSCH-LCR-InformationListIEs-RL-SetupRspTDD ::= SEQUENCE (SIZE(0..maxNoOfDSCHsLCR)) OF DSCH-LCR-
InformationItem-RL-SetupRspTDD

DSCH-LCR-InformationItem-RL-SetupRspTDD ::= SEQUENCE {
    dsch-ID                 DSCH-ID,
    dSCH-FlowControlInformation     DSCH-FlowControlInformation,
    bindingID               BindingID   OPTIONAL,
    transportLayerAddress   TransportLayerAddress   OPTIONAL,
    transportFormatManagement   TransportFormatManagement,
    iE-Extensions           ProtocolExtensionContainer { {DSCH-LCR-InformationItem-RL-SetupRspTDD-
ExtIEs} } OPTIONAL,
    ...
```

```
}

DSCH-LCR-InformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCH-LCR-InformationResponse-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{USCH-LCR-
InformationList-RL-SetupRspTDD}}

USCH-LCR-InformationList-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-USCH-LCR-InformationListIEs-RL-SetupRspTDD      CRITICALITY ignore  TYPE USCH-LCR-
InformationListIEs-RL-SetupRspTDD PRESENCE mandatory }
}

USCH-LCR-InformationListIEs-RL-SetupRspTDD ::= SEQUENCE (SIZE(0..maxNoOfUSCHsLCR)) OF USCH-LCR-
InformationItem-RL-SetupRspTDD

USCH-LCR-InformationItem-RL-SetupRspTDD ::= SEQUENCE {
    usch-ID                     USCH-ID,
    bindingID                   BindingID   OPTIONAL,
    transportLayerAddress       TransportLayerAddress   OPTIONAL,
    transportFormatManagement   TransportFormatManagement,
    iE-Extensions               ProtocolExtensionContainer { {USCH-LCR-InformationItem-RL-
SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

USCH-LCR-InformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK SETUP FAILURE FDD
--
-- **************************************************************

RadioLinkSetupFailureFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkSetupFailureFDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkSetupFailureFDD-Extensions}}
OPTIONAL,
    ...
}

RadioLinkSetupFailureFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                  CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
optional    } |
    { ID id-CN-PS-DomainIdentifier          CRITICALITY ignore  TYPE CN-PS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-CN-CS-DomainIdentifier          CRITICALITY ignore  TYPE CN-CS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-CauseLevel-RL-SetupFailureFDD               CRITICALITY ignore    TYPE  CauseLevel-RL-
SetupFailureFDD     PRESENCE mandatory }|
    { ID id-UL-SIRTarget                CRITICALITY ignore  TYPE UL-SIR             PRESENCE
optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

CauseLevel-RL-SetupFailureFDD ::= CHOICE {
    generalCause        GeneralCauseList-RL-SetupFailureFDD,
    rLSpecificCause     RLSpecificCauseList-RL-SetupFailureFDD,
    ...
}

GeneralCauseList-RL-SetupFailureFDD ::= SEQUENCE {
    cause                                   Cause,
    iE-Extensions                           ProtocolExtensionContainer { { GeneralCauseItem-RL-
SetupFailureFDD-ExtIEs} }       OPTIONAL,
    ...
}

GeneralCauseItem-RL-SetupFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RLSpecificCauseList-RL-SetupFailureFDD ::= SEQUENCE {
```

```
    unsuccessful-RL-InformationRespList-RL-SetupFailureFDD      UnsuccessfulRL-
InformationResponseList-RL-SetupFailureFDD,
    successful-RL-InformationRespList-RL-SetupFailureFDD        SuccessfulRL-
InformationResponseList-RL-SetupFailureFDD  OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { RLSpecificCauseItem-
RL-SetupFailureFDD-ExtIEs} }        OPTIONAL,
    ...
}

RLSpecificCauseItem-RL-SetupFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DSCH-RNTI                           CRITICALITY ignore      EXTENSION DSCH-RNTI
                        PRESENCE optional }|
    { ID id-HSDSCH-RNTI                         CRITICALITY ignore      EXTENSION HSDSCH-RNTI
                        PRESENCE optional }|
    { ID id-HSDSCH-FDD-Information-Response     CRITICALITY ignore      EXTENSION HSDSCH-FDD-
Information-Response        PRESENCE optional },
    ...
}

UnsuccessfulRL-InformationResponseList-RL-SetupFailureFDD ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF
ProtocolIE-Single-Container { {UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD-IEs} }

UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD       CRITICALITY ignore  TYPE
UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD       PRESENCE mandatory  }
}

UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    cause                       Cause,
    iE-Extensions                   ProtocolExtensionContainer { {UnsuccessfulRL-
InformationResponse-RL-SetupFailureFDD-ExtIEs} } OPTIONAL,
    ...
}

UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SuccessfulRL-InformationResponseList-RL-SetupFailureFDD ::= SEQUENCE (SIZE (0..maxNrOfRLs-1)) OF
ProtocolIE-Single-Container { {SuccessfulRL-InformationResponse-RL-SetupFailureFDD-IEs} }

SuccessfulRL-InformationResponse-RL-SetupFailureFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-SuccessfulRL-InformationResponse-RL-SetupFailureFDD     CRITICALITY ignore  TYPE
SuccessfulRL-InformationResponse-RL-SetupFailureFDD     PRESENCE mandatory  }
}

SuccessfulRL-InformationResponse-RL-SetupFailureFDD ::= SEQUENCE {
    rL-ID                                   RL-ID,
    rL-Set-ID                               RL-Set-ID,
    uRA-Information                         URA-Information     OPTIONAL,
    sAI                                     SAI,
    gA-Cell                                 GA-Cell     OPTIONAL,
    gA-AccessPointPosition                  GA-AccessPointPosition      OPTIONAL,
    received-total-wide-band-power                                  Received-total-wide-band-power,
    secondary-CCPCH-Info                    Secondary-CCPCH-Info        OPTIONAL,
    dl-CodeInformation                      FDD-DL-CodeInformation,
    diversityIndication                     DiversityIndication-RL-SetupFailureFDD,

    sSDT-SupportIndicator                   SSDT-SupportIndicator,
    maxUL-SIR                               UL-SIR,
    minUL-SIR                               UL-SIR,
    closedlooptimingadjustmentmode          Closedlooptimingadjustmentmode  OPTIONAL,
    maximumAllowedULTxPower                 MaximumAllowedULTxPower,
    maximumDLTxPower                        DL-Power,
    minimumDLTxPower                        DL-Power,
    primaryCPICH-Power                      PrimaryCPICH-Power,
    primaryScramblingCode                   PrimaryScramblingCode   OPTIONAL,
    uL-UARFCN                                       UARFCN      OPTIONAL,
    dL-UARFCN                                       UARFCN      OPTIONAL,
    dSCH-InformationResponse-RL-SetupFailureFDD     DSCH-InformationResponseList-RL-SetupFailureFDD
    OPTIONAL,
    neighbouring-UMTS-CellInformation       Neighbouring-UMTS-CellInformation OPTIONAL,
    neighbouring-GSM-CellInformation        Neighbouring-GSM-CellInformation OPTIONAL,
    pC-Preamble                             PC-Preamble,
    sRB-Delay                               SRB-Delay,
    iE-Extensions                           ProtocolExtensionContainer { {SuccessfulRL-
InformationResponse-RL-SetupFailureFDD-ExtIEs} } OPTIONAL,
```

```
    ...
}

SuccessfulRL-InformationResponse-RL-SetupFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes                    CRITICALITY ignore  EXTENSION GA-
CellAdditionalShapes                                PRESENCE optional }|
    { ID id-DL-PowerBalancing-ActivationIndicator      CRITICALITY ignore  EXTENSION DL-
PowerBalancing-ActivationIndicator          PRESENCE optional }|
    { ID id-TFCI-PC-SupportIndicator                   CRITICALITY ignore  EXTENSION TFCI-PC-
SupportIndicator                            PRESENCE optional }|
    { ID id-HCS-Prio                                   CRITICALITY ignore  EXTENSION HCS-Prio
                                            PRESENCE optional }|
    { ID id-Primary-CPICH-Usage-For-Channel-Estimation  CRITICALITY ignore  EXTENSION Primary-CPICH-
Usage-For-Channel-Estimation    PRESENCE optional }|
    { ID id-Secondary-CPICH-Information                 CRITICALITY ignore  EXTENSION Secondary-
CPICH-Information                       PRESENCE optional },
    ...
}

DiversityIndication-RL-SetupFailureFDD ::= CHOICE {
    combining                       Combining-RL-SetupFailureFDD,
    nonCombiningOrFirstRL       NonCombiningOrFirstRL-RL-SetupFailureFDD
}

Combining-RL-SetupFailureFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    iE-Extensions               ProtocolExtensionContainer { { CombiningItem-RL-SetupFailureFDD-
ExtIEs} } OPTIONAL,
    ...
}

CombiningItem-RL-SetupFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DCH-InformationResponse         CRITICALITY ignore  EXTENSION DCH-InformationResponse
        PRESENCE optional   },
    ...
}

NonCombiningOrFirstRL-RL-SetupFailureFDD ::= SEQUENCE {
    dCH-InformationResponse                 DCH-InformationResponse,
    iE-Extensions                           ProtocolExtensionContainer { {
NonCombiningOrFirstRLItem-RL-SetupFailureFDD-ExtIEs} } OPTIONAL,
    ...
}

NonCombiningOrFirstRLItem-RL-SetupFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-InformationResponseList-RL-SetupFailureFDD ::= ProtocolIE-Single-Container {{ DSCH-
InformationResponseListIEs-RL-SetupFailureFDD }}

DSCH-InformationResponseListIEs-RL-SetupFailureFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCH-FDD-InformationResponse   CRITICALITY ignore    TYPE DSCH-FDD-InformationResponse
    PRESENCE mandatory }
}

RadioLinkSetupFailureFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK SETUP FAILURE TDD
--
-- **************************************************************

RadioLinkSetupFailureTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkSetupFailureTDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkSetupFailureTDD-Extensions}}
OPTIONAL,
    ...
}

RadioLinkSetupFailureTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-CauseLevel-RL-SetupFailureTDD   CRITICALITY ignore  TYPE CauseLevel-RL-SetupFailureTDD
    PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
```

```
    ...
}

CauseLevel-RL-SetupFailureTDD ::= CHOICE {
    generalCause        GeneralCauseList-RL-SetupFailureTDD,
    rLSpecificCause     RLSpecificCauseList-RL-SetupFailureTDD,
    ...
}

GeneralCauseList-RL-SetupFailureTDD ::= SEQUENCE {
    cause                       Cause,
    iE-Extensions               ProtocolExtensionContainer { { GeneralCauseItem-RL-SetupFailureTDD-
ExtIEs} }       OPTIONAL,
    ...
}

GeneralCauseItem-RL-SetupFailureTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RLSpecificCauseList-RL-SetupFailureTDD ::= SEQUENCE {
    unsuccessful-RL-InformationRespItem-RL-SetupFailureTDD  Unsuccessful-RL-InformationRespItem-RL-
SetupFailureTDD,
    iE-Extensions                                           ProtocolExtensionContainer { {
RLSpecificCauseItem-RL-SetupFailureTDD-ExtIEs} }        OPTIONAL,
    ...
}

RLSpecificCauseItem-RL-SetupFailureTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Unsuccessful-RL-InformationRespItem-RL-SetupFailureTDD ::= ProtocolIE-Single-Container {
{Unsuccessful-RL-InformationRespItemIE-RL-SetupFailureTDD} }

Unsuccessful-RL-InformationRespItemIE-RL-SetupFailureTDD RNSAP-PROTOCOL-IES ::= {
    { ID    id-UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD        CRITICALITY ignore
    TYPE    UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD       PRESENCE    mandatory   }
}

UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    cause                       Cause,
    iE-Extensions                   ProtocolExtensionContainer { {UnsuccessfulRL-
InformationResponse-RL-SetupFailureTDD-ExtIEs} } OPTIONAL,
    ...
}

UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkSetupFailureTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK ADDITION REQUEST FDD
--
-- **************************************************************

RadioLinkAdditionRequestFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkAdditionRequestFDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkAdditionRequestFDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkAdditionRequestFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-SIRTarget                CRITICALITY reject  TYPE UL-SIR                 PRESENCE
mandatory   } |
    { ID id-RL-InformationList-RL-AdditionRqstFDD   CRITICALITY notify  TYPE RL-InformationList-RL-
AdditionRqstFDD PRESENCE mandatory  }|
    { ID id-Active-Pattern-Sequence-Information CRITICALITY reject  TYPE Active-Pattern-Sequence-
Information  PRESENCE optional },
    ...
}
```

```
RL-InformationList-RL-AdditionRqstFDD           ::= SEQUENCE (SIZE (1..maxNrOfRLs-1)) OF ProtocolIE-
Single-Container { {RL-Information-RL-AdditionRqstFDD-IEs} }

RL-Information-RL-AdditionRqstFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-RL-AdditionRqstFDD   CRITICALITY notify  TYPE RL-Information-RL-
AdditionRqstFDD     PRESENCE mandatory  }
}

RL-Information-RL-AdditionRqstFDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    c-ID                            C-ID,
    frameOffset                     FrameOffset,
    chipOffset                      ChipOffset,
    diversityControlField           DiversityControlField,
    primaryCPICH-EcNo               PrimaryCPICH-EcNo       OPTIONAL,
    sSDT-CellID                     SSDT-CellID         OPTIONAL,
    transmitDiversityIndicator      TransmitDiversityIndicator      OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-RL-AdditionRqstFDD-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-RL-AdditionRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DLReferencePower    CRITICALITY ignore      EXTENSION   DL-Power        PRESENCE
optional}|
    { ID id-Enhanced-PrimaryCPICH-EcNo              CRITICALITY ignore          EXTENSION Enhanced-
PrimaryCPICH-EcNo       PRESENCE optional   }|
    { ID id-RL-Specific-DCH-Info        CRITICALITY ignore      EXTENSION   RL-Specific-DCH-Info
    PRESENCE    optional    }|
    { ID id-DelayedActivation CRITICALITY reject EXTENSION DelayedActivation PRESENCE optional }|
    { ID id-Qth-Parameter   CRITICALITY ignore      EXTENSION   Qth-Parameter       PRESENCE
optional },
    ...
}

RadioLinkAdditionRequestFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DPC-Mode                CRITICALITY reject      EXTENSION   DPC-Mode        PRESENCE
optional  }|
    { ID id-Permanent-NAS-UE-Identity               CRITICALITY ignore          EXTENSION Permanent-
NAS-UE-Identity     PRESENCE optional   },
    ...
}

-- **************************************************************
--
-- RADIO LINK ADDITION REQUEST TDD
--
-- **************************************************************

RadioLinkAdditionRequestTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkAdditionRequestTDD-IEs}},
    protocolExtensions            ProtocolExtensionContainer {{RadioLinkAdditionRequestTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkAdditionRequestTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-RL-AdditionRqstTDD   CRITICALITY reject  TYPE RL-Information-RL-
AdditionRqstTDD     PRESENCE mandatory  },
    ...
}

RL-Information-RL-AdditionRqstTDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    c-ID                            C-ID,
    frameOffset                     FrameOffset,
    diversityControlField           DiversityControlField,
    primaryCCPCH-RSCP               PrimaryCCPCH-RSCP       OPTIONAL,
    dL-TimeSlot-ISCP-Info           DL-TimeSlot-ISCP-Info   OPTIONAL,
    --for 3.84Mcps TDD only
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-RL-AdditionRqstTDD-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-RL-AdditionRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
```

```
    { ID id-DL-Timeslot-ISCP-LCR-Information-RL-AdditionRqstTDD CRITICALITY reject      EXTENSION
    DL-TimeSlot-ISCP-LCR-Information        PRESENCE optional   }|
    --for 1.28Mcps TDD only
   { ID id-RL-Specific-DCH-Info     CRITICALITY ignore      EXTENSION   RL-Specific-DCH-Info
    PRESENCE    optional    }|
    { ID id-DelayedActivation CRITICALITY reject EXTENSION DelayedActivation PRESENCE optional }|
    { ID id-UL-Synchronisation-Parameters-LCR           CRITICALITY ignore      EXTENSION   UL-
Synchronisation-Parameters-LCR      PRESENCE    optional    }|  -- Mandatory for 1.28Mcps TDD, Not
Applicable to 3.84Mcps TDD
    { ID id-PrimaryCCPCH-RSCP-Delta     CRITICALITY ignore      EXTENSION   PrimaryCCPCH-RSCP-Delta
    PRESENCE    optional    },
    ...
}

RadioLinkAdditionRequestTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Permanent-NAS-UE-Identity               CRITICALITY ignore          EXTENSION Permanent-
NAS-UE-Identity     PRESENCE optional   }|
    { ID id-UL-CCTrCH-InformationList-RL-AdditionRqstTDD    CRITICALITY notify  EXTENSION UL-CCTrCH-
InformationList-RL-AdditionRqstTDD  PRESENCE optional       } |
    { ID id-DL-CCTrCH-InformationList-RL-AdditionRqstTDD    CRITICALITY notify  EXTENSION DL-CCTrCH-
InformationList-RL-AdditionRqstTDD  PRESENCE optional   },
    ...
}

UL-CCTrCH-InformationList-RL-AdditionRqstTDD    ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {UL-CCTrCH-InformationItemIEs-RL-AdditionRqstTDD} }

UL-CCTrCH-InformationItemIEs-RL-AdditionRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationItem-RL-AdditionRqstTDD    CRITICALITY notify  TYPE UL-CCTrCH-
InformationItem-RL-AdditionRqstTDD  PRESENCE optional},
    ...
}

UL-CCTrCH-InformationItem-RL-AdditionRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    uplinkStepSizeLCR           TDD-TPC-UplinkStepSize-LCR   OPTIONAL,
    -- Applicable to 1.28Mcps TDD only
    iE-Extensions               ProtocolExtensionContainer { {UL-CCTrCH-InformationItem-RL-
AdditionRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-InformationItem-RL-AdditionRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationList-RL-AdditionRqstTDD    ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {DL-CCTrCH-InformationItemIEs-RL-AdditionRqstTDD} }

DL-CCTrCH-InformationItemIEs-RL-AdditionRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationItem-RL-AdditionRqstTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationItem-RL-AdditionRqstTDD  PRESENCE optional},
    ...
}

DL-CCTrCH-InformationItem-RL-AdditionRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    downlinkStepSize            TDD-TPC-DownlinkStepSize   OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {DL-CCTrCH-InformationItem-RL-
AdditionRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationItem-RL-AdditionRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK ADDITION RESPONSE FDD
--
-- **************************************************************

RadioLinkAdditionResponseFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkAdditionResponseFDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkAdditionResponseFDD-
Extensions}}               OPTIONAL,
    ...
```

```
}

RadioLinkAdditionResponseFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponseList-RL-AdditionRspFDD    CRITICALITY ignore  TYPE RL-
InformationResponseList-RL-AdditionRspFDD       PRESENCE mandatory  } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RL-InformationResponseList-RL-AdditionRspFDD        ::= SEQUENCE (SIZE (1..maxNrOfRLs-1)) OF
ProtocolIE-Single-Container { {RL-InformationResponseItemIEs-RL-AdditionRspFDD} }

RL-InformationResponseItemIEs-RL-AdditionRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponseItem-RL-AdditionRspFDD        CRITICALITY ignore  TYPE RL-
InformationResponseItem-RL-AdditionRspFDD   PRESENCE mandatory  }
}

RL-InformationResponseItem-RL-AdditionRspFDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    rL-Set-ID                       RL-Set-ID,
    uRA-Information                 URA-Information     OPTIONAL,
    sAI                             SAI,
    gA-Cell                         GA-Cell     OPTIONAL,
    gA-AccessPointPosition          GA-AccessPointPosition  OPTIONAL,
    received-total-wide-band-power  Received-total-wide-band-power,
    secondary-CCPCH-Info            Secondary-CCPCH-Info        OPTIONAL,
    dl-CodeInformation              DL-CodeInformationList-RL-AdditionRspFDD,
    diversityIndication             DiversityIndication-RL-AdditionRspFDD,

    sSDT-SupportIndicator               SSDT-SupportIndicator,
    minUL-SIR                           UL-SIR,
    maxUL-SIR                           UL-SIR,
    closedlooptimingadjustmentmode      Closedlooptimingadjustmentmode  OPTIONAL,
    maximumAllowedULTxPower             MaximumAllowedULTxPower,
    maximumDLTxPower                    DL-Power,
    minimumDLTxPower                    DL-Power,
    neighbouring-UMTS-CellInformation   Neighbouring-UMTS-CellInformation   OPTIONAL,
    neighbouring-GSM-CellInformation    Neighbouring-GSM-CellInformation OPTIONAL,
    pC-Preamble                         PC-Preamble,
    sRB-Delay                           SRB-Delay,
    primaryCPICH-Power                  PrimaryCPICH-Power,
    iE-Extensions                       ProtocolExtensionContainer { {RL-InformationResponseItem-RL-
AdditionRspFDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponseItem-RL-AdditionRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes         CRITICALITY ignore  EXTENSION   GA-CellAdditionalShapes
    PRESENCE optional }|
    { ID id-DL-PowerBalancing-ActivationIndicator   CRITICALITY ignore      EXTENSION       DL-
PowerBalancing-ActivationIndicator      PRESENCE optional}|
    { ID id-TFCI-PC-SupportIndicator        CRITICALITY ignore  EXTENSION   TFCI-PC-SupportIndicator
        PRESENCE optional }|
    { ID id-HCS-Prio            CRITICALITY ignore  EXTENSION   HCS-Prio        PRESENCE optional }|
    { ID id-Primary-CPICH-Usage-For-Channel-Estimation      CRITICALITY ignore  EXTENSION   Primary-
CPICH-Usage-For-Channel-Estimation      PRESENCE optional },
    ...
}

DL-CodeInformationList-RL-AdditionRspFDD ::= ProtocolIE-Single-Container {{ DL-
CodeInformationListIEs-RL-AdditionRspFDD }}

DL-CodeInformationListIEs-RL-AdditionRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-FDD-DL-CodeInformation  CRITICALITY ignore  TYPE FDD-DL-CodeInformation     PRESENCE
mandatory }
}

DiversityIndication-RL-AdditionRspFDD ::= CHOICE {
    combining                       Combining-RL-AdditionRspFDD,
    nonCombining                    NonCombining-RL-AdditionRspFDD
}

Combining-RL-AdditionRspFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    iE-Extensions               ProtocolExtensionContainer { { CombiningItem-RL-AdditionRspFDD-
ExtIEs} } OPTIONAL,
    ...
```

```
}

CombiningItem-RL-AdditionRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DCH-InformationResponse         CRITICALITY ignore  EXTENSION DCH-InformationResponse
        PRESENCE optional   },
    ...
}

NonCombining-RL-AdditionRspFDD ::= SEQUENCE {
    dCH-InformationResponse                 DCH-InformationResponse,
    iE-Extensions                               ProtocolExtensionContainer { { NonCombiningItem-RL-
AdditionRspFDD-ExtIEs} } OPTIONAL,
    ...
}

NonCombiningItem-RL-AdditionRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkAdditionResponseFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK ADDITION RESPONSE TDD
--
-- **************************************************************

RadioLinkAdditionResponseTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkAdditionResponseTDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkAdditionResponseTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkAdditionResponseTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponse-RL-AdditionRspTDD        CRITICALITY ignore  TYPE RL-
InformationResponse-RL-AdditionRspTDD   PRESENCE optional   } |
    --Mandatory for 3.84Mcps TDD only
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RL-InformationResponse-RL-AdditionRspTDD ::= SEQUENCE {
    rL-ID                               RL-ID,
    uRA-Information                     URA-Information     OPTIONAL,
    sAI                                 SAI,
    gA-Cell                             GA-Cell     OPTIONAL,
    gA-AccessPointPosition              GA-AccessPointPosition  OPTIONAL,
    ul-TimeSlot-ISCP-Info               UL-TimeSlot-ISCP-Info,
    minUL-SIR                           UL-SIR,
    maxUL-SIR                           UL-SIR,
    maximumAllowedULTxPower             MaximumAllowedULTxPower,
    maximumDLTxPower                    DL-Power,
    minimumDLTxPower                    DL-Power,
    pCCPCH-Power                        PCCPCH-Power,
    timingAdvanceApplied                TimingAdvanceApplied,
    alphaValue                          AlphaValue,
    ul-PhysCH-SF-Variation              UL-PhysCH-SF-Variation,
    synchronisationConfiguration        SynchronisationConfiguration,
    secondary-CCPCH-Info-TDD            Secondary-CCPCH-Info-TDD                        OPTIONAL,
    ul-CCTrCHInformation                UL-CCTrCHInformationList-RL-AdditionRspTDD      OPTIONAL,
    dl-CCTrCHInformation                DL-CCTrCHInformationList-RL-AdditionRspTDD      OPTIONAL,
    dCH-Information                     DCH-Information-RL-AdditionRspTDD               OPTIONAL,
    dSCH-InformationResponse            DSCH-InformationResponse-RL-AdditionRspTDD      OPTIONAL,
    uSCH-InformationResponse            USCH-InformationResponse-RL-AdditionRspTDD      OPTIONAL,
    neighbouring-UMTS-CellInformation   Neighbouring-UMTS-CellInformation   OPTIONAL,
    neighbouring-GSM-CellInformation    Neighbouring-GSM-CellInformation OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { {RL-InformationResponse-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponse-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes         CRITICALITY ignore  EXTENSION   GA-CellAdditionalShapes
    PRESENCE optional }|
```

```
    { ID id-HCS-Prio            CRITICALITY ignore  EXTENSION   HCS-Prio        PRESENCE optional },
    ...
}

UL-CCTrCHInformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{UL-
CCTrCHInformationListIEs-RL-AdditionRspTDD}}

UL-CCTrCHInformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationListIE-RL-AdditionRspTDD  CRITICALITY ignore  TYPE UL-
CCTrCHInformationListIE-RL-AdditionRspTDD       PRESENCE mandatory }
}

UL-CCTrCHInformationListIE-RL-AdditionRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF UL-
CCTrCHInformationItem-RL-AdditionRspTDD

UL-CCTrCHInformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    ul-DPCH-Information             UL-DPCH-InformationList-RL-AdditionRspTDD       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCHInformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCHInformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-DPCH-InformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container { {UL-DPCH-
InformationListIEs-RL-AdditionRspTDD} }

UL-DPCH-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-InformationItem-RL-AdditionRspTDD       CRITICALITY ignore  TYPE UL-DPCH-
InformationItem-RL-AdditionRspTDD  PRESENCE mandatory    }
}

UL-DPCH-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    uL-Timeslot-Information         UL-Timeslot-Information,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCHInformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{DL-
CCTrCHInformationListIEs-RL-AdditionRspTDD}}

DL-CCTrCHInformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationListIE-RL-AdditionRspTDD  CRITICALITY ignore  TYPE DL-
CCTrCHInformationListIE-RL-AdditionRspTDD       PRESENCE mandatory }
}

DL-CCTrCHInformationListIE-RL-AdditionRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF DL-
CCTrCHInformationItem-RL-AdditionRspTDD

DL-CCTrCHInformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    dl-DPCH-Information             DL-DPCH-InformationList-RL-AdditionRspTDD       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCHInformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCHInformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-CCTrCH-Maximum-DL-Power-RL-AdditionRspTDD       CRITICALITY ignore      EXTENSION  DL-
Power   PRESENCE optional   }| -- this is a DCH type CCTrCH power
    { ID id-CCTrCH-Minimum-DL-Power-RL-AdditionRspTDD       CRITICALITY ignore      EXTENSION  DL-
Power   PRESENCE optional   }, -- this is a DCH type CCTrCH power
    ...
}

DL-DPCH-InformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container { {DL-DPCH-
InformationListIEs-RL-AdditionRspTDD} }
```

```
DL-DPCH-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-InformationItem-RL-AdditionRspTDD       CRITICALITY ignore  TYPE DL-DPCH-
InformationItem-RL-AdditionRspTDD  PRESENCE mandatory    }
}

DL-DPCH-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    dL-Timeslot-Information         DL-Timeslot-Information,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-Information-RL-AdditionRspTDD ::= SEQUENCE {
    diversityIndication                 DiversityIndication-RL-AdditionRspTDD,

    iE-Extensions                   ProtocolExtensionContainer { { DCH-Information-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DCH-Information-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DiversityIndication-RL-AdditionRspTDD ::= CHOICE {
    combining       Combining-RL-AdditionRspTDD,
    nonCombining    NonCombining-RL-AdditionRspTDD
}

Combining-RL-AdditionRspTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    iE-Extensions               ProtocolExtensionContainer { { CombiningItem-RL-AdditionRspTDD-
ExtIEs} } OPTIONAL,
    ...
}

CombiningItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DCH-InformationResponse         CRITICALITY ignore  EXTENSION DCH-InformationResponse
        PRESENCE optional   },
    ...
}

NonCombining-RL-AdditionRspTDD  ::= SEQUENCE {
    dCH-InformationResponse     DCH-InformationResponse,
    iE-Extensions                   ProtocolExtensionContainer { { NonCombiningItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

NonCombiningItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-InformationResponse-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{DSCH-
InformationListIEs-RL-AdditionRspTDD}}

DSCH-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCH-InformationListIE-RL-AdditionRspTDD    CRITICALITY ignore  TYPE DSCH-
InformationListIE-RL-AdditionRspTDD     PRESENCE mandatory }
}

DSCH-InformationListIE-RL-AdditionRspTDD ::= SEQUENCE (SIZE(0..maxNoOfDSCHs)) OF
DSCHInformationItem-RL-AdditionRspTDD

DSCHInformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    dsch-ID                 DSCH-ID,
    transportFormatManagement   TransportFormatManagement,
    dSCH-FlowControlInformation     DSCH-FlowControlInformation,
    diversityIndication     DiversityIndication-RL-AdditionRspTDD2 OPTIONAL,
    -- diversityIndication present, if CHOICE = nonCombining
```

```
    iE-Extensions           ProtocolExtensionContainer { {DSCHInformationItem-RL-AdditionRspTDD-
ExtIEs} } OPTIONAL,
    ...
}

DSCHInformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DiversityIndication-RL-AdditionRspTDD2 ::= SEQUENCE {
    bindingID               BindingID   OPTIONAL,
    transportLayerAddress   TransportLayerAddress   OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {DiversityIndication-RL-AdditionRspTDD2-
ExtIEs} } OPTIONAL,
    ...
}
DiversityIndication-RL-AdditionRspTDD2-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCH-InformationResponse-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{USCH-
InformationListIEs-RL-AdditionRspTDD}}

USCH-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-USCH-InformationListIE-RL-AdditionRspTDD    CRITICALITY ignore  TYPE USCH-
InformationListIE-RL-AdditionRspTDD     PRESENCE mandatory }
}

USCH-InformationListIE-RL-AdditionRspTDD ::= SEQUENCE (SIZE(0..maxNoOfUSCHs)) OF
USCHInformationItem-RL-AdditionRspTDD

USCHInformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    uSCH-ID                 USCH-ID,
    transportFormatManagement   TransportFormatManagement,
    diversityIndication     DiversityIndication-RL-AdditionRspTDD2 OPTIONAL,
    -- diversityIndication present, if CHOICE = nonCombining
    iE-Extensions           ProtocolExtensionContainer { {USCHInformationItem-RL-AdditionRspTDD-
ExtIEs} } OPTIONAL,
    ...
}

USCHInformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkAdditionResponseTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-RL-LCR-InformationResponse-RL-AdditionRspTDD    CRITICALITY ignore      EXTENSION   RL-
LCR-InformationResponse-RL-AdditionRspTDD       PRESENCE optional   },
    --Mandatory for 1.28Mcps TDD only
    ...
}

RL-LCR-InformationResponse-RL-AdditionRspTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    uRA-Information             URA-Information,
    sAI                         SAI,
    gA-Cell                     GA-Cell     OPTIONAL,
    gA-AccessPointPosition      GA-AccessPointPosition  OPTIONAL,
    ul-TimeSlot-ISCP-LCR-Info   UL-TimeSlot-ISCP-LCR-Info,
    maxUL-SIR                   UL-SIR,
    minUL-SIR                   UL-SIR,
    pCCPCH-Power                PCCPCH-Power,
    maximumAllowedULTxPower     MaximumAllowedULTxPower,
    maximumDLTxPower            DL-Power,
    minimumDLTxPower            DL-Power,
    alphaValue                  AlphaValue,
    ul-PhysCH-SF-Variation      UL-PhysCH-SF-Variation,
    synchronisationConfiguration        SynchronisationConfiguration,
    secondary-LCR-CCPCH-Info-TDD        Secondary-LCR-CCPCH-Info-TDD
    OPTIONAL,
    ul-CCTrCH-LCR-Information           UL-CCTrCH-LCR-InformationList-RL-AdditionRspTDD
    OPTIONAL,
    dl-CCTrCH-LCR-Information           DL-CCTrCH-LCR-InformationList-RL-AdditionRspTDD
    OPTIONAL,
    dCH-InformationResponse             DCH-InformationResponseList-RL-AdditionRspTDD
    OPTIONAL,
    dsch-LCR-InformationResponse        DSCH-LCR-InformationResponse-RL-AdditionRspTDD    OPTIONAL,
```

```
    usch-LCR-InformationResponse            USCH-LCR-InformationResponse-RL-AdditionRspTDD
OPTIONAL,
    neighbouring-UMTS-CellInformation           Neighbouring-UMTS-CellInformation
OPTIONAL,
    neighbouring-GSM-CellInformation            Neighbouring-GSM-CellInformation
OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { RL-LCR-
InformationResponseList-RL-AdditionRspTDD-ExtIEs} }     OPTIONAL,
    ...
}

RL-LCR-InformationResponseList-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes     CRITICALITY ignore  EXTENSION   GA-CellAdditionalShapes
    PRESENCE optional }|
    { ID id-HCS-Prio                    CRITICALITY ignore  EXTENSION   HCS-Prio
    PRESENCE optional }|
    { ID id-UL-TimingAdvanceCtrl-LCR    CRITICALITY ignore  EXTENSION   UL-TimingAdvanceCtrl-LCR
    PRESENCE optional },
    --Mandatory for 1.28Mcps TDD only
    ...
}

UL-CCTrCH-LCR-InformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{UL-CCTrCH-LCR-
InformationListIEs-RL-AdditionRspTDD }}

UL-CCTrCH-LCR-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD   CRITICALITY ignore   TYPE UL-CCTrCH-
LCR-InformationListIE-RL-AdditionRspTDD     PRESENCE mandatory }
}

UL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHsLCR)) OF UL-
CCTrCH-LCR-InformationItem-RL-AdditionRspTDD

UL-CCTrCH-LCR-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    ul-DPCH-LCR-Information             UL-DPCH-LCR-InformationList-RL-AdditionRspTDD
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-LCR-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-LCR-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-DPCH-LCR-InformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container { {UL-DPCH-LCR-
InformationListIEs-RL-AdditionRspTDD} }

UL-DPCH-LCR-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-LCR-InformationItem-RL-AdditionRspTDD       CRITICALITY ignore  TYPE UL-DPCH-
LCR-InformationItem-RL-AdditionRspTDD  PRESENCE mandatory   }
}

UL-DPCH-LCR-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    uL-TimeslotLCR-Information      UL-TimeslotLCR-Information,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-LCR-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-LCR-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-LCR-InformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{DL-CCTrCH-LCR-
InformationListIEs-RL-AdditionRspTDD}}

DL-CCTrCH-LCR-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD   CRITICALITY ignore   TYPE DL-CCTrCH-
LCR-InformationListIE-RL-AdditionRspTDD  PRESENCE mandatory }
}

DL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHsLCR)) OF DL-
CCTrCH-LCR-InformationItem-RL-AdditionRspTDD
```

```
DL-CCTrCH-LCR-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    dl-DPCH-LCR-Information     DL-DPCH-LCR-InformationList-RL-AdditionRspTDD       OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {DL-CCTrCH-LCR-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-LCR-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-LCR-InformationList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container { {DL-DPCH-LCR-
InformationListIEs-RL-AdditionRspTDD} }

DL-DPCH-LCR-InformationListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-LCR-InformationItem-RL-AdditionRspTDD       CRITICALITY ignore  TYPE DL-DPCH-
LCR-InformationItem-RL-AdditionRspTDD  PRESENCE mandatory   }
}

DL-DPCH-LCR-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    dL-TimeslotLCR-Information      DL-TimeslotLCR-Information,
    tSTD-Indicator                  TSTD-Indicator,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-LCR-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-LCR-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-InformationResponseList-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{DCH-
InformationResponseListIEs-RL-AdditionRspTDD}}

DCH-InformationResponseListIEs-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DCH-InformationResponse   CRITICALITY ignore TYPE DCH-InformationResponse  PRESENCE
mandatory }
}

DSCH-LCR-InformationResponse-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{DSCH-LCR-
InformationList-RL-AdditionRspTDD}}

DSCH-LCR-InformationList-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCH-LCR-InformationListIEs-RL-AdditionRspTDD       CRITICALITY ignore  TYPE DSCH-LCR-
InformationListIEs-RL-AdditionRspTDD PRESENCE mandatory }
}

DSCH-LCR-InformationListIEs-RL-AdditionRspTDD ::= SEQUENCE (SIZE(0..maxNoOfDSCHsLCR)) OF DSCH-LCR-
InformationItem-RL-AdditionRspTDD

DSCH-LCR-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    dsch-ID                 DSCH-ID,
    dSCH-FlowControlInformation     DSCH-FlowControlInformation,
    bindingID               BindingID   OPTIONAL,
    transportLayerAddress   TransportLayerAddress   OPTIONAL,
    transportFormatManagement   TransportFormatManagement,
    iE-Extensions           ProtocolExtensionContainer { {DSCH-LCR-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

DSCH-LCR-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCH-LCR-InformationResponse-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{USCH-LCR-
InformationList-RL-AdditionRspTDD}}

USCH-LCR-InformationList-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-USCH-LCR-InformationListIEs-RL-AdditionRspTDD       CRITICALITY ignore  TYPE USCH-LCR-
InformationListIEs-RL-AdditionRspTDD PRESENCE mandatory }
}
```

```
USCH-LCR-InformationListIEs-RL-AdditionRspTDD ::= SEQUENCE (SIZE(0..maxNoOfUSCHsLCR)) OF USCH-LCR-
InformationItem-RL-AdditionRspTDD

USCH-LCR-InformationItem-RL-AdditionRspTDD ::= SEQUENCE {
    usch-ID                     USCH-ID,
    transportFormatManagement   TransportFormatManagement,
    diversityIndication         DiversityIndication-RL-AdditionRspTDD2      OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {USCH-LCR-InformationItem-RL-
AdditionRspTDD-ExtIEs} } OPTIONAL,
    ...
}

USCH-LCR-InformationItem-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK ADDITION FAILURE FDD
--
-- **************************************************************

RadioLinkAdditionFailureFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkAdditionFailureFDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkAdditionFailureFDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkAdditionFailureFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-CauseLevel-RL-AdditionFailureFDD                    CRITICALITY     ignore
    TYPE CauseLevel-RL-AdditionFailureFDD                           PRESENCE    mandatory }|
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

CauseLevel-RL-AdditionFailureFDD ::= CHOICE {
    generalCause        GeneralCauseList-RL-AdditionFailureFDD,
    rLSpecificCause     RLSpecificCauseList-RL-AdditionFailureFDD,
    ...
}

GeneralCauseList-RL-AdditionFailureFDD ::= SEQUENCE {
    cause                                   Cause,
    iE-Extensions                           ProtocolExtensionContainer { { GeneralCauseItem-RL-
AdditionFailureFDD-ExtIEs} }            OPTIONAL,
    ...
}

GeneralCauseItem-RL-AdditionFailureFDD-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RLSpecificCauseList-RL-AdditionFailureFDD ::= SEQUENCE {
    unsuccessful-RL-InformationRespList-RL-AdditionFailureFDD       UnsuccessfulRL-
InformationResponseList-RL-AdditionFailureFDD,
    successful-RL-InformationRespList-RL-AdditionFailureFDD         SuccessfulRL-
InformationResponseList-RL-AdditionFailureFDD  OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { RLSpecificCauseItem-
RL-AdditionFailureFDD-ExtIEs} }         OPTIONAL,
    ...
}

RLSpecificCauseItem-RL-AdditionFailureFDD-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UnsuccessfulRL-InformationResponseList-RL-AdditionFailureFDD ::= SEQUENCE (SIZE (1..maxNrOfRLs-1))
OF ProtocolIE-Single-Container { {UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD-IEs} }

UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD    CRITICALITY ignore  TYPE
UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD        PRESENCE mandatory  }
}

UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD ::= SEQUENCE {
    rL-ID                           RL-ID,
```

```
    cause                           Cause,
    iE-Extensions                   ProtocolExtensionContainer { {UnsuccessfulRL-
InformationResponse-RL-AdditionFailureFDD-ExtIEs} } OPTIONAL,
    ...
}

UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SuccessfulRL-InformationResponseList-RL-AdditionFailureFDD ::= SEQUENCE (SIZE (0..maxNrOfRLs-2)) OF
ProtocolIE-Single-Container { {SuccessfulRL-InformationResponse-RL-AdditionFailureFDD-IEs} }

SuccessfulRL-InformationResponse-RL-AdditionFailureFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-SuccessfulRL-InformationResponse-RL-AdditionFailureFDD      CRITICALITY ignore  TYPE
SuccessfulRL-InformationResponse-RL-AdditionFailureFDD      PRESENCE mandatory  }
}

SuccessfulRL-InformationResponse-RL-AdditionFailureFDD ::= SEQUENCE {
    rL-ID                               RL-ID,
    rL-Set-ID                           RL-Set-ID,
    uRA-Information                     URA-Information     OPTIONAL,
    sAI                                 SAI,
    gA-Cell                             GA-Cell     OPTIONAL,
    gA-AccessPointPosition              GA-AccessPointPosition      OPTIONAL,
    received-total-wide-band-power      Received-total-wide-band-power,
    secondary-CCPCH-Info                Secondary-CCPCH-Info        OPTIONAL,
    dl-CodeInformation                  DL-CodeInformationList-RL-AdditionFailureFDD,
    diversityIndication                 DiversityIndication-RL-AdditionFailureFDD,
    -- This IE represents both the Diversity Indication IE and the choice based on the diversity
indication as described in
    -- the tabular message format in subclause 9.1.
    sSDT-SupportIndicator               SSDT-SupportIndicator,
    minUL-SIR                           UL-SIR,
    maxUL-SIR                           UL-SIR,
    closedlooptimingadjustmentmode      Closedlooptimingadjustmentmode  OPTIONAL,
    maximumAllowedULTxPower             MaximumAllowedULTxPower,
    maximumDLTxPower                    DL-Power,
    minimumDLTxPower                    DL-Power,
    neighbouring-UMTS-CellInformation   Neighbouring-UMTS-CellInformation OPTIONAL,
    neighbouring-GSM-CellInformation    Neighbouring-GSM-CellInformation OPTIONAL,
    primaryCPICH-Power                  PrimaryCPICH-Power,
    pC-Preamble                         PC-Preamble,
    sRB-Delay                           SRB-Delay,
    iE-Extensions                       ProtocolExtensionContainer { {SuccessfulRL-
InformationResponse-RL-AdditionFailureFDD-ExtIEs} } OPTIONAL,
    ...
}

SuccessfulRL-InformationResponse-RL-AdditionFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes                 CRITICALITY ignore  EXTENSION   GA-
CellAdditionalShapes        PRESENCE optional }|
    { ID id-DL-PowerBalancing-ActivationIndicator   CRITICALITY ignore  EXTENSION   DL-
PowerBalancing-ActivationIndicator      PRESENCE optional}|
    { ID id-TFCI-PC-SupportIndicator                CRITICALITY ignore  EXTENSION   TFCI-PC-
SupportIndicator        PRESENCE optional }|
    { ID id-HCS-Prio                                CRITICALITY ignore  EXTENSION   HCS-Prio
    PRESENCE optional }|
    { ID id-Primary-CPICH-Usage-For-Channel-Estimation      CRITICALITY ignore  EXTENSION   Primary-
CPICH-Usage-For-Channel-Estimation      PRESENCE optional },
    ...
}

DL-CodeInformationList-RL-AdditionFailureFDD ::= ProtocolIE-Single-Container {{ DL-
CodeInformationListIEs-RL-AdditionFailureFDD }}

DL-CodeInformationListIEs-RL-AdditionFailureFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-FDD-DL-CodeInformation   CRITICALITY ignore  TYPE FDD-DL-CodeInformation     PRESENCE
mandatory }
}

DiversityIndication-RL-AdditionFailureFDD ::= CHOICE {
    combining                       Combining-RL-AdditionFailureFDD,
    nonCombining                    NonCombining-RL-AdditionFailureFDD
}

Combining-RL-AdditionFailureFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
```

```
    iE-Extensions               ProtocolExtensionContainer { { CombiningItem-RL-AdditionFailureFDD-
ExtIEs} } OPTIONAL,
    ...
}

CombiningItem-RL-AdditionFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DCH-InformationResponse         CRITICALITY ignore  EXTENSION DCH-InformationResponse
        PRESENCE optional   },
    ...
}

NonCombining-RL-AdditionFailureFDD ::= SEQUENCE {
    dCH-InformationResponse     DCH-InformationResponse,
    iE-Extensions                               ProtocolExtensionContainer { { NonCombiningItem-RL-
AdditionFailureFDD-ExtIEs} } OPTIONAL,
    ...
}

NonCombiningItem-RL-AdditionFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkAdditionFailureFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK ADDITION FAILURE TDD
--
-- **************************************************************

RadioLinkAdditionFailureTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkAdditionFailureTDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkAdditionFailureTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkAdditionFailureTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-CauseLevel-RL-AdditionFailureTDD    CRITICALITY ignore  TYPE CauseLevel-RL-
AdditionFailureTDD  PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

CauseLevel-RL-AdditionFailureTDD ::= CHOICE {
    generalCause        GeneralCauseList-RL-AdditionFailureTDD,
    rLSpecificCause     RLSpecificCauseList-RL-AdditionFailureTDD,
    ...
}

GeneralCauseList-RL-AdditionFailureTDD ::= SEQUENCE {
    cause                       Cause,
    iE-Extensions               ProtocolExtensionContainer { { GeneralCauseItem-RL-
AdditionFailureTDD-ExtIEs} }        OPTIONAL,
    ...
}

GeneralCauseItem-RL-AdditionFailureTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RLSpecificCauseList-RL-AdditionFailureTDD ::= SEQUENCE {
    unsuccessful-RL-InformationRespItem-RL-AdditionFailureTDD   Unsuccessful-RL-InformationRespItem-
RL-AdditionFailureTDD,
    iE-Extensions                                               ProtocolExtensionContainer { {
RLSpecificCauseItem-RL-AdditionFailureTDD-ExtIEs} }     OPTIONAL,
    ...
}

RLSpecificCauseItem-RL-AdditionFailureTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Unsuccessful-RL-InformationRespItem-RL-AdditionFailureTDD ::= ProtocolIE-Single-Container {
{Unsuccessful-RL-InformationRespItemIE-RL-AdditionFailureTDD} }
```

```
Unsuccessful-RL-InformationRespItemIE-RL-AdditionFailureTDD RNSAP-PROTOCOL-IES ::= {
    { ID    id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD     CRITICALITY ignore
    TYPE    UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD    PRESENCE mandatory}
}

UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    cause                       Cause,
    iE-Extensions               ProtocolExtensionContainer { {UnsuccessfulRL-InformationResponse-RL-
AdditionFailureTDD-ExtIEs} } OPTIONAL,
    ...
}

UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkAdditionFailureTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK DELETION REQUEST
--
-- **************************************************************

RadioLinkDeletionRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkDeletionRequest-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkDeletionRequest-Extensions}}
OPTIONAL,
    ...
}

RadioLinkDeletionRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationList-RL-DeletionRqst  CRITICALITY notify  TYPE RL-InformationList-RL-
DeletionRqst        PRESENCE mandatory  },
    ...
}

RL-InformationList-RL-DeletionRqst          ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-Information-RL-DeletionRqst-IEs} }

RL-Information-RL-DeletionRqst-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-RL-DeletionRqst      CRITICALITY notify  TYPE RL-Information-RL-
DeletionRqst        PRESENCE mandatory  }
}

RL-Information-RL-DeletionRqst ::= SEQUENCE {
    rL-ID                       RL-ID,
    iE-Extensions               ProtocolExtensionContainer { {RL-Information-RL-DeletionRqst-ExtIEs}
} OPTIONAL,
    ...
}

RL-Information-RL-DeletionRqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkDeletionRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK DELETION RESPONSE
--
-- **************************************************************

RadioLinkDeletionResponse ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkDeletionResponse-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkDeletionResponse-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkDeletionResponse-IEs RNSAP-PROTOCOL-IES ::= {
```

```
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RadioLinkDeletionResponse-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION PREPARE FDD
--
-- **************************************************************

RadioLinkReconfigurationPrepareFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationPrepareFDD-
IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationPrepareFDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationPrepareFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-AllowedQueuingTime          CRITICALITY reject  TYPE AllowedQueuingTime
    PRESENCE optional   } |
    { ID id-UL-DPCH-Information-RL-ReconfPrepFDD            CRITICALITY reject  TYPE UL-DPCH-
Information-RL-ReconfPrepFDD            PRESENCE optional   } |
    { ID id-DL-DPCH-Information-RL-ReconfPrepFDD            CRITICALITY reject  TYPE DL-DPCH-
Information-RL-ReconfPrepFDD            PRESENCE optional   } |
    { ID id-FDD-DCHs-to-Modify      CRITICALITY reject  TYPE FDD-DCHs-to-Modify     PRESENCE
optional    } |
    { ID id-DCHs-to-Add-FDD     CRITICALITY reject  TYPE DCH-FDD-Information        PRESENCE
optional    } |
    { ID id-DCH-DeleteList-RL-ReconfPrepFDD     CRITICALITY reject  TYPE DCH-DeleteList-RL-
ReconfPrepFDD       PRESENCE optional   } |
    { ID id-DSCH-Modify-RL-ReconfPrepFDD        CRITICALITY reject  TYPE DSCH-Modify-RL-
ReconfPrepFDD       PRESENCE optional   } |
    { ID id-DSCHs-to-Add-FDD            CRITICALITY reject  TYPE DSCH-FDD-Information
    PRESENCE optional   } |
    { ID id-DSCH-Delete-RL-ReconfPrepFDD        CRITICALITY reject  TYPE DSCH-Delete-RL-
ReconfPrepFDD       PRESENCE optional   } |
    { ID id-RL-InformationList-RL-ReconfPrepFDD CRITICALITY reject  TYPE RL-InformationList-RL-
ReconfPrepFDD   PRESENCE optional   }|
    { ID id-Transmission-Gap-Pattern-Sequence-Information   CRITICALITY reject  TYPE Transmission-
Gap-Pattern-Sequence-Information     PRESENCE optional },
    ...
}

UL-DPCH-Information-RL-ReconfPrepFDD ::= SEQUENCE {
    ul-ScramblingCode               UL-ScramblingCode       OPTIONAL,
    ul-SIRTarget                    UL-SIR                  OPTIONAL,
    minUL-ChannelisationCodeLength  MinUL-ChannelisationCodeLength  OPTIONAL,
    maxNrOfUL-DPDCHs                MaxNrOfUL-DPCHs         OPTIONAL
    -- This IE shall be present if minUL-ChannelisationCodeLength equals to 4 --,
    ul-PunctureLimit                PunctureLimit           OPTIONAL,
    tFCS                            TFCS    OPTIONAL,
    ul-DPCCH-SlotFormat             UL-DPCCH-SlotFormat     OPTIONAL,
    diversityMode                   DiversityMode           OPTIONAL,
    sSDT-CellIDLength               SSDT-CellID-Length      OPTIONAL,
    s-FieldLength                   S-FieldLength           OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-Information-RL-
ReconfPrepFDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-Information-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-Information-RL-ReconfPrepFDD ::= SEQUENCE {
    tFCS                            TFCS    OPTIONAL,
    dl-DPCH-SlotFormat              DL-DPCH-SlotFormat      OPTIONAL,
    nrOfDLchannelisationcodes       NrOfDLchannelisationcodes   OPTIONAL,
    tFCI-SignallingMode             TFCI-SignallingMode     OPTIONAL,
    tFCI-Presence                   TFCI-Presence           OPTIONAL
    -- This IE shall be present if DL DPCH Slot Format IE is from 12 to 16 --,
    multiplexingPosition            MultiplexingPosition        OPTIONAL,
```

```
    limitedPowerIncrease            LimitedPowerIncrease        OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-Information-RL-
ReconfPrepFDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-Information-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-SplitType   CRITICALITY reject  EXTENSION   SplitType   PRESENCE optional   }|
    { ID id-LengthOfTFCI2   CRITICALITY reject  EXTENSION   LengthOfTFCI2   PRESENCE optional   },
    ...
}

DCH-DeleteList-RL-ReconfPrepFDD             ::= SEQUENCE (SIZE (0..maxNrOfDCHs)) OF DCH-DeleteItem-
RL-ReconfPrepFDD

DCH-DeleteItem-RL-ReconfPrepFDD ::= SEQUENCE {
    dCH-ID                          DCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {DCH-DeleteItem-RL-ReconfPrepFDD-
ExtIEs} } OPTIONAL,
    ...
}

DCH-DeleteItem-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-Modify-RL-ReconfPrepFDD ::= SEQUENCE {
    dSCH-Information                    DSCH-ModifyInfo-RL-ReconfPrepFDD    OPTIONAL,
    pdSCH-RL-ID                         RL-ID                       OPTIONAL,
    tFCS                                TFCS                        OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-Modify-RL-ReconfPrepFDD-
ExtIEs} } OPTIONAL,
    ...
}

DSCH-Modify-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-EnhancedDSCHPCIndicator         CRITICALITY ignore  EXTENSION EnhancedDSCHPCIndicator
    PRESENCE optional}|
    { ID id-EnhancedDSCHPC                  CRITICALITY ignore  EXTENSION EnhancedDSCHPC
    PRESENCE conditional},
    -- The IE shall be present if the Enhanced DSCH PC Indicator IE is set to "Enhanced DSCH PC
Active in the UE".
    ...
}

DSCH-ModifyInfo-RL-ReconfPrepFDD ::= SEQUENCE (SIZE(0..maxNoOfDSCHs)) OF DSCH-ModifyInformationItem-
RL-ReconfPrepFDD

DSCH-ModifyInformationItem-RL-ReconfPrepFDD ::= SEQUENCE {
    dSCH-ID                             DSCH-ID,
    trChSourceStatisticsDescriptor      TrCH-SrcStatisticsDescr OPTIONAL,
    transportFormatSet                  TransportFormatSet              OPTIONAL,
    allocationRetentionPriority     AllocationRetentionPriority     OPTIONAL,
    schedulingPriorityIndicator         SchedulingPriorityIndicator     OPTIONAL,
    bLER                                BLER                            OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-ModifyInformationItem-RL-
ReconfPrepFDD-ExtIEs} } OPTIONAL,
    ...
}

DSCH-ModifyInformationItem-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TrafficClass            CRITICALITY ignore  EXTENSION TrafficClass              PRESENCE
optional    }|
    { ID id-BindingID                       CRITICALITY ignore      EXTENSION   BindingID
    PRESENCE    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
   { ID id-TransportLayerAddress            CRITICALITY ignore      EXTENSION
    TransportLayerAddress       PRESENCE    optional    },
   -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

DSCH-Delete-RL-ReconfPrepFDD ::= SEQUENCE {
    dSCH-Information                    DSCH-Info-Delete-RL-ReconfPrepFDD,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-Delete-RL-ReconfPrepFDD-
ExtIEs} } OPTIONAL,
    ...
```

```
}

DSCH-Delete-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-Info-Delete-RL-ReconfPrepFDD ::= SEQUENCE (SIZE(1..maxNoOfDSCHs)) OF DSCH-
DeleteInformationItem-RL-REconfPrepFDD

DSCH-DeleteInformationItem-RL-REconfPrepFDD ::= SEQUENCE {
    dSCH-ID                          DSCH-ID,
    iE-Extensions                 ProtocolExtensionContainer { {DSCH-DeleteInformationItem-RL-
ReconfPrepFDD-ExtIEs} } OPTIONAL,
    ...
}

DSCH-DeleteInformationItem-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-InformationList-RL-ReconfPrepFDD         ::= SEQUENCE (SIZE (0..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-Information-RL-ReconfPrepFDD-IEs} }

RL-Information-RL-ReconfPrepFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-RL-ReconfPrepFDD     CRITICALITY reject  TYPE RL-Information-RL-
ReconfPrepFDD       PRESENCE mandatory  }
}

RL-Information-RL-ReconfPrepFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    sSDT-Indication                 SSDT-Indication     OPTIONAL,
    sSDT-CellIdentity               SSDT-CellID     OPTIONAL
    -- The IE shall be present if the sSDT-Indication is set to 'sSDT-active-in-the-UE' --,
    transmitDiversityIndicator      TransmitDiversityIndicator      OPTIONAL,
    -- This IE shall be present if Diversity Mode IE is present in UL DPCH Information IE and is not
equal to “none”
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-RL-ReconfPrepFDD-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-SSDT-CellIDforEDSCHPC               CRITICALITY ignore  EXTENSION SSDT-CellID
    PRESENCE conditional }|
    -- This IE shall be present if Enhanced DSCH PC IE is present in either the DSCHs to Modify IE
or the DSCHs to Add IE.
    { ID id-DLReferencePower                    CRITICALITY ignore  EXTENSION   DL-Power
    PRESENCE optional   }|
    { ID id-RL-Specific-DCH-Info                CRITICALITY ignore  EXTENSION RL-Specific-DCH-Info
    PRESENCE    optional    }|
    { ID id-DL-DPCH-TimingAdjustment            CRITICALITY reject  EXTENSION DL-DPCH-
TimingAdjustment    PRESENCE optional }|
    { ID id-Qth-Parameter                       CRITICALITY ignore  EXTENSION Qth-Parameter
    PRESENCE optional }|
    { ID id-Phase-Reference-Update-Indicator    CRITICALITY ignore  EXTENSION Phase-Reference-
Update-Indicator    PRESENCE optional },
    ...
}

RadioLinkReconfigurationPrepareFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-HSDSCH-FDD-Information                      CRITICALITY reject  EXTENSION HSDSCH-FDD-
Information PRESENCE optional}|
    { ID id-HSDSCH-Information-to-Modify                        CRITICALITY reject  EXTENSION
HSDSCH-Information-to-Modify    PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Add                     CRITICALITY reject  EXTENSION HSDSCH-
MACdFlows-Information           PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Delete                  CRITICALITY reject  EXTENSION HSDSCH-
MACdFlows-to-Delete PRESENCE optional}|
    { ID id-HSPDSCH-RL-ID                                       CRITICALITY reject  EXTENSION RL-ID
    PRESENCE optional}|
    { ID id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation   CRITICALITY ignore  EXTENSION
    UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation       PRESENCE optional}|
    { ID id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH    CRITICALITY ignore
    EXTENSION UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH  PRESENCE optional},
    ...
}
```

```
-- **************************************************************
--
-- RADIO LINK RECONFIGURATION PREPARE TDD
--
-- **************************************************************

RadioLinkReconfigurationPrepareTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationPrepareTDD-
IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationPrepareTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationPrepareTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-AllowedQueuingTime          CRITICALITY reject  TYPE AllowedQueuingTime
    PRESENCE optional   } |
    { ID id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD   CRITICALITY notify  TYPE UL-CCTrCH-
InformationAddList-RL-ReconfPrepTDD PRESENCE optional   } |
    { ID id-UL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD    CRITICALITY notify  TYPE UL-CCTrCH-
InformationModifyList-RL-ReconfPrepTDD  PRESENCE optional   } |
    { ID id-UL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD    CRITICALITY notify  TYPE UL-CCTrCH-
InformationDeleteList-RL-ReconfPrepTDD  PRESENCE optional   } |
    { ID id-DL-CCTrCH-InformationAddList-RL-ReconfPrepTDD   CRITICALITY notify  TYPE DL-CCTrCH-
InformationAddList-RL-ReconfPrepTDD PRESENCE optional   } |
    { ID id-DL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationModifyList-RL-ReconfPrepTDD  PRESENCE optional   } |
    { ID id-DL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationDeleteList-RL-ReconfPrepTDD  PRESENCE optional   } |
    { ID id-TDD-DCHs-to-Modify      CRITICALITY reject  TYPE TDD-DCHs-to-Modify     PRESENCE
optional    } |
    { ID id-DCHs-to-Add-TDD     CRITICALITY reject  TYPE DCH-TDD-Information        PRESENCE
optional    } |
    { ID id-DCH-DeleteList-RL-ReconfPrepTDD     CRITICALITY reject  TYPE DCH-DeleteList-RL-
ReconfPrepTDD       PRESENCE optional   }|
    { ID id-DSCH-ModifyList-RL-ReconfPrepTDD    CRITICALITY reject  TYPE DSCH-ModifyList-RL-
ReconfPrepTDD       PRESENCE optional   } |
    { ID id-DSCHs-to-Add-TDD        CRITICALITY reject  TYPE DSCH-TDD-Information           PRESENCE
optional    } |
    { ID id-DSCH-DeleteList-RL-ReconfPrepTDD    CRITICALITY reject  TYPE DSCH-DeleteList-RL-
ReconfPrepTDD       PRESENCE optional   } |
    { ID id-USCH-ModifyList-RL-ReconfPrepTDD    CRITICALITY reject  TYPE USCH-ModifyList-RL-
ReconfPrepTDD       PRESENCE optional   } |
    { ID id-USCHs-to-Add        CRITICALITY reject  TYPE USCH-Information           PRESENCE
optional    } |
    { ID id-USCH-DeleteList-RL-ReconfPrepTDD    CRITICALITY reject  TYPE USCH-DeleteList-RL-
ReconfPrepTDD       PRESENCE optional   },
    ...
}

UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD       ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {UL-CCTrCH-AddInformation-RL-ReconfPrepTDD-IEs} }

UL-CCTrCH-AddInformation-RL-ReconfPrepTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-AddInformation-RL-ReconfPrepTDD   CRITICALITY notify  TYPE UL-CCTrCH-
AddInformation-RL-ReconfPrepTDD PRESENCE mandatory  }
}

UL-CCTrCH-AddInformation-RL-ReconfPrepTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    tFCS                        TFCS,
    tFCI-Coding                 TFCI-Coding,
    punctureLimit                   PunctureLimit,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-AddInformation-RL-
ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-AddInformation-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-UL-SIRTarget        CRITICALITY reject      EXTENSION       UL-SIR      PRESENCE
optional}|
    -- This IE shall be mandatory for 1.28Mcps TDD, not applicable for 3.84Mcps TDD.
    { ID id-TDD-TPC-UplinkStepSize-InformationAdd-LCR-RL-ReconfPrepTDD  CRITICALITY reject
        EXTENSION TDD-TPC-UplinkStepSize-LCR    PRESENCE optional   },
    -- Mandatory for 1.28Mcps TDD, not applicable to 3.84Mcps TDD
    ...
}
```

```
UL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {UL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD-IEs} }

UL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD    CRITICALITY notify  TYPE UL-CCTrCH-
ModifyInformation-RL-ReconfPrepTDD  PRESENCE mandatory  }
}

UL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    tFCS                        TFCS        OPTIONAL,
    tFCI-Coding                 TFCI-Coding             OPTIONAL,
    punctureLimit                   PunctureLimit               OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-ModifyInformation-RL-
ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-UL-SIRTarget        CRITICALITY reject      EXTENSION       UL-SIR      PRESENCE
optional}|
    -- This IE shall be applicable for 1.28Mcps TDD only.
     { ID id-TDD-TPC-UplinkStepSize-InformationModify-LCR-RL-ReconfPrepTDD   CRITICALITY reject
         EXTENSION   TDD-TPC-UplinkStepSize-LCR      PRESENCE optional   },
    -- Applicable to 1.28Mcps TDD only
    ...
}

UL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {UL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD-IEs} }

UL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD    CRITICALITY notify  TYPE UL-CCTrCH-
DeleteInformation-RL-ReconfPrepTDD  PRESENCE mandatory  }
}

UL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-DeleteInformation-RL-
ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationAddList-RL-ReconfPrepTDD       ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {DL-CCTrCH-AddInformation-RL-ReconfPrepTDD-IEs} }

DL-CCTrCH-AddInformation-RL-ReconfPrepTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationAddItem-RL-ReconfPrepTDD   CRITICALITY notify  TYPE DL-CCTrCH-
InformationAddItem-RL-ReconfPrepTDD PRESENCE mandatory  }
}

DL-CCTrCH-InformationAddItem-RL-ReconfPrepTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    tFCS                        TFCS,
    tFCI-Coding                 TFCI-Coding,
    punctureLimit                   PunctureLimit,
    cCTrCH-TPCList                  CCTrCH-TPCAddList-RL-ReconfPrepTDD  OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationAddItem-RL-
ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationAddItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
     { ID id-TDD-TPC-DownlinkStepSize-InformationAdd-RL-ReconfPrepTDD    CRITICALITY reject
        EXTENSION   TDD-TPC-DownlinkStepSize    PRESENCE optional   },
    ...
}

CCTrCH-TPCAddList-RL-ReconfPrepTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF CCTrCH-TPCAddItem-RL-
ReconfPrepTDD

CCTrCH-TPCAddItem-RL-ReconfPrepTDD   ::= SEQUENCE {
    cCTrCH-ID                       CCTrCH-ID,
```

```
    iE-Extensions                   ProtocolExtensionContainer { { CCTrCH-TPCAddItem-RL-
ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

CCTrCH-TPCAddItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {DL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD-IEs} }

DL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationModifyItem-RL-ReconfPrepTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationModifyItem-RL-ReconfPrepTDD  PRESENCE mandatory  }
}

DL-CCTrCH-InformationModifyItem-RL-ReconfPrepTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    tFCS                        TFCS        OPTIONAL,
    tFCI-Coding                 TFCI-Coding             OPTIONAL,
    punctureLimit                   PunctureLimit               OPTIONAL,
    cCTrCH-TPCList                  CCTrCH-TPCModifyList-RL-ReconfPrepTDD       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationModifyItem-
RL-ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationModifyItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
     { ID id-TDD-TPC-DownlinkStepSize-InformationModify-RL-ReconfPrepTDD  CRITICALITY reject
         EXTENSION   TDD-TPC-DownlinkStepSize    PRESENCE optional},
    ...
}

CCTrCH-TPCModifyList-RL-ReconfPrepTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF CCTrCH-
TPCModifyItem-RL-ReconfPrepTDD

CCTrCH-TPCModifyItem-RL-ReconfPrepTDD    ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    iE-Extensions               ProtocolExtensionContainer { { CCTrCH-TPCModifyItem-RL-
ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

CCTrCH-TPCModifyItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {DL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD-IEs} }

DL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationDeleteItem-RL-ReconfPrepTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationDeleteItem-RL-ReconfPrepTDD  PRESENCE mandatory  }
}

DL-CCTrCH-InformationDeleteItem-RL-ReconfPrepTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationDeleteItem-
RL-ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationDeleteItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-DeleteList-RL-ReconfPrepTDD             ::= SEQUENCE (SIZE (0..maxNrOfDCHs)) OF DCH-DeleteItem-
RL-ReconfPrepTDD

DCH-DeleteItem-RL-ReconfPrepTDD ::= SEQUENCE {
    dCH-ID                      DCH-ID,
    iE-Extensions               ProtocolExtensionContainer { {DCH-DeleteItem-RL-ReconfPrepTDD-
ExtIEs} } OPTIONAL,
    ...
}

DCH-DeleteItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
```

```
    ...
}

DSCH-ModifyList-RL-ReconfPrepTDD ::= SEQUENCE (SIZE(0..maxNoOfDSCHs)) OF DSCH-ModifyItem-RL-
ReconfPrepTDD

DSCH-ModifyItem-RL-ReconfPrepTDD ::= SEQUENCE {
    dSCH-ID                             DSCH-ID,
    dl-ccTrCHID                         CCTrCH-ID                       OPTIONAL,
    trChSourceStatisticsDescriptor      TrCH-SrcStatisticsDescr OPTIONAL,
    transportFormatSet                  TransportFormatSet              OPTIONAL,
    allocationRetentionPriority     AllocationRetentionPriority     OPTIONAL,
    schedulingPriorityIndicator         SchedulingPriorityIndicator     OPTIONAL,
    bLER                                BLER                            OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    iE-Extensions                   ProtocolExtensionContainer { {DSCH-ModifyItem-RL-ReconfPrepTDD-
ExtIEs} } OPTIONAL,
    ...
}

DSCH-ModifyItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TrafficClass            CRITICALITY ignore  EXTENSION TrafficClass              PRESENCE
optional    }|
    { ID id-BindingID                       CRITICALITY ignore      EXTENSION   BindingID
PRESENCE    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
   { ID id-TransportLayerAddress            CRITICALITY ignore      EXTENSION
    TransportLayerAddress       PRESENCE    optional    },
    -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

DSCH-DeleteList-RL-ReconfPrepTDD ::= SEQUENCE (SIZE(0..maxNoOfDSCHs)) OF DSCH-DeleteItem-RL-
ReconfPrepTDD

DSCH-DeleteItem-RL-ReconfPrepTDD ::= SEQUENCE {
    dSCH-ID                             DSCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {DSCH-DeleteItem-RL-ReconfPrepTDD-
ExtIEs} } OPTIONAL,
    ...
}

DSCH-DeleteItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCH-ModifyList-RL-ReconfPrepTDD ::= SEQUENCE (SIZE(0..maxNoOfUSCHs)) OF USCH-ModifyItem-RL-
ReconfPrepTDD

USCH-ModifyItem-RL-ReconfPrepTDD ::= SEQUENCE {
    uSCH-ID                             USCH-ID,
    ul-ccTrCHID                         CCTrCH-ID                       OPTIONAL,
    trChSourceStatisticsDescriptor      TrCH-SrcStatisticsDescr OPTIONAL,
    transportFormatSet                  TransportFormatSet              OPTIONAL,
    allocationRetentionPriority     AllocationRetentionPriority     OPTIONAL,
    schedulingPriorityIndicator         SchedulingPriorityIndicator     OPTIONAL,
    bLER                                BLER                            OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    rb-Info                             RB-Info                         OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { {USCH-ModifyItem-RL-
ReconfPrepTDD-ExtIEs} } OPTIONAL,
    ...
}

USCH-ModifyItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TrafficClass            CRITICALITY ignore  EXTENSION TrafficClass              PRESENCE
optional    }|
    { ID id-BindingID               CRITICALITY ignore  EXTENSION   BindingID   PRESENCE
    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID id-TransportLayerAddress           CRITICALITY ignore      EXTENSION
    TransportLayerAddress       PRESENCE    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID id-TnlQos                      CRITICALITY ignore      EXTENSION   TnlQos      PRESENCE
    optional    },
    ...
}
```

```
USCH-DeleteList-RL-ReconfPrepTDD ::= SEQUENCE (SIZE(0..maxNoOfUSCHs)) OF USCH-DeleteItem-RL-
ReconfPrepTDD

USCH-DeleteItem-RL-ReconfPrepTDD ::= SEQUENCE {
    uSCH-ID                         USCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {USCH-DeleteItem-RL-ReconfPrepTDD-
ExtIEs} } OPTIONAL,
    ...
}

USCH-DeleteItem-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkReconfigurationPrepareTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-PrimaryCCPCH-RSCP-RL-ReconfPrepTDD                  CRITICALITY ignore      EXTENSION
    PrimaryCCPCH-RSCP   PRESENCE optional   }|
    { ID id-DL-TimeSlot-ISCP-Info-RL-ReconfPrepTDD              CRITICALITY ignore      EXTENSION
    DL-TimeSlot-ISCP-Info   PRESENCE optional   }|
    { ID id-DL-Timeslot-ISCP-LCR-Information-RL-ReconfPrepTDD   CRITICALITY ignore      EXTENSION
    DL-TimeSlot-ISCP-LCR-Information    PRESENCE optional   }|
    { ID id-HSDSCH-TDD-Information                              CRITICALITY reject      EXTENSION
HSDSCH-TDD-Information      PRESENCE optional}|
    { ID id-HSDSCH-Information-to-Modify                        CRITICALITY reject      EXTENSION
HSDSCH-Information-to-Modify        PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Add             CRITICALITY reject      EXTENSION HSDSCH-MACdFlows-
Information         PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Delete          CRITICALITY reject      EXTENSION HSDSCH-MACdFlows-
to-Delete   PRESENCE optional}|
    { ID id-HSPDSCH-RL-ID                       CRITICALITY reject      EXTENSION RL-ID
    PRESENCE optional}|
    { ID id-PDSCH-RL-ID             CRITICALITY ignore          EXTENSION RL-ID     PRESENCE
optional }|
    { ID id-UL-Synchronisation-Parameters-LCR           CRITICALITY ignore      EXTENSION   UL-
Synchronisation-Parameters-LCR      PRESENCE    optional    }|  -- Mandatory for 1.28Mcps TDD, Not
Applicable to 3.84Mcps TDD
    { ID id-RL-Information-RL-ReconfPrepTDD     CRITICALITY ignore      EXTENSION   RL-Information-
RL-ReconfPrepTDD        PRESENCE    optional    }|
    { ID id-PrimaryCCPCH-RSCP-Delta     CRITICALITY ignore      EXTENSION   PrimaryCCPCH-RSCP-Delta
    PRESENCE    optional    },
    ...
}


RL-Information-RL-ReconfPrepTDD ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF RL-InformationIE-RL-
ReconfPrepTDD

RL-InformationIE-RL-ReconfPrepTDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    rL-Specific-DCH-Info            RL-Specific-DCH-Info            OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { { RL-InformationIE-RL-
ReconfPrepTDD-ExtIEs} }     OPTIONAL,
    ...
}

RL-InformationIE-RL-ReconfPrepTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION READY FDD
--
-- **************************************************************

RadioLinkReconfigurationReadyFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationReadyFDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationReadyFDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationReadyFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponseList-RL-ReconfReadyFDD    CRITICALITY ignore  TYPE RL-
InformationResponseList-RL-ReconfReadyFDD       PRESENCE optional   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
```

```
}

RL-InformationResponseList-RL-ReconfReadyFDD        ::= SEQUENCE (SIZE (0..maxNrOfRLs)) OF
ProtocolIE-Single-Container { {RL-InformationResponse-RL-ReconfReadyFDD-IEs} }

RL-InformationResponse-RL-ReconfReadyFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponseItem-RL-ReconfReadyFDD    CRITICALITY ignore  TYPE RL-
InformationResponseItem-RL-ReconfReadyFDD       PRESENCE mandatory  }
}

RL-InformationResponseItem-RL-ReconfReadyFDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    max-UL-SIR                      UL-SIR          OPTIONAL,
    min-UL-SIR                      UL-SIR          OPTIONAL,
    maximumDLTxPower                DL-Power        OPTIONAL,
    minimumDLTxPower                DL-Power        OPTIONAL,
    secondary-CCPCH-Info            Secondary-CCPCH-Info        OPTIONAL,
    dl-CodeInformationList          DL-CodeInformationList-RL-ReconfReadyFDD    OPTIONAL,
    dCHInformationResponse          DCH-InformationResponseList-RL-ReconfReadyFDD   OPTIONAL,
    dSCHsToBeAddedOrModified        DSCHsToBeAddedOrModified-RL-ReconfReadyFDD      OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationResponseItem-RL-
ReconfReadyFDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponseItem-RL-ReconfReadyFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DL-PowerBalancing-UpdatedIndicator          CRITICALITY ignore  EXTENSION DL-
PowerBalancing-UpdatedIndicator     PRESENCE optional}|
    { ID id-Primary-CPICH-Usage-For-Channel-Estimation  CRITICALITY ignore  EXTENSION Primary-CPICH-
Usage-For-Channel-Estimation    PRESENCE optional }|
    { ID id-Secondary-CPICH-Information-Change          CRITICALITY ignore  EXTENSION Secondary-
CPICH-Information-Change                PRESENCE optional },
    ...
}

DL-CodeInformationList-RL-ReconfReadyFDD ::= ProtocolIE-Single-Container {{ DL-
CodeInformationListIEs-RL-ReconfReadyFDD }}

DL-CodeInformationListIEs-RL-ReconfReadyFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-FDD-DL-CodeInformation  CRITICALITY ignore  TYPE FDD-DL-CodeInformation     PRESENCE
mandatory }
}

DCH-InformationResponseList-RL-ReconfReadyFDD               ::= ProtocolIE-Single-Container { {DCH-
InformationResponseListIEs-RL-ReconfReadyFDD} }

DCH-InformationResponseListIEs-RL-ReconfReadyFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DCH-InformationResponse     CRITICALITY ignore  TYPE DCH-InformationResponse
    PRESENCE mandatory  }
}

DSCHsToBeAddedOrModified-RL-ReconfReadyFDD ::= ProtocolIE-Single-Container {
{DSCHsToBeAddedOrModifiedIEs-RL-ReconfReadyFDD} }

DSCHsToBeAddedOrModifiedIEs-RL-ReconfReadyFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCHsToBeAddedOrModified-FDD    CRITICALITY ignore  TYPE DSCH-FDD-InformationResponse
    PRESENCE mandatory  }
}

RadioLinkReconfigurationReadyFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DSCH-RNTI                           CRITICALITY ignore      EXTENSION DSCH-RNTI
                            PRESENCE optional }|
    { ID id-HSDSCH-RNTI                         CRITICALITY ignore      EXTENSION HSDSCH-RNTI
                            PRESENCE optional }|
    { ID id-HSDSCH-FDD-Information-Response     CRITICALITY ignore      EXTENSION HSDSCH-FDD-
Information-Response        PRESENCE optional }|
    { ID id-MAChs-ResetIndicator                CRITICALITY ignore      EXTENSION MAChs-
ResetIndicator                      PRESENCE optional },
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION READY TDD
--
-- **************************************************************

RadioLinkReconfigurationReadyTDD ::= SEQUENCE {
```

```
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationReadyTDD-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationReadyTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationReadyTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponse-RL-ReconfReadyTDD
                        CRITICALITY ignore  TYPE RL-InformationResponse-RL-ReconfReadyTDD
    PRESENCE optional   } |
    --This RL-InformationResponse-RL-ReconfReadyTDD is for the first RL repetition in the list.
    --Repetitions 2 and on are defined in Multiple-RL-InformationResponse-RL-ReconfReadyTDD.
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RL-InformationResponse-RL-ReconfReadyTDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    max-UL-SIR                      UL-SIR          OPTIONAL,
    min-UL-SIR                      UL-SIR          OPTIONAL,
    maximumDLTxPower                DL-Power        OPTIONAL,
    minimumDLTxPower                DL-Power        OPTIONAL,
    secondary-CCPCH-Info-TDD        Secondary-CCPCH-Info-TDD    OPTIONAL,
    ul-CCTrCH-Information            UL-CCTrCH-InformationList-RL-ReconfReadyTDD OPTIONAL,
    dl-CCTrCH-Information            DL-CCTrCH-InformationList-RL-ReconfReadyTDD OPTIONAL,
    dCHInformationResponse          DCH-InformationResponseList-RL-ReconfReadyTDD   OPTIONAL,
    dSCHsToBeAddedOrModified        DSCHToBeAddedOrModified-RL-ReconfReadyTDD   OPTIONAL,
    uSCHsToBeAddedOrModified        USCHToBeAddedOrModified-RL-ReconfReadyTDD   OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationResponse-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponse-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-UL-TimingAdvanceCtrl-LCR            CRITICALITY ignore  EXTENSION   UL-
TimingAdvanceCtrl-LCR       PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}

UL-CCTrCH-InformationList-RL-ReconfReadyTDD     ::= ProtocolIE-Single-Container {{UL-
CCTrCHInformationListIEs-RL-ReconfReadyTDD}}

UL-CCTrCHInformationListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationListIE-RL-ReconfReadyTDD  CRITICALITY ignore   TYPE UL-
CCTrCHInformationListIE-RL-ReconfReadyTDD       PRESENCE mandatory }
}

UL-CCTrCHInformationListIE-RL-ReconfReadyTDD ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF UL-CCTrCH-
InformationItem-RL-ReconfReadyTDD

UL-CCTrCH-InformationItem-RL-ReconfReadyTDD ::= SEQUENCE {
    cCTrCH-ID                       CCTrCH-ID,
    ul-DPCH-AddInformation          UL-DPCH-InformationAddList-RL-ReconfReadyTDD
    OPTIONAL,
    --For 3.84Mcps TDD only
    ul-DPCH-ModifyInformation       UL-DPCH-InformationModifyList-RL-ReconfReadyTDD
    OPTIONAL,
    --For 3.84Mcps TDD only
    ul-DPCH-DeleteInformation       UL-DPCH-InformationDeleteList-RL-ReconfReadyTDD
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-InformationItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-InformationItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-UL-DPCH-LCR-InformationAddListIE-RL-ReconfReadyTDD  CRITICALITY ignore     EXTENSION
    UL-DPCH-LCR-InformationAddList-RL-ReconfReadyTDD        PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}

UL-DPCH-LCR-InformationAddList-RL-ReconfReadyTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
```

```
    uL-TimeslotLCR-Info           UL-TimeslotLCR-Information,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-LCR-InformationAddItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-LCR-InformationAddItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-DPCH-InformationAddList-RL-ReconfReadyTDD ::= ProtocolIE-Single-Container {{UL-DPCH-
InformationAddListIEs-RL-ReconfReadyTDD}}

UL-DPCH-InformationAddListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-InformationAddListIE-RL-ReconfReadyTDD   CRITICALITY ignore  TYPE UL-DPCH-
InformationAddListIE-RL-ReconfReadyTDD      PRESENCE optional }
}

UL-DPCH-InformationAddListIE-RL-ReconfReadyTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    rxTimingDeviationForTA          RxTimingDeviationForTA          OPTIONAL,
    uL-Timeslot-Information         UL-Timeslot-Information,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-InformationAddItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-InformationAddItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-DPCH-InformationModifyList-RL-ReconfReadyTDD ::= ProtocolIE-Single-Container {{UL-DPCH-
InformationModifyListIEs-RL-ReconfReadyTDD}}

UL-DPCH-InformationModifyListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD   CRITICALITY ignore   TYPE UL-DPCH-
InformationModifyListIE-RL-ReconfReadyTDD       PRESENCE mandatory }
}

UL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod            OPTIONAL,
    repetitionLength                RepetitionLength            OPTIONAL,
    tDD-DPCHOffset                  TDD-DPCHOffset              OPTIONAL,
    uL-Timeslot-InformationModifyList-RL-ReconfReadyTDD         UL-Timeslot-InformationModifyList-
RL-ReconfReadyTDD           OPTIONAL,
    --For 3.84Mcps TDD only
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-InformationModifyItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-UL-Timeslot-LCR-InformationModifyList-RL-ReconfReadyTDD   CRITICALITY ignore EXTENSION
UL-TimeslotLCR-InformationModifyList-RL-ReconfReadyTDD      PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}

UL-TimeslotLCR-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfTsLCR)) OF UL-
TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD

UL-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    midambleShiftLCR                MidambleShiftLCR            OPTIONAL,
    tFCI-Presence                   TFCI-Presence           OPTIONAL,
    tDD-uL-Code-LCR-Information         TDD-UL-Code-LCR-InformationModifyList-RL-ReconfReadyTDD
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-TimeslotLCR-
InformationModifyItem-RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

TDD-UL-Code-LCR-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfDPCHsLCR)) OF
TDD-UL-Code-LCR-InformationModifyItem-RL-ReconfReadyTDD

TDD-UL-Code-LCR-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
```

```
    dPCH-ID                         DPCH-ID,
    tDD-ChannelisationCodeLCR           TDD-ChannelisationCodeLCR       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {TDD-UL-Code-LCR-
InformationModifyItem-RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

TDD-UL-Code-LCR-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TDD-UL-DPCH-TimeSlotFormatModifyItem-LCR-RL-ReconfReadyTDD   CRITICALITYreject
EXTENSION TDD-UL-DPCH-TimeSlotFormat-LCR   PRESENCE  optional},
    ...
}

UL-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-Timeslot-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfTS)) OF UL-
Timeslot-InformationModifyItem-RL-ReconfReadyTDD

UL-Timeslot-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
    timeSlot                        TimeSlot,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType           OPTIONAL,
    tFCI-Presence                   TFCI-Presence           OPTIONAL,
    uL-Code-Information         TDD-UL-Code-InformationModifyList-RL-ReconfReadyTDD
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-Timeslot-InformationModifyItem-
RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-Timeslot-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TDD-UL-Code-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfDPCHs)) OF TDD-UL-
Code-InformationModifyItem-RL-ReconfReadyTDD

TDD-UL-Code-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
    dPCH-ID                         DPCH-ID,
    tDD-ChannelisationCode          TDD-ChannelisationCode      OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {TDD-UL-Code-InformationModifyItem-
RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

TDD-UL-Code-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-DPCH-InformationDeleteList-RL-ReconfReadyTDD ::= ProtocolIE-Single-Container {{UL-DPCH-
InformationDeleteListIEs-RL-ReconfReadyTDD}}

UL-DPCH-InformationDeleteListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD   CRITICALITY ignore   TYPE UL-DPCH-
InformationDeleteListIE-RL-ReconfReadyTDD       PRESENCE mandatory }
}

UL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD ::= SEQUENCE (SIZE (0..maxNrOfDPCHs)) OF UL-DPCH-
InformationDeleteItem-RL-ReconfReadyTDD

UL-DPCH-InformationDeleteItem-RL-ReconfReadyTDD ::= SEQUENCE {
    dPCH-ID                     DPCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-InformationDeleteList-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-InformationDeleteList-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationList-RL-ReconfReadyTDD     ::= ProtocolIE-Single-Container {{DL-
CCTrCHInformationListIEs-RL-ReconfReadyTDD}}

DL-CCTrCHInformationListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationListIE-RL-ReconfReadyTDD   CRITICALITY ignore   TYPE DL-
CCTrCHInformationListIE-RL-ReconfReadyTDD       PRESENCE mandatory }
```

```
}

DL-CCTrCHInformationListIE-RL-ReconfReadyTDD ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF DL-CCTrCH-
InformationItem-RL-ReconfReadyTDD

DL-CCTrCH-InformationItem-RL-ReconfReadyTDD ::= SEQUENCE {
    cCTrCH-ID                       CCTrCH-ID,
    dl-DPCH-AddInformation          DL-DPCH-InformationAddList-RL-ReconfReadyTDD
    OPTIONAL,
    --For 3.84Mcps TDD only
    dl-DPCH-ModifyInformation       DL-DPCH-InformationModifyList-RL-ReconfReadyTDD
    OPTIONAL,
    --For 3.84Mcps TDD only
    dl-DPCH-DeleteInformation       DL-DPCH-InformationDeleteList-RL-ReconfReadyTDD
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DL-DPCH-LCR-InformationAddListIE-RL-ReconfReadyTDD   CRITICALITY ignore
    EXTENSION    DL-DPCH-LCR-InformationAddList-RL-ReconfReadyTDD       PRESENCE  optional}|
    --For 1.28Mcps TDD only
    { ID id-CCTrCH-Maximum-DL-Power-RL-ReconfReadyTDD       CRITICALITY ignore  EXTENSION DL-Power
    -- Applicable to 3.84Mcps TDD only, this is a DCH type CCTrCH power
    { ID id-CCTrCH-Minimum-DL-Power-RL-ReconfReadyTDD       CRITICALITY ignore  EXTENSION DL-Power
    -- Applicable to 3.84Mcps TDD only, this is a DCH type CCTrCH power
    ...
}

DL-DPCH-LCR-InformationAddList-RL-ReconfReadyTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    dL-TimeslotLCR-Info           DL-TimeslotLCR-Information,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-LCR-InformationAddItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-LCR-InformationAddItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-InformationAddList-RL-ReconfReadyTDD ::= ProtocolIE-Single-Container {{DL-DPCH-
InformationAddListIEs-RL-ReconfReadyTDD}}

DL-DPCH-InformationAddListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-InformationAddListIE-RL-ReconfReadyTDD   CRITICALITY ignore  TYPE DL-DPCH-
InformationAddListIE-RL-ReconfReadyTDD      PRESENCE mandatory }
}

DL-DPCH-InformationAddListIE-RL-ReconfReadyTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod,
    repetitionLength                RepetitionLength,
    tDD-DPCHOffset                  TDD-DPCHOffset,
    dL-Timeslot-Information         DL-Timeslot-Information,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-InformationAddItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-InformationAddItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-InformationModifyList-RL-ReconfReadyTDD ::= ProtocolIE-Single-Container {{DL-DPCH-
InformationModifyListIEs-RL-ReconfReadyTDD}}

DL-DPCH-InformationModifyListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD   CRITICALITY ignore   TYPE DL-DPCH-
InformationModifyListIE-RL-ReconfReadyTDD       PRESENCE mandatory }
}

DL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod            OPTIONAL,
    repetitionLength                RepetitionLength            OPTIONAL,
```

```
    tDD-DPCHOffset                  TDD-DPCHOffset              OPTIONAL,
    dL-Timeslot-InformationModifyList-RL-ReconfReadyTDD         DL-Timeslot-InformationModifyList-
RL-ReconfReadyTDD           OPTIONAL,
    --For 3.84Mcps TDD only
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-InformationModifyItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DL-Timeslot-LCR-InformationModifyList-RL-ReconfReadyTDD   CRITICALITY ignore EXTENSION
DL-TimeslotLCR-InformationModifyList-RL-ReconfReadyTDD      PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}

DL-TimeslotLCR-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfTsLCR)) OF DL-
TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD

DL-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    midambleShiftLCR                MidambleShiftLCR            OPTIONAL,
    tFCI-Presence                   TFCI-Presence           OPTIONAL,
    tDD-dL-Code-LCR-Information     TDD-DL-Code-LCR-InformationModifyList-RL-ReconfReadyTDD
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-TimeslotLCR-
InformationModifyItem-RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

TDD-DL-Code-LCR-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfDPCHsLCR)) OF
TDD-DL-Code-LCR-InformationModifyItem-RL-ReconfReadyTDD

TDD-DL-Code-LCR-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
    dPCH-ID                         DPCH-ID,
    tDD-ChannelisationCodeLCR       TDD-ChannelisationCodeLCR       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {TDD-DL-Code-LCR-
InformationModifyItem-RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

TDD-DL-Code-LCR-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Maximum-DL-Power-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD   CRITICALITY
ignore  EXTENSION   DL-Power     PRESENCE optional }|
    { ID id-Minimum-DL-Power-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD   CRITICALITY
ignore  EXTENSION   DL-Power     PRESENCE optional },
    ...
}

DL-Timeslot-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfTS)) OF DL-
Timeslot-InformationModifyItem-RL-ReconfReadyTDD

DL-Timeslot-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
    timeSlot                        TimeSlot,
    midambleShiftAndBurstType       MidambleShiftAndBurstType           OPTIONAL,
    tFCI-Presence                   TFCI-Presence           OPTIONAL,
    dL-Code-Information             TDD-DL-Code-InformationModifyList-RL-ReconfReadyTDD
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-Timeslot-InformationModifyItem-
RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-Timeslot-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TDD-DL-Code-InformationModifyList-RL-ReconfReadyTDD::= SEQUENCE ( SIZE (1..maxNrOfDPCHs)) OF TDD-DL-
Code-InformationModifyItem-RL-ReconfReadyTDD

TDD-DL-Code-InformationModifyItem-RL-ReconfReadyTDD ::= SEQUENCE {
    dPCH-ID                         DPCH-ID,
    tDD-ChannelisationCode          TDD-ChannelisationCode      OPTIONAL,
```

```
    iE-Extensions                   ProtocolExtensionContainer { {TDD-DL-Code-InformationModifyItem-
RL-ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

TDD-DL-Code-InformationModifyItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TDD-DL-DPCH-TimeSlotFormatModifyItem-LCR-RL-ReconfReadyTDD   CRITICALITYreject
EXTENSION TDD-DL-DPCH-TimeSlotFormat-LCR   PRESENCE  optional},
    ...
}

DL-DPCH-InformationDeleteList-RL-ReconfReadyTDD ::= ProtocolIE-Single-Container {{DL-DPCH-
InformationDeleteListIEs-RL-ReconfReadyTDD}}

DL-DPCH-InformationDeleteListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD   CRITICALITY ignore   TYPE DL-DPCH-
InformationDeleteListIE-RL-ReconfReadyTDD       PRESENCE mandatory }
}

DL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD ::= SEQUENCE (SIZE (0..maxNrOfDPCHs)) OF DL-DPCH-
InformationDeleteItem-RL-ReconfReadyTDD

DL-DPCH-InformationDeleteItem-RL-ReconfReadyTDD ::= SEQUENCE {
    dPCH-ID                     DPCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-InformationDeleteList-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-InformationDeleteList-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-InformationResponseList-RL-ReconfReadyTDD               ::= ProtocolIE-Single-Container { {DCH-
InformationResponseListIEs-RL-ReconfReadyTDD} }

DCH-InformationResponseListIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DCH-InformationResponse     CRITICALITY ignore  TYPE DCH-InformationResponse
    PRESENCE mandatory  }
}

DSCHToBeAddedOrModified-RL-ReconfReadyTDD           ::= ProtocolIE-Single-Container {
{DSCHToBeAddedOrModifiedIEs-RL-ReconfReadyTDD} }

DSCHToBeAddedOrModifiedIEs-RL-ReconfReadyTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD   CRITICALITY ignore  TYPE
DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD       PRESENCE mandatory  }
}

DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD ::= SEQUENCE (SIZE (0..maxNoOfDSCHs)) OF
DSCHToBeAddedOrModifiedItem-RL-ReconfReadyTDD

DSCHToBeAddedOrModifiedItem-RL-ReconfReadyTDD ::= SEQUENCE {
    dsch-ID                 DSCH-ID,
    transportFormatManagement   TransportFormatManagement,
    dSCH-FlowControlInformation DSCH-FlowControlInformation,
    bindingID               BindingID   OPTIONAL,
    transportLayerAddress   TransportLayerAddress   OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {DSCHToBeAddedOrModifiedItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

DSCHToBeAddedOrModifiedItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCHToBeAddedOrModified-RL-ReconfReadyTDD           ::= ProtocolIE-Single-Container {
{USCHToBeAddedOrModifiedIEs-RL-ReconfReadyTDD} }USCHToBeAddedOrModifiedIEs-RL-ReconfReadyTDD RNSAP-
PROTOCOL-IES ::= {
    { ID id-USCHToBeAddedOrModifiedList-RL-ReconfReadyTDD   CRITICALITY ignore  TYPE
USCHToBeAddedOrModifiedList-RL-ReconfReadyTDD       PRESENCE mandatory  }
}

USCHToBeAddedOrModifiedList-RL-ReconfReadyTDD ::= SEQUENCE (SIZE (0..maxNoOfUSCHs)) OF
USCHToBeAddedOrModifiedItem-RL-ReconfReadyTDD

USCHToBeAddedOrModifiedItem-RL-ReconfReadyTDD ::= SEQUENCE {
```

```
    uSCH-ID                 USCH-ID,
    transportFormatManagement   TransportFormatManagement,
    bindingID               BindingID   OPTIONAL,
    transportLayerAddress   TransportLayerAddress   OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {USCHToBeAddedOrModifiedItem-RL-
ReconfReadyTDD-ExtIEs} } OPTIONAL,
    ...
}

USCHToBeAddedOrModifiedItem-RL-ReconfReadyTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkReconfigurationReadyTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-HSDSCH-RNTI                         CRITICALITY ignore      EXTENSION HSDSCH-RNTI
                        PRESENCE optional }|
    { ID id-DSCH-RNTI                           CRITICALITY ignore      EXTENSION DSCH-RNTI
                        PRESENCE optional }|
    { ID id-HSDSCH-TDD-Information-Response     CRITICALITY ignore      EXTENSION HSDSCH-TDD-
Information-Response        PRESENCE optional }|
    { ID id-MAChs-ResetIndicator                CRITICALITY ignore      EXTENSION MAChs-
ResetIndicator                      PRESENCE optional }|
    { ID id-Multiple-RL-InformationResponse-RL-ReconfReadyTDD   CRITICALITY ignore      EXTENSION
    Multiple-RL-InformationResponse-RL-ReconfReadyTDD       PRESENCE    optional},
-- This is for RL repetitions 2 and on in RL list.
    ...
}

Multiple-RL-InformationResponse-RL-ReconfReadyTDD ::= SEQUENCE (SIZE (1..maxNrOfRLs-1)) OF RL-
InformationResponse-RL-ReconfReadyTDD


-- **************************************************************
--
-- RADIO LINK RECONFIGURATION COMMIT
--
-- **************************************************************

RadioLinkReconfigurationCommit ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationCommit-IEs}},
    protocolExtensions            ProtocolExtensionContainer {{RadioLinkReconfigurationCommit-
Extensions}}                OPTIONAL,
    ...
}

RadioLinkReconfigurationCommit-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-CFN                 CRITICALITY ignore  TYPE CFN                    PRESENCE mandatory
    }|
    { ID id-Active-Pattern-Sequence-Information     CRITICALITY ignore  TYPE Active-Pattern-
Sequence-Information         PRESENCE optional  },--FDD only
    ...
}

RadioLinkReconfigurationCommit-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION FAILURE
--
-- **************************************************************

RadioLinkReconfigurationFailure ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationFailure-IEs}},
    protocolExtensions            ProtocolExtensionContainer {{RadioLinkReconfigurationFailure-
Extensions}}                OPTIONAL,
    ...
}

RadioLinkReconfigurationFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-CauseLevel-RL-ReconfFailure     CRITICALITY ignore  TYPE CauseLevel-RL-ReconfFailure
    PRESENCE mandatory  } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}
```

```
CauseLevel-RL-ReconfFailure ::= CHOICE {
    generalCause        GeneralCauseList-RL-ReconfFailure,
    rLSpecificCause     RLSpecificCauseList-RL-ReconfFailure,
    ...
}

GeneralCauseList-RL-ReconfFailure ::= SEQUENCE {
    cause                                   Cause,
    iE-Extensions                           ProtocolExtensionContainer { { GeneralCauseItem-RL-
ReconfFailure-ExtIEs} }         OPTIONAL,
    ...
 }

GeneralCauseItem-RL-ReconfFailure-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RLSpecificCauseList-RL-ReconfFailure ::= SEQUENCE {
    rL-ReconfigurationFailureList-RL-ReconfFailure      RL-ReconfigurationFailureList-RL-
ReconfFailure       OPTIONAL,
    iE-Extensions                                       ProtocolExtensionContainer { {
RLSpecificCauseItem-RL-ReconfFailure-ExtIEs} }          OPTIONAL,
    ...
 }

RLSpecificCauseItem-RL-ReconfFailure-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-ReconfigurationFailureList-RL-ReconfFailure ::= SEQUENCE (SIZE (0..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-ReconfigurationFailure-RL-ReconfFailure-IEs} }

RL-ReconfigurationFailure-RL-ReconfFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-ReconfigurationFailure-RL-ReconfFail CRITICALITY ignore  TYPE RL-
ReconfigurationFailure-RL-ReconfFail    PRESENCE mandatory  }
}

RL-ReconfigurationFailure-RL-ReconfFail ::= SEQUENCE {
    rL-ID                       RL-ID,
    cause                       Cause,
    iE-Extensions                   ProtocolExtensionContainer { {RL-ReconfigurationFailure-RL-
ReconfFailure-ExtIEs} } OPTIONAL,
    ...
}

RL-ReconfigurationFailure-RL-ReconfFailure-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkReconfigurationFailure-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION CANCEL
--
-- **************************************************************

RadioLinkReconfigurationCancel ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationCancel-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationCancel-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationCancel-IEs RNSAP-PROTOCOL-IES ::= {
    ...
}

RadioLinkReconfigurationCancel-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION REQUEST FDD
--
```

```
-- **************************************************************

RadioLinkReconfigurationRequestFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationRequestFDD-
IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationRequestFDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationRequestFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-AllowedQueuingTime          CRITICALITY reject  TYPE AllowedQueuingTime
    PRESENCE optional   } |
    { ID id-UL-DPCH-Information-RL-ReconfRqstFDD            CRITICALITY reject  TYPE UL-DPCH-
Information-RL-ReconfRqstFDD    PRESENCE optional   } |
    { ID id-DL-DPCH-Information-RL-ReconfRqstFDD            CRITICALITY reject  TYPE DL-DPCH-
Information-RL-ReconfRqstFDD    PRESENCE optional   } |
    { ID id-FDD-DCHs-to-Modify      CRITICALITY reject  TYPE FDD-DCHs-to-Modify     PRESENCE
optional    } |
    { ID id-DCHs-to-Add-FDD     CRITICALITY reject  TYPE DCH-FDD-Information        PRESENCE
optional    } |
    { ID id-DCH-DeleteList-RL-ReconfRqstFDD     CRITICALITY reject  TYPE DCH-DeleteList-RL-
ReconfRqstFDD       PRESENCE optional   }|
    { ID id-Transmission-Gap-Pattern-Sequence-Information   CRITICALITY reject  TYPE Transmission-
Gap-Pattern-Sequence-Information PRESENCE optional },
    ...
}

UL-DPCH-Information-RL-ReconfRqstFDD ::= SEQUENCE {
    tFCS                            TFCS    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-Information-RL-
ReconfRqstFDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-Information-RL-ReconfRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-Information-RL-ReconfRqstFDD ::= SEQUENCE {
    tFCS                            TFCS    OPTIONAL,
    tFCI-SignallingMode             TFCI-SignallingMode OPTIONAL,
    limitedPowerIncrease            LimitedPowerIncrease    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-Information-RL-
ReconfRqstFDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-Information-RL-ReconfRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-DeleteList-RL-ReconfRqstFDD             ::= SEQUENCE (SIZE (0..maxNrOfDCHs)) OF DCH-DeleteItem-
RL-ReconfRqstFDD

DCH-DeleteItem-RL-ReconfRqstFDD ::= SEQUENCE {
    dCH-ID                          DCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {DCH-DeleteItem-RL-ReconfRqstFDD-
ExtIEs} } OPTIONAL,
    ...
}

DCH-DeleteItem-RL-ReconfRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkReconfigurationRequestFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-RL-ReconfigurationRequestFDD-RL-InformationList CRITICALITY ignore  EXTENSION RL-
ReconfigurationRequestFDD-RL-InformationList        PRESENCE    optional}|
    { ID id-DL-ReferencePowerInformation                    CRITICALITY ignore  EXTENSION DL-
ReferencePowerInformation               PRESENCE optional   }|
    { ID id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation               CRITICALITY ignore
    EXTENSION UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation     PRESENCE optional}|
    { ID id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH    CRITICALITY ignore
    EXTENSION UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH      PRESENCE
optional}|
    { ID id-HSDSCH-FDD-Information                  CRITICALITY reject  EXTENSION HSDSCH-FDD-
Information         PRESENCE optional}|
```

```
    { ID id-HSDSCH-Information-to-Modify-Unsynchronised CRITICALITY reject      EXTENSION HSDSCH-
Information-to-Modify-Unsynchronised    PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Add                 CRITICALITY reject      EXTENSION HSDSCH-
MACdFlows-Information           PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Delete              CRITICALITY reject      EXTENSION HSDSCH-
MACdFlows-to-Delete         PRESENCE optional}|
    { ID id-HSPDSCH-RL-ID                           CRITICALITY reject      EXTENSION RL-ID
                            PRESENCE optional},
    ...
}

RL-ReconfigurationRequestFDD-RL-InformationList ::= SEQUENCE (SIZE (0..maxNrOfRLs)) OF ProtocolIE-
Single-Container {
    {RL-ReconfigurationRequestFDD-RL-Information-ListItem} }

RL-ReconfigurationRequestFDD-RL-Information-ListItem RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-ReconfigurationRequestFDD-RL-Information-IEs CRITICALITY ignore  TYPE RL-
ReconfigurationRequestFDD-RL-Information-IEs    PRESENCE optional   }
}

RL-ReconfigurationRequestFDD-RL-Information-IEs ::= SEQUENCE {
    rL-ID                   RL-ID,
    rL-Specific-DCH-Info    RL-Specific-DCH-Info OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { RL-ReconfigurationRequestFDD-RL-
Information-ExtIEs} } OPTIONAL,
    ...
}

RL-ReconfigurationRequestFDD-RL-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION REQUEST TDD
--
-- **************************************************************

RadioLinkReconfigurationRequestTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationRequestTDD-
IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationRequestTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationRequestTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-AllowedQueuingTime          CRITICALITY reject  TYPE AllowedQueuingTime
    PRESENCE optional   } |
    { ID id-UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD    CRITICALITY notify  TYPE UL-CCTrCH-
InformationModifyList-RL-ReconfRqstTDD  PRESENCE optional   } |
    { ID id-UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD    CRITICALITY notify  TYPE UL-CCTrCH-
InformationDeleteList-RL-ReconfRqstTDD  PRESENCE optional   } |
    { ID id-DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationModifyList-RL-ReconfRqstTDD  PRESENCE optional   } |
    { ID id-DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationDeleteList-RL-ReconfRqstTDD  PRESENCE optional   } |
    { ID id-TDD-DCHs-to-Modify      CRITICALITY reject  TYPE TDD-DCHs-to-Modify     PRESENCE
optional    } |
    { ID id-DCHs-to-Add-TDD     CRITICALITY reject  TYPE DCH-TDD-Information        PRESENCE
optional    } |
    { ID id-DCH-DeleteList-RL-ReconfRqstTDD     CRITICALITY reject  TYPE DCH-DeleteList-RL-
ReconfRqstTDD       PRESENCE optional   },
    ...
}

UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD-IEs} }

UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD    CRITICALITY notify  TYPE UL-CCTrCH-
InformationModifyItem-RL-ReconfRqstTDD  PRESENCE mandatory  }
}

UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    tFCS                        TFCS        OPTIONAL,
```

```
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-InformationModifyItem-
RL-ReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
   { ID id-UL-SIRTarget     CRITICALITY reject     EXTENSION      UL-SIR     PRESENCE   optional
},
    -- Applicable to 1.28Mcps TDD only
    ...
}

UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD-IEs} }

UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD    CRITICALITY notify  TYPE UL-CCTrCH-
InformationDeleteItem-RL-ReconfRqstTDD  PRESENCE mandatory  }
}

UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-InformationDeleteItem-
RL-ReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD-IEs} }

DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationModifyItem-RL-ReconfRqstTDD  PRESENCE mandatory  }
}

DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    tFCS                        TFCS        OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationModifyItem-
RL-ReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD        ::= SEQUENCE (SIZE (0..maxNrOfCCTrCHs)) OF
ProtocolIE-Single-Container { {DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD-IEs} }

DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD    CRITICALITY notify  TYPE DL-CCTrCH-
InformationDeleteItem-RL-ReconfRqstTDD  PRESENCE mandatory  }
}

DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD ::= SEQUENCE {
    cCTrCH-ID                   CCTrCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationDeleteItem-
RL-ReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-DeleteList-RL-ReconfRqstTDD             ::= SEQUENCE (SIZE(0..maxNrOfDCHs)) OF DCH-DeleteItem-
RL-ReconfRqstTDD

DCH-DeleteItem-RL-ReconfRqstTDD ::= SEQUENCE {
    dCH-ID                      DCH-ID,
    iE-Extensions                   ProtocolExtensionContainer { {DCH-DeleteItem-RL-ReconfRqstTDD-
ExtIEs} } OPTIONAL,
    ...
```

```
}

DCH-DeleteItem-RL-ReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkReconfigurationRequestTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
  { ID id-RL-ReconfigurationRequestTDD-RL-Information    CRITICALITY ignore      EXTENSION
    Multiple-RL-ReconfigurationRequestTDD-RL-Information        PRESENCE    optional}|
    { ID id-HSDSCH-TDD-Information              CRITICALITY reject      EXTENSION HSDSCH-TDD-
Information     PRESENCE optional}|
    { ID id-HSDSCH-Information-to-Modify-Unsynchronised CRITICALITY reject      EXTENSION HSDSCH-
Information-to-Modify-Unsynchronised    PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Add             CRITICALITY reject      EXTENSION HSDSCH-MACdFlows-
Information         PRESENCE optional}|
    { ID id-HSDSCH-MACdFlows-to-Delete          CRITICALITY reject      EXTENSION HSDSCH-MACdFlows-
to-Delete       PRESENCE optional}|
    { ID id-HSPDSCH-RL-ID                       CRITICALITY reject      EXTENSION RL-ID
                        PRESENCE optional},
    ...
}

Multiple-RL-ReconfigurationRequestTDD-RL-Information ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF RL-
ReconfigurationRequestTDD-RL-Information

RL-ReconfigurationRequestTDD-RL-Information ::= SEQUENCE {
    rL-ID                   RL-ID,
    rL-Specific-DCH-Info    RL-Specific-DCH-Info OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { RL-ReconfigurationRequestTDD-RL-
Information-ExtIEs} } OPTIONAL,
    ...
}

RL-ReconfigurationRequestTDD-RL-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID    id-UL-Synchronisation-Parameters-LCR            CRITICALITY ignore      EXTENSION   UL-
Synchronisation-Parameters-LCR      PRESENCE    optional    },  -- Mandatory for 1.28Mcps TDD, Not
Applicable to 3.84Mcps TDD
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION RESPONSE FDD
--
-- **************************************************************

RadioLinkReconfigurationResponseFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationResponseFDD-
IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkReconfigurationResponseFDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationResponseFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponseList-RL-ReconfRspFDD      CRITICALITY ignore  TYPE RL-
InformationResponseList-RL-ReconfRspFDD         PRESENCE optional   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RL-InformationResponseList-RL-ReconfRspFDD      ::= SEQUENCE (SIZE (0..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-InformationResponse-RL-ReconfRspFDD-IEs} }

RL-InformationResponse-RL-ReconfRspFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponseItem-RL-ReconfRspFDD      CRITICALITY ignore  TYPE RL-
InformationResponseItem-RL-ReconfRspFDD     PRESENCE mandatory  }
}

RL-InformationResponseItem-RL-ReconfRspFDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    max-UL-SIR                      UL-SIR          OPTIONAL,
    min-UL-SIR                      UL-SIR          OPTIONAL,
    maximumDLTxPower                DL-Power        OPTIONAL,
    minimumDLTxPower                DL-Power        OPTIONAL,
    secondary-CCPCH-Info            Secondary-CCPCH-Info        OPTIONAL,
    dCHsInformationResponseList     DCH-InformationResponseList-RL-ReconfRspFDD OPTIONAL,
```

```
    dL-CodeInformationList-RL-ReconfResp    DL-CodeInformationList-RL-ReconfRspFDD  OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { {RL-InformationResponseItem-RL-
ReconfRspFDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponseItem-RL-ReconfRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DL-PowerBalancing-UpdatedIndicator  CRITICALITY ignore      EXTENSION       DL-
PowerBalancing-UpdatedIndicator     PRESENCE optional},
    ...
}

DCH-InformationResponseList-RL-ReconfRspFDD             ::= ProtocolIE-Single-Container { {DCH-
InformationResponseListIEs-RL-ReconfRspFDD} }

DCH-InformationResponseListIEs-RL-ReconfRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DCH-InformationResponse     CRITICALITY ignore  TYPE DCH-InformationResponse
    PRESENCE mandatory  }
}

DL-CodeInformationList-RL-ReconfRspFDD ::= ProtocolIE-Single-Container {{ DL-CodeInformationListIEs-
RL-ReconfRspFDD }}

DL-CodeInformationListIEs-RL-ReconfRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-FDD-DL-CodeInformation   CRITICALITY ignore  TYPE FDD-DL-CodeInformation     PRESENCE
optional }
}

RadioLinkReconfigurationResponseFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-HSDSCH-RNTI                         CRITICALITY ignore      EXTENSION HSDSCH-RNTI
                    PRESENCE optional }|
    { ID id-HSDSCH-FDD-Information-Response     CRITICALITY ignore      EXTENSION HSDSCH-FDD-
Information-Response        PRESENCE optional }|
    { ID id-MAChs-ResetIndicator                CRITICALITY ignore      EXTENSION MAChs-
ResetIndicator                      PRESENCE optional },
    ...
}

-- **************************************************************
--
-- RADIO LINK RECONFIGURATION RESPONSE TDD
--
-- **************************************************************

RadioLinkReconfigurationResponseTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkReconfigurationResponseTDD-
IEs}},
    protocolExtensions            ProtocolExtensionContainer {{RadioLinkReconfigurationResponseTDD-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkReconfigurationResponseTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationResponse-RL-ReconfRspTDD      CRITICALITY ignore  TYPE RL-
InformationResponse-RL-ReconfRspTDD         PRESENCE optional   } |
    --This RL-InformationResponse-RL-ReconfRspTDD is for the first RL repetition in the list.
    --Repetitions 2 and on are defined in Multiple-RL-InformationResponse-RL-ReconfRspTDD.
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

RL-InformationResponse-RL-ReconfRspTDD ::= SEQUENCE {
    rL-ID                           RL-ID,
    max-UL-SIR                      UL-SIR          OPTIONAL,
    min-UL-SIR                      UL-SIR          OPTIONAL,
    maximumDLTxPower                DL-Power        OPTIONAL,
    minimumDLTxPower                DL-Power        OPTIONAL,
    dCHsInformationResponseList     DCH-InformationResponseList-RL-ReconfRspTDD OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationResponse-RL-
ReconfRspTDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponse-RL-ReconfRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DL-CCTrCH-InformationList-RL-ReconfRspTDD   CRITICALITY ignore  EXTENSION DL-CCTrCH-
InformationList-RL-ReconfRspTDD     PRESENCE optional }|
```

```
    { ID id-UL-TimingAdvanceCtrl-LCR                    CRITICALITY ignore  EXTENSION UL-
TimingAdvanceCtrl-LCR       PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}

DL-CCTrCH-InformationList-RL-ReconfRspTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF DL-CCTrCH-
InformationItem-RL-ReconfRspTDD

DL-CCTrCH-InformationItem-RL-ReconfRspTDD ::= SEQUENCE {
    cCTrCH-ID                                   CCTrCH-ID,
    dl-DPCH-ModifyInformation-LCR               DL-DPCH-InformationModifyList-LCR-RL-ReconfRspTDD
        OPTIONAL,
    --For 1.28Mcps TDD only
    cCTrCH-Maximum-DL-Power                     DL-Power                OPTIONAL,
    --For 3.84Mcps TDD only, this is a DCH type CCTrCH power
    cCTrCH-Minimum-DL-Power                     DL-Power                OPTIONAL,
    --For 3.84Mcps TDD only, this is a DCH type CCTrCH power
    iE-Extensions                               ProtocolExtensionContainer { { DL-CCTrCH-
InformationItem-RL-ReconfRspTDD-ExtIEs} }       OPTIONAL,
    ...
}

DL-CCTrCH-InformationItem-RL-ReconfRspTDD-ExtIEs   RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-InformationModifyList-LCR-RL-ReconfRspTDD  ::= ProtocolIE-Single-Container {{ DL-DPCH-
InformationModifyListIEs-LCR-RL-ReconfRspTDD }}

DL-DPCH-InformationModifyListIEs-LCR-RL-ReconfRspTDD RNSAP-PROTOCOL-IES ::= {
    {ID id-DL-DPCH-InformationModifyItem-LCR-RL-ReconfRspTDD   CRITICALITY ignore    TYPE  DL-DPCH-
InformationModifyItem-LCR-RL-ReconfRspTDD       PRESENCE optional },
    ...
}

DL-DPCH-InformationModifyItem-LCR-RL-ReconfRspTDD  ::= SEQUENCE {
   dL-Timeslot-LCR-InformationModifyList-RL-ReconfRqstTDD       DL-Timeslot-LCR-
   InformationModifyList-RL-ReconfRspTDD        OPTIONAL,
   iE-ExtensionsProtocolExtensionContainer { { DL-DPCH-InformationModifyItem-LCR-RL-ReconfRspTDD-
   ExtIEs} }    OPTIONAL,
    ...
}

DL-DPCH-InformationModifyItem-LCR-RL-ReconfRspTDD-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-Timeslot-LCR-InformationModifyList-RL-ReconfRspTDD ::= SEQUENCE (SIZE (1..maxNrOfDLTsLCR)) OF DL-
Timeslot-LCR-InformationModifyItem-RL-ReconfRspTDD

DL-Timeslot-LCR-InformationModifyItem-RL-ReconfRspTDD    ::= SEQUENCE {
    timeSlotLCR                             TimeSlotLCR,
    maxPowerLCR                             DL-Power    OPTIONAL,
    minPowerLCR                             DL-Power    OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { DL-Timeslot-LCR-
InformationModifyItem-RL-ReconfRspTDD-ExtIEs} }     OPTIONAL,
    ...
}

DL-Timeslot-LCR-InformationModifyItem-RL-ReconfRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-InformationResponseList-RL-ReconfRspTDD             ::= ProtocolIE-Single-Container { {DCH-
InformationResponseListIEs-RL-ReconfRspTDD} }

DCH-InformationResponseListIEs-RL-ReconfRspTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DCH-InformationResponse CRITICALITY ignore  TYPE DCH-InformationResponse    PRESENCE
optional    }
}

RadioLinkReconfigurationResponseTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-HSDSCH-RNTI                         CRITICALITY ignore      EXTENSION HSDSCH-RNTI
                        PRESENCE optional }|
    { ID id-HSDSCH-TDD-Information-Response     CRITICALITY ignore      EXTENSION HSDSCH-TDD-
Information-Response        PRESENCE optional }|
```

```
    { ID id-MAChs-ResetIndicator                CRITICALITY ignore      EXTENSION MAChs-
ResetIndicator                          PRESENCE optional }|
    { ID id-RL-ReconfigurationResponseTDD-RL-Information    CRITICALITY ignore      EXTENSION
    Multiple-RL-InformationResponse-RL-ReconfRspTDD     PRESENCE    optional},
    ...
}

Multiple-RL-InformationResponse-RL-ReconfRspTDD ::= SEQUENCE (SIZE (1..maxNrOfRLs-1)) OF RL-
InformationResponse-RL-ReconfRspTDD
--Includes the 2nd through the max number of radio link information repetitions.

-- **************************************************************
--
-- RADIO LINK FAILURE INDICATION
--
-- **************************************************************

RadioLinkFailureIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkFailureIndication-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkFailureIndication-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkFailureIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-Reporting-Object-RL-FailureInd  CRITICALITY ignore  TYPE Reporting-Object-RL-FailureInd
    PRESENCE mandatory  },
    ...
}

Reporting-Object-RL-FailureInd ::= CHOICE {
    rL                      RL-RL-FailureInd,
    rL-Set                  RL-Set-RL-FailureInd, --FDD only
    ...,
    cCTrCH                  CCTrCH-RL-FailureInd  --TDD only
}

RL-RL-FailureInd            ::= SEQUENCE {
    rL-InformationList-RL-FailureInd        RL-InformationList-RL-FailureInd,
    iE-Extensions                           ProtocolExtensionContainer { { RLItem-RL-FailureInd-
ExtIEs} } OPTIONAL,
    ...
}

RLItem-RL-FailureInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-InformationList-RL-FailureInd            ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-Information-RL-FailureInd-IEs} }

RL-Information-RL-FailureInd-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-RL-FailureInd        CRITICALITY ignore  TYPE RL-Information-RL-
FailureInd      PRESENCE mandatory  }
}

RL-Information-RL-FailureInd ::= SEQUENCE {
    rL-ID                       RL-ID,
    cause                       Cause,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-RL-FailureInd-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-RL-FailureInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-RL-FailureInd            ::= SEQUENCE {
    rL-Set-InformationList-RL-FailureInd    RL-Set-InformationList-RL-FailureInd,
    iE-Extensions                           ProtocolExtensionContainer { { RL-SetItem-RL-FailureInd-
ExtIEs} } OPTIONAL,
    ...
}

RL-SetItem-RL-FailureInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
RL-Set-InformationList-RL-FailureInd            ::= SEQUENCE (SIZE (1..maxNrOfRLSets)) OF
ProtocolIE-Single-Container { {RL-Set-Information-RL-FailureInd-IEs} }

RL-Set-Information-RL-FailureInd-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-Information-RL-FailureInd        CRITICALITY ignore  TYPE RL-Set-Information-RL-
FailureInd      PRESENCE mandatory  }
}

RL-Set-Information-RL-FailureInd ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    cause                           Cause,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-Information-RL-FailureInd-
ExtIEs} } OPTIONAL,
    ...
}

RL-Set-Information-RL-FailureInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkFailureIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CCTrCH-RL-FailureInd ::= SEQUENCE {
    rL-ID                                       RL-ID,
    cCTrCH-InformationList-RL-FailureInd        CCTrCH-InformationList-RL-FailureInd,
    iE-Extensions                           ProtocolExtensionContainer { { CCTrCHItem-RL-FailureInd-
ExtIEs } }      OPTIONAL,
    ...
 }

CCTrCHItem-RL-FailureInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CCTrCH-InformationList-RL-FailureInd ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF ProtocolIE-Single-
Container {{ CCTrCH-InformationItemIE-RL-FailureInd}}

CCTrCH-InformationItemIE-RL-FailureInd RNSAP-PROTOCOL-IES ::= {
    { ID    id-CCTrCH-InformationItem-RL-FailureInd         CRITICALITY     ignore          TYPE
    CCTrCH-InformationItem-RL-FailureInd            PRESENCE    mandatory}
 }

CCTrCH-InformationItem-RL-FailureInd ::= SEQUENCE {
    cCTrCH-ID                                   CCTrCH-ID,
    cause                                       Cause,
    iE-Extensions                               ProtocolExtensionContainer { { CCTrCH-
InformationItem-RL-FailureInd-ExtIEs } }        OPTIONAL,
    ...
 }

CCTrCH-InformationItem-RL-FailureInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK PREEMPTION REQUIRED INDICATION
--
-- **************************************************************

RadioLinkPreemptionRequiredIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkPreemptionRequiredIndication-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{RadioLinkPreemptionRequiredIndication-Extensions}}              OPTIONAL,
    ...
}

RadioLinkPreemptionRequiredIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationList-RL-PreemptRequiredInd    CRITICALITY ignore  TYPE RL-InformationList-
RL-PreemptRequiredInd       PRESENCE optional   },
    ...
}
```

```
RL-InformationList-RL-PreemptRequiredInd            ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF
ProtocolIE-Single-Container { {RL-InformationItemIEs-RL-PreemptRequiredInd} }

RL-InformationItemIEs-RL-PreemptRequiredInd RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationItem-RL-PreemptRequiredInd        CRITICALITY ignore  TYPE RL-
InformationItem-RL-PreemptRequiredInd       PRESENCE mandatory  }
}

RL-InformationItem-RL-PreemptRequiredInd::= SEQUENCE {
    rL-ID                       RL-ID,
    iE-Extensions               ProtocolExtensionContainer { {RL-Information-RL-PreemptRequiredInd-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-RL-PreemptRequiredInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkPreemptionRequiredIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-HSDSCHMacdFlowSpecificInformationList-RL-PreemptRequiredInd  CRITICALITY ignore
    EXTENSION HSDSCHMacdFlowSpecificInformationList-RL-PreemptRequiredInd PRESENCE optional },
    ...
}

HSDSCHMacdFlowSpecificInformationList-RL-PreemptRequiredInd ::= SEQUENCE (SIZE (1..
maxNrOfMACdFlows)) OF ProtocolIE-Single-Container { {HSDSCHMacdFlowSpecificInformationItemIEs-RL-
PreemptRequiredInd} }

HSDSCHMacdFlowSpecificInformationItemIEs-RL-PreemptRequiredInd RNSAP-PROTOCOL-IES ::= {
    { ID id-HSDSCHMacdFlowSpecificInformationItem-RL-PreemptRequiredInd     CRITICALITY ignore  TYPE
HSDSCHMacdFlowSpecificInformationItem-RL-PreemptRequiredInd PRESENCE mandatory  }
}

HSDSCHMacdFlowSpecificInformationItem-RL-PreemptRequiredInd ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                      HSDSCH-MACdFlow-ID,
    iE-Extensions               ProtocolExtensionContainer { { HSDSCHMacdFlowSpecificInformation-RL-
PreemptRequiredInd-ExtIEs} } OPTIONAL,
    ...
}

HSDSCHMacdFlowSpecificInformation-RL-PreemptRequiredInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK RESTORE INDICATION
--
-- **************************************************************

RadioLinkRestoreIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkRestoreIndication-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkRestoreIndication-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkRestoreIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-Reporing-Object-RL-RestoreInd   CRITICALITY ignore  TYPE Reporting-Object-RL-RestoreInd
    PRESENCE mandatory  },
    ...
}

Reporting-Object-RL-RestoreInd ::= CHOICE {
    rL                      RL-RL-RestoreInd, --TDD only
    rL-Set                  RL-Set-RL-RestoreInd, --FDD only
    ...,
    cCTrCH                  CCTrCH-RL-RestoreInd  --TDD only
}

RL-RL-RestoreInd ::= SEQUENCE {
    rL-InformationList-RL-RestoreInd        RL-InformationList-RL-RestoreInd,
    iE-Extensions                           ProtocolExtensionContainer { { RLItem-RL-RestoreInd-
ExtIEs} } OPTIONAL,
    ...
}
```

```
RLItem-RL-RestoreInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-InformationList-RL-RestoreInd            ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-Information-RL-RestoreInd-IEs} }

RL-Information-RL-RestoreInd-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-RL-RestoreInd        CRITICALITY ignore  TYPE RL-Information-RL-
RestoreInd      PRESENCE mandatory  }
}

RL-Information-RL-RestoreInd ::= SEQUENCE {
    rL-ID                       RL-ID,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-RL-RestoreInd-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-RL-RestoreInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-RL-RestoreInd ::= SEQUENCE {
    rL-Set-InformationList-RL-RestoreInd    RL-Set-InformationList-RL-RestoreInd,
    iE-Extensions                           ProtocolExtensionContainer { { RL-SetItem-RL-RestoreInd-
ExtIEs} } OPTIONAL,
    ...
}

RL-SetItem-RL-RestoreInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-InformationList-RL-RestoreInd            ::= SEQUENCE (SIZE (1..maxNrOfRLSets)) OF
ProtocolIE-Single-Container { {RL-Set-Information-RL-RestoreInd-IEs} }

RL-Set-Information-RL-RestoreInd-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-Information-RL-RestoreInd        CRITICALITY ignore  TYPE RL-Set-Information-RL-
RestoreInd      PRESENCE mandatory  }
}

RL-Set-Information-RL-RestoreInd ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-Information-RL-RestoreInd-
ExtIEs} } OPTIONAL,
    ...
}

RL-Set-Information-RL-RestoreInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkRestoreIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CCTrCH-RL-RestoreInd ::= SEQUENCE {
    rL-ID                                       RL-ID,
    cCTrCH-InformationList-RL-RestoreInd        CCTrCH-InformationList-RL-RestoreInd,
    iE-Extensions                           ProtocolExtensionContainer { { CCTrCHItem-RL-RestoreInd-
ExtIEs } }      OPTIONAL,
    ...
 }

CCTrCHItem-RL-RestoreInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CCTrCH-InformationList-RL-RestoreInd ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF ProtocolIE-Single-
Container {{ CCTrCH-InformationItemIE-RL-RestoreInd}}

CCTrCH-InformationItemIE-RL-RestoreInd RNSAP-PROTOCOL-IES ::= {
    { ID    id-CCTrCH-InformationItem-RL-RestoreInd         CRITICALITY     ignore          TYPE
    CCTrCH-InformationItem-RL-RestoreInd            PRESENCE    mandatory}
 }

CCTrCH-InformationItem-RL-RestoreInd ::= SEQUENCE {
```

```
    cCTrCH-ID                                       CCTrCH-ID,
    iE-Extensions                                ProtocolExtensionContainer { { CCTrCH-
InformationItem-RL-RestoreInd-ExtIEs } }        OPTIONAL,
    ...
 }

CCTrCH-InformationItem-RL-RestoreInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- DOWNLINK POWER CONTROL REQUEST
--
-- **************************************************************

DL-PowerControlRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DL-PowerControlRequest-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{DL-PowerControlRequest-Extensions}}
OPTIONAL,
    ...
}

DL-PowerControlRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-PowerAdjustmentType         CRITICALITY ignore  TYPE PowerAdjustmentType
    PRESENCE mandatory} |
   { ID id-DLReferencePower         CRITICALITY ignore  TYPE DL-Power
    PRESENCE conditional} |
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common'
    { ID id-InnerLoopDLPCStatus         CRITICALITY ignore  TYPE InnerLoopDLPCStatus
    PRESENCE    optional } |
    { ID id-DLReferencePowerList-DL-PC-Rqst     CRITICALITY ignore  TYPE DL-
ReferencePowerInformationList-DL-PC-Rqst    PRESENCE conditional} |
    -- This IE shall be present if Power Adjustment Type IE equals to 'Individual'
    { ID id-MaxAdjustmentStep           CRITICALITY ignore  TYPE MaxAdjustmentStep          PRESENCE
conditional } |
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    { ID id-AdjustmentPeriod            CRITICALITY ignore  TYPE AdjustmentPeriod           PRESENCE
conditional }|
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    { ID id-AdjustmentRatio         CRITICALITY ignore  TYPE ScaledAdjustmentRatio          PRESENCE
conditional },
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    ...
}

DL-ReferencePowerInformationList-DL-PC-Rqst     ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {DL-ReferencePowerInformation-DL-PC-Rqst-IEs} }

DL-ReferencePowerInformation-DL-PC-Rqst-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-ReferencePowerInformation-DL-PC-Rqst CRITICALITY ignore  TYPE DL-
ReferencePowerInformation-DL-PC-Rqst    PRESENCE mandatory  }
}

DL-ReferencePowerInformation-DL-PC-Rqst ::= SEQUENCE {
    rL-ID                       RL-ID,
    dl-Reference-Power                  DL-Power,
    iE-Extensions                   ProtocolExtensionContainer { {DL-ReferencePowerInformation-DL-
PC-Rqst-ExtIEs} } OPTIONAL,
    ...
}

DL-ReferencePowerInformation-DL-PC-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PowerControlRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- DOWNLINK POWER TIMESLOT CONTROL REQUEST TDD
--
-- **************************************************************

DL-PowerTimeslotControlRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DL-PowerTimeslotControlRequest-IEs}},
```

```
    protocolExtensions           ProtocolExtensionContainer {{DL-PowerTimeslotControlRequest-
Extensions}}               OPTIONAL,
    ...
}

DL-PowerTimeslotControlRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-timeSlot-ISCP   CRITICALITY ignore  TYPE DL-TimeSlot-ISCP-Info  PRESENCE optional},
    --Mandatory for 3.84Mcps TDD only
    ...
}

DL-PowerTimeslotControlRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-timeSlot-ISCP-LCR-List-DL-PC-Rqst-TDD   CRITICALITY ignore  EXTENSION    DL-TimeSlot-
ISCP-LCR-Information        PRESENCE optional}|
    --Mandatory for 1.28Mcps TDD only
    { ID id-PrimCCPCH-RSCP-DL-PC-RqstTDD            CRITICALITY ignore      EXTENSION PrimaryCCPCH-
RSCP                PRESENCE optional }|
    { ID id-PrimaryCCPCH-RSCP-Delta     CRITICALITY ignore      EXTENSION   PrimaryCCPCH-RSCP-Delta
    PRESENCE    optional    },
    ...
}

-- **************************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION REQUEST FDD
--
-- **************************************************************

PhysicalChannelReconfigurationRequestFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container
{{PhysicalChannelReconfigurationRequestFDD-IEs}},
    protocolExtensions          ProtocolExtensionContainer
{{PhysicalChannelReconfigurationRequestFDD-Extensions}}               OPTIONAL,
    ...
}

PhysicalChannelReconfigurationRequestFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-PhyChReconfRqstFDD   CRITICALITY reject  TYPE RL-Information-
PhyChReconfRqstFDD      PRESENCE mandatory  },
    ...
}

RL-Information-PhyChReconfRqstFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    dl-CodeInformation              DL-CodeInformationList-PhyChReconfRqstFDD,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-PhyChReconfRqstFDD-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-PhyChReconfRqstFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CodeInformationList-PhyChReconfRqstFDD       ::= ProtocolIE-Single-Container { {DL-
CodeInformationListIEs-PhyChReconfRqstFDD} }

DL-CodeInformationListIEs-PhyChReconfRqstFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-FDD-DL-CodeInformation  CRITICALITY notify  TYPE FDD-DL-CodeInformation PRESENCE
mandatory   }
}

PhysicalChannelReconfigurationRequestFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION REQUEST TDD
--
-- **************************************************************

PhysicalChannelReconfigurationRequestTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container
{{PhysicalChannelReconfigurationRequestTDD-IEs}},
    protocolExtensions          ProtocolExtensionContainer
{{PhysicalChannelReconfigurationRequestTDD-Extensions}}               OPTIONAL,
    ...
```

```
}

PhysicalChannelReconfigurationRequestTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Information-PhyChReconfRqstTDD   CRITICALITY reject  TYPE RL-Information-
PhyChReconfRqstTDD      PRESENCE mandatory  },
    ...
}

RL-Information-PhyChReconfRqstTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    ul-CCTrCH-Information              UL-CCTrCH-InformationList-PhyChReconfRqstTDD    OPTIONAL,
    dl-CCTrCH-Information              DL-CCTrCH-InformationList-PhyChReconfRqstTDD    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Information-PhyChReconfRqstTDD-
ExtIEs} } OPTIONAL,
    ...
}

RL-Information-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-HSPDSCH-Timeslot-InformationList-PhyChReconfRqstTDD     CRITICALITY reject  EXTENSION
HSPDSCH-Timeslot-InformationList-PhyChReconfRqstTDD     PRESENCE optional } |
    --For 3.84Mcps TDD only
    { ID id-HSPDSCH-Timeslot-InformationListLCR-PhyChReconfRqstTDD  CRITICALITY reject  EXTENSION
HSPDSCH-Timeslot-InformationListLCR-PhyChReconfRqstTDD  PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}

UL-CCTrCH-InformationList-PhyChReconfRqstTDD        ::= ProtocolIE-Single-Container { {UL-CCTrCH-
InformationListIEs-PhyChReconfRqstTDD} }

UL-CCTrCH-InformationListIEs-PhyChReconfRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-CCTrCH-InformationListIE-PhyChReconfRqstTDD      CRITICALITY reject  TYPE UL-CCTrCH-
InformationListIE-PhyChReconfRqstTDD        PRESENCE mandatory  }
}

UL-CCTrCH-InformationListIE-PhyChReconfRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF UL-CCTrCH-
InformationItem-PhyChReconfRqstTDD

UL-CCTrCH-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    cCTrCH-ID                       CCTrCH-ID,
    ul-DPCH-Information             UL-DPCH-InformationList-PhyChReconfRqstTDD,
    iE-Extensions                   ProtocolExtensionContainer { {UL-CCTrCH-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCH-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-DPCH-InformationList-PhyChReconfRqstTDD ::= ProtocolIE-Single-Container {{UL-DPCH-
InformationListIEs-PhyChReconfRqstTDD}}

UL-DPCH-InformationListIEs-PhyChReconfRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-UL-DPCH-InformationItem-PhyChReconfRqstTDD  CRITICALITY notify  TYPE UL-DPCH-
InformationItem-PhyChReconfRqstTDD      PRESENCE mandatory }
}

UL-DPCH-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod        OPTIONAL,
    repetitionLength                RepetitionLength        OPTIONAL,
    tDD-DPCHOffset                  TDD-DPCHOffset          OPTIONAL,
    uL-Timeslot-InformationList-PhyChReconfRqstTDD          UL-Timeslot-InformationList-
PhyChReconfRqstTDD      OPTIONAL,
    --For 3.84Mcps TDD only
    iE-Extensions                   ProtocolExtensionContainer { {UL-DPCH-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-DPCH-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-UL-Timeslot-LCR-InformationList-PhyChReconfRqstTDD  CRITICALITY reject      EXTENSION
UL-TimeslotLCR-InformationList-PhyChReconfRqstTDD       PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}
```

```
UL-TimeslotLCR-InformationList-PhyChReconfRqstTDD::= SEQUENCE ( SIZE (1..maxNrOfTsLCR)) OF UL-
TimeslotLCR-InformationItem-PhyChReconfRqstTDD

UL-TimeslotLCR-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    midambleShiftLCR                MidambleShiftLCR        OPTIONAL,
    tFCI-Presence                   TFCI-Presence       OPTIONAL,
    uL-Code-LCR-Information         TDD-UL-Code-LCR-Information     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-TimeslotLCR-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-TimeslotLCR-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-Timeslot-InformationList-PhyChReconfRqstTDD::= SEQUENCE ( SIZE (1..maxNrOfTS)) OF UL-Timeslot-
InformationItem-PhyChReconfRqstTDD

UL-Timeslot-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    timeSlot                        TimeSlot,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType       OPTIONAL,
    tFCI-Presence                   TFCI-Presence       OPTIONAL,
    uL-Code-Information         TDD-UL-Code-Information     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {UL-Timeslot-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-Timeslot-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-CCTrCH-InformationList-PhyChReconfRqstTDD        ::= ProtocolIE-Single-Container { {DL-CCTrCH-
InformationListIEs-PhyChReconfRqstTDD} }

DL-CCTrCH-InformationListIEs-PhyChReconfRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-CCTrCH-InformationListIE-PhyChReconfRqstTDD      CRITICALITY reject  TYPE DL-CCTrCH-
InformationListIE-PhyChReconfRqstTDD        PRESENCE mandatory  }
}

DL-CCTrCH-InformationListIE-PhyChReconfRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfCCTrCHs)) OF DL-CCTrCH-
InformationItem-PhyChReconfRqstTDD

DL-CCTrCH-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    cCTrCH-ID                       CCTrCH-ID,
    dl-DPCH-Information             DL-DPCH-InformationList-PhyChReconfRqstTDD,
    iE-Extensions                   ProtocolExtensionContainer { {DL-CCTrCH-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-CCTrCH-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-DPCH-InformationList-PhyChReconfRqstTDD ::= ProtocolIE-Single-Container {{DL-DPCH-
InformationListIEs-PhyChReconfRqstTDD}}

DL-DPCH-InformationListIEs-PhyChReconfRqstTDD RNSAP-PROTOCOL-IES ::= {
    { ID id-DL-DPCH-InformationItem-PhyChReconfRqstTDD  CRITICALITY notify  TYPE DL-DPCH-
InformationItem-PhyChReconfRqstTDD      PRESENCE mandatory }
}

DL-DPCH-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    repetitionPeriod                RepetitionPeriod        OPTIONAL,
    repetitionLength                RepetitionLength        OPTIONAL,
    tDD-DPCHOffset                  TDD-DPCHOffset          OPTIONAL,
    dL-Timeslot-InformationList-PhyChReconfRqstTDD          DL-Timeslot-InformationList-
PhyChReconfRqstTDD      OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-DPCH-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-DPCH-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
```

```
    { ID id-DL-Timeslot-LCR-InformationList-PhyChReconfRqstTDD  CRITICALITY reject     EXTENSION
DL-TimeslotLCR-InformationList-PhyChReconfRqstTDD       PRESENCE optional },
    --For 1.28Mcps TDD only
    ...
}

DL-TimeslotLCR-InformationList-PhyChReconfRqstTDD::= SEQUENCE ( SIZE (1..maxNrOfTsLCR)) OF DL-
TimeslotLCR-InformationItem-PhyChReconfRqstTDD

DL-TimeslotLCR-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    midambleShiftLCR                MidambleShiftLCR        OPTIONAL,
    tFCI-Presence                   TFCI-Presence       OPTIONAL,
    dL-Code-LCR-Information         TDD-DL-Code-LCR-Information     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-TimeslotLCR-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-TimeslotLCR-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-Timeslot-InformationList-PhyChReconfRqstTDD::= SEQUENCE ( SIZE (1..maxNrOfTS)) OF DL-Timeslot-
InformationItem-PhyChReconfRqstTDD

DL-Timeslot-InformationItem-PhyChReconfRqstTDD ::= SEQUENCE {
    timeSlot                        TimeSlot,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType       OPTIONAL,
    tFCI-Presence                   TFCI-Presence       OPTIONAL,
    dL-Code-Information         TDD-DL-Code-Information     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DL-Timeslot-InformationItem-
PhyChReconfRqstTDD-ExtIEs} } OPTIONAL,
    ...
}

DL-Timeslot-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSPDSCH-Timeslot-InformationList-PhyChReconfRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfDLTs)) OF HSPDSCH-
Timeslot-InformationItem-PhyChReconfRqstTDD

HSPDSCH-Timeslot-InformationItem-PhyChReconfRqstTDD::= SEQUENCE {
    timeslot                                    TimeSlot,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType,
    iE-Extensions                               ProtocolExtensionContainer { { HSPDSCH-Timeslot-
InformationItem-PhyChReconfRqstTDD-ExtIEs } }           OPTIONAL,
    ...
}

HSPDSCH-Timeslot-InformationItem-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSPDSCH-Timeslot-InformationListLCR-PhyChReconfRqstTDD::= SEQUENCE (SIZE (1..maxNrOfDLTsLCR)) OF
HSPDSCH-Timeslot-InformationItemLCR-PhyChReconfRqstTDD

HSPDSCH-Timeslot-InformationItemLCR-PhyChReconfRqstTDD::= SEQUENCE {
    timeslotLCR                                 TimeSlotLCR,
    midambleShiftLCR                            MidambleShiftLCR,
    iE-Extensions                               ProtocolExtensionContainer { { HSPDSCH-Timeslot-
InformationItemLCR-PhyChReconfRqstTDD-ExtIEs } }            OPTIONAL,
    ...
}

HSPDSCH-Timeslot-InformationItemLCR-PhyChReconfRqstTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PhysicalChannelReconfigurationRequestTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION COMMAND
--
```

```
-- **************************************************************

PhysicalChannelReconfigurationCommand ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{PhysicalChannelReconfigurationCommand-
IEs}},
    protocolExtensions           ProtocolExtensionContainer
{{PhysicalChannelReconfigurationCommand-Extensions}}               OPTIONAL,
    ...
}

PhysicalChannelReconfigurationCommand-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-CFN                 CRITICALITY ignore  TYPE CFN                    PRESENCE mandatory
    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

PhysicalChannelReconfigurationCommand-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************************

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{PhysicalChannelReconfigurationFailure-
IEs}},
    protocolExtensions           ProtocolExtensionContainer
{{PhysicalChannelReconfigurationFailure-Extensions}}               OPTIONAL,
    ...
}

PhysicalChannelReconfigurationFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-Cause                   CRITICALITY ignore  TYPE Cause                  PRESENCE
mandatory   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

PhysicalChannelReconfigurationFailure-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK CONGESTION INDICATION
--
-- **************************************************************

RadioLinkCongestionIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RadioLinkCongestionIndication-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RadioLinkCongestionIndication-
Extensions}}               OPTIONAL,
    ...
}

RadioLinkCongestionIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-CongestionCause                     CRITICALITY ignore  TYPE CongestionCause
          PRESENCE optional }|
    { ID id-RL-InformationList-RL-CongestInd    CRITICALITY ignore  TYPE RL-InformationList-RL-
CongestInd      PRESENCE mandatory },
    ...
}

RL-InformationList-RL-CongestInd           ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-InformationItemIEs-RL-CongestInd} }

RL-InformationItemIEs-RL-CongestInd RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationItem-RL-CongestInd        CRITICALITY ignore  TYPE RL-InformationItem-RL-
CongestInd      PRESENCE mandatory  }
}

RL-InformationItem-RL-CongestInd ::= SEQUENCE {
```

```
    rL-ID                           RL-ID,
    dCH-Rate-Information        DCH-Rate-Information-RL-CongestInd,
    iE-Extensions               ProtocolExtensionContainer { {RL-Information-RL-CongestInd-ExtIEs} }
OPTIONAL,
    ...
}

DCH-Rate-Information-RL-CongestInd ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF ProtocolIE-Single-
Container { {DCH-Rate-InformationItemIEs-RL-CongestInd} }

DCH-Rate-InformationItemIEs-RL-CongestInd RNSAP-PROTOCOL-IES ::= {
    { ID id-DCH-Rate-InformationItem-RL-CongestInd      CRITICALITY ignore  TYPE DCH-Rate-
InformationItem-RL-CongestInd       PRESENCE mandatory  }
}

DCH-Rate-InformationItem-RL-CongestInd ::= SEQUENCE {
    dCH-ID                      DCH-ID,
    allowed-Rate-Information    Allowed-Rate-Information OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {DCH-Rate-InformationItem-RL-
CongestInd-ExtIEs} } OPTIONAL,
    ...
}

DCH-Rate-InformationItem-RL-CongestInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Information-RL-CongestInd-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkCongestionIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- UPLINK SIGNALLING TRANSFER INDICATION FDD
--
-- **************************************************************

UplinkSignallingTransferIndicationFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UplinkSignallingTransferIndicationFDD-
IEs}},
    protocolExtensions           ProtocolExtensionContainer
{{UplinkSignallingTransferIndicationFDD-Extensions}}              OPTIONAL,
    ...
}

UplinkSignallingTransferIndicationFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UC-ID                   CRITICALITY ignore  TYPE UC-ID                  PRESENCE
mandatory   } |
    { ID id-SAI                CRITICALITY ignore  TYPE SAI                    PRESENCE mandatory
    } |
    { ID id-GA-Cell            CRITICALITY ignore  TYPE GA-Cell                PRESENCE optional
    } |
    { ID id-C-RNTI                  CRITICALITY ignore  TYPE C-RNTI                 PRESENCE
mandatory   } |
    { ID id-S-RNTI                  CRITICALITY ignore  TYPE S-RNTI                 PRESENCE
mandatory   } |
    { ID id-D-RNTI                  CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
optional    } |
    { ID id-PropagationDelay        CRITICALITY ignore  TYPE PropagationDelay       PRESENCE
mandatory   } |
    { ID id-STTD-SupportIndicator              CRITICALITY ignore  TYPE STTD-SupportIndicator
    PRESENCE mandatory } |
    { ID id-ClosedLoopMode1-SupportIndicator    CRITICALITY ignore  TYPE ClosedLoopMode1-
SupportIndicator    PRESENCE mandatory } |
    { ID id-ClosedLoopMode2-SupportIndicator    CRITICALITY ignore  TYPE ClosedLoopMode2-
SupportIndicator    PRESENCE mandatory } |
    { ID id-L3-Information             CRITICALITY ignore  TYPE L3-Information             PRESENCE
mandatory   } |
    { ID id-CN-PS-DomainIdentifier          CRITICALITY ignore  TYPE CN-PS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-CN-CS-DomainIdentifier          CRITICALITY ignore  TYPE CN-CS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-URA-Information                 CRITICALITY ignore  TYPE URA-Information
    PRESENCE optional   },
```

```
    ...
}

UplinkSignallingTransferIndicationFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes             CRITICALITY ignore  EXTENSION GA-
CellAdditionalShapes                PRESENCE optional }|
    { ID id-DPC-Mode-Change-SupportIndicator    CRITICALITY ignore  EXTENSION DPC-Mode-Change-
SupportIndicator    PRESENCE optional }|
    { ID id-CommonTransportChannelResourcesInitialisationNotRequired    CRITICALITY ignore
    EXTENSION CommonTransportChannelResourcesInitialisationNotRequired  PRESENCE optional }|
    { ID id-CellCapabilityContainer-FDD         CRITICALITY ignore  EXTENSION
CellCapabilityContainer-FDD         PRESENCE optional }|
    { ID id-SNA-Information                     CRITICALITY ignore  EXTENSION SNA-Information
                PRESENCE optional }|
    { ID id-CellPortionID                       CRITICALITY ignore  EXTENSION CellPortionID
              PRESENCE optional }|
    { ID id-Active-MBMS-Bearer-Service-UplinkSigTrFDD       CRITICALITY ignore  EXTENSION Active-
MBMS-Bearer-Service-List-UplinkSigTrFDD          PRESENCE optional},
    ...
}

Active-MBMS-Bearer-Service-List-UplinkSigTrFDD  ::= SEQUENCE (SIZE (1..maxNrOfActiveMBMSServices))
OF MBMS-Bearer-ServiceItem-UplinkSigTrFDD

MBMS-Bearer-ServiceItem-UplinkSigTrFDD  ::=SEQUENCE{
    tmgi    TMGI,
    transmissionMode    TransmissionMode,
    iE-Extensions                       ProtocolExtensionContainer { { MBMS-Bearer-ServiceItem-
UplinkSigTrFDD-ExtIEs} } OPTIONAL,
    ...
}
MBMS-Bearer-ServiceItem-UplinkSigTrFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- UPLINK SIGNALLING TRANSFER INDICATION TDD
--
-- **************************************************************

UplinkSignallingTransferIndicationTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UplinkSignallingTransferIndicationTDD-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{UplinkSignallingTransferIndicationTDD-Extensions}}              OPTIONAL,
    ...
}

UplinkSignallingTransferIndicationTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UC-ID                   CRITICALITY ignore  TYPE UC-ID                  PRESENCE
mandatory   } |
    { ID id-SAI                 CRITICALITY ignore  TYPE SAI                    PRESENCE mandatory
    } |
    { ID id-GA-Cell             CRITICALITY ignore  TYPE GA-Cell                PRESENCE optional
    } |
    { ID id-C-RNTI                  CRITICALITY ignore  TYPE C-RNTI                 PRESENCE
mandatory   } |
    { ID id-S-RNTI                  CRITICALITY ignore  TYPE S-RNTI                 PRESENCE
mandatory   } |
    { ID id-D-RNTI                  CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
optional    } |
    { ID id-RxTimingDeviationForTA          CRITICALITY ignore  TYPE RxTimingDeviationForTA PRESENCE
mandatory } |
    { ID id-L3-Information               CRITICALITY ignore  TYPE L3-Information             PRESENCE
mandatory   } |
    { ID id-CN-PS-DomainIdentifier          CRITICALITY ignore  TYPE CN-PS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-CN-CS-DomainIdentifier          CRITICALITY ignore  TYPE CN-CS-DomainIdentifier
    PRESENCE optional   } |
    { ID id-URA-Information                 CRITICALITY ignore  TYPE URA-Information
    PRESENCE optional   },
    ...
}

UplinkSignallingTransferIndicationTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-GA-CellAdditionalShapes         CRITICALITY ignore  EXTENSION   GA-CellAdditionalShapes
    PRESENCE optional   }|
```

```
    { ID id-CommonTransportChannelResourcesInitialisationNotRequired    CRITICALITY ignore
    EXTENSION CommonTransportChannelResourcesInitialisationNotRequired      PRESENCE optional   }|
    { ID id-CellCapabilityContainer-TDD     CRITICALITY ignore  EXTENSION   CellCapabilityContainer-
TDD     PRESENCE optional }|
        -- Applicable to 3.84Mcps TDD only
    { ID id-CellCapabilityContainer-TDD-LCR CRITICALITY ignore  EXTENSION   CellCapabilityContainer-
TDD-LCR     PRESENCE optional }|
        -- Applicable to 1.28Mcps TDD only
    { ID id-SNA-Information                 CRITICALITY ignore  EXTENSION   SNA-Information
            PRESENCE optional }|
    { ID id-Active-MBMS-Bearer-Service-UplinkSigTrTDD       CRITICALITY ignore  EXTENSION Active-
MBMS-Bearer-Service-List-UplinkSigTrTDD         PRESENCE optional},
    ...

}

Active-MBMS-Bearer-Service-List-UplinkSigTrTDD  ::= SEQUENCE (SIZE (1..maxNrOfActiveMBMSServices))
OF MBMS-Bearer-ServiceItem-UplinkSigTrTDD


MBMS-Bearer-ServiceItem-UplinkSigTrTDD  ::=SEQUENCE{
    tmgi    TMGI,
    transmissionMode    TransmissionMode,
    iE-Extensions                   ProtocolExtensionContainer { { MBMS-Bearer-ServiceItem-
UplinkSigTrTDD-ExtIEs} } OPTIONAL,
    ...
}

MBMS-Bearer-ServiceItem-UplinkSigTrTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
-- **************************************************************
--
-- DOWNLINK SIGNALLING TRANSFER REQUEST
--
-- **************************************************************

DownlinkSignallingTransferRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DownlinkSignallingTransferRequest-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{DownlinkSignallingTransferRequest-
Extensions}}               OPTIONAL,
    ...
}

DownlinkSignallingTransferRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-C-ID                    CRITICALITY ignore  TYPE C-ID                   PRESENCE
mandatory   } |
    -- May be a GERAN cell identifier
    { ID id-D-RNTI                  CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
mandatory   } |
    { ID id-L3-Information              CRITICALITY ignore  TYPE L3-Information             PRESENCE
mandatory   } |
    { ID id-D-RNTI-ReleaseIndication        CRITICALITY ignore  TYPE D-RNTI-ReleaseIndication
    PRESENCE mandatory  },
    ...
}

DownlinkSignallingTransferRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-URA-ID      CRITICALITY ignore      EXTENSION   URA-ID  PRESENCE optional}|
    { ID id-MBMS-Bearer-Service-List        CRITICALITY ignore  EXTENSION MBMS-Bearer-Service-List
        PRESENCE optional}|
    { ID id-Old-URA-ID      CRITICALITY ignore      EXTENSION   URA-ID  PRESENCE optional}|
    { ID id-SRNC-ID     CRITICALITY  ignore      EXTENSION   RNC-ID  PRESENCE    conditional},
    -- This IE shall be present if the URA-ID IE or Old URA-ID IE is present.
    ...
}


-- **************************************************************
--
-- RELOCATION COMMIT
--
-- **************************************************************

RelocationCommit ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{RelocationCommit-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{RelocationCommit-Extensions}}
OPTIONAL,
```

```
    ...
}

RelocationCommit-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                  CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
optional    } |
    { ID id-RANAP-RelocationInformation     CRITICALITY ignore  TYPE RANAP-RelocationInformation
    PRESENCE optional   },
    ...
}

RelocationCommit-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- PAGING REQUEST
--
-- **************************************************************

PagingRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{PagingRequest-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{PagingRequest-Extensions}}
OPTIONAL,
    ...
}

PagingRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-PagingArea-PagingRqst           CRITICALITY ignore  TYPE PagingArea-PagingRqst
    PRESENCE mandatory  } |
    { ID id-SRNC-ID                 CRITICALITY ignore  TYPE RNC-ID                 PRESENCE
mandatory   } | -- May be a BSC-Id.
    { ID id-S-RNTI                  CRITICALITY ignore  TYPE S-RNTI                 PRESENCE
mandatory   } |
    { ID id-IMSI                    CRITICALITY ignore  TYPE IMSI                   PRESENCE
mandatory   } |
    { ID id-DRXCycleLengthCoefficient               CRITICALITY ignore  TYPE
DRXCycleLengthCoefficient               PRESENCE mandatory  }|
    { ID id-CNOriginatedPage-PagingRqst             CRITICALITY ignore  TYPE CNOriginatedPage-
PagingRqst          PRESENCE optional       },
    ...
}

PagingArea-PagingRqst ::= CHOICE {
    uRA                     URA-PagingRqst, -- May be a GRA-ID.
    cell                    Cell-PagingRqst, -- UTRAN only
    ...
}

URA-PagingRqst ::= SEQUENCE {
    uRA-ID                      URA-ID,
    iE-Extensions               ProtocolExtensionContainer { { URAItem-PagingRqst-ExtIEs} }
OPTIONAL,
    ...
}

URAItem-PagingRqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cell-PagingRqst ::= SEQUENCE {
    c-ID                        C-ID,
    iE-Extensions               ProtocolExtensionContainer { { CellItem-PagingRqst-ExtIEs} }
OPTIONAL,
    ...
}

CellItem-PagingRqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CNOriginatedPage-PagingRqst::= SEQUENCE {
    pagingCause                 PagingCause,
    cNDomainType                CNDomainType,
    pagingRecordType            PagingRecordType,
    iE-Extensions               ProtocolExtensionContainer { { CNOriginatedPage-PagingRqst-ExtIEs} }
OPTIONAL,
```

```
    ...
}

CNOriginatedPage-PagingRqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PagingRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- DEDICATED MEASUREMENT INITIATION REQUEST
--
-- **************************************************************

DedicatedMeasurementInitiationRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DedicatedMeasurementInitiationRequest-
IEs}},
    protocolExtensions           ProtocolExtensionContainer
{{DedicatedMeasurementInitiationRequest-Extensions}}               OPTIONAL,
    ...
}

DedicatedMeasurementInitiationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID               CRITICALITY reject  TYPE MeasurementID              PRESENCE
mandatory   } |
    { ID id-DedicatedMeasurementObjectType-DM-Rqst  CRITICALITY reject  TYPE
DedicatedMeasurementObjectType-DM-Rqst  PRESENCE mandatory  } |

    { ID id-DedicatedMeasurementType            CRITICALITY reject  TYPE DedicatedMeasurementType
        PRESENCE mandatory  } |
    { ID id-MeasurementFilterCoefficient        CRITICALITY reject  TYPE
MeasurementFilterCoefficient            PRESENCE optional   } |
    { ID id-ReportCharacteristics           CRITICALITY reject  TYPE ReportCharacteristics
    PRESENCE mandatory  }|
   { ID id-CFNReportingIndicator         CRITICALITY reject  TYPE FNReportingIndicator
PRESENCE mandatory  }|
   { ID id-CFN                        CRITICALITY reject  TYPE CFN                     PRESENCE
optional  },
    ...
}

DedicatedMeasurementObjectType-DM-Rqst ::= CHOICE {
    rL                      RL-DM-Rqst,
    rLS                     RL-Set-DM-Rqst,
    allRL                   All-RL-DM-Rqst,
    allRLS                  All-RL-Set-DM-Rqst,
    ...
}

RL-DM-Rqst ::= SEQUENCE {
    rL-InformationList-DM-Rqst      RL-InformationList-DM-Rqst,
    iE-Extensions                   ProtocolExtensionContainer { { RLItem-DM-Rqst-ExtIEs} }
OPTIONAL,
    ...
    }

RLItem-DM-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-InformationList-DM-Rqst                  ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-Information-DM-Rqst-IEs} }

RL-Information-DM-Rqst-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationItem-DM-Rqst      CRITICALITY reject  TYPE RL-InformationItem-DM-Rqst
    PRESENCE mandatory  }
}

RL-InformationItem-DM-Rqst ::= SEQUENCE {
    rL-ID                       RL-ID,
    dPCH-ID                     DPCH-ID     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationItem-DM-Rqst-ExtIEs}
} OPTIONAL,
    ...
}
```

```
RL-InformationItem-DM-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-HSSICH-Info-DM-Rqst     CRITICALITY reject              EXTENSION   HSSICH-Info-DM-Rqst
    -- TDD only
    ...
}

HSSICH-Info-DM-Rqst ::= SEQUENCE (SIZE (1..maxNrOfHSSICHs)) OF HS-SICH-ID

RL-Set-DM-Rqst ::= SEQUENCE {
    rL-Set-InformationList-DM-Rqst  RL-Set-InformationList-DM-Rqst,
    iE-Extensions                   ProtocolExtensionContainer { { RL-SetItem-DM-Rqst-ExtIEs} }
OPTIONAL,
    ...
    }

RL-SetItem-DM-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-InformationList-DM-Rqst                  ::= SEQUENCE (SIZE (1..maxNrOfRLSets)) OF
ProtocolIE-Single-Container { {RL-Set-Information-DM-Rqst-IEs} }

RL-Set-Information-DM-Rqst-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-InformationItem-DM-Rqst      CRITICALITY reject  TYPE RL-Set-InformationItem-DM-
Rqst            PRESENCE mandatory  }
}

RL-Set-InformationItem-DM-Rqst ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-InformationItem-DM-Rqst-
ExtIEs} } OPTIONAL,
    ...
}

RL-Set-InformationItem-DM-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

All-RL-DM-Rqst ::= NULL

All-RL-Set-DM-Rqst ::= NULL

DedicatedMeasurementInitiationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-PartialReportingIndicator       CRITICALITY ignore          EXTENSION
    PartialReportingIndicator                                   PRESENCE optional   }|
    { ID    id-MeasurementRecoveryBehavior              CRITICALITY ignore              EXTENSION
    MeasurementRecoveryBehavior     PRESENCE optional
    },
    ...
}

-- **************************************************************
--
-- DEDICATED MEASUREMENT INITIATION RESPONSE
--
-- **************************************************************

DedicatedMeasurementInitiationResponse ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DedicatedMeasurementInitiationResponse-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{DedicatedMeasurementInitiationResponse-Extensions}}               OPTIONAL,
    ...
}

DedicatedMeasurementInitiationResponse-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID               CRITICALITY ignore  TYPE MeasurementID              PRESENCE
mandatory   } |
    { ID id-DedicatedMeasurementObjectType-DM-Rsp   CRITICALITY ignore  TYPE
DedicatedMeasurementObjectType-DM-Rsp   PRESENCE optional   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

DedicatedMeasurementObjectType-DM-Rsp ::= CHOICE {
    rLs                     RL-DM-Rsp,
```

```
    rLS                     RL-Set-DM-Rsp,
    allRL                   RL-DM-Rsp,
    allRLS                  RL-Set-DM-Rsp,
    ...
}

RL-DM-Rsp ::= SEQUENCE {
    rL-InformationList-DM-Rsp       RL-InformationList-DM-Rsp,
    iE-Extensions                   ProtocolExtensionContainer { { RLItem-DM-Rsp-ExtIEs} } OPTIONAL,
    ...
}

RLItem-DM-Rsp-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-DM-Rsp ::= SEQUENCE {
    rL-Set-InformationList-DM-Rsp   RL-Set-InformationList-DM-Rsp,
    iE-Extensions                   ProtocolExtensionContainer { { RL-SetItem-DM-Rsp-ExtIEs} }
OPTIONAL,
    ...
}

RL-SetItem-DM-Rsp-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-InformationList-DM-Rsp                   ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-Information-DM-Rsp-IEs} }

RL-Information-DM-Rsp-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationItem-DM-Rsp       CRITICALITY ignore  TYPE RL-InformationItem-DM-Rsp
    PRESENCE mandatory  }
}

RL-InformationItem-DM-Rsp ::= SEQUENCE {
    rL-ID                       RL-ID,
    dPCH-ID                     DPCH-ID             OPTIONAL,
    dedicatedMeasurementValue           DedicatedMeasurementValue,
   cFN                     CFN             OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationItem-DM-Rsp-ExtIEs}
} OPTIONAL,
    ...
}

RL-InformationItem-DM-Rsp-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    {ID id-HSSICH-Info-DM       CRITICALITY reject              EXTENSION   HS-SICH-ID      PRESENCE
optional},
    -- TDD only
    ...
}

RL-Set-InformationList-DM-Rsp   ::= SEQUENCE (SIZE (1..maxNrOfRLSets)) OF ProtocolIE-Single-
Container { {RL-Set-Information-DM-Rsp-IEs} }

RL-Set-Information-DM-Rsp-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-InformationItem-DM-Rsp       CRITICALITY ignore  TYPE RL-Set-InformationItem-DM-
Rsp     PRESENCE mandatory  }
}

RL-Set-InformationItem-DM-Rsp ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    dedicatedMeasurementValue       DedicatedMeasurementValue,
   cFN                     CFN                     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-InformationItem-DM-Rspns-
ExtIEs} } OPTIONAL,
    ...
}

RL-Set-InformationItem-DM-Rspns-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DedicatedMeasurementInitiationResponse-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
     { ID    id-MeasurementRecoverySupportIndicator      CRITICALITY ignore      EXTENSION
     MeasurementRecoverySupportIndicator     PRESENCE optional
    },
    ...
```

```
}

-- **************************************************************
--
-- DEDICATED MEASUREMENT INITIATION FAILURE
--
-- **************************************************************

DedicatedMeasurementInitiationFailure ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DedicatedMeasurementInitiationFailure-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{DedicatedMeasurementInitiationFailure-Extensions}}               OPTIONAL,
    ...
}

DedicatedMeasurementInitiationFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID               CRITICALITY ignore  TYPE MeasurementID              PRESENCE
mandatory   } |
    { ID id-Cause                   CRITICALITY ignore  TYPE Cause                  PRESENCE
mandatory   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

DedicatedMeasurementInitiationFailure-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DedicatedMeasurementObjectType-DM-Fail  CRITICALITY ignore  EXTENSION
DedicatedMeasurementObjectType-DM-Fail  PRESENCE optional   },
    ...
}

DedicatedMeasurementObjectType-DM-Fail ::= CHOICE {
    rL                      RL-DM-Fail,
    rLS                     RL-Set-DM-Fail,
    allRL                   RL-DM-Fail,
    allRLS                  RL-Set-DM-Fail,
    ...
}

RL-DM-Fail ::= SEQUENCE {
    rL-unsuccessful-InformationRespList-DM-Fail     RL-Unsuccessful-InformationRespList-DM-Fail,
    rL-successful-InformationRespList-DM-Fail       RL-Successful-InformationRespList-DM-Fail
    OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { { RLItem-DM-Fail-ExtIEs} }
OPTIONAL,
    ...
}

RLItem-DM-Fail-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-DM-Fail ::= SEQUENCE {
    rL-Set-unsuccessful-InformationRespList-DM-Fail RL-Set-Unsuccessful-InformationRespList-DM-Fail,
    rL-Set-successful-InformationRespList-DM-Fail   RL-Set-Successful-InformationRespList-DM-Fail
        OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { { RL-SetItem-DM-Fail-ExtIEs} }
OPTIONAL,
    ...
}

RL-SetItem-DM-Fail-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Unsuccessful-InformationRespList-DM-Fail         ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF
ProtocolIE-Single-Container { {RL-Unsuccessful-InformationResp-DM-Fail-IEs} }

RL-Unsuccessful-InformationResp-DM-Fail-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Unsuccessful-InformationItem-DM-Fail     CRITICALITY ignore  TYPE RL-Unsuccessful-
InformationItem-DM-Fail     PRESENCE mandatory  }
}

RL-Unsuccessful-InformationItem-DM-Fail ::= SEQUENCE {
    rL-ID                       RL-ID,
    individualcause             Cause   OPTIONAL,
```

```
    iE-Extensions               ProtocolExtensionContainer { {RL-Unsuccessful-InformationItem-DM-
Fail-ExtIEs} } OPTIONAL,
    ...
}

RL-Unsuccessful-InformationItem-DM-Fail-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Successful-InformationRespList-DM-Fail           ::= SEQUENCE (SIZE (1..maxNrOfRLs-1)) OF
ProtocolIE-Single-Container { {RL-Successful-InformationResp-DM-Fail-IEs} }

RL-Successful-InformationResp-DM-Fail-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Successful-InformationItem-DM-Fail       CRITICALITY ignore  TYPE RL-Successful-
InformationItem-DM-Fail     PRESENCE mandatory  }
}

RL-Successful-InformationItem-DM-Fail ::= SEQUENCE {
    rL-ID                       RL-ID,
    dPCH-ID                     DPCH-ID             OPTIONAL,
    dedicatedMeasurementValue   DedicatedMeasurementValue,
   cFN                    CFN              OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {RL-Successful-InformationItem-DM-Fail-
ExtIEs} } OPTIONAL,
    ...
}

RL-Successful-InformationItem-DM-Fail-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    {ID id-HSSICH-Info-DM       CRITICALITY reject              EXTENSION   HS-SICH-ID      PRESENCE
optional},
    -- TDD only
    ...
}

RL-Set-Unsuccessful-InformationRespList-DM-Fail             ::= SEQUENCE (SIZE (1..maxNrOfRLSets))
OF ProtocolIE-Single-Container { {RL-Set-Unsuccessful-InformationResp-DM-Fail-IEs} }

RL-Set-Unsuccessful-InformationResp-DM-Fail-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-Unsuccessful-InformationItem-DM-Fail     CRITICALITY ignore  TYPE RL-Set-
Unsuccessful-InformationItem-DM-Fail        PRESENCE mandatory  }
}

RL-Set-Unsuccessful-InformationItem-DM-Fail ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    individualcause                 Cause       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-Unsuccessful-
InformationItem-DM-Failns-ExtIEs} } OPTIONAL,
    ...
}

RL-Set-Unsuccessful-InformationItem-DM-Failns-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-Successful-InformationRespList-DM-Fail               ::= SEQUENCE (SIZE (1..maxNrOfRLSets-1))
OF ProtocolIE-Single-Container { {RL-Set-Successful-InformationResp-DM-Fail-IEs} }

RL-Set-Successful-InformationResp-DM-Fail-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-Successful-InformationItem-DM-Fail       CRITICALITY ignore  TYPE RL-Set-
Successful-InformationItem-DM-Fail      PRESENCE mandatory  }
}

RL-Set-Successful-InformationItem-DM-Fail ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    dedicatedMeasurementValue       DedicatedMeasurementValue,
   cFN                    CFN                  OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-Successful-InformationItem-
DM-Failns-ExtIEs} } OPTIONAL,
    ...
}

RL-Set-Successful-InformationItem-DM-Failns-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- DEDICATED MEASUREMENT REPORT
```

```
--
-- **************************************************************

DedicatedMeasurementReport ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DedicatedMeasurementReport-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{DedicatedMeasurementReport-
Extensions}}               OPTIONAL,
    ...
}

DedicatedMeasurementReport-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID              CRITICALITY ignore  TYPE MeasurementID              PRESENCE
mandatory   } |
    { ID id-DedicatedMeasurementObjectType-DM-Rprt  CRITICALITY ignore  TYPE
DedicatedMeasurementObjectType-DM-Rprt  PRESENCE mandatory  },
    ...
}

DedicatedMeasurementObjectType-DM-Rprt ::= CHOICE {
    rLs                     RL-DM-Rprt,
    rLS                     RL-Set-DM-Rprt,
    allRL                   RL-DM-Rprt,
    allRLS                  RL-Set-DM-Rprt,
    ...
}

RL-DM-Rprt ::= SEQUENCE {
    rL-InformationList-DM-Rprt      RL-InformationList-DM-Rprt,
    iE-Extensions                   ProtocolExtensionContainer { { RLItem-DM-Rprt-ExtIEs} }
OPTIONAL,
    ...
}

RLItem-DM-Rprt-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-DM-Rprt ::= SEQUENCE {
    rL-Set-InformationList-DM-Rprt  RL-Set-InformationList-DM-Rprt,
    iE-Extensions                   ProtocolExtensionContainer { { RL-SetItem-DM-Rprt-ExtIEs} }
OPTIONAL,
    ...
}

RL-SetItem-DM-Rprt-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-InformationList-DM-Rprt                  ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF ProtocolIE-
Single-Container { {RL-Information-DM-Rprt-IEs} }

RL-Information-DM-Rprt-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-InformationItem-DM-Rprt      CRITICALITY ignore  TYPE RL-InformationItem-DM-Rprt
    PRESENCE mandatory  }
}

RL-InformationItem-DM-Rprt ::= SEQUENCE {
    rL-ID                       RL-ID,
    dPCH-ID                     DPCH-ID             OPTIONAL,
    dedicatedMeasurementValueInformation    DedicatedMeasurementValueInformation,
    iE-Extensions                   ProtocolExtensionContainer { {RL-InformationItem-DM-Rprt-ExtIEs}
} OPTIONAL,
    ...
}

RL-InformationItem-DM-Rprt-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    {ID id-HSSICH-Info-DM-Rprt      CRITICALITY ignore              EXTENSION   HS-SICH-ID
    PRESENCE optional},
    -- TDD only
    ...
}

RL-Set-InformationList-DM-Rprt                  ::= SEQUENCE (SIZE (1..maxNrOfRLSets)) OF
ProtocolIE-Single-Container { {RL-Set-Information-DM-Rprt-IEs} }

RL-Set-Information-DM-Rprt-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-InformationItem-DM-Rprt      CRITICALITY ignore  TYPE RL-Set-InformationItem-DM-
Rprt            PRESENCE mandatory  }
```

```
}

RL-Set-InformationItem-DM-Rprt ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    dedicatedMeasurementValueInformation    DedicatedMeasurementValueInformation,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-InformationItem-DM-Rprt-
ExtIEs} } OPTIONAL,
    ...
}

RL-Set-InformationItem-DM-Rprt-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DedicatedMeasurementReport-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID    id-MeasurementRecoveryReportingIndicator        CRITICALITY ignore      EXTENSION
    MeasurementRecoveryReportingIndicator       PRESENCE optional },
    ...
}

-- **************************************************************
--
-- DEDICATED MEASUREMENT TERMINATION REQUEST
--
-- **************************************************************

DedicatedMeasurementTerminationRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DedicatedMeasurementTerminationRequest-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{DedicatedMeasurementTerminationRequest-Extensions}}               OPTIONAL,
    ...
}

DedicatedMeasurementTerminationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID               CRITICALITY ignore  TYPE MeasurementID              PRESENCE
mandatory   },
    ...
}

DedicatedMeasurementTerminationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- DEDICATED MEASUREMENT FAILURE INDICATION
--
-- **************************************************************

DedicatedMeasurementFailureIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{DedicatedMeasurementFailureIndication-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{DedicatedMeasurementFailureIndication-Extensions}}               OPTIONAL,
    ...
}

DedicatedMeasurementFailureIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID               CRITICALITY ignore  TYPE MeasurementID              PRESENCE
mandatory   } |
    { ID id-Cause                   CRITICALITY ignore  TYPE Cause                  PRESENCE
mandatory   },
    ...
}

DedicatedMeasurementFailureIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DedicatedMeasurementObjectType-DM-Fail-Ind  CRITICALITY ignore  EXTENSION
DedicatedMeasurementObjectType-DM-Fail-Ind  PRESENCE optional   },
    ...
}

DedicatedMeasurementObjectType-DM-Fail-Ind ::= CHOICE {
    rL                      RL-DM-Fail-Ind,
    rLS                     RL-Set-DM-Fail-Ind,
    allRL                   RL-DM-Fail-Ind,
    allRLS                  RL-Set-DM-Fail-Ind,
    ...
```

```
}

RL-DM-Fail-Ind ::= SEQUENCE {
    rL-unsuccessful-InformationRespList-DM-Fail-Ind     RL-Unsuccessful-InformationRespList-DM-Fail-
Ind,
    iE-Extensions                                       ProtocolExtensionContainer { { RLItem-DM-
Fail-Ind-ExtIEs} } OPTIONAL,
    ...
}

RLItem-DM-Fail-Ind-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-DM-Fail-Ind ::= SEQUENCE {
    rL-Set-unsuccessful-InformationRespList-DM-Fail-Ind     RL-Set-Unsuccessful-InformationRespList-
DM-Fail-Ind,
    iE-Extensions                                           ProtocolExtensionContainer { { RL-
SetItem-DM-Fail-Ind-ExtIEs} } OPTIONAL,
    ...
}

RL-SetItem-DM-Fail-Ind-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Unsuccessful-InformationRespList-DM-Fail-Ind         ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF
ProtocolIE-Single-Container { {RL-Unsuccessful-InformationResp-DM-Fail-Ind-IEs} }

RL-Unsuccessful-InformationResp-DM-Fail-Ind-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Unsuccessful-InformationItem-DM-Fail-Ind     CRITICALITY ignore  TYPE RL-
Unsuccessful-InformationItem-DM-Fail-Ind        PRESENCE mandatory  }
}

RL-Unsuccessful-InformationItem-DM-Fail-Ind ::= SEQUENCE {
    rL-ID                       RL-ID,
    individualcause             Cause       OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {RL-Unsuccessful-InformationItem-DM-
Fail-Ind-ExtIEs} } OPTIONAL,
    ...
}

RL-Unsuccessful-InformationItem-DM-Fail-Ind-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RL-Set-Unsuccessful-InformationRespList-DM-Fail-Ind             ::= SEQUENCE (SIZE
(1..maxNrOfRLSets)) OF ProtocolIE-Single-Container { {RL-Set-Unsuccessful-InformationResp-DM-Fail-
Ind-IEs} }

RL-Set-Unsuccessful-InformationResp-DM-Fail-Ind-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-Set-Unsuccessful-InformationItem-DM-Fail-Ind     CRITICALITY ignore  TYPE RL-Set-
Unsuccessful-InformationItem-DM-Fail-Ind        PRESENCE mandatory  }
}

RL-Set-Unsuccessful-InformationItem-DM-Fail-Ind ::= SEQUENCE {
    rL-Set-ID                       RL-Set-ID,
    individualcause                 Cause       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {RL-Set-Unsuccessful-
InformationItem-DM-Fail-Indns-ExtIEs} } OPTIONAL,
    ...
}

RL-Set-Unsuccessful-InformationItem-DM-Fail-Indns-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL RESOURCES RELEASE REQUEST
--
-- **************************************************************

CommonTransportChannelResourcesReleaseRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container
{{CommonTransportChannelResourcesReleaseRequest-IEs}},
    protocolExtensions           ProtocolExtensionContainer
{{CommonTransportChannelResourcesReleaseRequest-Extensions}}               OPTIONAL,
```

```
    ...
}

CommonTransportChannelResourcesReleaseRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                  CRITICALITY ignore  TYPE D-RNTI                 PRESENCE
mandatory   },
    ...
}

CommonTransportChannelResourcesReleaseRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL RESOURCES REQUEST
--
-- **************************************************************

CommonTransportChannelResourcesRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{CommonTransportChannelResourcesRequest-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{CommonTransportChannelResourcesRequest-Extensions}}          OPTIONAL,
    ...
}

CommonTransportChannelResourcesRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                  CRITICALITY reject  TYPE D-RNTI                 PRESENCE
mandatory   } |
    { ID id-C-ID                    CRITICALITY reject  TYPE C-ID                   PRESENCE
optional    } |
    { ID id-TransportBearerRequestIndicator     CRITICALITY reject  TYPE
TransportBearerRequestIndicator     PRESENCE mandatory  } |
    { ID id-TransportBearerID           CRITICALITY reject  TYPE TransportBearerID
    PRESENCE mandatory  },
    ...
}

CommonTransportChannelResourcesRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Permanent-NAS-UE-Identity               CRITICALITY ignore          EXTENSION Permanent-
NAS-UE-Identity     PRESENCE optional   }|
    { ID id-BindingID                       CRITICALITY ignore      EXTENSION   BindingID   PRESENCE
    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
   { ID id-TransportLayerAddress            CRITICALITY ignore      EXTENSION
    TransportLayerAddress       PRESENCE    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID id-MBMS-Bearer-Service-List        CRITICALITY notify  EXTENSION MBMS-Bearer-Service-List
        PRESENCE optional},
    ...

}


-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL RESOURCES RESPONSE FDD
--
-- **************************************************************

CommonTransportChannelResourcesResponseFDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container
{{CommonTransportChannelResourcesResponseFDD-IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{CommonTransportChannelResourcesResponseFDD-Extensions}}          OPTIONAL,
    ...
}

CommonTransportChannelResourcesResponseFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-S-RNTI                  CRITICALITY ignore  TYPE S-RNTI                 PRESENCE
mandatory   } |
    { ID id-C-RNTI                  CRITICALITY ignore  TYPE C-RNTI                 PRESENCE
optional    } |
    { ID id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD   CRITICALITY ignore  TYPE FACH-
InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD        PRESENCE mandatory  } |
    { ID id-TransportLayerAddress           CRITICALITY ignore  TYPE TransportLayerAddress
    PRESENCE optional   } |
```

```
    { ID id-BindingID               CRITICALITY ignore  TYPE BindingID                  PRESENCE
optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD ::= SEQUENCE {
    fACH-FlowControlInformation     FACH-FlowControlInformation-CTCH-ResourceRspFDD,
    iE-Extensions                   ProtocolExtensionContainer { {FACH-InfoForUESelectedS-CCPCH-
CTCH-ResourceRspFDD-ExtIEs} } OPTIONAL,
    ...
}

FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

FACH-FlowControlInformation-CTCH-ResourceRspFDD ::= ProtocolIE-Single-Container {{ FACH-
FlowControlInformationIEs-CTCH-ResourceRspFDD }}

FACH-FlowControlInformationIEs-CTCH-ResourceRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-FACH-FlowControlInformation CRITICALITY ignore  TYPE    FACH-FlowControlInformation
    PRESENCE mandatory  }
}

CommonTransportChannelResourcesResponseFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-C-ID                CRITICALITY ignore      EXTENSION   C-ID        PRESENCE mandatory
},
    ...
}

-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL RESOURCES RESPONSE TDD
--
-- **************************************************************

CommonTransportChannelResourcesResponseTDD ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container
{{CommonTransportChannelResourcesResponseTDD-IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{CommonTransportChannelResourcesResponseTDD-Extensions}}           OPTIONAL,
    ...
}

CommonTransportChannelResourcesResponseTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-S-RNTI                  CRITICALITY ignore  TYPE S-RNTI                 PRESENCE
mandatory   } |
    { ID id-C-RNTI                  CRITICALITY ignore  TYPE C-RNTI                 PRESENCE
optional    } |
    { ID id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD   CRITICALITY ignore  TYPE FACH-
InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD        PRESENCE mandatory  } |
    { ID id-TransportLayerAddress           CRITICALITY ignore  TYPE TransportLayerAddress
    PRESENCE optional   } |
    { ID id-BindingID               CRITICALITY ignore  TYPE BindingID                  PRESENCE
optional    } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD ::= SEQUENCE {
    fACH-FlowControlInformation     FACH-FlowControlInformation-CTCH-ResourceRspTDD,
    iE-Extensions                   ProtocolExtensionContainer { {FACH-InfoForUESelectedS-CCPCH-
CTCH-ResourceRspTDD-ExtIEs} } OPTIONAL,
    ...
}

FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

FACH-FlowControlInformation-CTCH-ResourceRspTDD ::= ProtocolIE-Single-Container {{ FACH-
FlowControlInformationIEs-CTCH-ResourceRspTDD }}

FACH-FlowControlInformationIEs-CTCH-ResourceRspTDD RNSAP-PROTOCOL-IES ::= {
```

```
    { ID id-FACH-FlowControlInformation CRITICALITY ignore  TYPE    FACH-FlowControlInformation
    PRESENCE mandatory  }
}

CommonTransportChannelResourcesResponseTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-C-ID                CRITICALITY ignore      EXTENSION   C-ID        PRESENCE mandatory
},
    ...
}

-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL RESOURCES FAILURE
--
-- **************************************************************

CommonTransportChannelResourcesFailure ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{CommonTransportChannelResourcesFailure-
IEs}},
    protocolExtensions           ProtocolExtensionContainer
{{CommonTransportChannelResourcesFailure-Extensions}}          OPTIONAL,
    ...
}

CommonTransportChannelResourcesFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-S-RNTI                  CRITICALITY ignore  TYPE S-RNTI                 PRESENCE
mandatory   } |
    { ID id-Cause                   CRITICALITY ignore  TYPE Cause                  PRESENCE
mandatory   } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

CommonTransportChannelResourcesFailure-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- COMPRESSED MODE COMMAND
--
-- **************************************************************

CompressedModeCommand ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{CompressedModeCommand-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{CompressedModeCommand-Extensions}}
OPTIONAL,
    ...
}

CompressedModeCommand-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-Active-Pattern-Sequence-Information     CRITICALITY ignore  TYPE Active-Pattern-
    Sequence-Information         PRESENCE mandatory  },
    ...
}

CompressedModeCommand-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- ERROR INDICATION
--
-- **************************************************************

ErrorIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{ErrorIndication-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{ErrorIndication-Extensions}}
    OPTIONAL,
    ...
}

ErrorIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-Cause                   CRITICALITY ignore  TYPE Cause                  PRESENCE
optional} |
```

```
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

ErrorIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-S-RNTI                  CRITICALITY ignore  EXTENSION S-RNTI                    PRESENCE
optional    } |
    { ID id-D-RNTI                  CRITICALITY ignore  EXTENSION D-RNTI                    PRESENCE
optional    },
    ...
}

-- **************************************************************
--
-- COMMON MEASUREMENT INITIATION REQUEST
--
-- **************************************************************

CommonMeasurementInitiationRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonMeasurementInitiationRequest-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonMeasurementInitiationRequest-
Extensions}}        OPTIONAL,
    ...
}

CommonMeasurementInitiationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-MeasurementID                            CRITICALITY reject          TYPE
    MeasurementID                           PRESENCE    mandatory   }|
    { ID    id-CommonMeasurementObjectType-CM-Rqst          CRITICALITY reject          TYPE
    CommonMeasurementObjectType-CM-Rqst     PRESENCE    mandatory   }|

    { ID    id-CommonMeasurementType                        CRITICALITY reject          TYPE
    CommonMeasurementType                   PRESENCE    mandatory   }|
    { ID    id-MeasurementFilterCoefficient                 CRITICALITY reject          TYPE
    MeasurementFilterCoefficient            PRESENCE    optional    }|
    -- UTRAN only
    { ID    id-ReportCharacteristics                        CRITICALITY reject          TYPE
    ReportCharacteristics                   PRESENCE    mandatory   }|
    { ID    id-SFNReportingIndicator                        CRITICALITY reject          TYPE
    FNReportingIndicator                    PRESENCE    mandatory
    } |
    { ID    id-SFN                                          CRITICALITY reject          TYPE    SFN
                                    PRESENCE optional
    }|
    -- UTRAN only
    { ID   id-CommonMeasurementAccuracy                 CRITICALITY reject          TYPE
    CommonMeasurementAccuracy               PRESENCE optional
    },
    -- UTRAN only
    ...
}

CommonMeasurementInitiationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
   { ID id-MeasurementRecoveryBehavior              CRITICALITY ignore              EXTENSION
    MeasurementRecoveryBehavior     PRESENCE optional
   },
    -- UTRAN only
    ...
}

CommonMeasurementObjectType-CM-Rqst ::= CHOICE {
    cell                            Cell-CM-Rqst,
    ...
}

Cell-CM-Rqst ::= SEQUENCE {
    uC-ID                           UC-ID,
    -- May be a GERAN cell identifier
    timeSlot                        TimeSlot        OPTIONAL,   --3.84Mcps TDD only
    timeSlotLCR                     TimeSlotLCR     OPTIONAL,   --1.28Mcps TDD only
    neighbouringCellMeasurementInformation          NeighbouringCellMeasurementInfo     OPTIONAL,
    -- UTRAN only
    iE-Extensions                   ProtocolExtensionContainer  { { CellItem-CM-Rqst-ExtIEs} }
    OPTIONAL,
    ...
}
```

```
NeighbouringCellMeasurementInfo ::= SEQUENCE (SIZE (1..maxNrOfMeasNCell)) OF
        CHOICE {
                neighbouringFDDCellMeasurementInformation
    NeighbouringFDDCellMeasurementInformation,
                neighbouringTDDCellMeasurementInformation
    NeighbouringTDDCellMeasurementInformation,
                ...,
                extension-neighbouringCellMeasurementInformation    Extension-
neighbouringCellMeasurementInformation
           }

Extension-neighbouringCellMeasurementInformation    ::= ProtocolIE-Single-Container {{ Extension-
neighbouringCellMeasurementInformationIE }}

Extension-neighbouringCellMeasurementInformationIE RNSAP-PROTOCOL-IES ::= {
    { ID id-neighbouringTDDCellMeasurementInformationLCR    CRITICALITY reject  TYPE
NeighbouringTDDCellMeasurementInformationLCR    PRESENCE mandatory },
    ...
}

CellItem-CM-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- COMMON MEASUREMENT INITIATION RESPONSE
--
-- **************************************************************

CommonMeasurementInitiationResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonMeasurementInitiationResponse-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonMeasurementInitiationResponse-
Extensions}}        OPTIONAL,
    ...
}

CommonMeasurementInitiationResponse-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-MeasurementID                            CRITICALITY ignore          TYPE
    MeasurementID                                   PRESENCE    mandatory   }|
    { ID    id-CommonMeasurementObjectType-CM-Rsp       CRITICALITY ignore          TYPE
    CommonMeasurementObjectType-CM-Rsp      PRESENCE    optional    }|
    { ID    id-SFN                                      CRITICALITY ignore          TYPE    SFN
                                            PRESENCE    optional    }|
    -- UTRAN only
    { ID    id-CriticalityDiagnostics                   CRITICALITY ignore          TYPE
    CriticalityDiagnostics                      PRESENCE    optional    }|
    { ID   id-CommonMeasurementAccuracy                 CRITICALITY reject          TYPE
    CommonMeasurementAccuracy               PRESENCE optional
    },
    -- UTRAN only
    ...
}

CommonMeasurementInitiationResponse-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
     { ID    id-MeasurementRecoverySupportIndicator      CRITICALITY ignore      EXTENSION
     MeasurementRecoverySupportIndicator     PRESENCE optional
     },
    -- UTRAN only
    ...
}

CommonMeasurementObjectType-CM-Rsp ::= CHOICE {
    cell                        Cell-CM-Rsp,
    ...
 }

Cell-CM-Rsp ::= SEQUENCE {
    commonMeasurementValue                      CommonMeasurementValue,
    iE-Extensions                               ProtocolExtensionContainer  { { CellItem-CM-Rsp-
ExtIEs} }       OPTIONAL,
    ...
 }

CellItem-CM-Rsp-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
-- **************************************************************
--
-- COMMON MEASUREMENT INITIATION FAILURE
--
-- **************************************************************

CommonMeasurementInitiationFailure ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonMeasurementInitiationFailure-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonMeasurementInitiationFailure-
Extensions}}        OPTIONAL,
    ...
}

CommonMeasurementInitiationFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-MeasurementID                CRITICALITY     ignore          TYPE    MeasurementID
                PRESENCE    mandatory   }|
    { ID    id-Cause                        CRITICALITY     ignore          TYPE    Cause
                PRESENCE    mandatory   }|
    { ID    id-CriticalityDiagnostics       CRITICALITY     ignore          TYPE
    CriticalityDiagnostics      PRESENCE    optional    },
    ...
}

CommonMeasurementInitiationFailure-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- COMMON MEASUREMENT REPORT
--
-- **************************************************************

CommonMeasurementReport ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonMeasurementReport-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonMeasurementReport-Extensions}}
    OPTIONAL,
    ...
}

CommonMeasurementReport-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-MeasurementID                            CRITICALITY ignore          TYPE
    MeasurementID                           PRESENCE    mandatory   }|
    { ID    id-CommonMeasurementObjectType-CM-Rprt      CRITICALITY ignore          TYPE
    CommonMeasurementObjectType-CM-Rprt     PRESENCE    mandatory   }|
    { ID    id-SFN                                      CRITICALITY ignore          TYPE    SFN
                                PRESENCE    optional    },
    -- UTRAN only
    ...
}

CommonMeasurementReport-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
     { ID    id-MeasurementRecoveryReportingIndicator        CRITICALITY ignore      EXTENSION
     MeasurementRecoveryReportingIndicator      PRESENCE optional },
    -- UTRAN only
    ...
}

CommonMeasurementObjectType-CM-Rprt ::= CHOICE {
    cell                            Cell-CM-Rprt,
    ...
 }

Cell-CM-Rprt ::= SEQUENCE {
    commonMeasurementValueInformation   CommonMeasurementValueInformation,
    iE-Extensions                   ProtocolExtensionContainer  {{ CellItem-CM-Rprt-ExtIEs }}
    OPTIONAL,
    ...

 }

CellItem-CM-Rprt-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- COMMON MEASUREMENT TERMINATION REQUEST
```

```
--
-- **************************************************************

CommonMeasurementTerminationRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonMeasurementTerminationRequest-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonMeasurementTerminationRequest-
Extensions}}        OPTIONAL,
    ...
}

CommonMeasurementTerminationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-MeasurementID            CRITICALITY     ignore              TYPE    MeasurementID
        PRESENCE    mandatory},
    ...
}

CommonMeasurementTerminationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- COMMON MEASUREMENT FAILURE INDICATION
--
-- **************************************************************

CommonMeasurementFailureIndication ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonMeasurementFailureIndication-IEs}},
    protocolExtensions          ProtocolExtensionContainer  {{CommonMeasurementFailureIndication-
Extensions}}                OPTIONAL,
    ...
}

CommonMeasurementFailureIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-MeasurementID            CRITICALITY ignore          TYPE    MeasurementID
    PRESENCE    mandatory   }|
    { ID    id-Cause                    CRITICALITY ignore          TYPE    Cause
    PRESENCE    mandatory   },
    ...
}

CommonMeasurementFailureIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- INFORMATION EXCHANGE INITIATION REQUEST
--
-- **************************************************************

InformationExchangeInitiationRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{InformationExchangeInitiationRequest-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{InformationExchangeInitiationRequest-
Extensions}}        OPTIONAL,
    ...
}

InformationExchangeInitiationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID                        CRITICALITY reject      TYPE
    InformationExchangeID                   PRESENCE    mandatory   }|
    { ID    id-InformationExchangeObjectType-InfEx-Rqst     CRITICALITY reject      TYPE
    InformationExchangeObjectType-InfEx-Rqst        PRESENCE    mandatory   }|

    { ID    id-InformationType                              CRITICALITY reject      TYPE
    InformationType                         PRESENCE    mandatory   }|
    { ID    id-InformationReportCharacteristics             CRITICALITY reject      TYPE
    InformationReportCharacteristics        PRESENCE    mandatory   },
    ...
}

InformationExchangeInitiationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

InformationExchangeObjectType-InfEx-Rqst ::= CHOICE {
    cell                                                    Cell-InfEx-Rqst,
    ...,
```

```
    extension-InformationExchangeObjectType-InfEx-Rqst      Extension-InformationExchangeObjectType-
InfEx-Rqst

}

Cell-InfEx-Rqst ::= SEQUENCE {
    c-ID                            C-ID, --May be a GERAN cell identifier
    iE-Extensions                   ProtocolExtensionContainer  { { CellItem-InfEx-Rqst-ExtIEs} }
    OPTIONAL,
    ...
}

CellItem-InfEx-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Extension-InformationExchangeObjectType-InfEx-Rqst  ::= ProtocolIE-Single-Container {{ Extension-
InformationExchangeObjectType-InfEx-RqstIE }}

Extension-InformationExchangeObjectType-InfEx-RqstIE RNSAP-PROTOCOL-IES ::= {
    { ID id-GSM-Cell-InfEx-Rqst CRITICALITY reject  TYPE GSM-Cell-InfEx-Rqst    PRESENCE mandatory
}|
    { ID id-MBMS-Bearer-Service-List        CRITICALITY     reject      TYPE    MBMS-Bearer-Service-
List        PRESENCE    mandatory}

}

GSM-Cell-InfEx-Rqst ::= SEQUENCE {
    cGI                             CGI,
    iE-Extensions                   ProtocolExtensionContainer  { { GSMCellItem-InfEx-Rqst-ExtIEs} }
    OPTIONAL,
    ...
}

GSMCellItem-InfEx-Rqst-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}



-- **************************************************************
--
-- INFORMATION EXCHANGE INITIATION RESPONSE
--
-- **************************************************************

InformationExchangeInitiationResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{InformationExchangeInitiationResponse-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{InformationExchangeInitiationResponse-
Extensions}}        OPTIONAL,
    ...
}

InformationExchangeInitiationResponse-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID                        CRITICALITY ignore          TYPE
    InformationExchangeID                   PRESENCE    mandatory   }|
    { ID    id-InformationExchangeObjectType-InfEx-Rsp      CRITICALITY ignore          TYPE
    InformationExchangeObjectType-InfEx-Rsp     PRESENCE    optional    }|
    { ID    id-CriticalityDiagnostics                       CRITICALITY ignore          TYPE
    CriticalityDiagnostics                  PRESENCE    optional    },
    ...
}

InformationExchangeInitiationResponse-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

InformationExchangeObjectType-InfEx-Rsp ::= CHOICE {
    cell                        Cell-InfEx-Rsp,
    ...,
    extension-InformationExchangeObjectType-InfEx-Rsp       Extension-InformationExchangeObjectType-
InfEx-Rsp
}

Cell-InfEx-Rsp ::= SEQUENCE {
    requestedDataValue              RequestedDataValue,
    iE-Extensions                   ProtocolExtensionContainer  { { CellItem-InfEx-Rsp-ExtIEs} }
    OPTIONAL,
```

```
    ...
}

CellItem-InfEx-Rsp-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Extension-InformationExchangeObjectType-InfEx-Rsp   ::= ProtocolIE-Single-Container {{ Extension-
InformationExchangeObjectType-InfEx-RspIE }}

Extension-InformationExchangeObjectType-InfEx-RspIE RNSAP-PROTOCOL-IES ::= {
    { ID id-MBMS-Bearer-Service-List-InfEx-Rsp  CRITICALITY     ignore      TYPE    MBMS-Bearer-
Service-List-InfEx-Rsp      PRESENCE    mandatory}
}


MBMS-Bearer-Service-List-InfEx-Rsp  ::= SEQUENCE (SIZE (1..maxNrOfMBMSServices)) OF MBMS-Bearer-
ServiceItemIEs-InfEx-Rsp



MBMS-Bearer-ServiceItemIEs-InfEx-Rsp    ::=SEQUENCE{
    tmgi    TMGI,
    apn     AccessPointName,
    iPMulticastAdress   IPMulticastAddress,
    iE-Extensions                   ProtocolExtensionContainer { { MBMS-Bearer-ServiceItem-InfEx-
Rsp-ExtIEs} } OPTIONAL,
    ...
}

MBMS-Bearer-ServiceItem-InfEx-Rsp-ExtIEs    RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
-- **************************************************************
--
-- INFORMATION EXCHANGE INITIATION FAILURE
--
-- **************************************************************

InformationExchangeInitiationFailure ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{InformationExchangeInitiationFailure-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{InformationExchangeInitiationFailure-
Extensions}}        OPTIONAL,
    ...
}

InformationExchangeInitiationFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID                CRITICALITY     ignore          TYPE
    InformationExchangeID               PRESENCE    mandatory   }|
    { ID    id-Cause                                CRITICALITY     ignore          TYPE    Cause
                                    PRESENCE    mandatory   }|
    { ID    id-CriticalityDiagnostics               CRITICALITY     ignore          TYPE
    CriticalityDiagnostics              PRESENCE    optional    },
    ...
}

InformationExchangeInitiationFailure-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- INFORMATION REPORT
--
-- **************************************************************

InformationReport ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{InformationReport-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{InformationReport-Extensions}}
    OPTIONAL,
    ...
}

InformationReport-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID                        CRITICALITY ignore          TYPE
    InformationExchangeID                           PRESENCE    mandatory   }|
    { ID    id-InformationExchangeObjectType-InfEx-Rprt     CRITICALITY ignore          TYPE
    InformationExchangeObjectType-InfEx-Rprt        PRESENCE    mandatory   },
```

```
    ...
}

InformationReport-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

InformationExchangeObjectType-InfEx-Rprt ::= CHOICE {
    cell                            Cell-InfEx-Rprt,
    ...
 }

Cell-InfEx-Rprt ::= SEQUENCE {
    requestedDataValueInformation   RequestedDataValueInformation,
    iE-Extensions                   ProtocolExtensionContainer  {{ CellItem-InfEx-Rprt-ExtIEs }}
    OPTIONAL,
    ...

 }

CellItem-InfEx-Rprt-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


-- **************************************************************
--
-- INFORMATION EXCHANGE TERMINATION REQUEST
--
-- **************************************************************

InformationExchangeTerminationRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{InformationExchangeTerminationRequest-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{InformationExchangeTerminationRequest-
Extensions}}        OPTIONAL,
    ...
}

InformationExchangeTerminationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID            CRITICALITY     ignore              TYPE
    InformationExchangeID           PRESENCE    mandatory},
    ...
}

InformationExchangeTerminationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


-- **************************************************************
--
-- INFORMATION EXCHANGE FAILURE INDICATION
--
-- **************************************************************

InformationExchangeFailureIndication ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{InformationExchangeFailureIndication-IEs}},
    protocolExtensions          ProtocolExtensionContainer  {{InformationExchangeFailureIndication-
Extensions}}                OPTIONAL,
    ...
}

InformationExchangeFailureIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID            CRITICALITY ignore          TYPE
    InformationExchangeID           PRESENCE    mandatory   }|
    { ID    id-Cause                            CRITICALITY ignore          TYPE    Cause
                    PRESENCE    mandatory   },
    ...
}

InformationExchangeFailureIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RESET REQUEST
--
```

```
-- **************************************************************

ResetRequest ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{ResetRequest-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{ResetRequest-Extensions}}     OPTIONAL,
    ...
}

ResetRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RNC-ID              CRITICALITY reject  TYPE RNC-ID     PRESENCE mandatory} |
    { ID id-ResetIndicator      CRITICALITY reject      TYPE    ResetIndicator      PRESENCE
    mandatory},
    ...
}

ResetRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResetIndicator ::= CHOICE {
    context         ContextList-Reset,
    all-contexts        NULL,
    ...,
    contextGroup    ContextGroupList-Reset
}

ContextList-Reset ::= SEQUENCE {
    contextInfoList-Reset       ContextInfoList-Reset,
    iE-Extensions                           ProtocolExtensionContainer  { {ContextItem-Reset-
ExtIEs} }       OPTIONAL,
    ...
}

ContextItem-Reset-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

ContextInfoList-Reset ::= SEQUENCE (SIZE (1.. maxResetContext)) OF ProtocolIE-Single-Container
{{ ContextInfoItemIE-Reset }}

ContextInfoItemIE-Reset RNSAP-PROTOCOL-IES ::= {
    {ID id-ContextInfoItem-Reset        CRITICALITY reject      TYPE ContextInfoItem-Reset
    PRESENCE mandatory}
}

ContextInfoItem-Reset ::= SEQUENCE {
    contextType-Reset           ContextType-Reset,
    iE-Extensions               ProtocolExtensionContainer  { { ContextInfoItem-Reset-ExtIEs} }
    OPTIONAL,
    ...
}

ContextInfoItem-Reset-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

ContextType-Reset ::= CHOICE {
    sRNTI           S-RNTI,
    dRNTI           D-RNTI,
    ...
}

ContextGroupList-Reset ::= SEQUENCE {
    contextGroupInfoList-Reset      ContextGroupInfoList-Reset,
    iE-Extensions                   ProtocolExtensionContainer  { {ContextGroupItem-Reset-ExtIEs} }
    OPTIONAL,
    ...
}

ContextGroupItem-Reset-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

ContextGroupInfoList-Reset ::= SEQUENCE (SIZE (1.. maxResetContextGroup))   OF ProtocolIE-Single-
Container {{ ContextGroupInfoItemIE-Reset }}

ContextGroupInfoItemIE-Reset RNSAP-PROTOCOL-IES ::= {
```

```
    {ID id-ContextGroupInfoItem-Reset       CRITICALITY reject      TYPE ContextGroupInfoItem-Reset
    PRESENCE mandatory}
}

ContextGroupInfoItem-Reset ::= SEQUENCE {
    s-RNTI-Group                S-RNTI-Group,
    iE-Extensions               ProtocolExtensionContainer  { { ContextGroupInfoItem-Reset-ExtIEs} }
    OPTIONAL,
    ...
}

ContextGroupInfoItem-Reset-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RESET RESPONSE
--
-- **************************************************************

ResetResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{ResetResponse-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{ResetResponse-Extensions}}
    OPTIONAL,
    ...
}

ResetResponse-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RNC-ID              CRITICALITY ignore  TYPE RNC-ID     PRESENCE mandatory} |
    { ID id-CriticalityDiagnostics      CRITICALITY     ignore      TYPE    CriticalityDiagnostics
    PRESENCE    optional},
    ...
}

ResetResponse-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK ACTIVATION COMMAND FDD
--
-- **************************************************************

RadioLinkActivationCommandFDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{RadioLinkActivationCommandFDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{RadioLinkActivationCommandFDD-Extensions}}
            OPTIONAL,
    ...
}

RadioLinkActivationCommandFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DelayedActivationList-RL-ActivationCmdFDD       CRITICALITY ignore  TYPE
    DelayedActivationInformationList-RL-ActivationCmdFDD            PRESENCE    mandatory   },
    ...
}

RadioLinkActivationCommandFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DelayedActivationInformationList-RL-ActivationCmdFDD ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF
ProtocolIE-Single-Container {
    { DelayedActivationInformation-RL-ActivationCmdFDD-IEs} }

DelayedActivationInformation-RL-ActivationCmdFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DelayedActivationInformation-RL-ActivationCmdFDD    CRITICALITY ignore  TYPE
DelayedActivationInformation-RL-ActivationCmdFDD    PRESENCE optional   }
}

DelayedActivationInformation-RL-ActivationCmdFDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    delayed-activation-update   DelayedActivationUpdate,
    iE-Extensions               ProtocolExtensionContainer { { DelayedActivationInformation-RL-
ActivationCmdFDD-ExtIEs} } OPTIONAL,
    ...
}
```

```
DelayedActivationInformation-RL-ActivationCmdFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK ACTIVATION COMMAND TDD
--
-- **************************************************************

RadioLinkActivationCommandTDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{RadioLinkActivationCommandTDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{RadioLinkActivationCommandTDD-Extensions}}
            OPTIONAL,
    ...
}

RadioLinkActivationCommandTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DelayedActivationList-RL-ActivationCmdTDD       CRITICALITY ignore  TYPE
    DelayedActivationInformationList-RL-ActivationCmdTDD            PRESENCE    mandatory   },
    ...
}

RadioLinkActivationCommandTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DelayedActivationInformationList-RL-ActivationCmdTDD ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF
ProtocolIE-Single-Container {
    { DelayedActivationInformation-RL-ActivationCmdTDD-IEs} }

DelayedActivationInformation-RL-ActivationCmdTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DelayedActivationInformation-RL-ActivationCmdTDD    CRITICALITY ignore  TYPE
DelayedActivationInformation-RL-ActivationCmdTDD    PRESENCE optional   }
}

DelayedActivationInformation-RL-ActivationCmdTDD ::= SEQUENCE {
    rL-ID                       RL-ID,
    delayed-activation-update   DelayedActivationUpdate,
    iE-Extensions               ProtocolExtensionContainer { { DelayedActivationInformation-RL-
ActivationCmdTDD-ExtIEs} } OPTIONAL,
    ...
}

DelayedActivationInformation-RL-ActivationCmdTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- GERAN UPLINK SIGNALLING TRANSFER INDICATION
--
-- **************************************************************

GERANUplinkSignallingTransferIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{GERANUplinkSignallingTransferIndication-
IEs}},
    protocolExtensions            ProtocolExtensionContainer
{{GERANUplinkSignallingTransferIndication-Extensions}}  OPTIONAL,
    ...
}

GERANUplinkSignallingTransferIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-UC-ID                       CRITICALITY ignore  TYPE UC-ID
    PRESENCE mandatory  }   |
    -- UC-Id may be GERAN cell identifier.
    { ID id-SAI                         CRITICALITY ignore  TYPE SAI
    PRESENCE mandatory  }   |
    { ID id-S-RNTI                      CRITICALITY ignore  TYPE S-RNTI
    PRESENCE mandatory  }   |
    { ID id-D-RNTI                      CRITICALITY ignore  TYPE D-RNTI
    PRESENCE optional   }   |
    { ID id-L3-Information              CRITICALITY ignore  TYPE L3-Information
    PRESENCE mandatory  }   |
    { ID id-CN-PS-DomainIdentifier      CRITICALITY ignore  TYPE CN-PS-DomainIdentifier
    PRESENCE optional   }   |
```

```
    { ID id-CN-CS-DomainIdentifier      CRITICALITY ignore  TYPE CN-CS-DomainIdentifier
    PRESENCE optional   }   |
    { ID id-URA-Information             CRITICALITY ignore  TYPE URA-Information
    PRESENCE optional   },
    -- URA information may be GRA information
    ...
}

GERANUplinkSignallingTransferIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK PARAMETER UPDATE INDICATION FDD
--
-- **************************************************************

RadioLinkParameterUpdateIndicationFDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{RadioLinkParameterUpdateIndicationFDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{RadioLinkParameterUpdateIndicationFDD-
Extensions}}        OPTIONAL,
    ...
}

RadioLinkParameterUpdateIndicationFDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-HSDSCH-FDD-Update-Information                        CRITICALITY ignore  TYPE
    HSDSCH-FDD-Update-Information           PRESENCE    optional}|
    { ID    id-RL-ParameterUpdateIndicationFDD-RL-InformationList   CRITICALITY ignore  TYPE    RL-
ParameterUpdateIndicationFDD-RL-InformationList     PRESENCE optional   },
    ...
}

RL-ParameterUpdateIndicationFDD-RL-InformationList ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF
ProtocolIE-Single-Container { { RL-ParameterUpdateIndicationFDD-RL-InformationList-IEs} }

RL-ParameterUpdateIndicationFDD-RL-InformationList-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-RL-ParameterUpdateIndicationFDD-RL-Information-Item     CRITICALITY ignore  TYPE RL-
ParameterUpdateIndicationFDD-RL-Information-Item        PRESENCE mandatory  }
}

RL-ParameterUpdateIndicationFDD-RL-Information-Item::= SEQUENCE {
    rL-ID                           RL-ID,
    phase-Reference-Update-Indicator    Phase-Reference-Update-Indicator    OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { RL-
ParameterUpdateIndicationFDD-RL-Information-ExtIEs} } OPTIONAL,
    ...
}

RL-ParameterUpdateIndicationFDD-RL-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RadioLinkParameterUpdateIndicationFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- RADIO LINK PARAMETER UPDATE INDICATION TDD
--
-- **************************************************************

RadioLinkParameterUpdateIndicationTDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{RadioLinkParameterUpdateIndicationTDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{RadioLinkParameterUpdateIndicationTDD-
Extensions}}        OPTIONAL,
    ...
}

RadioLinkParameterUpdateIndicationTDD-IEs RNSAP-PROTOCOL-IES ::= {
    { ID    id-HSDSCH-TDD-Update-Information        CRITICALITY     ignore      TYPE    HSDSCH-TDD-
Update-Information          PRESENCE    optional},
    ...
}

RadioLinkParameterUpdateIndicationTDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
```

```
}

-- **************************************************************
--
-- UE MEASUREMENT INITIATION REQUEST
--
-- **************************************************************

UEMeasurementInitiationRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UEMeasurementInitiationRequest-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{UEMeasurementInitiationRequest-
Extensions}}               OPTIONAL,
    ...
}

UEMeasurementInitiationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-AllowedQueuingTime                  CRITICALITY reject  TYPE AllowedQueuingTime
            PRESENCE optional       } |
    { ID id-MeasurementID                       CRITICALITY reject  TYPE MeasurementID
              PRESENCE mandatory  } |
    { ID id-UEMeasurementType                   CRITICALITY reject  TYPE UEMeasurementType
              PRESENCE mandatory  } |
    { ID id-UEMeasurementTimeslotInfoHCR        CRITICALITY reject  TYPE
UEMeasurementTimeslotInfoHCR            PRESENCE optional       } |
    { ID id-UEMeasurementTimeslotInfoLCR        CRITICALITY reject  TYPE
UEMeasurementTimeslotInfoLCR            PRESENCE optional       } |
    { ID id-MeasurementFilterCoefficient        CRITICALITY reject  TYPE
MeasurementFilterCoefficient            PRESENCE optional       } |
    { ID id-UEMeasurementReportCharacteristics  CRITICALITY reject  TYPE
UEMeasurementReportCharacteristics  PRESENCE mandatory  } |
    { ID id-UEMeasurementParameterModAllow      CRITICALITY reject  TYPE
UEMeasurementParameterModAllow          PRESENCE mandatory  },
    ...
}

UEMeasurementInitiationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- UE MEASUREMENT INITIATION RESPONSE
--
-- **************************************************************

UEMeasurementInitiationResponse ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UEMeasurementInitiationResponse-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{UEMeasurementInitiationResponse-
Extensions}}               OPTIONAL,
    ...
}

UEMeasurementInitiationResponse-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID                       CRITICALITY ignore  TYPE MeasurementID
              PRESENCE mandatory  } |
    { ID id-MeasurementFilterCoefficient        CRITICALITY reject  TYPE
MeasurementFilterCoefficient            PRESENCE optional       } |
    { ID id-UEMeasurementReportCharacteristics  CRITICALITY reject  TYPE
UEMeasurementReportCharacteristics  PRESENCE optional       } |
    { ID id-CriticalityDiagnostics              CRITICALITY ignore  TYPE CriticalityDiagnostics
              PRESENCE optional   },
    ...
}

UEMeasurementInitiationResponse-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- UE MEASUREMENT INITIATION FAILURE
--
-- **************************************************************

UEMeasurementInitiationFailure ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UEMeasurementInitiationFailure-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{UEMeasurementInitiationFailure-
Extensions}}               OPTIONAL,
```

```
    ...
}

UEMeasurementInitiationFailure-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID                   CRITICALITY ignore  TYPE MeasurementID
    PRESENCE mandatory  } |
    { ID id-Cause                           CRITICALITY ignore  TYPE Cause
    PRESENCE mandatory  } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics
    PRESENCE optional   },
    ...
}

UEMeasurementInitiationFailure-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- UE MEASUREMENT REPORT
--
-- **************************************************************

UEMeasurementReport ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UEMeasurementReport-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{UEMeasurementReport-Extensions}}
OPTIONAL,
    ...
}

UEMeasurementReport-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID                   CRITICALITY ignore  TYPE MeasurementID
        PRESENCE mandatory  } |
    { ID id-UEMeasurementValueInformation   CRITICALITY ignore  TYPE UEMeasurementValueInformation
    PRESENCE mandatory  },
    ...
}

UEMeasurementReport-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- UE MEASUREMENT TERMINATION REQUEST
--
-- **************************************************************

UEMeasurementTerminationRequest ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UEMeasurementTerminationRequest-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{UEMeasurementTerminationRequest-
Extensions}}               OPTIONAL,
    ...
}

UEMeasurementTerminationRequest-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID               CRITICALITY ignore  TYPE MeasurementID              PRESENCE
mandatory   },
    ...
}

UEMeasurementTerminationRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- UE MEASUREMENT FAILURE INDICATION
--
-- **************************************************************

UEMeasurementFailureIndication ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container      {{UEMeasurementFailureIndication-IEs}},
    protocolExtensions           ProtocolExtensionContainer {{UEMeasurementFailureIndication-
Extensions}}               OPTIONAL,
    ...
}
```

```
UEMeasurementFailureIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MeasurementID               CRITICALITY ignore  TYPE MeasurementID              PRESENCE
mandatory   } |
    { ID id-Cause                       CRITICALITY ignore  TYPE Cause                      PRESENCE
mandatory   },
    ...
}

UEMeasurementFailureIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- IUR INVOKE TRACE
--
-- **************************************************************

IurInvokeTrace ::= SEQUENCE {
    protocolIEs                             ProtocolIE-Container        {{IurInvokeTrace-IEs}},
    protocolExtensions                      ProtocolExtensionContainer  {{IurInvokeTrace-
Extensions}}        OPTIONAL,
    ...
}

IurInvokeTrace-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                          CRITICALITY ignore  TYPE D-RNTI
                PRESENCE optional       }|
    { ID id-TraceReference                  CRITICALITY ignore  TYPE TraceReference
                PRESENCE mandatory  }|
    { ID id-UEIdentity                      CRITICALITY ignore  TYPE UEIdentity
                PRESENCE mandatory  }|
    { ID id-TraceRecordingSessionReference      CRITICALITY ignore  TYPE
TraceRecordingSessionReference          PRESENCE mandatory  }|
    { ID id-ListOfInterfacesToTrace         CRITICALITY ignore  TYPE ListOfInterfacesToTrace
                PRESENCE optional       }|
    { ID id-TraceDepth                      CRITICALITY ignore  TYPE TraceDepth
                PRESENCE mandatory  },
    ...
}

ListOfInterfacesToTrace ::= SEQUENCE (SIZE (1..maxNrOfInterfaces)) OF ProtocolIE-Single-Container {{
InterfacesToBeTracedItemIE }}

InterfacesToBeTracedItemIE RNSAP-PROTOCOL-IES ::= {
    { ID id-InterfacesToTraceItem           CRITICALITY ignore  TYPE InterfacesToTraceItem
                PRESENCE mandatory  }
}

InterfacesToTraceItem ::= SEQUENCE {
    interface               ENUMERATED {iub,iur,...},
    iE-Extensions           ProtocolExtensionContainer { {InterfacesToTraceItem-ExtIEs} }
    OPTIONAL,
    ...
}

InterfacesToTraceItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


IurInvokeTrace-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- IUR DEACTIVATE TRACE
--
-- **************************************************************

IurDeactivateTrace ::= SEQUENCE {
    protocolIEs                             ProtocolIE-Container        {{IurDeactivateTrace-
IEs}},
    protocolExtensions                      ProtocolExtensionContainer  {{IurDeactivateTrace-
Extensions}}    OPTIONAL,
    ...
}
```

```
IurDeactivateTrace-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-D-RNTI                              CRITICALITY ignore  TYPE D-RNTI
                PRESENCE optional       }|
    { ID id-TraceReference                      CRITICALITY ignore  TYPE TraceReference
                PRESENCE mandatory  },
    ...
}

IurDeactivateTrace-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS ATTACH COMMAND
--
-- **************************************************************

MBMSAttachCommand ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{MBMSAttachCommand-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{MBMSAttachCommand-Extensions}}
    OPTIONAL,
    ...
}

MBMSAttachCommand-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MBMS-Bearer-Service-List        CRITICALITY     ignore      TYPE MBMS-Bearer-Service-
List PRESENCE   mandatory} |
    { ID id-UE-State        CRITICALITY     ignore  TYPE    UE-State        PRESENCE    optional},
    ...
}

MBMSAttachCommand-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS DETACH COMMAND
--
-- **************************************************************

MBMSDetachCommand ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{MBMSDetachCommand-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{MBMSDetachCommand-Extensions}}
    OPTIONAL,
    ...
}

MBMSDetachCommand-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-MBMS-Bearer-Service-List    CRITICALITY     ignore      TYPE MBMS-Bearer-Service-List
PRESENCE    mandatory} |
    { ID id-UE-State        CRITICALITY     ignore  TYPE    UE-State        PRESENCE    optional},
    ...
}

MBMSDetachCommand-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS CHANNEL TYPE RECONFIGURATION INDICATION
--
-- **************************************************************

MBMSChannelTypeReconfigurationIndication ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{MBMSChannelTypeReconfigurationIndication-
IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{MBMSChannelTypeReconfigurationIndication-
Extensions}}        OPTIONAL,
    ...
}

MBMSChannelTypeReconfigurationIndication-IEs RNSAP-PROTOCOL-IES ::= {
    { ID id-DRNC-ID                 CRITICALITY ignore  TYPE RNC-ID         PRESENCE mandatory} |
    { ID id-C-ID                    CRITICALITY ignore  TYPE C-ID           PRESENCE mandatory} |
```

```
    { ID id-TMGI            CRITICALITY ignore  TYPE    TMGI        PRESENCE mandatory}|
    { ID id-TransmissionMode            CRITICALITY ignore  TYPE    TransmissionMode
    PERSENCE mandatory}|
    { ID id-AffectedUEInformationForMBMS                    CRITICALITY ignore  TYPE
AffectedUEInformationForMBMS                    PRESENCE optional   } ,
    ...
}

AffectedUEInformationForMBMS    ::= SEQUENCE (SIZE (1..maxNrOfUEs)) OF S-RNTI


MBMSChannelTypeReconfigurationIndication-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


-- **************************************************************
--
-- PRIVATE MESSAGE
--
-- **************************************************************

PrivateMessage ::= SEQUENCE {
    privateIEs      PrivateIE-Container  {{PrivateMessage-IEs}},
    ...
}

PrivateMessage-IEs RNSAP-PRIVATE-IES ::= {
    ...
}

END
```

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************

RNSAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) rnsap (1) version1 (1) rnsap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    maxCodeNumComp-1,
    maxNrOfFACHs,
    maxFACHCountPlus1,
    maxIBSEG,
    maxNoOfDSCHs,
    maxNoOfDSCHs-1,
    maxNoOfUSCHs,
    maxNoTFCIGroups,
    maxNoCodeGroups,
    maxNrOfDCHs,
    maxNrOfDL-Codes,
    maxNrOfDLTs,
    maxNrOfDLTsLCR,
    maxNrOfDPCHs,
    maxNrOfDPCHsLCR,
    maxNrOfErrors,
    maxNrOfFDDNeighboursPerRNC,
    maxNrOfMACcshSDU-Length,
    maxNrOfNeighbouringRNCs,
    maxNrOfTDDNeighboursPerRNC,
    maxNrOfLCRTDDNeighboursPerRNC,
    maxNrOfTS,
    maxNrOfTsLCR,
    maxNrOfULTs,
    maxNrOfULTsLCR,
```

```
    maxNrOfGSMNeighboursPerRNC,
    maxRateMatching,
    maxNrOfPoints,
    maxNoOfRB,
    maxNrOfRLs,
    maxNrOfTFCs,
    maxNrOfTFs,
    maxCTFC,
    maxRNCinURA-1,
    maxNrOfSCCPCHs,
    maxTFCI1Combs,
    maxTFCI2Combs,
    maxTFCI2Combs-1,
    maxTGPS,
    maxTTI-Count,
    maxNoGPSTypes,
    maxNoSat,
    maxNrOfSNAs,
    maxNrOfHARQProc,
    maxNrOfHSSCCHCodes,
    maxNrOfMACdFlows,
    maxNrOfMACdFlows-1,
    maxNrOfMBMSServices,
    maxNrOfPDUIndexes,
    maxNrOfPDUIndexes-1,
    maxNrOfPrioQueues,
    maxNrOfPrioQueues-1,
    maxNrOfSatAlmanac-maxNoSat,
    maxNrOfGERANSI,

    id-Allowed-Rate-Information,
    id-AntennaColocationIndicator,
    id-BindingID,
    id-Cell-Capacity-Class-Value,
    id-CellCapabilityContainer-FDD,
    id-CellCapabilityContainer-TDD,
    id-CellCapabilityContainer-TDD-LCR,
    id-CoverageIndicator,
    id-DPC-Mode-Change-SupportIndicator,
    id-DSCH-Specific-FDD-Additional-List,
    id-GERAN-Cell-Capability,
    id-GERAN-Classmark,
    id-Guaranteed-Rate-Information,
    id-HCS-Prio,
    id-Load-Value,
    id-Load-Value-IncrDecrThres,
    id-Neighbouring-GSM-CellInformation,
    id-Neighbouring-UMTS-CellInformationItem,
    id-neighbouring-LCR-TDD-CellInformation,
    id-NRT-Load-Information-Value,
    id-NRT-Load-Information-Value-IncrDecrThres,
    id-OnModification,
    id-Received-Total-Wideband-Power-Value,
    id-Received-Total-Wideband-Power-Value-IncrDecrThres,
    id-RT-Load-Value,
    id-RT-Load-Value-IncrDecrThres,
    id-SFNSFNMeasurementThresholdInformation,
    id-SNA-Information,
    id-TrafficClass,
    id-Transmitted-Carrier-Power-Value,
    id-Transmitted-Carrier-Power-Value-IncrDecrThres,
    id-TUTRANGPSMeasurementThresholdInformation,
    id-UL-Timeslot-ISCP-Value,
    id-UL-Timeslot-ISCP-Value-IncrDecrThres,
    maxNrOfLevels,
    maxNrOfMeasNCell,
    maxNrOfMeasNCell-1,
    id-MessageStructure,
    id-EnhancedDSCHPC,
    id-RestrictionStateIndicator,
    id-Rx-Timing-Deviation-Value-LCR,
    id-TransportLayerAddress,
    id-TypeOfError,
    id-Angle-Of-Arrival-Value-LCR,
    id-IPDL-TDD-ParametersLCR,
    id-DSCH-InitialWindowSize,
    id-Maximum-DL-Power-TimeslotLCR-InformationItem,
    id-Minimum-DL-Power-TimeslotLCR-InformationItem,
```

```
    id-HS-SICH-Reception-Quality,
    id-HS-SICH-Reception-Quality-Measurement-Value,
    id-ExtendedGSMCellIndividualOffset,
    id-Unidirectional-DCH-Indicator,
    id-RTLoadValue,
    id-NRTLoadInformationValue,
    id-Satellite-Almanac-Information-ExtItem,
    id-TnlQos,
    id-UpPTSInterferenceValue,
    id-NACC-Related-Data

FROM RNSAP-Constants

    Criticality,
    ProcedureID,
    ProtocolIE-ID,
    TransactionID,
    TriggeringMessage
FROM RNSAP-CommonDataTypes

    ProtocolIE-Single-Container{},
    ProtocolExtensionContainer{},
    RNSAP-PROTOCOL-IES,
    RNSAP-PROTOCOL-EXTENSION
FROM RNSAP-Containers;

-- A

AckNack-RepetitionFactor ::= INTEGER (1..4,...)
-- Step: 1

Ack-Power-Offset ::= INTEGER (0..8,...)
-- According to mapping in ref. [21] subclause 4.2.1

Active-Pattern-Sequence-Information ::= SEQUENCE {
    cMConfigurationChangeCFN        CFN,
    transmission-Gap-Pattern-Sequence-Status    Transmission-Gap-Pattern-Sequence-Status-List
    OPTIONAL,
    iE-Extensions       ProtocolExtensionContainer { {Active-Pattern-Sequence-Information-ExtIEs} }
OPTIONAL,
    ...
}

Active-Pattern-Sequence-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

AdjustmentPeriod            ::= INTEGER(1..256)
-- Unit Frame

AllocationRetentionPriority ::= SEQUENCE {
    priorityLevel               PriorityLevel,
    pre-emptionCapability       Pre-emptionCapability,
    pre-emptionVulnerability    Pre-emptionVulnerability,
    iE-Extensions           ProtocolExtensionContainer { {AllocationRetentionPriority-ExtIEs} }
OPTIONAL,
    ...
}

AllocationRetentionPriority-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Allowed-Rate-Information    ::= SEQUENCE {
    allowed-UL-Rate         Allowed-Rate OPTIONAL,
    allowed-DL-Rate         Allowed-Rate OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {Allowed-Rate-Information-ExtIEs} }
OPTIONAL,
    ...
}

Allowed-Rate-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Allowed-Rate            ::= INTEGER (1..maxNrOfTFs)
-- "1": TFI 0, "2": TFI 1, "3": TFI 2, ...
```

```
AllowedQueuingTime          ::= INTEGER (1..60)
-- seconds

AlphaValue                  ::= INTEGER (0..8)
-- Actual value = Alpha / 8

Angle-Of-Arrival-Value-LCR ::= SEQUENCE {
    aOA-LCR                 AOA-LCR,
    aOA-LCR-Accuracy-Class  AOA-LCR-Accuracy-Class,
    iE-Extensions           ProtocolExtensionContainer { {Angle-Of-Arrival-Value-LCR-ExtIEs} }
OPTIONAL,
...
}

Angle-Of-Arrival-Value-LCR-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

AOA-LCR ::= INTEGER (0..719)
-- Angle Of Arrival for 1.28Mcps TDD

AOA-LCR-Accuracy-Class  ::= ENUMERATED {a,b,c,d,e,f,g,h,...}

AntennaColocationIndicator ::= ENUMERATED {
    co-located,
    ...
}

AccessPointName     ::= OCTET STRING (SIZE (1..100,...))

-- B

BadSatellites ::= SEQUENCE {
    badSatelliteInformation     SEQUENCE (SIZE (1..maxNoSat)) OF
        SEQUENCE {
            badSAT-ID                   SAT-ID,
            iE-Extensions               ProtocolExtensionContainer { { BadSatelliteInformation-
ExtIEs} }       OPTIONAL,
            ...
        },
    iE-Extensions               ProtocolExtensionContainer { { BadSatellites-ExtIEs} }
    OPTIONAL,
    ...
}

BadSatelliteInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

BadSatellites-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Band-Indicator ::= ENUMERATED {
    dcs1800Band,
    pcs1900Band,
    ...
}

BCC ::= BIT STRING (SIZE (3))

BCCH-ARFCN ::= INTEGER (0..1023)

BetaCD ::= INTEGER (0..15)

BindingID               ::= OCTET STRING (SIZE (1..4,...))
-- If the Binding ID includes an UDP port, the UDP port is included in octet 1 and 2.

BLER                    ::= INTEGER (-63..0)
-- Step 0.1 (Range -6.3..0). It is the Log10 of the BLER

SCTD-Indicator  ::= ENUMERATED {
    active,
    inactive
}

BSIC ::= SEQUENCE {
    nCC         NCC,
```

```
    bCC         BCC
}

BurstModeParameters ::= SEQUENCE {
    burstStart      INTEGER (0..15),
    burstLength     INTEGER (10..25),
    burstFreq       INTEGER (1..16),
    iE-Extensions               ProtocolExtensionContainer { { BurstModeParameters-ExtIEs} }
    OPTIONAL,
    ...
}

BurstModeParameters-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- C

Cause ::= CHOICE {
    radioNetwork        CauseRadioNetwork,
    transport           CauseTransport,
    protocol            CauseProtocol,
    misc                CauseMisc,
    ...
}

CauseMisc ::= ENUMERATED {
    control-processing-overload,
    hardware-failure,
    om-intervention,
    not-enough-user-plane-processing-resources,
    unspecified,
    ...
}

CauseProtocol ::= ENUMERATED {
    transfer-syntax-error,
    abstract-syntax-error-reject,
    abstract-syntax-error-ignore-and-notify,
    message-not-compatible-with-receiver-state,
    semantic-error,
    unspecified,
    abstract-syntax-error-falsely-constructed-message,
    ...
}

CauseRadioNetwork ::= ENUMERATED {
    unknown-C-ID,
    cell-not-available,
    power-level-not-supported,
    ul-scrambling-code-already-in-use,
    dl-radio-resources-not-available,
    ul-radio-resources-not-available,
    measurement-not-supported-for-the-object,
    combining-resources-not-available,
    combining-not-supported,
    reconfiguration-not-allowed,
    requested-configuration-not-supported,
    synchronisation-failure,
    requested-tx-diversity-mode-not-supported,
    measurement-temporaily-not-available,
    unspecified,
    invalid-CM-settings,
    reconfiguration-CFN-not-elapsed,
    number-of-DL-codes-not-supported,
    dedicated-transport-channel-type-not-supported,
    dl-shared-channel-type-not-supported,
    ul-shared-channel-type-not-supported,
    common-transport-channel-type-not-supported,
    ul-spreading-factor-not-supported,
    dl-spreading-factor-not-supported,
    cm-not-supported,
    transaction-not-supported-by-destination-node-b,
    rl-already-activated-or-alocated,
    ...,
   number-of-UL-codes-not-supported,
    cell-reserved-for-operator-use,
    dpc-mode-change-not-supported,
```

```
    information-temporarily-not-available,
    information-provision-not-supported-for-the-object,
    power-balancing-status-not-compatible,
    delayed-activation-not-supported,
    rl-timing-adjustment-not-supported,
    unknown-RNTI,
    measurement-repetition-rate-not-compatible,
    ue-not-capable-of-support
}

CauseTransport ::= ENUMERATED {
    transport-resource-unavailable,
    unspecified,
    ...
}

CellCapabilityContainer-FDD ::= BIT STRING (SIZE (32))
-- First bit: Flexible Hard Split Support Indicator
-- Second bit: Delayed Activation Support Indicator
-- Third bit: HS-DSCH Support Indicator
-- Fourth bit: DSCH Support Indicator
-- Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the
transmitter and shall be ignored by the receiver.

CellCapabilityContainer-TDD ::= BIT STRING (SIZE (32))
-- First bit: Delayed Activation Support Indicator
-- Second bit: HS-DSCH Support Indicator
-- Third bit: DSCH Support Indicator
-- Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the
transmitter and shall be ignored by the receiver.

CellCapabilityContainer-TDD-LCR ::= BIT STRING (SIZE (32))
-- First bit: Delayed Activation Support Indicator
-- Second bit: HS-DSCH Support Indicator
-- Third bit: DSCH Support Indicator
-- Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the
transmitter and shall be ignored by the receiver.

C-ID                    ::= INTEGER (0..65535)

CCTrCH-ID               ::= INTEGER (0..15)

Cell-Capacity-Class-Value ::= SEQUENCE {
        uplinkCellCapacityClassValue        INTEGER(1..100,...),
        downlinkCellCapacityClassValue      INTEGER(1..100,...)
}


CellIndividualOffset    ::= INTEGER (-20..20)

CellParameterID             ::= INTEGER (0..127,...)

CellPortionID   ::= INTEGER (0..63,...)

CFN                 ::= INTEGER (0..255)

CGI ::= SEQUENCE {
    lAI         SEQUENCE {
        pLMN-Identity   PLMN-Identity,
        lAC             LAC,
        iE-Extensions           ProtocolExtensionContainer { {LAI-ExtIEs} } OPTIONAL,
        ...
    },
    cI              CI,
    iE-Extensions           ProtocolExtensionContainer { {CGI-ExtIEs} } OPTIONAL
}

LAI-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CGI-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

ChannelCodingType ::= ENUMERATED {
    no-codingTDD,
    convolutional-coding,
```

```
    turbo-coding,
    ...
}

ChipOffset              ::= INTEGER (0..38399)

CI                  ::= OCTET STRING (SIZE (2))

ClosedLoopMode1-SupportIndicator    ::= ENUMERATED {
    closedLoop-Mode1-Supported,
    closedLoop-Mode1-not-Supported
}

ClosedLoopMode2-SupportIndicator    ::= ENUMERATED {
    closedLoop-Mode2-Supported,
    closedLoop-Mode2-not-Supported
}

Closedlooptimingadjustmentmode  ::= ENUMERATED {
    adj-1-slot,
    adj-2-slot,
    ...
}

CodeNumber ::= INTEGER (0..maxCodeNumComp-1)

CodingRate ::= ENUMERATED {
    half,
    third,
    ...
}

CommonMeasurementAccuracy ::= CHOICE {
    tUTRANGPSMeasurementAccuracyClass       TUTRANGPSAccuracyClass,
    ...
}

CommonMeasurementType ::= ENUMERATED {
    uTRAN-GPS-timing-of-cell-frames-for-UE-Positioning,
    sFN-SFN-observerd-time-difference,
    load,
    transmitted-carrier-power,
    received-total-wide-band-power,
    uplink-timeslot-iscp,
    ...,
    rT-load,
    nRT-load-Information,
    upPTSInterference
}
-- For measurements on the Iur-g interface, only load, RT Load and NRT Load information are
requested.

CommonMeasurementValue ::= CHOICE {
    tUTRANGPSMeasurementValueInformation    TUTRANGPSMeasurementValueInformation,
    sFNSFNMeasurementValueInformation       SFNSFNMeasurementValueInformation,
    loadValue                           LoadValue,
    transmittedCarrierPowerValue        INTEGER(0..100),
    receivedTotalWideBandPowerValue     INTEGER(0..621),
    uplinkTimeslotISCPValue             UL-TimeslotISCP,
    ...,
    extension-CommonMeasurementValue    Extension-CommonMeasurementValue
}

Extension-CommonMeasurementValue    ::= ProtocolIE-Single-Container {{ Extension-
CommonMeasurementValueIE }}

Extension-CommonMeasurementValueIE RNSAP-PROTOCOL-IES ::= {
    { ID id-RTLoadValue CRITICALITY ignore  TYPE RTLoadValue    PRESENCE mandatory }|
    { ID id-NRTLoadInformationValue CRITICALITY ignore  TYPE NRTLoadInformationValue    PRESENCE
mandatory }|
    { ID id-UpPTSInterferenceValue      CRITICALITY reject  TYPE    UpPTSInterferenceValue
    PRESENCE mandatory }
}

-- For measurements on the Iur-g interface, only load, RT Load and NRT Load values are reported.

CommonMeasurementValueInformation ::= CHOICE {
    measurementAvailable        CommonMeasurementAvailable,
```

```
    measurementnotAvailable     NULL
}

CommonMeasurementAvailable::= SEQUENCE {
    commonMeasurementValue      CommonMeasurementValue,
    iE-Extensions                   ProtocolExtensionContainer { { CommonMeasurementAvailableItem-
ExtIEs} } OPTIONAL,
    ...
}

CommonMeasurementAvailableItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CongestionCause ::= ENUMERATED {
    uTRAN-dynamic-resources,
    uTRAN-semistatic-resources,
    ...
}

CommonTransportChannelResourcesInitialisationNotRequired ::= ENUMERATED {
    not-Required
}

CoverageIndicator ::= ENUMERATED {
    overlap,
    covers,
    containedIn,
    ...
}

CRC-Size                ::= ENUMERATED {
    v0,
    v8,
    v12,
    v16,
    v24,
    ...
}

CriticalityDiagnostics ::= SEQUENCE {
    procedureID                 ProcedureID         OPTIONAL,
    triggeringMessage           TriggeringMessage       OPTIONAL,
    procedureCriticality        Criticality             OPTIONAL,
    transactionID               TransactionID           OPTIONAL,
    iEsCriticalityDiagnostics       CriticalityDiagnostics-IE-List  OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {CriticalityDiagnostics-ExtIEs} }
OPTIONAL,
    ...
}

CriticalityDiagnostics-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1..maxNrOfErrors)) OF
    SEQUENCE {
        iECriticality           Criticality,
        iE-ID                   ProtocolIE-ID,
        repetitionNumber        RepetitionNumber0       OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {CriticalityDiagnostics-IE-List-ExtIEs}
} OPTIONAL,
        ...
    }

CriticalityDiagnostics-IE-List-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
{   ID id-MessageStructure      CRITICALITY ignore      EXTENSION MessageStructure      PRESENCE
optional    }|
{   ID id-TypeOfError           CRITICALITY ignore      EXTENSION TypeOfError           PRESENCE
mandatory   },
    ...
}

MessageStructure ::= SEQUENCE (SIZE (1..maxNrOfLevels)) OF
    SEQUENCE {
        iE-ID                   ProtocolIE-ID,
        repetitionNumber        RepetitionNumber1       OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {MessageStructure-ExtIEs} } OPTIONAL,
```

```
        ...
    }


MessageStructure-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CN-CS-DomainIdentifier ::= SEQUENCE {
    pLMN-Identity       PLMN-Identity,
    lAC                 LAC,
    iE-Extensions       ProtocolExtensionContainer { {CN-CS-DomainIdentifier-ExtIEs} } OPTIONAL
}

CN-CS-DomainIdentifier-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CN-PS-DomainIdentifier ::= SEQUENCE {
    pLMN-Identity       PLMN-Identity,
    lAC                 LAC,
    rAC                 RAC,
    iE-Extensions       ProtocolExtensionContainer { {CN-PS-DomainIdentifier-ExtIEs} } OPTIONAL
}

CN-PS-DomainIdentifier-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

CNDomainType    ::= ENUMERATED {
    cs-domain,
    ps-domain,
    dont-care,
    ...
}
-- See in [16]

CQI-Feedback-Cycle ::= ENUMERATED {v0, v2, v4, v8, v10, v20, v40, v80, v160,...}

CQI-Power-Offset ::= INTEGER (0..8,...)
-- According to mapping in ref. [21] subclause 4.2.1

CQI-RepetitionFactor ::= INTEGER (1..4,...)
-- Step: 1

C-RNTI                  ::= INTEGER (0..65535)

-- D
DATA-ID ::= INTEGER (0..3)

DCH-FDD-Information     ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-FDD-InformationItem

DCH-FDD-InformationItem ::= SEQUENCE {
    payloadCRC-PresenceIndicator        PayloadCRC-PresenceIndicator,
    ul-FP-Mode                          UL-FP-Mode,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    dCH-SpecificInformationList         DCH-Specific-FDD-InformationList,
    iE-Extensions                       ProtocolExtensionContainer { {DCH-FDD-InformationItem-
ExtIEs} } OPTIONAL,
    ...
}

DCH-FDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TnlQos          CRITICALITY ignore      EXTENSION   TnlQos      PRESENCE    optional
    },
    ...
}

DCH-Specific-FDD-InformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-Specific-FDD-Item

DCH-Specific-FDD-Item ::=   SEQUENCE {
    dCH-ID                              DCH-ID,
    trCH-SrcStatisticsDescr             TrCH-SrcStatisticsDescr,
    ul-transportFormatSet               TransportFormatSet,
    dl-transportFormatSet               TransportFormatSet,
    ul-BLER                             BLER,
    dl-BLER                             BLER,
```

```
    allocationRetentionPriority         AllocationRetentionPriority,
    frameHandlingPriority               FrameHandlingPriority,
    qE-Selector                         QE-Selector,
    dRACControl                         DRACControl,
    iE-Extensions                       ProtocolExtensionContainer { {DCH-FDD-SpecificItem-ExtIEs} }
OPTIONAL,
    ...
}

DCH-FDD-SpecificItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Guaranteed-Rate-Information     CRITICALITY ignore  EXTENSION Guaranteed-Rate-
Information     PRESENCE optional   }|
    { ID id-TrafficClass                    CRITICALITY ignore  EXTENSION TrafficClass  PRESENCE
mandatory}|
    { ID id-Unidirectional-DCH-Indicator    CRITICALITY reject  EXTENSION Unidirectional-DCH-
Indicator       PRESENCE optional   },
    ...
}

DCH-ID                  ::= INTEGER (0..255)

DCH-InformationResponse ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-InformationResponseItem

DCH-InformationResponseItem ::= SEQUENCE {
    dCH-ID                      DCH-ID,
    bindingID                   BindingID               OPTIONAL,
    transportLayerAddress       TransportLayerAddress   OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {DCH-InformationResponseItem-ExtIEs} }
OPTIONAL,
    ...
}

DCH-InformationResponseItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Allowed-Rate-Information        CRITICALITY ignore  EXTENSION Allowed-Rate-Information
    PRESENCE optional   },
    ...
}

DCH-TDD-Information     ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-TDD-InformationItem

DCH-TDD-InformationItem ::= SEQUENCE {
    payloadCRC-PresenceIndicator        PayloadCRC-PresenceIndicator,
    ul-FP-Mode                          UL-FP-Mode,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    dCH-SpecificInformationList         DCH-Specific-TDD-InformationList,
    iE-Extensions                       ProtocolExtensionContainer { {DCH-TDD-InformationItem-
ExtIEs} } OPTIONAL,
    ...
}

DCH-TDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TnlQos                      CRITICALITY ignore      EXTENSION   TnlQos      PRESENCE
    optional    },
    ...
}

DCH-Specific-TDD-InformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-Specific-TDD-Item

DCH-Specific-TDD-Item ::=   SEQUENCE {
    dCH-ID                              DCH-ID,
    ul-cCTrCH-ID                        CCTrCH-ID, -- UL CCTrCH in which the DCH is mapped
    dl-cCTrCH-ID                        CCTrCH-ID, -- DL CCTrCH in which the DCH is mapped
    trCH-SrcStatisticsDescr             TrCH-SrcStatisticsDescr,
    ul-transportFormatSet               TransportFormatSet,
    dl-transportFormatSet               TransportFormatSet,
    ul-BLER                             BLER,
    dl-BLER                             BLER,
    allocationRetentionPriority         AllocationRetentionPriority,
    frameHandlingPriority               FrameHandlingPriority,
    qE-Selector                         QE-Selector         OPTIONAL,
    -- This IE shall be present if DCH is part of set of Co-ordinated DCHs
    iE-Extensions                       ProtocolExtensionContainer { {DCH-Specific-TDD-Item-ExtIEs}
} OPTIONAL,
    ...
}

DCH-Specific-TDD-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
```

```
    { ID id-Guaranteed-Rate-Information     CRITICALITY ignore  EXTENSION Guaranteed-Rate-
Information     PRESENCE optional   }|
    { ID id-TrafficClass                    CRITICALITY ignore  EXTENSION TrafficClass  PRESENCE
mandatory}|
    { ID id-Unidirectional-DCH-Indicator    CRITICALITY reject  EXTENSION Unidirectional-DCH-
Indicator       PRESENCE optional   },
    ...
}

DedicatedMeasurementType ::= ENUMERATED {
    sir,
    sir-error,
    transmitted-code-power,
    rSCP,
    rx-timing-deviation,
    round-trip-time,
    ...,
    rx-timing-deviation-LCR,
    angle-Of-Arrival-LCR,
    hs-sich-quality
}

DedicatedMeasurementValue ::= CHOICE {
    sIR-Value           SIR-Value,
    sIR-ErrorValue          SIR-Error-Value,
    transmittedCodePowerValue   Transmitted-Code-Power-Value,
    rSCP                RSCP-Value, -- TDD only
    rxTimingDeviationValue  Rx-Timing-Deviation-Value,  -- 3.84Mcps TDD only
    roundTripTime       Round-Trip-Time-Value,  -- FDD only
    ...,
    extension-DedicatedMeasurementValue     Extension-DedicatedMeasurementValue
}

Extension-DedicatedMeasurementValue ::= ProtocolIE-Single-Container {{ Extension-
DedicatedMeasurementValueIE }}

Extension-DedicatedMeasurementValueIE RNSAP-PROTOCOL-IES ::= {
    { ID id-Rx-Timing-Deviation-Value-LCR   CRITICALITY reject  TYPE Rx-Timing-Deviation-Value-LCR
    PRESENCE mandatory }|
    { ID id-Angle-Of-Arrival-Value-LCR      CRITICALITY reject  TYPE Angle-Of-Arrival-Value-LCR
    PRESENCE mandatory }|
    { ID id-HS-SICH-Reception-Quality       CRITICALITY reject  TYPE HS-SICH-Reception-Quality-Value
    PRESENCE mandatory },
    ...
}

DedicatedMeasurementValueInformation ::= CHOICE {
    measurementAvailable        DedicatedMeasurementAvailable,
    measurementnotAvailable     DedicatedMeasurementnotAvailable
}

DedicatedMeasurementAvailable:= SEQUENCE {
    dedicatedmeasurementValue       DedicatedMeasurementValue,
   cFN                      CFN                 OPTIONAL,
    ie-Extensions                   ProtocolExtensionContainer { {
DedicatedMeasurementAvailableItem-ExtIEs} }     OPTIONAL,
    ...
}

DedicatedMeasurementAvailableItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DedicatedMeasurementnotAvailable ::= NULL

DelayedActivation ::= CHOICE {
    cfn                     CFN,
    separate-indication     NULL
}

DelayedActivationUpdate ::= CHOICE {
    activate        Activate-Info,
    deactivate      Deactivate-Info
}

Activate-Info ::= SEQUENCE {
    activation-type         Execution-Type,
    initial-dl-tx-power DL-Power,
```

```
    firstRLS-Indicator      FirstRLS-Indicator                                          OPTIONAL, --
FDD Only
    propagation-delay       PropagationDelay                                            OPTIONAL, --
FDD Only
    iE-Extensions           ProtocolExtensionContainer { { Activate-Info-ExtIEs} }      OPTIONAL,
    ...
}

Activate-Info-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Deactivate-Info ::= SEQUENCE {
    deactivation-type       Execution-Type,
    iE-Extensions           ProtocolExtensionContainer { { Deactivate-Info-ExtIEs} }
    OPTIONAL,
    ...
}

Deactivate-Info-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Execution-Type ::= CHOICE {
    synchronised    CFN,
    unsynchronised  NULL
}

DeltaSIR                ::= INTEGER (0..30)
-- Step 0.1 dB, Range 0..3 dB.

DGPSCorrections ::= SEQUENCE {
    gPSTOW                                  GPSTOW,
    gPS-Status-Health                       GPS-Status-Health,
    satellite-DGPSCorrections-Information   SEQUENCE (SIZE (1..maxNoSat)) OF
        SEQUENCE {
            sAT-ID                              SAT-ID,
            iode-dgps                           BIT STRING (SIZE (8)),
            uDRE                                UDRE,
            pRC                                 PRC,
            range-Correction-Rate               Range-Correction-Rate,
            iE-Extensions                       ProtocolExtensionContainer { { Satellite-
DGPSCorrections-Information-ExtIEs} }       OPTIONAL,
            ...
        },
    iE-Extensions                   ProtocolExtensionContainer { { DGPSCorrections-ExtIEs} }
    OPTIONAL,
    ...
}

Satellite-DGPSCorrections-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DGPSCorrections-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DGPSThreshold ::= SEQUENCE {
    pRCDeviation        PRCDeviation,
    iE-Extensions       ProtocolExtensionContainer { { DGPSThreshold-ExtIEs} }      OPTIONAL,
    ...
}

DGPSThreshold-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DiscardTimer ::= ENUMERATED
{v20,v40,v60,v80,v100,v120,v140,v160,v180,v200,v250,v300,v400,v500,v750,v1000,v1250,v1500,v1750,v200
0,v2500,v3000,v3500,v4000,v4500,v5000,v7500,
 ...
```

```
}

DiversityControlField           ::= ENUMERATED {
    may,
    must,
    must-not
}

DiversityMode               ::= ENUMERATED {
    none,
    sTTD,
    closedLoopMode1,
    closedLoopMode2,
    ...
}

DL-DPCH-SlotFormat          ::= INTEGER (0..16,...)

DL-DPCH-TimingAdjustment ::= ENUMERATED {
    timing-advance,
    timing-delay
}

DL-Power                ::= INTEGER (-350..150)
-- Value = DL-Power / 10
-- Unit dB, Range –35dB .. +15dB, Step 0.1dB

DL-PowerBalancing-Information ::= SEQUENCE {
    powerAdjustmentType                 PowerAdjustmentType,
   dLReferencePower                DL-Power        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common'
    dLReferencePowerList        DL-ReferencePowerInformationList        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Individual'
    maxAdjustmentStep                   MaxAdjustmentStep       OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    adjustmentPeriod                    AdjustmentPeriod        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    adjustmentRatio                     ScaledAdjustmentRatio   OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    iE-Extensions                       ProtocolExtensionContainer { { DL-PowerBalancing-
Information-ExtIEs } } OPTIONAL,
    ...
}

DL-PowerBalancing-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-ReferencePowerInformationList        ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF DL-
ReferencePowerInformationItem

DL-ReferencePowerInformationItem ::= SEQUENCE {
    rL-ID                   RL-ID,
    dl-Reference-Power          DL-Power,
    iE-Extensions               ProtocolExtensionContainer { {DL-ReferencePowerInformationItem-
ExtIEs} } OPTIONAL,
    ...
}

DL-ReferencePowerInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PowerBalancing-ActivationIndicator   ::= ENUMERATED {
    dL-PowerBalancing-Activated
}

DL-PowerBalancing-UpdatedIndicator  ::= ENUMERATED {
    dL-PowerBalancing-Updated
}

DL-ReferencePowerInformation    ::= SEQUENCE {
    common-DL-ReferencePowerInformation         DL-Power        OPTIONAL,
    individual-DL-ReferencePowerInformation     DL-ReferencePowerInformationList        OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { DL-
ReferencePowerInformation-ExtIEs } } OPTIONAL,
    ...
}
```

```
DL-ReferencePowerInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

D-RNTI                  ::= INTEGER (0..1048575)

D-RNTI-ReleaseIndication ::= ENUMERATED {
    release-D-RNTI,
    not-release-D-RNTI
}

DL-ScramblingCode           ::= INTEGER (0..15)

DL-FrameType ::= ENUMERATED {
    typeA,
    typeB,
    ...
}

DL-Timeslot-Information ::= SEQUENCE ( SIZE (1..maxNrOfTS)) OF DL-Timeslot-InformationItem

DL-Timeslot-InformationItem ::= SEQUENCE {
    timeSlot                    TimeSlot,
    midambleShiftAndBurstType       MidambleShiftAndBurstType,
    tFCI-Presence                   TFCI-Presence,
    dL-Code-Information             TDD-DL-Code-Information,
    iE-Extensions                   ProtocolExtensionContainer { {DL-Timeslot-InformationItem-
ExtIEs} } OPTIONAL,
    ...
}

DL-Timeslot-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeslotLCR-Information ::= SEQUENCE (SIZE (1.. maxNrOfDLTsLCR)) OF DL-TimeslotLCR-
InformationItem

DL-TimeslotLCR-InformationItem   ::= SEQUENCE {
    timeSlotLCR                         TimeSlotLCR,
    midambleShiftLCR                    MidambleShiftLCR,
    tFCI-Presence                       TFCI-Presence,
    dL-Code-LCR-Information            TDD-DL-Code-LCR-Information,
    iE-Extensions                       ProtocolExtensionContainer { { DL-TimeslotLCR-
InformationItem-ExtIEs} }       OPTIONAL,
    ...
}

DL-TimeslotLCR-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Maximum-DL-Power-TimeslotLCR-InformationItem    CRITICALITY ignore   EXTENSION DL-Power
    -- Applicable to 1.28Mcps TDD only
    { ID id-Minimum-DL-Power-TimeslotLCR-InformationItem    CRITICALITY ignore   EXTENSION DL-Power
    -- Applicable to 1.28Mcps TDD only
    ...
}

DL-TimeSlot-ISCP-Info ::= SEQUENCE (SIZE (1..maxNrOfDLTs)) OF DL-TimeSlot-ISCP-InfoItem

DL-TimeSlot-ISCP-InfoItem ::= SEQUENCE {
    timeSlot                    TimeSlot,
    dL-TimeslotISCP             DL-TimeslotISCP,
    iE-Extensions               ProtocolExtensionContainer { { DL-TimeSlot-ISCP-InfoItem-ExtIEs} }
OPTIONAL,
    ...
}

DL-TimeSlot-ISCP-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeSlot-ISCP-LCR-Information ::= SEQUENCE (SIZE (1..maxNrOfDLTsLCR)) OF DL-TimeSlot-ISCP-LCR-
InfoItem

DL-TimeSlot-ISCP-LCR-InfoItem ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    dL-TimeslotISCP                 DL-TimeslotISCP,
```

```
    iE-Extensions                   ProtocolExtensionContainer { { DL-TimeSlot-ISCP-LCR-InfoItem-
ExtIEs} }       OPTIONAL,
    ...
 }

DL-TimeSlot-ISCP-LCR-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeslotISCP         ::= INTEGER (0..91)
-- According to mapping in [24]

Downlink-Compressed-Mode-Method ::= ENUMERATED {
    puncturing,
    sFdiv2,
    higher-layer-scheduling,
    ...
}

DPC-Mode ::= ENUMERATED {
    mode0,
    mode1,
        ...
}

DPC-Mode-Change-SupportIndicator ::= ENUMERATED {
   dPC-ModeChangeSupported
}

DPCH-ID                 ::= INTEGER (0..239)

DPCHConstantValue ::= INTEGER (-10..10)
-- Unit dB, Step 1dB

DRACControl     ::= ENUMERATED {
    requested,
    not-requested
}

DRXCycleLengthCoefficient               ::= INTEGER (3..9)
-- See in [16]

DSCH-FDD-Information::= SEQUENCE {
    dSCH-Specific-Information           DSCH-Specific-FDD-Item,
-- This DSCH-Specific-FDD-Item is the first DSCH-Specific-FDD-Item in DSCH-FDD-Information. If more
than one DSCH-Specific-FDD-Item;s should be defined in a DSCH-FDD-Information, from 2nd DSCH-
Specific-FDD Item, they will be included in the DSCH-Specific-FDD-Additional-List in the DSCH-FDD-
Information-ExtIEs.
    pdSCH-RL-ID                         RL-ID,
    tFCS                                TFCS,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-FDD-Information-ExtIEs} }
OPTIONAL,
    ...
}

DSCH-FDD-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DSCH-Specific-FDD-Additional-List       CRITICALITY reject  EXTENSION DSCH-Specific-FDD-
Additional-List         PRESENCE optional   }|
    { ID id-EnhancedDSCHPC              CRITICALITY ignore  EXTENSION EnhancedDSCHPC
    PRESENCE optional   },
    ...
}

DSCH-RNTI ::= INTEGER (0..65535)

DSCH-Specific-FDD-Item ::= SEQUENCE {
    dSCH-ID                             DSCH-ID,
    trChSourceStatisticsDescriptor      TrCH-SrcStatisticsDescr,
    transportFormatSet                  TransportFormatSet,
    allocationRetentionPriority     AllocationRetentionPriority,
    schedulingPriorityIndicator         SchedulingPriorityIndicator,
    bLER                                BLER,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-Specific-FDD-Item-ExtIEs}
} OPTIONAL,
    ...
}

DSCH-Specific-FDD-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
```

```
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass      PRESENCE mandatory}|
   { ID id-BindingID                        CRITICALITY ignore      EXTENSION   BindingID
    PRESENCE    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
   { ID id-TransportLayerAddress            CRITICALITY ignore      EXTENSION
    TransportLayerAddress       PRESENCE    optional    },
   -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

DSCH-Specific-FDD-Additional-List ::= SEQUENCE (SIZE(1..maxNoOfDSCHs-1)) OF DSCH-Specific-FDD-Item

DSCH-FDD-InformationResponse ::= SEQUENCE {
    dsch-Specific-InformationResponse   DSCH-Specific-FDD-InformationResponse,
    pdSCHCodeMapping                    PDSCHCodeMapping,
    iE-Extensions                       ProtocolExtensionContainer { { DSCH-FDD-InformationResponse-
ExtIEs} } OPTIONAL,
    ...
}

DSCH-FDD-InformationResponse-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-Specific-FDD-InformationResponse ::= SEQUENCE (SIZE(1..maxNoOfDSCHs)) OF DSCH-Specific-FDD-
Response-Item

DSCH-Specific-FDD-Response-Item ::= SEQUENCE {
    dsch-ID                         DSCH-ID,
    dSCH-FlowControlInformation     DSCH-FlowControlInformation,
    bindingID                       BindingID               OPTIONAL,
    transportLayerAddress           TransportLayerAddress   OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DSCH-Specific-FDD-Response-Item-
ExtIEs} } OPTIONAL,
    ...
}

DSCH-Specific-FDD-Response-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-FlowControlInformation ::=  SEQUENCE (SIZE(1..16)) OF DSCH-FlowControlItem

DSCH-FlowControlItem ::= SEQUENCE {
    dSCH-SchedulingPriority             SchedulingPriorityIndicator,
    mAC-c-sh-SDU-Lengths                MAC-c-sh-SDU-LengthList,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-FlowControlItem-ExtIEs} }
OPTIONAL,
    ...
}

DSCH-FlowControlItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DSCH-InitialWindowSize  CRITICALITY ignore  EXTENSION   DSCH-InitialWindowSize  PRESENCE
optional },
    ...
}

DSCH-ID                 ::= INTEGER (0..255)

DSCH-InitialWindowSize          ::= INTEGER (1..255)
-- Number of MAC-c/sh SDUs.
-- 255 = Unlimited number of MAC-c/sh SDUs

DSCH-TDD-Information ::=  SEQUENCE (SIZE (1..maxNoOfDSCHs)) OF DSCH-TDD-InformationItem

DSCH-TDD-InformationItem ::= SEQUENCE {
    dSCH-ID                             DSCH-ID,
    dl-ccTrCHID                         CCTrCH-ID, -- DL CCTrCH in which the DSCH is mapped
    trChSourceStatisticsDescriptor      TrCH-SrcStatisticsDescr,
    transportFormatSet                  TransportFormatSet,
    allocationRetentionPriority     AllocationRetentionPriority,
    schedulingPriorityIndicator         SchedulingPriorityIndicator,
    bLER                                BLER,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-TDD-InformationItem-
ExtIEs} } OPTIONAL,
    ...
}
```

```
DSCH-TDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TrafficClass                    CRITICALITY ignore  EXTENSION TrafficClass      PRESENCE
mandatory}|
    { ID id-BindingID                       CRITICALITY ignore  EXTENSION   BindingID   PRESENCE
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID id-TransportLayerAddress           CRITICALITY ignore  EXTENSION   TransportLayerAddress
    PRESENCE    optional    },
    -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

DsField ::= BIT STRING (SIZE (8))

-- E

EnhancedDSCHPC ::= SEQUENCE {
    enhancedDSCHPCWnd   EnhancedDSCHPCWnd,
    enhancedDSCHPCCounter   EnhancedDSCHPCCounter,
    enhancedDSCHPowerOffset EnhancedDSCHPowerOffset,
    ...
}

EnhancedDSCHPCCounter ::= INTEGER (1..50)

EnhancedDSCHPCIndicator ::= ENUMERATED {
    enhancedDSCHPCActiveInTheUE,
    enhancedDSCHPCNotActiveInTheUE
}

EnhancedDSCHPCWnd ::= INTEGER (1..10)

EnhancedDSCHPowerOffset ::= INTEGER (-15..0)

Enhanced-PrimaryCPICH-EcNo          ::= INTEGER (0..49)

EventA ::= SEQUENCE {
    measurementTreshold     MeasurementThreshold,
    measurementHysteresisTime   MeasurementHysteresisTime       OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {EventA-ExtIEs} } OPTIONAL,
    ...
}

EventA-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

EventB ::= SEQUENCE {
    measurementTreshold     MeasurementThreshold,
    measurementHysteresisTime   MeasurementHysteresisTime       OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {EventB-ExtIEs} } OPTIONAL,
    ...
}

EventB-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


EventC ::= SEQUENCE {
    measurementIncreaseDecreaseThreshold    MeasurementIncreaseDecreaseThreshold,
    measurementChangeTime       MeasurementChangeTime,
    iE-Extensions           ProtocolExtensionContainer { {EventC-ExtIEs} } OPTIONAL,
    ...
}

EventC-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

EventD ::= SEQUENCE {
    measurementIncreaseDecreaseThreshold    MeasurementIncreaseDecreaseThreshold,
    measurementChangeTime       MeasurementChangeTime,
    iE-Extensions           ProtocolExtensionContainer { {EventD-ExtIEs} } OPTIONAL,
    ...
}

EventD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
```

```
}

EventE ::= SEQUENCE {
    measurementThreshold1       MeasurementThreshold,
    measurementThreshold2       MeasurementThreshold            OPTIONAL,
    measurementHysteresisTime   MeasurementHysteresisTime       OPTIONAL,
    reportPeriodicity       ReportPeriodicity           OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {EventE-ExtIEs} } OPTIONAL,
    ...
}

EventE-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

EventF ::= SEQUENCE {
    measurementThreshold1       MeasurementThreshold,
    measurementThreshold2       MeasurementThreshold            OPTIONAL,
    measurementHysteresisTime   MeasurementHysteresisTime       OPTIONAL,
    reportPeriodicity       ReportPeriodicity           OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {EventF-ExtIEs} } OPTIONAL,
    ...
}

EventF-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

ExtendedGSMCellIndividualOffset ::= INTEGER (-50..-11|11..50)

-- F

FACH-FlowControlInformation ::= SEQUENCE (SIZE (1..16)) OF FACH-FlowControlInformationItem

FACH-FlowControlInformationItem ::= SEQUENCE {
    fACH-SchedulingPriority         SchedulingPriorityIndicator,
    mAC-c-sh-SDU-Lengths            MAC-c-sh-SDU-LengthList,
    fACH-InitialWindowSize          FACH-InitialWindowSize,
    iE-Extensions                   ProtocolExtensionContainer { {FACH-FlowControlInformationItem-
ExtIEs} } OPTIONAL,
    ...
}

FACH-FlowControlInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

FACH-InitialWindowSize          ::= INTEGER { unlimited(255) } (0..255)
-- Number of frames MAC-c-sh SDUs.
-- 255 = Unlimited number of FACH data frames

FACH-InformationList ::= SEQUENCE (SIZE(0.. maxNrOfFACHs)) OF FACH-InformationItem

FACH-InformationItem ::= SEQUENCE {
    transportFormatSet              TransportFormatSet,
    iE-Extensions                   ProtocolExtensionContainer { { FACH-InformationItem-ExtIEs} }
OPTIONAL,
    ...
}

FACH-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

FACH-PCH-InformationList ::= SEQUENCE (SIZE(1..maxFACHCountPlus1)) OF FACH-PCH-InformationItem

FACH-PCH-InformationItem ::= SEQUENCE {
    transportFormatSet              TransportFormatSet,
    iE-Extensions                   ProtocolExtensionContainer { { FACH-PCH-InformationItem-ExtIEs}
} OPTIONAL,
    ...
}

FACH-PCH-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

FDD-DCHs-to-Modify              ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF FDD-DCHs-to-ModifyItem
```

```
FDD-DCHs-to-ModifyItem ::= SEQUENCE {
    ul-FP-Mode                          UL-FP-Mode      OPTIONAL,
    toAWS                               ToAWS       OPTIONAL,
    toAWE                               ToAWE       OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    dCH-SpecificInformationList         FDD-DCHs-to-ModifySpecificInformationList,
    iE-Extensions                       ProtocolExtensionContainer { {FDD-DCHs-to-ModifyItem-ExtIEs}
} OPTIONAL,
    ...
}

FDD-DCHs-to-ModifyItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TnlQos                      CRITICALITY ignore      EXTENSION   TnlQos  PRESENCE
    optional    },
    ...
}

FDD-DCHs-to-ModifySpecificInformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF FDD-DCHs-to-
ModifySpecificItem

FDD-DCHs-to-ModifySpecificItem ::=  SEQUENCE {
    dCH-ID                          DCH-ID,
    ul-TransportformatSet           TransportFormatSet      OPTIONAL,
    dl-TransportformatSet           TransportFormatSet      OPTIONAL,
    allocationRetentionPriority     AllocationRetentionPriority OPTIONAL,
    frameHandlingPriority           FrameHandlingPriority       OPTIONAL,
    dRACControl                     DRACControl     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {FDD-DCHs-to-ModifySpecificItem-
ExtIEs} } OPTIONAL,
    ...
}

FDD-DCHs-to-ModifySpecificItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Guaranteed-Rate-Information     CRITICALITY ignore  EXTENSION Guaranteed-Rate-
Information     PRESENCE optional   }|
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass      PRESENCE optional
    },
    ...
}

FDD-DL-ChannelisationCodeNumber     ::= INTEGER (0..511)
-- According to the mapping in [27]. The maximum value is equal to the DL spreading factor -1--

FDD-DL-CodeInformation ::= SEQUENCE (SIZE (1..maxNrOfDL-Codes)) OF FDD-DL-CodeInformationItem

FDD-DL-CodeInformationItem ::= SEQUENCE {
    dl-ScramblingCode                                       DL-ScramblingCode,
    fDD-DL-ChannelisationCodeNumber                         FDD-DL-ChannelisationCodeNumber,
    transmission-Gap-Pattern-Sequence-ScramblingCode-Information        Transmission-Gap-Pattern-
Sequence-ScramblingCode-Information OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { {FDD-DL-
CodeInformationItem-ExtIEs} } OPTIONAL,
    ...
}

FDD-DL-CodeInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

FDD-S-CCPCH-Offset          ::= INTEGER (0..149)

FDD-TPC-DownlinkStepSize ::= ENUMERATED {
    step-size0-5,
    step-size1,
    step-size1-5,
    step-size2,
    ...
}

SchedulingPriorityIndicator         ::= INTEGER { lowest(0), highest(15) } (0..15)

FirstRLS-Indicator ::= ENUMERATED {
    first-RLS,
    not-first-RLS
}

FNReportingIndicator ::= ENUMERATED {
```

```
    fN-reporting-required,
    fN-reporting-not-required
}

FPACH-Information ::= SEQUENCE {
    timeSlotLCR                 TimeSlotLCR,
    tDD-ChannelisationCodeLCR   TDD-ChannelisationCodeLCR,
    midambleShiftLCR            MidambleShiftLCR,
    wT                          INTEGER (1..4),
    ...
    }

FrameHandlingPriority           ::= INTEGER { lowest(0), highest(15) } (0..15)

FrameOffset             ::= INTEGER (0..255)
-- Frames

-- G

GapLength               ::= INTEGER (1..14)
-- Unit Slot

GapDuration             ::= INTEGER (1..144,...)
-- Unit Frame

GA-Cell ::= SEQUENCE (SIZE (1..maxNrOfPoints)) OF
    SEQUENCE {
        cell-GAIgeographicalCoordinate      GeographicalCoordinate,
        iE-Extensions           ProtocolExtensionContainer { {GA-Cell-ExtIEs} } OPTIONAL,
        ...
    }

GA-Cell-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-CellAdditionalShapes ::= CHOICE {
    pointWithUncertainty                            GA-PointWithUnCertainty,
    pointWithUncertaintyEllipse                     GA-PointWithUnCertaintyEllipse,
    pointWithAltitude                               GA-PointWithAltitude,
    pointWithAltitudeAndUncertaintyEllipsoid        GA-PointWithAltitudeAndUncertaintyEllipsoid,
    ellipsoidArc                                    GA-EllipsoidArc,
    ...
    }

GA-AltitudeAndDirection ::= SEQUENCE {
    directionOfAltitude     ENUMERATED {height, depth},
    altitude                INTEGER (0..32767),
    ...
}

GA-EllipsoidArc ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinate,
    innerRadius                 INTEGER (0..65535),
    uncertaintyRadius           INTEGER (0..127),
    offsetAngle                 INTEGER (0..179),
    includedAngle               INTEGER (0..179),
    confidence                  INTEGER (0..127),
    iE-Extensions               ProtocolExtensionContainer { { GA-EllipsoidArc-ExtIEs} } OPTIONAL,
    ...
}

GA-EllipsoidArc-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-PointWithAltitude ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinate,
    altitudeAndDirection        GA-AltitudeAndDirection,
    iE-Extensions               ProtocolExtensionContainer { { GA-PointWithAltitude-ExtIEs} }
OPTIONAL,
    ...
}

GA-PointWithAltitude-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
GA-PointWithAltitudeAndUncertaintyEllipsoid ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinate,
    altitudeAndDirection        GA-AltitudeAndDirection,
    uncertaintyEllipse          GA-UncertaintyEllipse,
    uncertaintyAltitude         INTEGER (0..127),
    confidence                  INTEGER (0..127),
    iE-Extensions               ProtocolExtensionContainer { { GA-
PointWithAltitudeAndUncertaintyEllipsoid-ExtIEs} } OPTIONAL,
    ...
}

GA-PointWithAltitudeAndUncertaintyEllipsoid-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-PointWithUnCertaintyEllipse ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinate,
    uncertaintyEllipse          GA-UncertaintyEllipse,
    confidence                  INTEGER (0..127),
    iE-Extensions               ProtocolExtensionContainer { { GA-PointWithUnCertaintyEllipse-
ExtIEs} } OPTIONAL,
    ...
}

GA-PointWithUnCertaintyEllipse-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-UncertaintyEllipse ::= SEQUENCE {
    uncertaintySemi-major       INTEGER (0..127),
    uncertaintySemi-minor       INTEGER (0..127),
    orientationOfMajorAxis      INTEGER (0..179),   -- The values 90..179 shall not be used.
    ...
}

GA-PointWithUnCertainty ::=SEQUENCE {
    geographicalCoordinates     GeographicalCoordinate,
    uncertaintyCode         INTEGER (0..127),
    iE-Extensions           ProtocolExtensionContainer { {GA-PointWithUnCertainty-ExtIEs} }
OPTIONAL,
    ...
}

GA-PointWithUnCertainty-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-AccessPointPosition ::= SEQUENCE {
    geographicalCoordinate      GeographicalCoordinate,
    iE-Extensions           ProtocolExtensionContainer { {GA-AccessPoint-ExtIEs} } OPTIONAL,
    ...
}

GA-AccessPoint-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GeographicalCoordinate ::= SEQUENCE {
    latitudeSign            ENUMERATED { north, south },
    latitude            INTEGER (0..8388607),
    longitude           INTEGER (-8388608..8388607),
    iE-Extensions           ProtocolExtensionContainer { {GeographicalCoordinate-ExtIEs} } OPTIONAL,
    ...
}

GeographicalCoordinate-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GERAN-Cell-Capability ::=   BIT STRING (SIZE (16))
-- First bit:  A/Gb mode --
-- Second bit: Iu mode   --
-- Note: undefined bits are considered as a spare bit and spare bits shall be set to 0 by the
transmitter and shall be ignored by the receiver. --

GERAN-Classmark ::=     OCTET STRING
    -- GERAN Classmark as defined in (38) --
```

```
GERAN-SI-Type ::= CHOICE {
    sI                          GERAN-SystemInfo,
    pSI                         GERAN-SystemInfo,
    ...
}

GERAN-SystemInfo ::= SEQUENCE (SIZE (1..maxNrOfGERANSI)) OF
        SEQUENCE {
            gERAN-SI-block      OCTET STRING (SIZE (1..23)),
            iE-Extensions       ProtocolExtensionContainer { { GERAN-SystemInfo-ExtIEs } }
    OPTIONAL,
            ...
}

GERAN-SystemInfo-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GenericTrafficCategory  ::= BIT STRING (SIZE (8))

GPS-Almanac ::= SEQUENCE {
    wn_a-alm                BIT STRING (SIZE (8)),
    satellite-Almanac-Information       SEQUENCE (SIZE (1..maxNoSat)) OF
        SEQUENCE {
            dATA-ID             DATA-ID,
            sAT-ID              SAT-ID,
            gps-e-alm           BIT STRING (SIZE (16)),
            gps-toa-alm         BIT STRING (SIZE (8)),
            gps-delta-I-alm     BIT STRING (SIZE (16)),
            omegadot-alm        BIT STRING (SIZE (16)),
            svhealth-alm        BIT STRING (SIZE (8)),
            gps-a-sqrt-alm      BIT STRING (SIZE (24)),
            omegazero-alm       BIT STRING (SIZE (24)),
            m-zero-alm          BIT STRING (SIZE (24)),
            gps-omega-alm       BIT STRING (SIZE (24)),
            gps-af-zero-alm     BIT STRING (SIZE (11)),
            gps-af-one-alm      BIT STRING (SIZE (11)),
            iE-Extensions       ProtocolExtensionContainer { { Satellite-Almanac-Information-ExtIEs}
}       OPTIONAL,
            ...
        },
    -- This GPS-Almanac-Information is for the 1st 16 satellites
    sVGlobalHealth-alm      BIT STRING (SIZE (364))     OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { GPS-Almanac-ExtIEs} }        OPTIONAL,
    ...
}

Satellite-Almanac-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GPS-Almanac-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    {   ID id-Satellite-Almanac-Information-ExtItem CRITICALITY ignore      EXTENSION   Satellite-
Almanac-Information-ExtItem         PRESENCE    optional},
    ...
}

Satellite-Almanac-Information-ExtItem ::= SEQUENCE (SIZE (1..maxNrOfSatAlmanac-maxNoSat)) OF
        SEQUENCE {
            dATA-ID             DATA-ID,
            sAT-ID              SAT-ID,
            gps-e-alm           BIT STRING (SIZE (16)),
            gps-toa-alm         BIT STRING (SIZE (8)),
            gps-delta-I-alm     BIT STRING (SIZE (16)),
            omegadot-alm        BIT STRING (SIZE (16)),
            svhealth-alm        BIT STRING (SIZE (8)),
            gps-a-sqrt-alm      BIT STRING (SIZE (24)),
            omegazero-alm       BIT STRING (SIZE (24)),
            m-zero-alm          BIT STRING (SIZE (24)),
            gps-omega-alm       BIT STRING (SIZE (24)),
            gps-af-zero-alm     BIT STRING (SIZE (11)),
            gps-af-one-alm      BIT STRING (SIZE (11)),
            iE-Extensions       ProtocolExtensionContainer { { Satellite-Almanac-Information-
ExtItemIEs} }       OPTIONAL,
            ...
        }
--  Includes the GPS-Almanac-Information for the 17th through 32nd satellites.
```

```
Satellite-Almanac-Information-ExtItemIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GPSInformation ::= SEQUENCE (SIZE (1..maxNoGPSTypes)) OF
    SEQUENCE {
        gPSInformationItem      ENUMERATED {
            gPS-NavigationModel-and-TimeRecovery,
            gPS-Ionospheric-Model,
            gPS-UTC-Model,
            gPS-Almanac,
            gPS-RealTime-Integrity,
            ...
        },
        iE-Extensions           ProtocolExtensionContainer { { GPSInformation-ExtIEs} }
    OPTIONAL,
        ...
    }
-- This IE shall be present if the Information Type IE indicates 'GPS Information'

GPSInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GPS-Ionospheric-Model ::= SEQUENCE {
    alpha-zero-ionos        BIT STRING (SIZE (8)),
    alpha-one-ionos         BIT STRING (SIZE (8)),
    alpha-two-ionos         BIT STRING (SIZE (8)),
    alpha-three-ionos       BIT STRING (SIZE (8)),
    beta-zero-ionos         BIT STRING (SIZE (8)),
    beta-one-ionos          BIT STRING (SIZE (8)),
    beta-two-ionos          BIT STRING (SIZE (8)),
    beta-three-ionos        BIT STRING (SIZE (8)),
    iE-Extensions           ProtocolExtensionContainer { { GPS-Ionospheric-Model-ExtIEs} }
    OPTIONAL,
    ...
}

GPS-Ionospheric-Model-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GPS-NavigationModel-and-TimeRecovery ::= SEQUENCE (SIZE (1..maxNoSat)) OF
    SEQUENCE {
        tx-tow-nav                      INTEGER (0..1048575),
        sAT-ID                          SAT-ID,
        tlm-message-nav                 BIT STRING (SIZE (14)),
        tlm-revd-c-nav                  BIT STRING (SIZE (2)),
        ho-word-nav                     BIT STRING (SIZE (22)),
        w-n-nav                         BIT STRING (SIZE (10)),
        ca-or-p-on-l2-nav               BIT STRING (SIZE (2)),
        user-range-accuracy-index-nav   BIT STRING (SIZE (4)),
        sv-health-nav                   BIT STRING (SIZE (6)),
        iodc-nav                        BIT STRING (SIZE (10)),
        l2-p-dataflag-nav               BIT STRING (SIZE (1)),
        sf1-reserved-nav                BIT STRING (SIZE (87)),
        t-gd-nav                        BIT STRING (SIZE (8)),
        t-oc-nav                        BIT STRING (SIZE (16)),
        a-f-2-nav                       BIT STRING (SIZE (8)),
        a-f-1-nav                       BIT STRING (SIZE (16)),
        a-f-zero-nav                    BIT STRING (SIZE (22)),
        c-rs-nav                        BIT STRING (SIZE (16)),
        delta-n-nav                     BIT STRING (SIZE (16)),
        m-zero-nav                      BIT STRING (SIZE (32)),
        c-uc-nav                        BIT STRING (SIZE (16)),
        gps-e-nav                       BIT STRING (SIZE (32)),
        c-us-nav                        BIT STRING (SIZE (16)),
        a-sqrt-nav                      BIT STRING (SIZE (32)),
        t-oe-nav                        BIT STRING (SIZE (16)),
        fit-interval-flag-nav           BIT STRING (SIZE (1)),
        aodo-nav                        BIT STRING (SIZE (5)),
        c-ic-nav                        BIT STRING (SIZE (16)),
        omega-zero-nav                  BIT STRING (SIZE (32)),
        c-is-nav                        BIT STRING (SIZE (16)),
        i-zero-nav                      BIT STRING (SIZE (32)),
        c-rc-nav                        BIT STRING (SIZE (16)),
        gps-omega-nav                   BIT STRING (SIZE (32)),
        omegadot-nav                    BIT STRING (SIZE (24)),
```

```
        idot-nav                        BIT STRING (SIZE (14)),
        spare-zero-fill                 BIT STRING (SIZE (20)),
        iE-Extensions                   ProtocolExtensionContainer { { GPS-NavigationModel-and-
TimeRecoveryItem-ExtIEs} }      OPTIONAL,
        ...
    }

GPS-NavigationModel-and-TimeRecoveryItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GPS-RealTime-Integrity ::= CHOICE {
    badSatellites               BadSatellites,
    noBadSatellite              NULL
}

GPS-RX-POS ::= SEQUENCE {
    geographicalCoordinate      GeographicalCoordinate,
    altitudeAndDirection        GA-AltitudeAndDirection,
    iE-Extensions               ProtocolExtensionContainer { { GPS-RX-POS-ExtIEs} } OPTIONAL,
    ...
}

GPS-RX-POS-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

GPS-Status-Health ::= ENUMERATED {
   udre-1-0,
   udre-0-75,
   udre-0-5,
   udre-0-3,
   udre-0-1,
   no-data,
   invalid-data
}

GPSTOW ::= INTEGER (0..604799)

GPS-UTC-Model ::= SEQUENCE {
    a-one-utc               BIT STRING (SIZE (24)),
    a-zero-utc              BIT STRING (SIZE (32)),
    t-ot-utc                BIT STRING (SIZE (8)),
    delta-t-ls-utc          BIT STRING (SIZE (8)),
    w-n-t-utc               BIT STRING (SIZE (8)),
    w-n-lsf-utc             BIT STRING (SIZE (8)),
    dn-utc                  BIT STRING (SIZE (8)),
    delta-t-lsf-utc         BIT STRING (SIZE (8)),
    iE-Extensions           ProtocolExtensionContainer { { GPS-UTC-Model-ExtIEs} }      OPTIONAL,
    ...
}

GPS-UTC-Model-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Guaranteed-Rate-Information ::= SEQUENCE {
    guaranteed-UL-Rate          Guaranteed-Rate OPTIONAL,
    guaranteed-DL-Rate          Guaranteed-Rate OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {Guaranteed-Rate-Information-ExtIEs} }
OPTIONAL,
    ...
}

Guaranteed-Rate-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Guaranteed-Rate         ::= INTEGER (1..maxNrOfTFs)
-- "1": TFI 0, "2": TFI 1, "3": TFI 2, ...

-- H

HARQ-MemoryPartitioning ::= CHOICE {
    implicit        HARQ-MemoryPartitioning-Implicit,
    explicit        HARQ-MemoryPartitioning-Explicit,
    ...
    }
```

```
HARQ-MemoryPartitioning-Implicit    ::= SEQUENCE {
    number-of-Processes         INTEGER (1..8,...),
    iE-Extensions               ProtocolExtensionContainer { { HARQ-MemoryPartitioning-Implicit-
ExtIEs } }          OPTIONAL,
    ...
}

HARQ-MemoryPartitioning-Implicit-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HARQ-MemoryPartitioning-Explicit    ::= SEQUENCE {
    hARQ-MemoryPartitioningList         HARQ-MemoryPartitioningList,
    iE-Extensions                       ProtocolExtensionContainer { { HARQ-MemoryPartitioning-
Explicit-ExtIEs } }         OPTIONAL,
    ...
}

HARQ-MemoryPartitioning-Explicit-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HARQ-MemoryPartitioningList ::= SEQUENCE (SIZE (1..maxNrOfHARQProc)) OF HARQ-MemoryPartitioningItem

HARQ-MemoryPartitioningItem ::= SEQUENCE {
    process-Memory-Size                 ENUMERATED {
                                        hms800, hms1600, hms2400, hms3200, hms4000,
                                        hms4800, hms5600, hms6400, hms7200, hms8000,
                                        hms8800, hms9600, hms10400, hms11200, hms12000,
                                        hms12800, hms13600, hms14400, hms15200, hms16000,
                                        hms17600, hms19200, hms20800, hms22400, hms24000,
                                        hms25600, hms27200, hms28800, hms30400, hms32000,
                                        hms36000, hms40000, hms44000, hms48000, hms52000,
                                        hms56000, hms60000, hms64000, hms68000, hms72000,
                                        hms76000, hms80000, hms88000, hms96000, hms104000,
                                        hms112000, hms120000, hms128000, hms136000, hms144000,
                                        hms152000, hms160000, hms176000, hms192000, hms208000,
                                        hms224000, hms240000, hms256000, hms272000, hms288000,
                                        hms304000,...},
    iE-Extensions                       ProtocolExtensionContainer { { HARQ-MemoryPartitioningItem-
ExtIEs } }          OPTIONAL,
    ...
}

HARQ-MemoryPartitioningItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
HCS-Prio    ::= INTEGER (0..7)
-- 0 = lowest priority, ...7 = highest priority

HSDSCH-FDD-Information ::= SEQUENCE {
    hSDSCH-MACdFlows-Information                HSDSCH-MACdFlows-Information,
    uE-Capabilities-Info                        UE-Capabilities-Info,
    mAChs-Reordering-Buffer-Size-for-RLC-UM     MAChsReorderingBufferSize-for-RLC-UM,
    cqiFeedback-CycleK                          CQI-Feedback-Cycle,
    cqiRepetitionFactor                         CQI-RepetitionFactor
    OPTIONAL,
    -- This IE shall be present if the CQI Feedback Cycle k IE is set to a value greater than 0.
    ackNackRepetitionFactor                     AckNack-RepetitionFactor,
    cqiPowerOffset                              CQI-Power-Offset,
    ackPowerOffset                              Ack-Power-Offset,
    nackPowerOffset                             Nack-Power-Offset,
    hsscch-PowerOffset                          HSSCCH-PowerOffset                          OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { HSDSCH-FDD-
Information-ExtIEs } }          OPTIONAL,
    ...
}

HSDSCH-FDD-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-FDD-Information-Response ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-InfoList-Response      HSDSCH-MACdFlow-Specific-InfoList-Response
                                        OPTIONAL,
    hSSCCH-Specific-InfoList-Response               HSSCCH-FDD-Specific-InfoList-Response
                                        OPTIONAL,
```

```
    hSPDSCH-and-HSSCCH-ScramblingCode              DL-ScramblingCode
                        OPTIONAL,
    measurement-Power-Offset                       Measurement-Power-Offset
                                                OPTIONAL,
    hARQ-MemoryPartitioning                        HARQ-MemoryPartitioning
                                                OPTIONAL,
    iE-Extensions                                  ProtocolExtensionContainer { { HSDSCH-FDD-
Information-Response-ExtIEs } }     OPTIONAL,
    ...
}

HSDSCH-FDD-Information-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-Information-to-Modify ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-InfoList-to-Modify     HSDSCH-MACdFlow-Specific-InfoList-to-Modify
    OPTIONAL,
    priorityQueue-Info-to-Modify                    PriorityQueue-InfoList-to-Modify
    OPTIONAL,
    mAChs-Reordering-Buffer-Size-for-RLC-UM         MAChsReorderingBufferSize-for-RLC-UM
    OPTIONAL,
    cqiFeedback-CycleK                              CQI-Feedback-Cycle
    OPTIONAL,   -- For FDD only
    cqiRepetitionFactor                             CQI-RepetitionFactor
    OPTIONAL,   -- For FDD only
    ackNackRepetitionFactor                         AckNack-RepetitionFactor
    OPTIONAL,   -- For FDD only
    cqiPowerOffset                                  CQI-Power-Offset
    OPTIONAL,   -- For FDD only
    ackPowerOffset                                  Ack-Power-Offset
    OPTIONAL,   -- For FDD only
    nackPowerOffset                                 Nack-Power-Offset
    OPTIONAL,   -- For FDD only
    hsscch-PowerOffset                              HSSCCH-PowerOffset
    OPTIONAL,   -- For FDD only
    hSSCCH-CodeChangeGrant                          HSSCCH-Code-Change-Grant
    OPTIONAL,
    tDDAckNackPowerOffset                           TDD-AckNack-Power-Offset
    OPTIONAL,   -- For TDD only
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-
Information-to-Modify-ExtIEs } }            OPTIONAL,
    ...
}

HSDSCH-Information-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-Information-to-Modify-Unsynchronised ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-InfoList-to-Modify     HSDSCH-MACdFlow-Specific-InfoList-to-Modify
            OPTIONAL,
    priorityQueueInfotoModifyUnsynchronised         PriorityQueue-InfoList-to-Modify-Unsynchronised
    cqiPowerOffset                                  CQI-Power-Offset                OPTIONAL,   --
For FDD only
    ackPowerOffset                                  Ack-Power-Offset                OPTIONAL,   --
For FDD only
    nackPowerOffset                                 Nack-Power-Offset               OPTIONAL,   --
For FDD only
    hsscch-PowerOffset                              HSSCCH-PowerOffset              OPTIONAL,   --
Only for FDD
    tDDAckNackPowerOffset                           TDD-AckNack-Power-Offset        OPTIONAL,   --
For TDD only
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-
Information-to-Modify-Unsynchronised-ExtIEs } }         OPTIONAL,
    ...
}

HSDSCH-Information-to-Modify-Unsynchronised-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-ID ::= INTEGER (0..maxNrOfMACdFlows-1)

HSDSCH-MACdFlow-Specific-InfoList ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-
Specific-InfoItem

HSDSCH-MACdFlow-Specific-InfoItem ::= SEQUENCE {
```

```
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    allocationRetentionPriority         AllocationRetentionPriority,
    trafficClass                        TrafficClass,
    bindingID                           BindingID                                   OPTIONAL,
    transportLayerAddress               TransportLayerAddress                       OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-
InfoItem-ExtIEs } }         OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList-Response ::= SEQUENCE (SIZE (0..maxNrOfMACdFlows)) OF HSDSCH-
MACdFlow-Specific-InfoItem-Response

HSDSCH-MACdFlow-Specific-InfoItem-Response ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bindingID                           BindingID                                   OPTIONAL,
    transportLayerAddress               TransportLayerAddress                       OPTIONAL,
    hSDSCH-Initial-Capacity-Allocation  HSDSCH-Initial-Capacity-Allocation      OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-
InfoItem-Response-ExtIEs } }            OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-
MACdFlow-Specific-InfoItem-to-Modify

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    allocationRetentionPriority         AllocationRetentionPriority             OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    trafficClass                        TrafficClass                            OPTIONAL,
    bindingID                           BindingID                               OPTIONAL,
    transportLayerAddress               TransportLayerAddress                   OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-
InfoItem-to-Modify-ExtIEs } }           OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlows-Information ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-Info               HSDSCH-MACdFlow-Specific-InfoList,
    priorityQueue-Info                          PriorityQueue-InfoList,
    iE-Extensions                               ProtocolExtensionContainer { { HSDSCH-MACdFlows-
Information-ExtIEs } }          OPTIONAL,
    ...
}


HSDSCH-MACdFlows-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlows-to-Delete ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlows-to-Delete-
Item

HSDSCH-MACdFlows-to-Delete-Item ::= SEQUENCE {
    hsDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlows-to-Delete-
Item-ExtIEs} }      OPTIONAL,
    ...
}

HSDSCH-MACdFlows-to-Delete-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
HSDSCH-Initial-Capacity-Allocation::= SEQUENCE (SIZE (1..maxNrOfPrioQueues)) OF HSDSCH-Initial-
Capacity-AllocationItem

HSDSCH-Initial-Capacity-AllocationItem ::= SEQUENCE {
    schedulingPriorityIndicator     SchedulingPriorityIndicator,
    maximum-MACdPDU-Size            MACdPDU-Size,
    hSDSCH-InitialWindowSize        HSDSCH-InitialWindowSize,
    iE-Extensions                   ProtocolExtensionContainer { {HSDSCH-Initial-Capacity-
AllocationItem-ExtIEs} } OPTIONAL,
    ...
}

HSDSCH-Initial-Capacity-AllocationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-InitialWindowSize            ::= INTEGER (1..255)
-- Number of MAC-d PDUs.

HSDSCH-RNTI ::= INTEGER (0..65535)

HSDSCH-TDD-Information ::= SEQUENCE {
    hSDSCH-MACdFlows-Information                HSDSCH-MACdFlows-Information,
    uE-Capabilities-Info                        UE-Capabilities-Info,
    mAChs-Reordering-Buffer-Size-for-RLC-UM     MAChsReorderingBufferSize-for-RLC-UM,
    tDD-AckNack-Power-Offset                    TDD-AckNack-Power-Offset,
    iE-Extensions                               ProtocolExtensionContainer { { HSDSCH-TDD-
Information-ExtIEs } }          OPTIONAL,
    ...
}

HSDSCH-TDD-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-TDD-Information-Response ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-InfoList-Response      HSDSCH-MACdFlow-Specific-InfoList-Response
    OPTIONAL,
    hSSCCH-TDD-Specific-InfoList-Response           HSSCCH-TDD-Specific-InfoList-Response
    OPTIONAL,
-- Not Applicable to 1.28Mcps TDD
    hSSCCH-TDD-Specific-InfoList-Response-LCR       HSSCCH-TDD-Specific-InfoList-Response-LCR
    OPTIONAL,
-- Not Applicable to 3.84Mcps TDD
    hSPDSCH-TDD-Specific-InfoList-Response          HSPDSCH-TDD-Specific-InfoList-Response
    OPTIONAL,
    hSPDSCH-TDD-Specific-InfoList-Response-LCR      HSPDSCH-TDD-Specific-InfoList-Response-LCR
    OPTIONAL,
    hARQ-MemoryPartitioning                         HARQ-MemoryPartitioning
    OPTIONAL,
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-TDD-
Information-Response-ExtIEs } }         OPTIONAL,
    ...
}

HSDSCH-TDD-Information-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSPDSCH-TDD-Specific-InfoList-Response ::= SEQUENCE (SIZE (0..maxNrOfDLTs)) OF HSPDSCH-TDD-Specific-
InfoItem-Response

HSPDSCH-TDD-Specific-InfoItem-Response ::= SEQUENCE {
    timeslot                                    TimeSlot,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType,
    iE-Extensions                               ProtocolExtensionContainer { { HSPDSCH-TDD-
Specific-InfoItem-Response-ExtIEs } }           OPTIONAL,
    ...
}

HSPDSCH-TDD-Specific-InfoItem-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSPDSCH-TDD-Specific-InfoList-Response-LCR ::= SEQUENCE (SIZE (1.. maxNrOfDLTsLCR)) OF HSPDSCH-TDD-
Specific-InfoItem-Response-LCR

HSPDSCH-TDD-Specific-InfoItem-Response-LCR ::= SEQUENCE {
```

```
    timeslotLCR                                 TimeSlotLCR,
    midambleShiftLCR                            MidambleShiftLCR,
    iE-Extensions                               ProtocolExtensionContainer { { HSPDSCH-TDD-Specific-
InfoItem-Response-LCR-ExtIEs } }            OPTIONAL,
    ...
}

HSPDSCH-TDD-Specific-InfoItem-Response-LCR-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSSCCH-FDD-Specific-InfoList-Response ::= SEQUENCE (SIZE (0..maxNrOfHSSCCHCodes)) OF HSSCCH-FDD-
Specific-InfoItem-Response

HSSCCH-FDD-Specific-InfoItem-Response ::= SEQUENCE {
    code-Number                                 INTEGER (0..127),
    iE-Extensions                               ProtocolExtensionContainer { { HSSCCH-FDD-
Specific-InfoItem-Response-ExtIEs } }           OPTIONAL,
    ...
}

HSSCCH-FDD-Specific-InfoItem-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSSCCH-PowerOffset ::= INTEGER (0..255)
-- PowerOffset = -32 + offset * 0.25
-- Unit dB, Range -32dB .. +31.75dB, Step +0.25dB

HSSCCH-TDD-Specific-InfoList-Response ::= SEQUENCE (SIZE (0..maxNrOfHSSCCHCodes)) OF HSSCCH-TDD-
Specific-InfoItem-Response

HSSCCH-TDD-Specific-InfoItem-Response ::= SEQUENCE {
    timeslot                                    TimeSlot,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType,
    tDD-ChannelisationCode                      TDD-ChannelisationCode,
    hSSICH-Info                                 HSSICH-Info,
    iE-Extensions                               ProtocolExtensionContainer { { HSSCCH-TDD-
Specific-InfoItem-Response-ExtIEs } }           OPTIONAL,
    ...
}

HSSCCH-TDD-Specific-InfoItem-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSSCCH-TDD-Specific-InfoList-Response-LCR ::= SEQUENCE (SIZE (0..maxNrOfHSSCCHCodes)) OF HSSCCH-TDD-
Specific-InfoItem-Response-LCR

HSSCCH-TDD-Specific-InfoItem-Response-LCR ::= SEQUENCE {
    timeslotLCR                                 TimeSlotLCR,
    midambleShiftLCR                            MidambleShiftLCR,
    first-TDD-ChannelisationCode                TDD-ChannelisationCode,
    second-TDD-ChannelisationCode           TDD-ChannelisationCode,
    hSSICH-InfoLCR                              HSSICH-InfoLCR,
    iE-Extensions                               ProtocolExtensionContainer { { HSSCCH-TDD-Specific-
InfoItem-Response-LCR-ExtIEs } }            OPTIONAL,
    ...
}

HSSCCH-TDD-Specific-InfoItem-Response-LCR-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSSICH-Info ::= SEQUENCE {
    hsSICH-ID                                   HS-SICH-ID,
    timeslot                                    TimeSlot,
    midambleShiftAndBurstType                   MidambleShiftAndBurstType,
    tDD-ChannelisationCode                      TDD-ChannelisationCode,
    iE-Extensions                               ProtocolExtensionContainer { { HSSICH-Info-
ExtIEs } }          OPTIONAL,
    ...
}

HSSICH-Info-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
HSSICH-InfoLCR ::= SEQUENCE {
    hsSICH-ID                                   HS-SICH-ID,
    timeslotLCR                                 TimeSlotLCR,
    midambleShiftLCR                            MidambleShiftLCR,
    tDD-ChannelisationCode                    TDD-ChannelisationCode,
    iE-Extensions                               ProtocolExtensionContainer { { HSSICH-Info-LCR-
ExtIEs } }          OPTIONAL,
    ...
}

HSSICH-Info-LCR-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HS-SICH-Reception-Quality-Value ::= SEQUENCE {
    failed-HS-SICH              HS-SICH-failed,
    missed-HS-SICH              HS-SICH-missed,
    total-HS-SICH               HS-SICH-total,
    iE-Extensions               ProtocolExtensionContainer { { HS-SICH-Reception-Quality-Value-
ExtIEs} } OPTIONAL,
...
}

HS-SICH-Reception-Quality-Value-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HS-SICH-failed ::= INTEGER (0..20)

HS-SICH-missed ::= INTEGER (0..20)

HS-SICH-total ::= INTEGER (0..20)

HS-SICH-Reception-Quality-Measurement-Value ::= INTEGER (0..20)
-- According to mapping in [23]

HS-SICH-ID ::= INTEGER (0..31)

HSSCCH-CodeChangeIndicator  ::= ENUMERATED {
    hsSCCHCodeChangeNeeded
}

HSSCCH-Code-Change-Grant    ::= ENUMERATED {
    changeGranted
}

HSDSCH-FDD-Update-Information ::= SEQUENCE {
    hsSCCHCodeChangeIndicator                   HSSCCH-CodeChangeIndicator
    OPTIONAL,
    cqiFeedback-CycleK                          CQI-Feedback-Cycle
    OPTIONAL,
    cqiRepetitionFactor                         CQI-RepetitionFactor
    OPTIONAL,
    ackNackRepetitionFactor                     AckNack-RepetitionFactor
    OPTIONAL,
    cqiPowerOffset                              CQI-Power-Offset
    OPTIONAL,
    ackPowerOffset                              Ack-Power-Offset
    OPTIONAL,
    nackPowerOffset                             Nack-Power-Offset
    OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { HSDSCH-FDD-
Update-Information-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-FDD-Update-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-TDD-Update-Information ::= SEQUENCE {
    hsSCCHCodeChangeIndicator                   HSSCCH-CodeChangeIndicator
    OPTIONAL,
    tDDAckNackPowerOffset                       TDD-AckNack-Power-Offset
    OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { HSDSCH-TDD-
Update-Information-ExtIEs } }       OPTIONAL,
    ...
```

```
}

HSDSCH-TDD-Update-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- I

IB-SchedulingInformation::= SEQUENCE {
    iB-SG-Rep                       IB-SG-REP,
    iB-segmentInformationList       IB-SegmentInformationList,
    iE-Extensions                   ProtocolExtensionContainer { { IB-SchedulingInformation-ExtIEs }
} OPTIONAL,
        ...
}

IB-SchedulingInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

IB-SegmentInformationList ::= SEQUENCE (SIZE(1..maxIBSEG)) OF IB-SegmentInformationItem

IB-SegmentInformationItem ::= SEQUENCE {
    iB-SG-POS                       IB-SG-POS,
    iE-Extensions                   ProtocolExtensionContainer { {  IB-SegmentInformationItem-ExtIEs
} } OPTIONAL,
    ...
}

IB-SegmentInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

IB-SG-POS   ::= INTEGER (0..4094)
-- Only even positions allowed

IB-SG-REP   ::= ENUMERATED {rep4, rep8, rep16, rep32, rep64, rep128, rep256, rep512, rep1024,
rep2048, rep4096}

IMEI        ::= OCTET STRING (SIZE(8))

IMEISV      ::= OCTET STRING (SIZE(8))

IMSI        ::= OCTET STRING (SIZE(3..8))

InformationAvailable::= SEQUENCE {
    requestedDataValue      RequestedDataValue,
    iE-Extensions           ProtocolExtensionContainer { { InformationAvailable-ExtIEs} }
    OPTIONAL,
    ...
}

InformationAvailable-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

InformationExchangeID ::= INTEGER (0..1048575)

InformationNotAvailable ::= NULL

InformationReportCharacteristics ::= CHOICE {
    onDemand                NULL,
    periodic                PeriodicInformation,
    onModification          OnModificationInformation,
    ...
}

InformationReportPeriodicity ::= CHOICE {
    min             INTEGER (1..60,...),
-- Unit min, Step 1min
    hour            INTEGER (1..24,...),
-- Unit hour, Step 1hour
    ...
}

InformationThreshold ::= CHOICE {
    dGPSThreshold       DGPSThreshold,
    ...
```

```
}


InformationType ::= SEQUENCE {
    informationTypeItem     ENUMERATED {
        gA-AccessPointPositionwithAltitude,
        gA-AccessPointPosition,
        iPDLParameters,
        gPSInformation,
        dGPSCorrections,
        gPS-RX-POS,
        sFNSFN-GA-AccessPointPosition,
        ...,
        cell-Capacity-Class,
        nACC-Related-Data
    },
    gPSInformation              GPSInformation          OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { InformationType-ExtIEs} }
    OPTIONAL,
    ...
}

-- The GPS Information IE shall be present if the Information Exchange Type IE indicates 'GPS
Information'
-- For information exchange on the Iur-g interface, only the Cell Capacity Class is used.

InformationType-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

InnerLoopDLPCStatus     ::= ENUMERATED {active, inactive}

IPDLParameters ::= CHOICE {
    iPDL-FDD-Parameters         IPDL-FDD-Parameters,
    iPDL-TDD-Parameters         IPDL-TDD-Parameters,    --3.84Mcps TDD only
    ...,
    extension-IPDLParameters    Extension-IPDLParameters
}

Extension-IPDLParameters    ::= ProtocolIE-Single-Container {{ Extension-IPDLParametersIE }}

Extension-IPDLParametersIE RNSAP-PROTOCOL-IES ::= {
    { ID id-IPDL-TDD-ParametersLCR  CRITICALITY reject  TYPE IPDL-TDD-ParametersLCR PRESENCE
mandatory },
    ...
}

IPDL-FDD-Parameters ::= SEQUENCE {
    iPSpacingFDD                IPSpacingFDD,
    iPLength                    IPLength,
    iPOffset                    IPOffset,
    seed                        Seed,
    burstModeParameters         BurstModeParameters     OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { IPDL-FDD-Parameters-ExtIEs} }
    OPTIONAL,
    ...
}

IPDL-FDD-Parameters-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

IPDL-TDD-Parameters ::= SEQUENCE {
    iPSpacingTDD                IPSpacingTDD,
    iPStart                     IPStart,
    iPSlot                      IPSlot,
    iP-P-CCPCH                  IP-P-CCPCH,
    burstModeParameters         BurstModeParameters     OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { IPDL-TDD-Parameters-ExtIEs} }
    OPTIONAL,
    ...
}

-- The BurstModeParameters IE shall be included if the Idle Periods are arranged in Burst Mode.

IPDL-TDD-Parameters-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
IPDL-TDD-ParametersLCR ::= SEQUENCE {
    iPSpacingTDD                IPSpacingTDD,
    iPStart                     IPStart,
    iPSub                       IPSub,
    burstModeParameters         BurstModeParameters     OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { IPDL-TDD-ParametersLCR-ExtIEs} }
    OPTIONAL,
    ...
}

-- The BurstModeParameters IE shall be included if the Idle Periods are arranged in Burst Mode.

IPDL-TDD-ParametersLCR-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

IPLength ::= ENUMERATED {
    ipl5,
    ipl10,
    ...
}

IPMulticastAddress  ::= BIT STRING (SIZE (128))

IPOffset ::= INTEGER (0..9)

IP-P-CCPCH ::= ENUMERATED {
    switchOff-1-Frame,
    switchOff-2-Frames
}

IPSlot ::= INTEGER (0..14)

IPSpacingFDD ::= ENUMERATED {
    ipsF5,
    ipsF7,
    ipsF10,
    ipsF15,
    ipsF20,
    ipsF30,
    ipsF40,
    ipsF50,
    ...
}

IPSpacingTDD ::= ENUMERATED {
    ipsT30,
    ipsT40,
    ipsT50,
    ipsT70,
    ipsT100,
    ...
}

IPStart ::= INTEGER (0..4095)

IPSub ::= ENUMERATED {
    first,
    second,
    both
}

-- J
-- K
-- L

LAC                 ::= OCTET STRING (SIZE (2)) --(EXCEPT ('0000'H|'FFFE'H))

LengthOfTFCI2 ::= INTEGER(1..10)

LimitedPowerIncrease ::= ENUMERATED {
    used,
    not-used
}

L3-Information              ::= BIT STRING
```

```
Load-Value-IncrDecrThres ::= INTEGER(0..100)

Load-Value ::= INTEGER(0..100)

LoadValue ::= SEQUENCE {
        uplinkLoadValue     INTEGER(0..100),
        downlinkLoadValue   INTEGER(0..100)
}

-- M

MaxNrOfUL-DPCHs             ::= INTEGER (1..6)

MAC-c-sh-SDU-Length         ::= INTEGER (1..5000)

MAC-c-sh-SDU-LengthList ::= SEQUENCE(SIZE(1..maxNrOfMACcshSDU-Length)) OF MAC-c-sh-SDU-Length

MACdPDU-Size ::= INTEGER (1..5000,...)

MACdPDU-Size-IndexList ::= SEQUENCE (SIZE (1..maxNrOfPDUIndexes)) OF MACdPDU-Size-IndexItem

MACdPDU-Size-IndexItem ::= SEQUENCE {
    sID                                 SID,
    mACdPDU-Size                        MACdPDU-Size,
    iE-Extensions                       ProtocolExtensionContainer { { MACdPDU-Size-IndexItem-ExtIEs
} }         OPTIONAL,
    ...
}

MACdPDU-Size-IndexItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

MACdPDU-Size-IndexList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfPDUIndexes)) OF MACdPDU-Size-
IndexItem-to-Modify

MACdPDU-Size-IndexItem-to-Modify ::= SEQUENCE {
    sID                                 SID,
    mACdPDU-Size                        MACdPDU-Size,
    iE-Extensions                       ProtocolExtensionContainer { { MACdPDU-Size-IndexItem-to-
Modify-ExtIEs } }           OPTIONAL,
    ...
}

MACdPDU-Size-IndexItem-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

MAChsGuaranteedBitRate ::= INTEGER (0..16777215,...)

MAChsReorderingBufferSize-for-RLC-UM ::= INTEGER (0..300,...)
-- Unit kBytes

MAC-hsWindowSize        ::= ENUMERATED {v4, v6, v8, v12, v16, v24, v32,...}

MaximumAllowedULTxPower     ::= INTEGER (-50..33)

MaxNrDLPhysicalchannels ::= INTEGER (1..224)
-- 1.28Mcps TDD 97 – 224 are unused

MaxNrDLPhysicalchannelsTS   ::= INTEGER (1..16)

MaxNrTimeslots              ::= INTEGER (1..14)
-- 1.28Mcps values 7-14 are unused

MaxNrULPhysicalchannels ::= INTEGER (1..2)

MaxTFCIvalue                ::= INTEGER (1..1023)

MBMS-Bearer-Service-List    ::= SEQUENCE (SIZE (1..maxNrOfMBMSServices)) OF TMGI

MeasurementFilterCoefficient ::=  ENUMERATED{k0, k1, k2, k3, k4, k5, k6, k7, k8, k9, k11, k13, k15,
k17, k19,...}
-- Measurement Filter Coefficient to be used for measurement

MeasurementID               ::= INTEGER (0..1048575)

Measurement-Power-Offset ::= INTEGER(-12 .. 26)
```

```
-- Actual value = IE value * 0.5

MinimumSpreadingFactor      ::= INTEGER (1..16)

Multi-code-info             ::= INTEGER (1..16)

MultipleURAsIndicator ::= ENUMERATED {
    multiple-URAs-exist,
    single-URA-exists
}

MaxAdjustmentStep           ::= INTEGER(1..10)
-- Unit Slot

MeasurementChangeTime       ::= INTEGER (1..6000,...)
-- The MeasurementChangeTime  gives the MeasurementChangeTime
-- in number of 10 ms periods.
-- E.g. Value 6000 means 60000ms(1min)
-- Unit is ms, Step is 10 ms


MeasurementHysteresisTime       ::= INTEGER (1..6000,...)
-- The MeasurementHysteresisTime  gives the
-- MeasurementHysteresisTime in number of 10 ms periods.
-- E.g. Value 6000 means 60000ms(1min)
-- Unit is ms, Step is 10ms

MeasurementIncreaseDecreaseThreshold        ::= CHOICE {
    sir                             SIR-Value-IncrDecrThres,
    sir-error                       SIR-Error-Value-IncrDecrThres,
    transmitted-code-power          Transmitted-Code-Power-Value-IncrDecrThres,
    rscp                            RSCP-Value-IncrDecrThres,
    round-trip-time                 Round-Trip-Time-IncrDecrThres,
    ...,
    extension-MeasurementIncreaseDecreaseThreshold      Extension-
MeasurementIncreaseDecreaseThreshold
}

Extension-MeasurementIncreaseDecreaseThreshold  ::= ProtocolIE-Single-Container {{ Extension-
MeasurementIncreaseDecreaseThresholdIE }}

Extension-MeasurementIncreaseDecreaseThresholdIE RNSAP-PROTOCOL-IES ::= {
    { ID id-Load-Value-IncrDecrThres    CRITICALITY reject  TYPE Load-Value-IncrDecrThres   PRESENCE
mandatory }|
    { ID id-Transmitted-Carrier-Power-Value-IncrDecrThres   CRITICALITY reject  TYPE Transmitted-
Carrier-Power-Value-IncrDecrThres       PRESENCE mandatory }|
    { ID id-Received-Total-Wideband-Power-Value-IncrDecrThres   CRITICALITY reject  TYPE Received-
Total-Wideband-Power-Value-IncrDecrThres        PRESENCE mandatory }|
    { ID id-UL-Timeslot-ISCP-Value-IncrDecrThres    CRITICALITY reject  TYPE UL-Timeslot-ISCP-Value-
IncrDecrThres   PRESENCE mandatory }|
    { ID id-RT-Load-Value-IncrDecrThres CRITICALITY reject  TYPE RT-Load-Value-IncrDecrThres
    PRESENCE mandatory }|
    { ID id-NRT-Load-Information-Value-IncrDecrThres    CRITICALITY reject  TYPE NRT-Load-
Information-Value-IncrDecrThres PRESENCE mandatory }|
    { ID id-UpPTSInterferenceValue      CRITICALITY reject  TYPE    UpPTSInterferenceValue
    PRESENCE mandatory }
}

MeasurementRecoveryBehavior ::= NULL

MeasurementRecoveryReportingIndicator ::= NULL

MeasurementRecoverySupportIndicator ::= NULL

MeasurementThreshold            ::= CHOICE {
    sir                             SIR-Value,
    sir-error                       SIR-Error-Value,
    transmitted-code-power          Transmitted-Code-Power-Value,
    rscp                            RSCP-Value,
    rx-timing-deviation             Rx-Timing-Deviation-Value,
    round-trip-time                 Round-Trip-Time-Value,
    ...,
    extension-MeasurementThreshold  Extension-MeasurementThreshold
}

Extension-MeasurementThreshold  ::= ProtocolIE-Single-Container {{ Extension-MeasurementThresholdIE
}}
```

```
Extension-MeasurementThresholdIE RNSAP-PROTOCOL-IES ::= {
    { ID id-TUTRANGPSMeasurementThresholdInformation    CRITICALITY reject  TYPE
TUTRANGPSMeasurementThresholdInformation        PRESENCE mandatory }|
    { ID id-SFNSFNMeasurementThresholdInformation       CRITICALITY reject  TYPE
SFNSFNMeasurementThresholdInformation           PRESENCE mandatory }|
    { ID id-Load-Value                                  CRITICALITY reject  TYPE Load-Value
                                PRESENCE mandatory }|
    { ID id-Transmitted-Carrier-Power-Value             CRITICALITY reject  TYPE Transmitted-
Carrier-Power-Value             PRESENCE mandatory }|
    { ID id-Received-Total-Wideband-Power-Value         CRITICALITY reject  TYPE Received-Total-
Wideband-Power-Value            PRESENCE mandatory }|
    { ID id-UL-Timeslot-ISCP-Value                      CRITICALITY reject  TYPE UL-Timeslot-ISCP-
Value                           PRESENCE mandatory }|
    { ID id-RT-Load-Value                               CRITICALITY reject  TYPE RT-Load-Value
                                PRESENCE mandatory }|
    { ID id-NRT-Load-Information-Value                  CRITICALITY reject  TYPE NRT-Load-
Information-Value                   PRESENCE mandatory }|
    { ID id-Rx-Timing-Deviation-Value-LCR               CRITICALITY reject  TYPE Rx-Timing-
Deviation-Value-LCR                 PRESENCE mandatory}|
    { ID id-HS-SICH-Reception-Quality-Measurement-Value CRITICALITY reject  TYPE HS-SICH-Reception-
Quality-Measurement-Value   PRESENCE mandatory}|
    { ID id-UpPTSInterferenceValue                      CRITICALITY reject  TYPE
UpPTSInterferenceValue                              PRESENCE mandatory }
}

MidambleConfigurationBurstType1And3 ::=     ENUMERATED {v4, v8, v16}

MidambleConfigurationBurstType2 ::=     ENUMERATED {v3, v6}

MidambleConfigurationLCR ::=    ENUMERATED {v2, v4, v6, v8, v10, v12, v14, v16, ...}

MidambleShiftAndBurstType ::=       CHOICE {
    type1                               SEQUENCE {
        midambleConfigurationBurstType1And3     MidambleConfigurationBurstType1And3,
        midambleAllocationMode              CHOICE {
            defaultMidamble                     NULL,
            commonMidamble                      NULL,
            ueSpecificMidamble                  MidambleShiftLong,
            ...
        },
        ...
    },
    type2                               SEQUENCE {
        midambleConfigurationBurstType2     MidambleConfigurationBurstType2,
        midambleAllocationMode              CHOICE {
            defaultMidamble                     NULL,
            commonMidamble                      NULL,
            ueSpecificMidamble                  MidambleShiftShort,
            ...
        },
        ...
    },
    type3                               SEQUENCE {
        midambleConfigurationBurstType1And3 MidambleConfigurationBurstType1And3,
        midambleAllocationMode          CHOICE {
            defaultMidamble                     NULL,
            ueSpecificMidamble                  MidambleShiftLong,
            ...
        },
        ...
    },
    ...
}

MidambleShiftLong ::=               INTEGER (0..15)

MidambleShiftShort ::=              INTEGER (0..5)

MidambleShiftLCR ::= SEQUENCE {
    midambleAllocationMode      MidambleAllocationMode,
    midambleShift               MidambleShiftLong       OPTIONAL,
        -- The IE shall be present if the Midamble Allocation Mode IE is set to "UE specific
    midamble".
    midambleConfigurationLCR    MidambleConfigurationLCR,
    iE-Extensions               ProtocolExtensionContainer { {MidambleShiftLCR-ExtIEs} }
    OPTIONAL,
    ...
    }
```

```
MidambleAllocationMode ::= ENUMERATED {
    defaultMidamble,
    commonMidamble,
    uESpecificMidamble,
    ...
    }

MidambleShiftLCR-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

MinUL-ChannelisationCodeLength      ::= ENUMERATED {
    v4,
    v8,
    v16,
    v32,
    v64,
    v128,
    v256
}

ModifyPriorityQueue ::= CHOICE {
    addPriorityQueue            PriorityQueue-InfoItem-to-Add,
    modifyPriorityQueue         PriorityQueue-InfoItem-to-Modify,
    deletePriorityQueue         PriorityQueue-Id,
    ...
}

Modulation ::= ENUMERATED {
    qPSK,
    eightPSK,
    ...
}

MultiplexingPosition ::= ENUMERATED {
    fixed,
    flexible
}

MAChs-ResetIndicator ::= ENUMERATED{
    mAChs-NotReset
}

-- N

NACC-Related-Data ::= SEQUENCE {
    gERAN-SI-Type               GERAN-SI-Type,
    iE-Extensions               ProtocolExtensionContainer { {NACC-Related-Data-ExtIEs} }
    OPTIONAL,
    ...
    }

NACC-Related-Data-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


Nack-Power-Offset ::= INTEGER (0..8,...)
-- According to mapping in ref. [21] subclause 4.2.1

NCC ::= BIT STRING (SIZE (3))

Neighbouring-UMTS-CellInformation ::= SEQUENCE (SIZE (1..maxNrOfNeighbouringRNCs)) OF ProtocolIE-
Single-Container {{ Neighbouring-UMTS-CellInformationItemIE }}

Neighbouring-UMTS-CellInformationItemIE RNSAP-PROTOCOL-IES ::= {
    { ID id-Neighbouring-UMTS-CellInformationItem   CRITICALITY ignore  TYPE    Neighbouring-UMTS-
CellInformationItem PRESENCE    mandatory }
}

Neighbouring-UMTS-CellInformationItem ::= SEQUENCE {
    rNC-ID                                  RNC-ID,
    cN-PS-DomainIdentifier                  CN-PS-DomainIdentifier      OPTIONAL,
    cN-CS-DomainIdentifier                  CN-CS-DomainIdentifier      OPTIONAL,
    neighbouring-FDD-CellInformation        Neighbouring-FDD-CellInformation    OPTIONAL,
    neighbouring-TDD-CellInformation        Neighbouring-TDD-CellInformation    OPTIONAL,
```

```
    iE-Extensions                           ProtocolExtensionContainer { {Neighbouring-UMTS-
CellInformationItem-ExtIEs} } OPTIONAL,
    ...
}

Neighbouring-UMTS-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-neighbouring-LCR-TDD-CellInformation            CRITICALITY  ignore     EXTENSION
    Neighbouring-LCR-TDD-CellInformation            PRESENCE optional },
    ...
}

Neighbouring-FDD-CellInformation ::= SEQUENCE ( SIZE (1..maxNrOfFDDNeighboursPerRNC,...)) OF
Neighbouring-FDD-CellInformationItem

Neighbouring-FDD-CellInformationItem ::= SEQUENCE {
    c-ID                                C-ID,
    uARFCNforNu                         UARFCN,
    uARFCNforNd                         UARFCN,
    frameOffset                         FrameOffset         OPTIONAL,
    primaryScramblingCode               PrimaryScramblingCode,
    primaryCPICH-Power                  PrimaryCPICH-Power      OPTIONAL,
    cellIndividualOffset                CellIndividualOffset    OPTIONAL,
    txDiversityIndicator                TxDiversityIndicator,
    sTTD-SupportIndicator               STTD-SupportIndicator   OPTIONAL,
    closedLoopMode1-SupportIndicator    ClosedLoopMode1-SupportIndicator    OPTIONAL,
    closedLoopMode2-SupportIndicator    ClosedLoopMode2-SupportIndicator    OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { Neighbouring-FDD-
CellInformationItem-ExtIEs} } OPTIONAL,
    ...
}

Neighbouring-FDD-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-RestrictionStateIndicator               CRITICALITY ignore          EXTENSION
RestrictionStateIndicator       PRESENCE optional   }|
    { ID id-DPC-Mode-Change-SupportIndicator    CRITICALITY ignore      EXTENSION   DPC-Mode-Change-
SupportIndicator        PRESENCE optional }|
    { ID id-CoverageIndicator               CRITICALITY ignore          EXTENSION CoverageIndicator
                PRESENCE optional   }|
    { ID id-AntennaColocationIndicator      CRITICALITY ignore          EXTENSION
AntennaColocationIndicator      PRESENCE optional   }|
    { ID id-HCS-Prio                        CRITICALITY ignore          EXTENSION HCS-Prio
                    PRESENCE optional   }|
    { ID id-CellCapabilityContainer-FDD         CRITICALITY ignore      EXTENSION
    CellCapabilityContainer-FDD             PRESENCE optional }|
    { ID id-SNA-Information                 CRITICALITY ignore          EXTENSION SNA-Information
        PRESENCE optional },
    ...
}

NeighbouringFDDCellMeasurementInformation ::= SEQUENCE {
    uC-ID                               UC-ID,
    uARFCN                              UARFCN,
    primaryScramblingCode               PrimaryScramblingCode,
    iE-Extensions                       ProtocolExtensionContainer { {
NeighbouringFDDCellMeasurementInformationItem-ExtIEs} } OPTIONAL,
    ...
}

NeighbouringFDDCellMeasurementInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Neighbouring-GSM-CellInformation ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-
CellInformationIE }}

Neighbouring-GSM-CellInformationIE RNSAP-PROTOCOL-IES ::= {
    { ID id-Neighbouring-GSM-CellInformation    CRITICALITY ignore  TYPE    Neighbouring-GSM-
CellInformationIEs  PRESENCE    mandatory }
}

Neighbouring-GSM-CellInformationIEs ::= SEQUENCE ( SIZE (1..maxNrOfGSMNeighboursPerRNC,...)) OF
Neighbouring-GSM-CellInformationItem

Neighbouring-GSM-CellInformationItem ::= SEQUENCE {
    cGI                                 CGI,
    cellIndividualOffset                CellIndividualOffset    OPTIONAL,
    bSIC                                BSIC,
```

```
    band-Indicator                      Band-Indicator,
    bCCH-ARFCN                          BCCH-ARFCN,
    iE-Extensions                       ProtocolExtensionContainer { { Neighbouring-GSM-
CellInformationItem-ExtIEs} } OPTIONAL,
    ...
}

Neighbouring-GSM-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-CoverageIndicator               CRITICALITY ignore          EXTENSION CoverageIndicator
                  PRESENCE optional   } |
    { ID id-AntennaColocationIndicator      CRITICALITY ignore          EXTENSION
AntennaColocationIndicator          PRESENCE optional   } |
    { ID id-HCS-Prio                        CRITICALITY ignore          EXTENSION HCS-Prio
                      PRESENCE optional   } |
    { ID id-SNA-Information                  CRITICALITY ignore          EXTENSION SNA-Information
                      PRESENCE optional   } |
    { ID id-GERAN-Cell-Capability           CRITICALITY ignore          EXTENSION GERAN-Cell-
Capability                  PRESENCE optional   } |
    { ID id-GERAN-Classmark                 CRITICALITY ignore          EXTENSION GERAN-Classmark
                      PRESENCE optional   } |
    { ID id-ExtendedGSMCellIndividualOffset CRITICALITY ignore          EXTENSION
ExtendedGSMCellIndividualOffset PRESENCE optional   },
    ...
}

Neighbouring-TDD-CellInformation ::= SEQUENCE ( SIZE (1..maxNrOfTDDNeighboursPerRNC,...)) OF
Neighbouring-TDD-CellInformationItem

Neighbouring-TDD-CellInformationItem ::= SEQUENCE {
    c-ID                            C-ID,
    uARFCNforNt                     UARFCN,
    frameOffset                     FrameOffset         OPTIONAL,
    cellParameterID                 CellParameterID,
    syncCase                        SyncCase,
    timeSlot                        TimeSlot            OPTIONAL
    -- This IE shall be present if Sync Case = Case1 -- ,
    sCH-TimeSlot                    SCH-TimeSlot            OPTIONAL
    -- This IE shall be present if Sync Case = Case2 -- ,
    sCTD-Indicator          SCTD-Indicator,
    cellIndividualOffset            CellIndividualOffset    OPTIONAL,
    dPCHConstantValue               DPCHConstantValue   OPTIONAL,
    pCCPCH-Power                    PCCPCH-Power            OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { { Neighbouring-TDD-
CellInformationItem-ExtIEs} } OPTIONAL,
    ...
}

Neighbouring-TDD-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-RestrictionStateIndicator               CRITICALITY ignore          EXTENSION
RestrictionStateIndicator       PRESENCE optional   }|
    { ID id-CoverageIndicator               CRITICALITY ignore          EXTENSION CoverageIndicator
                PRESENCE optional   }|
    { ID id-AntennaColocationIndicator      CRITICALITY ignore          EXTENSION
AntennaColocationIndicator      PRESENCE optional   }|
    { ID id-HCS-Prio                        CRITICALITY ignore          EXTENSION HCS-Prio
                    PRESENCE optional   }|
    { ID id-CellCapabilityContainer-TDD             CRITICALITY ignore  EXTENSION
    CellCapabilityContainer-TDD         PRESENCE optional }|
    { ID id-SNA-Information                          CRITICALITY ignore  EXTENSION SNA-Information
                    PRESENCE optional   },
    ...
}

NeighbouringTDDCellMeasurementInformation ::= SEQUENCE {
    uC-ID                               UC-ID,
    uARFCN                              UARFCN,
    cellParameterID                     CellParameterID,
    timeSlot                            TimeSlot                    OPTIONAL,
    midambleShiftAndBurstType           MidambleShiftAndBurstType   OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { {
NeighbouringTDDCellMeasurementInformationItem-ExtIEs} } OPTIONAL,
    ...
}

NeighbouringTDDCellMeasurementInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
NeighbouringTDDCellMeasurementInformationLCR ::= SEQUENCE {
    uC-ID                               UC-ID,
    uARFCN                              UARFCN,
    cellParameterID                     CellParameterID,
    timeSlotLCR                         TimeSlotLCR                 OPTIONAL,
    midambleShiftLCR                    MidambleShiftLCR            OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { {
NeighbouringTDDCellMeasurementInformationLCRItem-ExtIEs} } OPTIONAL,
    ...
}

NeighbouringTDDCellMeasurementInformationLCRItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Neighbouring-LCR-TDD-CellInformation ::= SEQUENCE (SIZE (1.. maxNrOfLCRTDDNeighboursPerRNC,...)) OF
Neighbouring-LCR-TDD-CellInformationItem

Neighbouring-LCR-TDD-CellInformationItem ::= SEQUENCE {
    c-ID                            C-ID,
    uARFCNforNt                     UARFCN,
    frameOffset                     FrameOffset         OPTIONAL,
    cellParameterID                 CellParameterID,
    sCTD-Indicator          SCTD-Indicator,
    cellIndividualOffset            CellIndividualOffset    OPTIONAL,
    dPCHConstantValue               DPCHConstantValue   OPTIONAL,
    pCCPCH-Power                    PCCPCH-Power            OPTIONAL,
    restrictionStateIndicator       RestrictionStateIndicator       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { { Neighbouring-LCR-TDD-
CellInformationItem-ExtIEs} } OPTIONAL,
    ...
}

Neighbouring-LCR-TDD-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-CoverageIndicator               CRITICALITY ignore      EXTENSION   CoverageIndicator
                        PRESENCE optional   }|
    { ID id-AntennaColocationIndicator      CRITICALITY ignore      EXTENSION
    AntennaColocationIndicator              PRESENCE optional   }|
    { ID id-HCS-Prio                        CRITICALITY ignore      EXTENSION   HCS-Prio
                        PRESENCE optional   }|
    { ID id-CellCapabilityContainer-TDD-LCR CRITICALITY ignore      EXTENSION
    CellCapabilityContainer-TDD-LCR     PRESENCE optional }|
    { ID id-SNA-Information                 CRITICALITY ignore      EXTENSION   SNA-Information
                        PRESENCE optional },
    ...
}

NrOfDLchannelisationcodes   ::= INTEGER (1..8)

NrOfTransportBlocks         ::= INTEGER (0..512)

NRT-Load-Information-Value-IncrDecrThres ::= INTEGER(0..3)

NRT-Load-Information-Value ::= INTEGER(0..3)

NRTLoadInformationValue ::= SEQUENCE {
        uplinkNRTLoadInformationValue       INTEGER(0..3),
        downlinkNRTLoadInformationValue     INTEGER(0..3)
}

-- O

OnModification ::= SEQUENCE {
    measurementThreshold    MeasurementThreshold,
    iE-Extensions           ProtocolExtensionContainer { {OnModification-ExtIEs} } OPTIONAL,
    ...
}

OnModification-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

OnModificationInformation ::= SEQUENCE {
    informationThreshold    InformationThreshold    OPTIONAL,
```

```
    iE-Extensions           ProtocolExtensionContainer { {OnModificationInformation-ExtIEs} }
OPTIONAL,
    ...
}

OnModificationInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- P

PagingCause ::= ENUMERATED {
    terminating-conversational-call,
    terminating-streaming-call,
    terminating-interactive-call,
    terminating-background-call,
    terminating-low-priority-signalling,
    ...,
    terminating-high-priority-signalling,
    terminating-cause-unknown
}
-- See in [16]

PagingRecordType ::= ENUMERATED {
    imsi-gsm-map,
    tmsi-gsm-map,
    p-tmsi-gsm-map,
    imsi-ds-41,
    tmsi-ds-41,
    ...
}
-- See in [16]

PartialReportingIndicator ::= ENUMERATED {
    partial-reporting-allowed
}

PayloadCRC-PresenceIndicator ::= ENUMERATED {
    crc-included,
    crc-not-included
}

PCCPCH-Power ::= INTEGER (-150..400,...)
-- PCCPCH-power = power * 10
-- If power <= -15 PCCPCH shall be set to -150
-- If power >= 40 PCCPCH shall be set to 400
-- Unit dBm, Range -15dBm .. +40 dBm, Step 0.1dBm

PCH-InformationList ::= SEQUENCE (SIZE(0..1)) OF PCH-InformationItem

PCH-InformationItem ::= SEQUENCE {
    transportFormatSet              TransportFormatSet,
    iE-Extensions                   ProtocolExtensionContainer { { PCH-InformationItem-ExtIEs} }
OPTIONAL,
    ...
}

PCH-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC-Preamble ::= INTEGER(0..7,...)

PDSCHCodeMapping ::= SEQUENCE {
    dL-ScramblingCode       DL-ScramblingCode,
    signallingMethod        PDSCHCodeMapping-SignallingMethod,
    iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-ExtIEs} } OPTIONAL,
    ...
}

PDSCHCodeMapping-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod ::= CHOICE {
    pDSCHCodeMapping-SignallingMethod-CodeRange     PDSCHCodeMapping-SignallingMethod-CodeRange,
    pDSCHCodeMapping-SignallingMethod-TFCIRange     PDSCHCodeMapping-SignallingMethod-TFCIRange,
```

```
    pDSCHCodeMapping-SignallingMethod-Explicit      PDSCHCodeMapping-SignallingMethod-Explicit,
    ...,
    pDSCHCodeMapping-SignallingMethod-Replace       PDSCHCodeMapping-SignallingMethod-Replace
 }

PDSCHCodeMapping-SignallingMethod-CodeRange ::= SEQUENCE (SIZE (1..maxNoCodeGroups)) OF
    SEQUENCE {
        spreadingFactor         SpreadingFactor,
        multi-code-info         Multi-code-info,
        start-CodeNumber        CodeNumber,
        stop-CodeNumber         CodeNumber,
        iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-SignallingMethod-
CodeRange-ExtIEs} } OPTIONAL,
        ...
    }

PDSCHCodeMapping-SignallingMethod-CodeRange-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod-TFCIRange ::= SEQUENCE (SIZE (1..maxNoTFCIGroups)) OF
    SEQUENCE {
        maxTFCIvalue            MaxTFCIvalue,
        spreadingFactor         SpreadingFactor,
        multi-code-info         Multi-code-info,
        codeNumber              CodeNumber,
        iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-SignallingMethod-
TFCIRange-ExtIEs} } OPTIONAL,
        ...
    }

PDSCHCodeMapping-SignallingMethod-TFCIRange-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod-Explicit ::= SEQUENCE (SIZE (1..maxTFCI2Combs)) OF
    SEQUENCE {
        spreadingFactor         SpreadingFactor,
        multi-code-info         Multi-code-info,
        codeNumber              CodeNumber,
        iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-SignallingMethod-
Explicit-ExtIEs} } OPTIONAL,
        ...
    }

PDSCHCodeMapping-SignallingMethod-Explicit-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod-Replace ::= SEQUENCE (SIZE (1..maxTFCI2Combs)) OF
    SEQUENCE {
        tfci-Field2                TFCS-MaxTFCI-field2-Value,
        spreadingFactor            SpreadingFactor,
        multi-CodeInfo             Multi-code-info,
        codeNumber                 CodeNumber,
        iE-Extensions              ProtocolExtensionContainer { { PDSCHCodeMapping-
SignallingMethod-Replace-ExtIEs} }      OPTIONAL,
    ...
}

PDSCHCodeMapping-SignallingMethod-Replace-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Periodic ::= SEQUENCE {
    reportPeriodicity       ReportPeriodicity,
    iE-Extensions           ProtocolExtensionContainer { {Periodic-ExtIEs} } OPTIONAL,
    ...
}

Periodic-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PeriodicInformation ::= SEQUENCE {
    informationReportPeriodicity        InformationReportPeriodicity,
    iE-Extensions                       ProtocolExtensionContainer { {PeriodicInformation-ExtIEs} }
OPTIONAL,
```

```
    ...
}

PeriodicInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Permanent-NAS-UE-Identity ::= CHOICE {
    imsi        IMSI,
    ...
}

Phase-Reference-Update-Indicator ::= ENUMERATED {
    phase-reference-needs-to-be-changed
}

PLMN-Identity ::= OCTET STRING (SIZE(3))

PowerAdjustmentType ::= ENUMERATED {
    none,
    common,
    individual
}

PowerOffset             ::= INTEGER (0..24)

PRC ::= INTEGER (-2047..2047)
--pseudo range correction; scaling factor 0.32 meters

PRCDeviation ::= ENUMERATED {
    prcd1,
    prcd2,
    prcd5,
    prcd10,
    ...
}

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PredictedSFNSFNDeviationLimit ::= INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

PredictedTUTRANGPSDeviationLimit ::= INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

PrimaryCPICH-Power          ::= INTEGER (-100..500)
-- step 0.1 (Range –10.0..50.0) Unit is dBm

PrimaryCPICH-EcNo           ::= INTEGER (-30..30)

Primary-CPICH-Usage-For-Channel-Estimation ::= ENUMERATED {
   primary-CPICH-may-be-used,
   primary-CPICH-shall-not-be-used
}

PrimaryCCPCH-RSCP           ::= INTEGER (0..91)
-- Mapping of Non Negative values according to maping in [24]

PrimaryCCPCH-RSCP-Delta     ::= INTEGER (-5..-1,...)
-- Mapping of Negative values according to maping in [24]

PrimaryScramblingCode           ::= INTEGER (0..511)

PriorityLevel               ::= INTEGER (0..15)
-- 0 = spare, 1 = highest priority, ...14 = lowest priority and 15 = no priority

PriorityQueue-Id ::= INTEGER (0..maxNrOfPrioQueues-1)

PriorityQueue-InfoList ::= SEQUENCE (SIZE (1..maxNrOfPrioQueues)) OF PriorityQueue-InfoItem
```

```
PriorityQueue-InfoItem ::= SEQUENCE {
    priorityQueue-Id                    PriorityQueue-Id,
    associatedHSDSCH-MACdFlow           HSDSCH-MACdFlow-ID,
    schedulingPriorityIndicator         SchedulingPriorityIndicator,
    t1                                  T1,
    discardTimer                        DiscardTimer                OPTIONAL,
    mAC-hsWindowSize                    MAC-hsWindowSize,
    mAChsGuaranteedBitRate              MAChsGuaranteedBitRate      OPTIONAL,
    mACdPDU-Size-Index                  MACdPDU-Size-IndexList,
    rLC-Mode                            RLC-Mode,
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-ExtIEs
} }         OPTIONAL,
    ...
}

PriorityQueue-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PriorityQueue-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfPrioQueues)) OF ModifyPriorityQueue

PriorityQueue-InfoItem-to-Add ::= SEQUENCE {
    priorityQueue-Id                    PriorityQueue-Id,
    associatedHSDSCH-MACdFlow           HSDSCH-MACdFlow-ID,
    schedulingPriorityIndicator         SchedulingPriorityIndicator,
    t1                                  T1,
    discardTimer                        DiscardTimer                            OPTIONAL,
    mAC-hsWindowSize                    MAC-hsWindowSize,
    mAChsGuaranteedBitRate              MAChsGuaranteedBitRate                  OPTIONAL,
    mACdPDU-Size-Index                  MACdPDU-Size-IndexList,
    rLC-Mode                            RLC-Mode,
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-to-
Add-ExtIEs } }          OPTIONAL,
    ...
}

PriorityQueue-InfoItem-to-Add-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PriorityQueue-InfoItem-to-Modify ::= SEQUENCE {
    priorityQueue-Id                    PriorityQueue-Id,
    schedulingPriorityIndicator         SchedulingPriorityIndicator             OPTIONAL,
    t1                                  T1                                      OPTIONAL,
    discardTimer                        DiscardTimer                            OPTIONAL,
    mAC-hsWindowSize                    MAC-hsWindowSize                        OPTIONAL,
    mAChsGuaranteedBitRate              MAChsGuaranteedBitRate                  OPTIONAL,
    mACdPDU-Size-Index-to-Modify        MACdPDU-Size-IndexList-to-Modify                    OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-to-
Modify-ExtIEs } }           OPTIONAL,
    ...
}

PriorityQueue-InfoItem-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PriorityQueue-InfoList-to-Modify-Unsynchronised ::= SEQUENCE (SIZE (0..maxNrOfPrioQueues)) OF
PriorityQueue-InfoItem-to-Modify-Unsynchronised

PriorityQueue-InfoItem-to-Modify-Unsynchronised ::= SEQUENCE {
    priorityQueueId                     PriorityQueue-Id,
    schedulingPriorityIndicator         SchedulingPriorityIndicator
    discardTimer                        DiscardTimer
    mAChsGuaranteedBitRate              MAChsGuaranteedBitRate
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-to-
Modify-Unsynchronised-ExtIEs} }     OPTIONAL,
    ...
}

PriorityQueue-InfoItem-to-Modify-Unsynchronised-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PropagationDelay            ::= INTEGER (0..255)

PunctureLimit               ::= INTEGER (0..15)
-- 0: 40%; 1: 44%; ... 14: 96%; 15: 100
```

```
-- Q

QE-Selector ::= ENUMERATED {
    selected,
    non-selected
}

Qth-Parameter ::= INTEGER (-20..0)
-- Unit dB, Step 1dB

-- R

RAC                 ::= OCTET STRING (SIZE(1))

RANAP-RelocationInformation     ::= BIT STRING

Range-Correction-Rate ::= INTEGER (-127..127)
-- scaling factor 0.032 m/s

RateMatchingAttribute           ::= INTEGER (1..maxRateMatching)

RB-Identity                     ::= INTEGER (0..31)

RB-Info ::= SEQUENCE (SIZE(1..maxNoOfRB)) OF RB-Identity

Received-Total-Wideband-Power-Value ::= Received-total-wide-band-power

Received-Total-Wideband-Power-Value-IncrDecrThres ::= INTEGER(0..620)
-- Unit dB Step 0.1dB
-- e.g. value 100 means 10dB

RefTFCNumber ::= INTEGER (0..15)

RepetitionLength            ::= INTEGER (1..63)

RepetitionPeriod ::= ENUMERATED {
    v1,
    v2,
    v4,
    v8,
    v16,
    v32,
    v64
}

RepetitionNumber0 ::= INTEGER (0..255)

RepetitionNumber1 ::= INTEGER (1..256)

ReportCharacteristics ::= CHOICE {
    onDemand            NULL,
    periodic            Periodic,
    eventA              EventA,
    eventB              EventB,
    eventC              EventC,
    eventD              EventD,
    eventE              EventE,
    eventF              EventF,
    ...,
    extension-ReportCharacteristics     Extension-ReportCharacteristics
}

Extension-ReportCharacteristics ::= ProtocolIE-Single-Container {{ Extension-ReportCharacteristicsIE
}}

Extension-ReportCharacteristicsIE RNSAP-PROTOCOL-IES ::= {
    { ID id-OnModification  CRITICALITY reject  TYPE OnModification     PRESENCE mandatory }
}

ReportPeriodicity ::= CHOICE {
    ten-msec                INTEGER (1..6000,...),
-- The Report Periodicity gives the reporting periodicity in number of 10 ms periods.
-- E.g. value 6000 means 60000ms (i.e. 1min)
-- Unit ms, Step 10ms
    min             INTEGER (1..60,...),
-- Unit min, Step 1min
    ...
```

```
}

RequestedDataValue ::= SEQUENCE {
    gA-AccessPointPositionwithAltitude          GA-AccessPointPositionwithOptionalAltitude
    OPTIONAL,
    iPDLParameters                              IPDLParameters
    OPTIONAL,
    dGPSCorrections                             DGPSCorrections
    OPTIONAL,
    gPS-NavigationModel-and-TimeRecovery        GPS-NavigationModel-and-TimeRecovery
    OPTIONAL,
    gPS-Ionospheric-Model                       GPS-Ionospheric-Model
    OPTIONAL,
    gPS-UTC-Model                               GPS-UTC-Model
    OPTIONAL,
    gPS-Almanac                                 GPS-Almanac
    OPTIONAL,
    gPS-RealTime-Integrity                      GPS-RealTime-Integrity
    OPTIONAL,
    gPS-RX-POS                                  GPS-RX-POS
    OPTIONAL,
    sFNSFN-GA-AccessPointPosition               GA-AccessPointPositionwithOptionalAltitude
    OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { RequestedDataValue-
ExtIEs} }       OPTIONAL,
    ...
}

RequestedDataValue-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Cell-Capacity-Class-Value   CRITICALITY ignore  EXTENSION Cell-Capacity-Class-Value
    PRESENCE mandatory }|
    { ID id-NACC-Related-Data           CRITICALITY ignore  EXTENSION NACC-Related-Data
    PRESENCE optional },
    ...
}

RequestedDataValueInformation ::= CHOICE {
    informationAvailable        InformationAvailable,
    informationNotAvailable     InformationNotAvailable
}

RestrictionStateIndicator   ::= ENUMERATED {
    cellNotResevedForOperatorUse,
    cellResevedForOperatorUse,
    ...
}

RL-ID                   ::= INTEGER (0..31)

RL-Set-ID               ::= INTEGER (0..31)

RL-Specific-DCH-Info ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF RL-Specific-DCH-Info-Item

RL-Specific-DCH-Info-Item ::= SEQUENCE {
    dCH-id                  DCH-ID,
    bindingID               BindingID OPTIONAL,
   -- Shall be ignored if bearer establishment with ALCAP.
    transportLayerAddress   TransportLayerAddress       OPTIONAL,
   -- Shall be ignored if bearer establishment with ALCAP.
    iE-Extensions           ProtocolExtensionContainer { { RL-Specific-DCH-Info-Item-ExtIEs} }
    OPTIONAL,
    ...
}

RL-Specific-DCH-Info-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RLC-Mode    ::= ENUMERATED {
    rLC-AM,
    rLC-UM,
    ...
}

RNC-ID                  ::= INTEGER (0..4095)

Round-Trip-Time-IncrDecrThres ::= INTEGER(0..32766)
```

```
Round-Trip-Time-Value ::= INTEGER(0..32767)
-- According to mapping in [23]

RSCP-Value ::= INTEGER (0..127)
-- According to mapping in [24]

RSCP-Value-IncrDecrThres ::= INTEGER (0..126)

Received-total-wide-band-power              ::= INTEGER (0..621)
-- According to mapping in [23]

RT-Load-Value-IncrDecrThres ::= INTEGER(0..100)

RT-Load-Value ::= INTEGER(0..100)

RTLoadValue ::= SEQUENCE {
        uplinkRTLoadValue       INTEGER(0..100),
        downlinkRTLoadValue     INTEGER(0..100)
}

RxTimingDeviationForTA              ::= INTEGER (0..127)
-- As specified in [5], ch. 6.2.7.6
-- For 1.28Mcps TDD this IE must be set to 0.

Rx-Timing-Deviation-Value ::= INTEGER (0..8191)
--According to mapping in [24][3.84Mcps TDD only]

Rx-Timing-Deviation-Value-LCR ::= INTEGER (0..511)
--According to mapping in [24][1.28Mcps TDD only]

-- S

SAC                 ::= OCTET STRING (SIZE (2))

SAI ::= SEQUENCE {
    pLMN-Identity       PLMN-Identity,
    lAC                 LAC,
    sAC                 SAC,
    iE-Extensions       ProtocolExtensionContainer { {SAI-ExtIEs} } OPTIONAL
}

SAI-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SAT-ID ::= INTEGER (0..63)

SCH-TimeSlot                ::= INTEGER (0..6)

ScaledAdjustmentRatio           ::= INTEGER(0..100)
-- AdjustmentRatio  = ScaledAdjustmentRatio / 100

Secondary-CCPCH-Info::= SEQUENCE {
    fDD-S-CCPCH-Offset                      FDD-S-CCPCH-Offset,
    dl-ScramblingCode                       DL-ScramblingCode,
    fDD-DL-ChannelisationCodeNumber         FDD-DL-ChannelisationCodeNumber,
    dl-TFCS                                 TFCS,
    secondaryCCPCH-SlotFormat               SecondaryCCPCH-SlotFormat,
    tFCI-Presence                           TFCI-Presence   OPTIONAL,
    -- This IE shall be present only if the Secondary CCPCH Slot Format IE is equal to any of the
values from 8 to 17
    multiplexingPosition                    MultiplexingPosition,
    sTTD-Indicator                          STTD-Indicator,
    fACH-PCH-InformationList                FACH-PCH-InformationList,
    iB-schedulingInformation                IB-SchedulingInformation,
    iE-Extensions                           ProtocolExtensionContainer { { Secondary-CCPCH-Info-
ExtIEs} } OPTIONAL,
    ...
}

Secondary-CCPCH-Info-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-CCPCH-Info-TDD::= SEQUENCE {
    dl-TFCS                                 TFCS,
    tFCI-Coding                             TFCI-Coding,
    secondary-CCPCH-TDD-InformationList     Secondary-CCPCH-TDD-InformationList,
```

```
    fACH-InformationList                    FACH-InformationList,
    pCH-InformationList                     PCH-InformationList,
    iE-Extensions                           ProtocolExtensionContainer { { Secondary-CCPCH-Info-TDD-
ExtIEs} } OPTIONAL,
    ...
}

Secondary-CCPCH-Info-TDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-CPICH-Information ::= SEQUENCE {
   dl-ScramblingCode                        DL-ScramblingCode,
   fDD-DL-ChannelisationCodeNumber          FDD-DL-ChannelisationCodeNumber,
   iE-Extensions                            ProtocolExtensionContainer { { Secondary-CPICH-
   Information-ExtIEs} } OPTIONAL,
    ...
}

Secondary-CPICH-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-CPICH-Information-Change ::= CHOICE {
new-secondary-CPICH                 Secondary-CPICH-Information,
secondary-CPICH-shall-not-be-used   NULL,
...
}

Secondary-LCR-CCPCH-Info-TDD::= SEQUENCE {
    dl-TFCS                                 TFCS,
    tFCI-Coding                             TFCI-Coding,
    secondary-LCR-CCPCH-TDD-InformationList Secondary-LCR-CCPCH-TDD-InformationList,
    fACH-InformationList                    FACH-InformationList,
    pCH-InformationList                     PCH-InformationList,
    iE-Extensions                           ProtocolExtensionContainer { { Secondary-LCR-CCPCH-Info-
TDD-ExtIEs} } OPTIONAL,
    ...
}

Secondary-LCR-CCPCH-Info-TDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-CCPCH-TDD-InformationList ::= SEQUENCE (SIZE(0.. maxNrOfSCCPCHs)) OF Secondary-CCPCH-TDD-
InformationItem

Secondary-CCPCH-TDD-InformationItem ::= SEQUENCE {
    timeSlot                        TimeSlot,
    midambleShiftAndBurstType       MidambleShiftAndBurstType,
    tFCI-Presence                   TFCI-Presence,
    secondary-CCPCH-TDD-Code-Information                Secondary-CCPCH-TDD-Code-Information,
    tDD-PhysicalChannelOffset       TDD-PhysicalChannelOffset,
    repetitionLength                RepetitionLength,
    repetitionPeriod                RepetitionPeriod,
    iE-Extensions                   ProtocolExtensionContainer { { Secondary-CCPCH-TDD-
InformationItem-ExtIEs} } OPTIONAL,
    ...
}

Secondary-CCPCH-TDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-LCR-CCPCH-TDD-InformationList ::= SEQUENCE (SIZE(0.. maxNrOfSCCPCHs)) OF Secondary-LCR-
CCPCH-TDD-InformationItem

Secondary-LCR-CCPCH-TDD-InformationItem ::= SEQUENCE {
    timeSlotLCR                             TimeSlotLCR,
    midambleShiftLCR                        MidambleShiftLCR,
    tFCI-Presence                           TFCI-Presence,
    secondary-LCR-CCPCH-TDD-Code-Information    Secondary-LCR-CCPCH-TDD-Code-Information,
    tDD-PhysicalChannelOffset               TDD-PhysicalChannelOffset,
    repetitionLength                        RepetitionLength,
    repetitionPeriod                        RepetitionPeriod,
    iE-Extensions                           ProtocolExtensionContainer { { Secondary-LCR-CCPCH-
TDD-InformationItem-ExtIEs} } OPTIONAL,
    ...
```

```
}

Secondary-LCR-CCPCH-TDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-CCPCH-TDD-Code-Information ::= SEQUENCE ( SIZE (1..maxNrOfSCCPCHs)) OF Secondary-CCPCH-
TDD-Code-InformationItem

Secondary-CCPCH-TDD-Code-InformationItem ::= SEQUENCE {
    tDD-ChannelisationCode          TDD-ChannelisationCode,
    iE-Extensions                   ProtocolExtensionContainer { {Secondary-CCPCH-TDD-Code-
InformationItem-ExtIEs} } OPTIONAL,
    ...
}

Secondary-CCPCH-TDD-Code-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-LCR-CCPCH-TDD-Code-Information ::= SEQUENCE ( SIZE (1..maxNrOfSCCPCHs)) OF Secondary-LCR-
CCPCH-TDD-Code-InformationItem

Secondary-LCR-CCPCH-TDD-Code-InformationItem ::= SEQUENCE {
    tDD-ChannelisationCodeLCR       TDD-ChannelisationCodeLCR,
    s-CCPCH-TimeSlotFormat-LCR     TDD-DL-DPCH-TimeSlotFormat-LCR,
    iE-Extensions                   ProtocolExtensionContainer { {Secondary-LCR-CCPCH-TDD-Code-
InformationItem-ExtIEs} } OPTIONAL,
    ...
}

Secondary-LCR-CCPCH-TDD-Code-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SecondInterleavingMode ::= ENUMERATED {
    frame-related,
    timeslot-related,
    ...
}

Seed ::= INTEGER (0..63)

Service-ID  ::= OCTET STRING (SIZE (3))

SFN ::= INTEGER (0..4095)

SFNSFN-FDD ::= INTEGER(0..614399)

SFNSFN-TDD ::= INTEGER(0..40961)

GA-AccessPointPositionwithOptionalAltitude ::= SEQUENCE {
    geographicalCoordinate                  GeographicalCoordinate,
    altitudeAndDirection                    GA-AltitudeAndDirection  OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { GA-
AccessPointPositionwithOptionalAltitude-ExtIEs} } OPTIONAL,
    ...
}

GA-AccessPointPositionwithOptionalAltitude-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SFNSFNChangeLimit ::= INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

SFNSFNDriftRate ::= INTEGER (-100..100)
-- Unit chip/s, Step 1/256 chip/s, Range -100/256..+100/256 chip/s

SFNSFNDriftRateQuality ::= INTEGER (0..100)
-- Unit chip/s, Step 1/256 chip/s, Range 0..100/256 chip/s

SFNSFNMeasurementThresholdInformation::= SEQUENCE {
    sFNSFNChangeLimit                   SFNSFNChangeLimit                   OPTIONAL,
    predictedSFNSFNDeviationLimit       PredictedSFNSFNDeviationLimit       OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {
SFNSFNMeasurementThresholdInformation-ExtIEs} }     OPTIONAL,
    ...
```

```
}

SFNSFNMeasurementThresholdInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SFNSFNMeasurementValueInformation ::= SEQUENCE {
    successfullNeighbouringCellSFNSFNObservedTimeDifferenceMeasurementInformation       SEQUENCE
(SIZE(1..maxNrOfMeasNCell)) OF
        SEQUENCE {
            uC-ID       UC-ID,
            sFNSFNValue                 SFNSFNValue,
            sFNSFNQuality               SFNSFNQuality                   OPTIONAL,
            sFNSFNDriftRate             SFNSFNDriftRate,
            sFNSFNDriftRateQuality      SFNSFNDriftRateQuality      OPTIONAL,
            sFNSFNTimeStampInformation  SFNSFNTimeStampInformation,
            iE-Extensions               ProtocolExtensionContainer { {
SuccessfullNeighbouringCellSFNSFNObservedTimeDifferenceMeasurementInformationItem-ExtIEs} }
    OPTIONAL,
            ...
        },
    unsuccessfullNeighbouringCellSFNSFNObservedTimeDifferenceMeasurementInformation     SEQUENCE
(SIZE(0..maxNrOfMeasNCell-1)) OF
        SEQUENCE {
            uC-ID       UC-ID,
            iE-Extensions       ProtocolExtensionContainer { {
UnsuccessfullNeighbouringCellSFNSFNObservedTimeDifferenceMeasurementInformationItem-ExtIEs} }
    OPTIONAL,
            ...
        },
    iE-Extensions       ProtocolExtensionContainer { { SFNSFNMeasurementValueInformationItem-ExtIEs}
}       OPTIONAL,
    ...
}

SFNSFNMeasurementValueInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SuccessfullNeighbouringCellSFNSFNObservedTimeDifferenceMeasurementInformationItem-ExtIEs RNSAP-
PROTOCOL-EXTENSION ::= {
    ...
}

UnsuccessfullNeighbouringCellSFNSFNObservedTimeDifferenceMeasurementInformationItem-ExtIEs RNSAP-
PROTOCOL-EXTENSION ::= {
    ...
}

SFNSFNQuality ::= INTEGER (0..255)
-- Unit chip, Step 1/16 chip, Range 0.. 255/16 chip


SFNSFNTimeStampInformation ::= CHOICE {
    sFNSFNTimeStamp-FDD     SFN,
    sFNSFNTimeStamp-TDD     SFNSFNTimeStamp-TDD,
    ...
}

SFNSFNTimeStamp-TDD::= SEQUENCE {
    sFN                 SFN,
    timeSlot            TimeSlot,
    iE-Extensions                   ProtocolExtensionContainer { { SFNSFNTimeStamp-ExtIEs}}
OPTIONAL,
    ...
}

SFNSFNTimeStamp-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
SFNSFNValue ::= CHOICE {
    sFNSFN-FDD      SFNSFN-FDD,
    sFNSFN-TDD      SFNSFN-TDD,
    ...
}

SID ::= INTEGER (0..maxNrOfPDUIndexes-1)

SIR-Error-Value         ::= INTEGER (0..125)

SIR-Error-Value-IncrDecrThres           ::= INTEGER (0..124)

SIR-Value               ::= INTEGER (0..63)
-- According to mapping in [11]/[14]

SIR-Value-IncrDecrThres ::= INTEGER (0..62)

SecondaryCCPCH-SlotFormat       ::= INTEGER (0..17,...)
-- refer to [8]

S-FieldLength               ::= ENUMERATED {
    v1,
    v2,
    ...
}

SNA-Information ::= SEQUENCE {
    pLMN-Identity   PLMN-Identity,
   listOfSNAs           ListOfSNAs                                          OPTIONAL,
   iE-Extensions    ProtocolExtensionContainer { { SNA-Information-ExtIEs} } OPTIONAL,
   ...
}

SNA-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

ListOfSNAs ::= SEQUENCE (SIZE (1.. maxNrOfSNAs)) OF SNACode

SNACode ::= INTEGER (0..65535)

SpecialBurstScheduling ::= INTEGER (1..256)

SplitType ::= ENUMERATED {
    hard,
    logical
}

SpreadingFactor         ::= INTEGER (4| 8| 16| 32| 64| 128| 256)

S-RNTI                  ::= INTEGER (0..1048575)
-- From 0 to 2^20-1

S-RNTI-Group            ::= SEQUENCE {
    sRNTI                   S-RNTI,
    sRNTI-BitMaskIndex      ENUMERATED {
        b1,
        b2,
        b3,
        b4,
        b5,
        b6,
        b7,
        b8,
        b9,
        b10,
        b11,
        b12,
        b13,
        b14,
        b15,
        b16,
        b17,
        b18,
        b19,...
}
```

```
}

SRB-Delay ::= INTEGER(0..7,...)

SSDT-CellID ::= ENUMERATED {
    a,
    b,
    c,
    d,
    e,
    f,
    g,
    h
}

SSDT-CellID-Length ::= ENUMERATED {
    short,
    medium,
    long
}

SSDT-Indication ::= ENUMERATED {
    sSDT-active-in-the-UE,
    sSDT-not-active-in-the-UE
}

SSDT-SupportIndicator ::= ENUMERATED {
    sSDT-supported,
    sSDT-not-supported
}

STTD-Indicator  ::= ENUMERATED {
    active,
    inactive
}

STTD-SupportIndicator   ::= ENUMERATED {
    sTTD-Supported,
    sTTD-not-Supported
}

Support-8PSK ::= ENUMERATED {
    v8PSK-Supported
}

SyncCase ::= INTEGER (1..2,...)

SynchronisationConfiguration ::= SEQUENCE {
    n-INSYNC-IND            INTEGER (1..256),
    n-OUTSYNC-IND           INTEGER (1..256),
    t-RLFAILURE             INTEGER (0..255),
-- Unit seconds, Range 0s .. 25.5s, Step 0.1s
    iE-Extensions           ProtocolExtensionContainer { { SynchronisationConfiguration-ExtIEs} }
    OPTIONAL,
    ...
}

SynchronisationConfiguration-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

SYNC-UL-ProcParameters  ::= SEQUENCE {
    maxSYNC-UL-transmissions        ENUMERATED {v1, v2, v4, v8, ...},
    powerRampStep                   INTEGER (0..3, ...),
    ...
    }

-- T

T1 ::= ENUMERATED {v10,v20,v30,v40,v50,v60,v70,v80,v90,v100,v120,v140,v160,v200,v300,v400,...}

TDD-AckNack-Power-Offset ::= INTEGER (-7..8,...)
-- Unit dB, Range –7dB .. +8dB, Step 1dB

TDD-ChannelisationCode          ::= ENUMERATED {
    chCode1div1,
    chCode2div1,
    chCode2div2,
```

```
    chCode4div1,
    chCode4div2,
    chCode4div3,
    chCode4div4,
    chCode8div1,
    chCode8div2,
    chCode8div3,
    chCode8div4,
    chCode8div5,
    chCode8div6,
    chCode8div7,
    chCode8div8,
    chCode16div1,
    chCode16div2,
    chCode16div3,
    chCode16div4,
    chCode16div5,
    chCode16div6,
    chCode16div7,
    chCode16div8,
    chCode16div9,
    chCode16div10,
    chCode16div11,
    chCode16div12,
    chCode16div13,
    chCode16div14,
    chCode16div15,
    chCode16div16,
    ...
}

TDD-ChannelisationCodeLCR ::= SEQUENCE {
    tDD-ChannelisationCode          TDD-ChannelisationCode,
    modulation                      Modulation, -- Modulation options for 1.28Mcps TDD in contrast
to 3.84Mcps TDD
    ...
}

TDD-DCHs-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF TDD-DCHs-to-ModifyItem

TDD-DCHs-to-ModifyItem ::= SEQUENCE {
    ul-FP-Mode                          UL-FP-Mode  OPTIONAL,
    toAWS                               ToAWS       OPTIONAL,
    toAWE                               ToAWE       OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    dCH-SpecificInformationList         TDD-DCHs-to-ModifySpecificInformationList,
    iE-Extensions                       ProtocolExtensionContainer { {TDD-DCHs-to-ModifyItem-ExtIEs}
} OPTIONAL,
    ...
}

TDD-DCHs-to-ModifyItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TnlQos                      CRITICALITY ignore      EXTENSION   TnlQos  PRESENCE
    optional    },
    ...
}

TDD-DCHs-to-ModifySpecificInformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF TDD-DCHs-to-
ModifySpecificItem

TDD-DCHs-to-ModifySpecificItem ::=  SEQUENCE {
    dCH-ID                          DCH-ID,
    ul-CCTrCH-ID                    CCTrCH-ID       OPTIONAL,
    dl-CCTrCH-ID                    CCTrCH-ID       OPTIONAL,
    ul-TransportformatSet           TransportFormatSet  OPTIONAL,
    dl-TransportformatSet           TransportFormatSet  OPTIONAL,
    allocationRetentionPriority     AllocationRetentionPriority OPTIONAL,
    frameHandlingPriority           FrameHandlingPriority   OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {TDD-DCHs-to-ModifySpecificItem-
ExtIEs} } OPTIONAL,
    ...
}

TDD-DCHs-to-ModifySpecificItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Guaranteed-Rate-Information     CRITICALITY ignore  EXTENSION Guaranteed-Rate-
Information     PRESENCE optional   }|
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass      PRESENCE optional},
    ...
```

```
}

TDD-DL-Code-Information ::= SEQUENCE ( SIZE (1..maxNrOfDPCHs)) OF TDD-DL-Code-InformationItem

TDD-DL-Code-InformationItem ::= SEQUENCE {
    dPCH-ID                         DPCH-ID,
    tDD-ChannelisationCode          TDD-ChannelisationCode,
    iE-Extensions                   ProtocolExtensionContainer { {TDD-DL-Code-InformationItem-
ExtIEs} } OPTIONAL,
    ...
}

TDD-DL-Code-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TDD-DL-Code-LCR-Information ::= SEQUENCE (SIZE (1..maxNrOfDPCHsLCR)) OF TDD-DL-Code-LCR-
InformationItem

TDD-DL-Code-LCR-InformationItem ::= SEQUENCE {
    dPCH-ID                                 DPCH-ID,
    tdd-ChannelisationCodeLCR               TDD-ChannelisationCodeLCR,
    tdd-DL-DPCH-TimeSlotFormat-LCR      TDD-DL-DPCH-TimeSlotFormat-LCR,
    iE-Extensions                           ProtocolExtensionContainer { { TDD-DL-Code-LCR-
InformationItem-ExtIEs} }       OPTIONAL,
    ...
}

TDD-DL-Code-LCR-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TDD-DL-DPCH-TimeSlotFormat-LCR ::= CHOICE {
    qPSK                        QPSK-DL-DPCH-TimeSlotFormatTDD-LCR,
    eightPSK                    EightPSK-DL-DPCH-TimeSlotFormatTDD-LCR,
    ...
}

QPSK-DL-DPCH-TimeSlotFormatTDD-LCR ::= INTEGER(0..24,...)

EightPSK-DL-DPCH-TimeSlotFormatTDD-LCR ::= INTEGER(0..24,...)

TDD-DPCHOffset ::= CHOICE {
    initialOffset       INTEGER (0..255),
    noinitialOffset     INTEGER (0..63)
}

TDD-PhysicalChannelOffset       ::= INTEGER (0..63)

TDD-TPC-DownlinkStepSize ::= ENUMERATED {
    step-size1,
    step-size2,
    step-size3,
    ...
}

TDD-TPC-UplinkStepSize-LCR ::= ENUMERATED {
    step-size1,
    step-size2,
    step-size3,
    ...
}

TDD-UL-Code-Information ::= SEQUENCE ( SIZE (1..maxNrOfDPCHs)) OF TDD-UL-Code-InformationItem

TDD-UL-Code-InformationItem ::= SEQUENCE {
    dPCH-ID                         DPCH-ID,
    tDD-ChannelisationCode          TDD-ChannelisationCode,
    iE-Extensions                   ProtocolExtensionContainer { {TDD-UL-Code-InformationItem-
ExtIEs} } OPTIONAL,
    ...
}

TDD-UL-Code-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
TDD-UL-Code-LCR-Information ::= SEQUENCE (SIZE (1..maxNrOfDPCHsLCR)) OF TDD-UL-Code-LCR-
InformationItem

TDD-UL-Code-LCR-InformationItem ::= SEQUENCE {
    dPCH-ID                                 DPCH-ID,
    tdd-ChannelisationCodeLCR               TDD-ChannelisationCodeLCR,
    tdd-UL-DPCH-TimeSlotFormat-LCR      TDD-UL-DPCH-TimeSlotFormat-LCR,
    iE-Extensions                           ProtocolExtensionContainer { { TDD-UL-Code-LCR-
InformationItem-ExtIEs} }       OPTIONAL,
    ...
}

TDD-UL-Code-LCR-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TDD-UL-DPCH-TimeSlotFormat-LCR ::= CHOICE {
    qPSK                        QPSK-UL-DPCH-TimeSlotFormatTDD-LCR,
    eightPSK                    EightPSK-UL-DPCH-TimeSlotFormatTDD-LCR,
    ...
}

QPSK-UL-DPCH-TimeSlotFormatTDD-LCR ::= INTEGER(0..69,...)

EightPSK-UL-DPCH-TimeSlotFormatTDD-LCR ::= INTEGER(0..24,...)

TFCI-Coding ::= ENUMERATED {
    v4,
    v8,
    v16,
    v32,
    ...
}

TFCI-PC-SupportIndicator ::=  ENUMERATED {
    tFCI-PC-mode1-supported,
    tFCI-PC-mode2-supported
}

TFCI-Presence ::= ENUMERATED {
    present,
    not-present
}

TFCI-SignallingMode ::= ENUMERATED {
    normal,
    split
}

TGD                 ::= INTEGER (0|15..269)
-- 0 = Undefined, only one transmission gap in the transmission gap pattern sequence

TGPRC               ::= INTEGER (0..511)
-- 0 = infinity

TGPSID              ::= INTEGER (1.. maxTGPS)

TGSN                ::= INTEGER (0..14)

TimeSlot                ::= INTEGER (0..14)

TimeSlotLCR ::= INTEGER (0..6)

TimingAdvanceApplied ::= ENUMERATED {
    yes,
    no
}

TMGI    ::= SEQUENCE    {
    plmn-id     PLMN-Identity,
    service-id  Service-ID,
    iE-Extensions                   ProtocolExtensionContainer { { TMGI-ExtIEs} }       OPTIONAL,
    ...
}

TMGI-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
TnlQos ::= CHOICE {
    dsField                     DsField,
    genericTrafficCategory      GenericTrafficCategory,
    ...
}

ToAWE                   ::= INTEGER (0..2559)

ToAWS                   ::= INTEGER (0..1279)

TraceDepth                      ::= ENUMERATED {
    minimum,
    medium,
    maximum,
    ...
}

TraceRecordingSessionReference  ::= INTEGER (0..65535)

TraceReference                  ::= OCTET STRING (SIZE (2..3))

TrafficClass ::= ENUMERATED {
    conversational,
    streaming,
    interactive,
    background,
    ...
}

Transmission-Gap-Pattern-Sequence-Information ::= SEQUENCE (SIZE (1..maxTGPS)) OF
    SEQUENCE {
        tGPSID          TGPSID,
        tGSN            TGSN,
        tGL1            GapLength,
        tGL2            GapLength   OPTIONAL,
        tGD             TGD,
        tGPL1           GapDuration,
        tGPL2           GapDuration OPTIONAL,
        uL-DL-mode      UL-DL-mode,
        downlink-Compressed-Mode-Method     Downlink-Compressed-Mode-Method     OPTIONAL,
            -- This IE shall be present if the value of the UL/DL mode IE is "DL only" or "UL/DL"
        uplink-Compressed-Mode-Method       Uplink-Compressed-Mode-Method       OPTIONAL,
            -- This IE shall be present if the value of the UL/DL mode IE is "UL only" or "UL/DL"
        dL-FrameType        DL-FrameType,
        delta-SIR1      DeltaSIR,
        delta-SIR-after1    DeltaSIR,
        delta-SIR2      DeltaSIR    OPTIONAL,
        delta-SIR-after2    DeltaSIR    OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {Transmission-Gap-Pattern-Sequence-
Information-ExtIEs} } OPTIONAL,
        ...
    }

Transmission-Gap-Pattern-Sequence-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Transmission-Gap-Pattern-Sequence-ScramblingCode-Information    ::= ENUMERATED{
   code-change,
   nocode-change
}

Transmission-Gap-Pattern-Sequence-Status-List ::= SEQUENCE (SIZE (0..maxTGPS)) OF
    SEQUENCE {
        tGPSID          TGPSID,
        tGPRC           TGPRC,
        tGCFN           CFN,
        iE-Extensions       ProtocolExtensionContainer { { Transmission-Gap-Pattern-Sequence-Status-
List-ExtIEs } } OPTIONAL,
        ...
}

Transmission-Gap-Pattern-Sequence-Status-List-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransmissionMode    ::=ENUMERATED {
```

```
    p-t-p,
    p-t-m,
    not-provided,
    ...
}

TransmissionTimeIntervalDynamic ::= ENUMERATED {
    msec-10,
    msec-20,
    msec-40,
    msec-80,
    ...
}

TransmissionTimeIntervalSemiStatic ::= ENUMERATED {
    msec-10,
    msec-20,
    msec-40,
    msec-80,
    dynamic,
    ...
}

TransmitDiversityIndicator ::= ENUMERATED {
    active,
    inactive
}

Transmitted-Carrier-Power-Value ::= INTEGER(0..100)
-- according to mapping in [23] and [24]

Transmitted-Carrier-Power-Value-IncrDecrThres ::= INTEGER(0..100)
-- according to mapping in [23] and [24]

TUTRANGPS ::= SEQUENCE {
    ms-part INTEGER (0..16383),
    ls-part     INTEGER (0..4294967295)
}

TUTRANGPSChangeLimit ::= INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

TUTRANGPSDriftRate ::= INTEGER (-50..50)
-- Unit chip/s, Step 1/256 chip/s, Range -50/256..+50/256 chip/s

TUTRANGPSDriftRateQuality ::= INTEGER (0..50)
-- Unit chip/s, Step 1/256 chip/s, Range 0..50/256 chip/s

TUTRANGPSAccuracyClass ::= ENUMERATED {
    accuracy-class-A,
    accuracy-class-B,
    accuracy-class-C,
    ...
}

TUTRANGPSMeasurementThresholdInformation ::= SEQUENCE {
    tUTRANGPSChangeLimit                    TUTRANGPSChangeLimit                    OPTIONAL,
    predictedTUTRANGPSDeviationLimit        PredictedTUTRANGPSDeviationLimit        OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {
TUTRANGPSMeasurementThresholdInformation-ExtIEs} }      OPTIONAL,
    ...
}

TUTRANGPSMeasurementThresholdInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TUTRANGPSMeasurementValueInformation ::= SEQUENCE {
        tUTRANGPS                       TUTRANGPS,
        tUTRANGPSQuality                TUTRANGPSQuality                OPTIONAL,
        tUTRANGPSDriftRate              TUTRANGPSDriftRate,
        tUTRANGPSDriftRateQuality       TUTRANGPSDriftRateQuality       OPTIONAL,
        iEe-Extensions                  ProtocolExtensionContainer { {
TUTRANGPSMeasurementValueInformationItem-ExtIEs} }      OPTIONAL,
        ...
}
```

```
TUTRANGPSMeasurementValueInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TUTRANGPSQuality ::= INTEGER (0..255)
-- Unit chip, Step 1/16 chip, Range 0.. 255/16 chip

TransportBearerID       ::= INTEGER (0..4095)

TransportBearerRequestIndicator     ::= ENUMERATED {
    bearer-requested,
    bearer-not-requested,
    ...
}

TransportBlockSize          ::= INTEGER (0..5000)
-- Unit is bits

TransportFormatCombination-Beta ::= CHOICE {
    signalledGainFactors    SEQUENCE {
        betaC                   BetaCD,
        betaD                   BetaCD,
       refTFCNumber         RefTFCNumber    OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { { SignalledGainFactors-ExtIEs} }
OPTIONAL,
        ...
    },
    refTFCNumber            RefTFCNumber,
    ...
}

SignalledGainFactors-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TFCS ::= SEQUENCE {
    tFCSvalues          CHOICE {
        no-Split-in-TFCI            TFCS-TFCSList,
        split-in-TFCI               SEQUENCE {
            transportFormatCombination-DCH      TFCS-DCHList,
            signallingMethod                    CHOICE {
                tFCI-Range                      TFCS-MapingOnDSCHList,
                explicit                            TFCS-DSCHList,
                ...
            },
            iE-Extensions                       ProtocolExtensionContainer { { Split-in-TFCI-ExtIEs}
} OPTIONAL,
        ...
        },
    ...
    },
    iE-Extensions       ProtocolExtensionContainer  { { TFCS-ExtIEs} }      OPTIONAL,
    ...
}

Split-in-TFCI-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TFCS-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TFCS-TFCSList ::= SEQUENCE (SIZE (1..maxNrOfTFCs)) OF
    SEQUENCE {
        cTFC                TFCS-CTFC,
        tFC-Beta        TransportFormatCombination-Beta OPTIONAL,
       -- The IE shall be present if the TFCS concerns a UL DPCH [FDD – or PRACH channel in FDD]
        iE-Extensions       ProtocolExtensionContainer  { { TFCS-TFCSList-ExtIEs} }     OPTIONAL,
    ...
}

TFCS-TFCSList-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TFCS-CTFC ::= CHOICE {
```

```
    ctfc2bit                            INTEGER (0..3),
    ctfc4bit                            INTEGER (0..15),
    ctfc6bit                            INTEGER (0..63),
    ctfc8bit                            INTEGER (0..255),
    ctfc12bit                           INTEGER (0..4095),
    ctfc16bit                           INTEGER (0..65535),
    ctfcmaxbit                          INTEGER (0..maxCTFC)
}

TFCS-DCHList ::= SEQUENCE (SIZE (1..maxTFCI1Combs)) OF
    SEQUENCE {
        cTFC                TFCS-CTFC,
        iE-Extensions       ProtocolExtensionContainer  { { TFCS-DCHList-ExtIEs} }      OPTIONAL,
        ...
}

TFCS-DCHList-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TFCS-MapingOnDSCHList ::= SEQUENCE (SIZE (1..maxNoTFCIGroups)) OF
    SEQUENCE {
        maxTFCI-field2-Value        TFCS-MaxTFCI-field2-Value,
        cTFC-DSCH               TFCS-CTFC,
        iE-Extensions               ProtocolExtensionContainer  { { TFCS-MapingOnDSCHList-ExtIEs} }
    OPTIONAL,
        ...
}

TFCS-MapingOnDSCHList-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TFCS-MaxTFCI-field2-Value ::= INTEGER (1..maxTFCI2Combs-1)

TFCS-DSCHList ::= SEQUENCE (SIZE (1..maxTFCI2Combs)) OF
    SEQUENCE {
        cTFC-DSCH               TFCS-CTFC,
        iE-Extensions               ProtocolExtensionContainer  { { TFCS-DSCHList-ExtIEs} }
    OPTIONAL,
        ...
}

TFCS-DSCHList-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransportFormatSet ::= SEQUENCE {
    dynamicParts            TransportFormatSet-DynamicPartList,
    semi-staticPart         TransportFormatSet-Semi-staticPart,
    iE-Extensions           ProtocolExtensionContainer { {TransportFormatSet-ExtIEs} } OPTIONAL,
    ...
}

TransportFormatSet-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransportFormatSet-DynamicPartList ::= SEQUENCE (SIZE (1..maxNrOfTFs)) OF
    SEQUENCE {
        nrOfTransportBlocks     NrOfTransportBlocks,
        transportBlockSize      TransportBlockSize      OPTIONAL
        -- This IE shall be present if nrOfTransportBlocks is greater than 0 --,
        mode                TransportFormatSet-ModeDP,
        iE-Extensions           ProtocolExtensionContainer { {TransportFormatSet-DynamicPartList-
ExtIEs} } OPTIONAL,
        ...
    }

TransportFormatSet-DynamicPartList-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransportFormatSet-ModeDP ::= CHOICE {
    tdd             TDD-TransportFormatSet-ModeDP,
    notApplicable       NULL,
    ...
}
```

```
TDD-TransportFormatSet-ModeDP ::= SEQUENCE {
    transmissionTimeIntervalInformation     TransmissionTimeIntervalInformation     OPTIONAL,
    -- This IE shall be present if the “Transmission Time Interval” of the “Semi-static Transport
Format Information” is “dynamic”. Otherwise it is absent.
    iE-Extensions                           ProtocolExtensionContainer { {TDD-TransportFormatSet-
ModeDP-ExtIEs} } OPTIONAL,
    ...
    }

TDD-TransportFormatSet-ModeDP-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransmissionTimeIntervalInformation ::= SEQUENCE (SIZE (1..maxTTI-Count)) OF
    SEQUENCE {
        transmissionTimeInterval    TransmissionTimeIntervalDynamic,
        iE-Extensions           ProtocolExtensionContainer { {TransmissionTimeIntervalInformation-
ExtIEs} } OPTIONAL,
        ...
    }

TransmissionTimeIntervalInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Transmitted-Code-Power-Value ::= INTEGER (0..127)
-- According to mapping in [11]/[14]

Transmitted-Code-Power-Value-IncrDecrThres ::= INTEGER (0..112,...)

TransportFormatManagement ::= ENUMERATED {
    cell-based,
    ue-based,
    ...
}

TransportFormatSet-Semi-staticPart ::= SEQUENCE {
    transmissionTime        TransmissionTimeIntervalSemiStatic,
    channelCoding           ChannelCodingType,
    codingRate          CodingRate              OPTIONAL
    -- This IE shall be present if channelCoding is 'convolutional' or 'turbo' --,
    rateMatcingAttribute        RateMatchingAttribute,
    cRC-Size            CRC-Size,
    mode                TransportFormatSet-ModeSSP,
    iE-Extensions           ProtocolExtensionContainer { {TransportFormatSet-Semi-staticPart-ExtIEs}
} OPTIONAL,
    ...
}

TransportFormatSet-Semi-staticPart-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

TransportFormatSet-ModeSSP ::= CHOICE {
    tdd             SecondInterleavingMode,
    notApplicable           NULL,
    ...
}

TransportLayerAddress           ::= BIT STRING (SIZE(1..160, ...))

TrCH-SrcStatisticsDescr     ::= ENUMERATED {
    speech,
    rRC,
    unknown,
    ...
}

TSTD-Indicator ::= ENUMERATED {
    active,
    inactive
}

TSTD-Support-Indicator ::= ENUMERATED {
    tSTD-supported,
    tSTD-not-supported
}
```

```
TxDiversityIndicator    ::= ENUMERATED {
    true,
    false
}

TypeOfError ::= ENUMERATED {
    not-understood,
    missing,
    ...
}

-- U

UARFCN                  ::= INTEGER (0..16383,...)
-- Corresponds to: 0.0Hz..3276.6Mhz. See [7], [43]

UDRE ::= ENUMERATED {
    lessThan1,
    between1-and-4,
    between4-and-8,
    over8,
    ...
}

UE-Capabilities-Info ::= SEQUENCE {
    hSDSCH-Physical-Layer-Category      INTEGER (1..64,...),
    iE-Extensions                       ProtocolExtensionContainer { { UE-Capabilities-Info-ExtIEs }
}           OPTIONAL,
    ...
}

UE-Capabilities-Info-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEIdentity                  ::= CHOICE {
    imsi        IMSI,
    imei        IMEI,
    imeisv      IMEISV,
    ...
}

UEMeasurementHysteresisTime ::= INTEGER (0..15)
    -- Unit dB
    -- Range 0..7.5 dB
    -- Step 0.5 dB

UEMeasurementParameterModAllow ::= ENUMERATED {
    parameterModificationAllowed,
    ...
}

UEMeasurementReportCharacteristics ::= CHOICE {
    periodic            UEMeasurementReportCharacteristicsPeriodic,
    event1h             UEMeasurementReportCharacteristicsEvent1h,
    event1i             UEMeasurementReportCharacteristicsEvent1i,
    event6a             UEMeasurementReportCharacteristicsEvent6a,
    event6b             UEMeasurementReportCharacteristicsEvent6b,
    event6c             UEMeasurementReportCharacteristicsEvent6c,
    event6d             UEMeasurementReportCharacteristicsEvent6d,
    ...,
    extension-ReportCharacteristics     UEMeasurementReportCharacteristics-Extension
}

UEMeasurementReportCharacteristicsEvent1h ::= SEQUENCE {
    uEMeasurementTreshold       UEMeasurementThreshold,
    uEMeasurementTimeToTrigger  UEMeasurementTimeToTrigger,
    uEMeasurementHysteresisTime UEMeasurementHysteresisTime,
    iE-Extensions               ProtocolExtensionContainer { {
UEMeasurementReportCharacteristicsEvent1h-ExtIEs} } OPTIONAL,
    ...
}

UEMeasurementReportCharacteristicsEvent1h-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
UEMeasurementReportCharacteristicsEvent1i ::= SEQUENCE {
    uEMeasurementTreshold       UEMeasurementThreshold,
    uEMeasurementTimeToTrigger  UEMeasurementTimeToTrigger,
    uEMeasurementHysteresisTime UEMeasurementHysteresisTime,
    iE-Extensions               ProtocolExtensionContainer { {
UEMeasurementReportCharacteristicsEvent1i-ExtIEs} } OPTIONAL,
    ...
}

UEMeasurementReportCharacteristicsEvent1i-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementReportCharacteristicsEvent6a ::= SEQUENCE {
    uEMeasurementTreshold       UEMeasurementThreshold,
    uEMeasurementTimeToTrigger  UEMeasurementTimeToTrigger,
    iE-Extensions               ProtocolExtensionContainer { {
UEMeasurementReportCharacteristicsEvent6a-ExtIEs} } OPTIONAL,
    ...
}

UEMeasurementReportCharacteristicsEvent6a-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementReportCharacteristicsEvent6b ::= SEQUENCE {
    uEMeasurementTreshold       UEMeasurementThreshold,
    uEMeasurementTimeToTrigger  UEMeasurementTimeToTrigger,
    iE-Extensions               ProtocolExtensionContainer { {
UEMeasurementReportCharacteristicsEvent6b-ExtIEs} } OPTIONAL,
    ...
}

UEMeasurementReportCharacteristicsEvent6b-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementReportCharacteristicsEvent6c ::= SEQUENCE {
    uEMeasurementTimeToTrigger  UEMeasurementTimeToTrigger,
    iE-Extensions               ProtocolExtensionContainer { {
UEMeasurementReportCharacteristicsEvent6c-ExtIEs} } OPTIONAL,
    ...
}

UEMeasurementReportCharacteristicsEvent6c-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementReportCharacteristicsEvent6d ::= SEQUENCE {
    uEMeasurementTimeToTrigger  UEMeasurementTimeToTrigger,
    iE-Extensions               ProtocolExtensionContainer { {
UEMeasurementReportCharacteristicsEvent6d-ExtIEs} } OPTIONAL,
    ...
}

UEMeasurementReportCharacteristicsEvent6d-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementReportCharacteristicsPeriodic ::= SEQUENCE {
    amountofReporting       UEMeasurementReportCharacteristicsPeriodicAmountofReporting,
    reportingInterval       UEMeasurementReportCharacteristicsPeriodicReportingInterval,
    iE-Extensions           ProtocolExtensionContainer {
{UEMeasurementReportCharacteristicsPeriodic-ExtIEs} } OPTIONAL,
    ...
}

UEMeasurementReportCharacteristicsPeriodicAmountofReporting::= ENUMERATED {
    r1,
    r2,
    r4,
    r8,
    r16,
    r32,
    r64,
    rInfinity
}
```

```
UEMeasurementReportCharacteristicsPeriodicReportingInterval::= ENUMERATED {
    r250,
    r500,
    r1000,
    r2000,
    r3000,
    r4000,
    r6000,
    r8000,
    r12000,
    r16000,
    r20000,
    r24000,
    r28000,
    r32000,
    r64000
}

UEMeasurementReportCharacteristicsPeriodic-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementReportCharacteristics-Extension    ::= ProtocolIE-Single-Container {{
UEMeasurementReportCharacteristics-ExtensionIE }}

UEMeasurementReportCharacteristics-ExtensionIE RNSAP-PROTOCOL-IES ::= {
    ...
}

UEMeasurementThreshold          ::= CHOICE {
    timeslotISCP                    UEMeasurementThresholdDLTimeslotISCP,
    uETransmitPower                 UEMeasurementThresholdUETransmitPower,
    ...,
    extension-UEMeasurementThreshold    UEMeasurementThreshold-Extension
}

UEMeasurementThresholdDLTimeslotISCP ::=    INTEGER(-115..-25)

UEMeasurementThresholdUETransmitPower ::=   INTEGER(-50..33)

UEMeasurementThreshold-Extension    ::= ProtocolIE-Single-Container {{ UEMeasurementThreshold-
ExtensionIE }}

UEMeasurementThreshold-ExtensionIE RNSAP-PROTOCOL-IES ::= {
    ...
}

UEMeasurementTimeslotInfoHCR::= SEQUENCE (SIZE (1..maxNrOfTS)) OF UEMeasurementTimeslotInfoHCR-IEs

UEMeasurementTimeslotInfoHCR-IEs ::= SEQUENCE {
    timeSlot                        TimeSlot,
    burstType                       UEMeasurementTimeslotInfoHCRBurstType,
    iE-Extensions                   ProtocolExtensionContainer { { UEMeasurementTimeslotInfoHCR-IEs-
ExtIEs} }       OPTIONAL,
    ...
}

UEMeasurementTimeslotInfoHCRBurstType ::= ENUMERATED {
    type1,
    type2,
    type3,
    ...
}

UEMeasurementTimeslotInfoHCR-IEs-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementTimeslotInfoLCR::= SEQUENCE (SIZE (1..maxNrOfTsLCR)) OF UEMeasurementTimeslotInfoLCR-
IEs

UEMeasurementTimeslotInfoLCR-IEs ::= SEQUENCE {
    timeSlot                        TimeSlotLCR,
    iE-Extensions                   ProtocolExtensionContainer { { UEMeasurementTimeslotInfoLCR-IEs-
ExtIEs} }       OPTIONAL,
    ...

}
```

```
UEMeasurementTimeslotInfoLCR-IEs-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementTimeToTrigger ::= ENUMERATED {
    r0,
    r10,
    r20,
    r40,
    r60,
    r80,
    r100,
    r120,
    r160,
    r200,
    r240,
    r320,
    r640,
    r1280,
    r2560,
    r5000
}

UEMeasurementType ::= ENUMERATED {
    primary-CCPCH-RSCP,
    dL-Timeslot-ISCP,
    uE-Transmitted-power,
    ...
}

UEMeasurementValue ::= CHOICE {
    uE-Transmitted-Power        UE-MeasurementValue-UE-Transmitted-Power,
    primary-CCPCH-RSCP          UE-MeasurementValue-Primary-CCPCH-RSCP,
    dL-Timeslot-ISCP            UE-MeasurementValue-DL-Timeslot-ISCP,
    ...,
    extension-UEMeasurementValue        UEMeasurementValue-Extension
}

UE-MeasurementValue-UE-Transmitted-Power ::= SEQUENCE {
    uEMeasurementTransmittedPowerListHCR        UEMeasurementValueTransmittedPowerListHCR
    OPTIONAL,
-- Mandatory for 3.84Mcps TDD, Not applicable for 1.28Mcps TDD
    uEMeasurementTransmittedPowerListLCR        UEMeasurementValueTransmittedPowerListLCR
    OPTIONAL,
-- Mandatory for 1.28Mcps TDD, Not applicable for 3.84Mcps TDD
    iE-Extensions                               ProtocolExtensionContainer { { UE-MeasurementValue-
UE-Transmitted-Power-ExtIEs} }      OPTIONAL,
    ...
}

UE-MeasurementValue-UE-Transmitted-Power-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementValueTransmittedPowerListHCR   ::= SEQUENCE (SIZE (1..maxNrOfTS)) OF
UEMeasurementValueTransmittedPowerListHCR-IEs

UEMeasurementValueTransmittedPowerListHCR-IEs ::= SEQUENCE {
    timeSlot                        TimeSlot,
    uETransmitPower                 INTEGER(0..104),
    -- mapping according to [24],values 0..20 not used
    iE-Extensions                               ProtocolExtensionContainer { {
UEMeasurementValueTransmittedPowerListHCR-IEs-ExtIEs} }     OPTIONAL,
    ...

}

UEMeasurementValueTransmittedPowerListHCR-IEs-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
UEMeasurementValueTransmittedPowerListLCR   ::= SEQUENCE (SIZE (1..maxNrOfTsLCR)) OF
UEMeasurementValueTransmittedPowerListLCR-IEs

UEMeasurementValueTransmittedPowerListLCR-IEs ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    uETransmitPower                 INTEGER(0..104),
    -- mapping according to [24],values 0..20 not used
```

```
    iE-Extensions                               ProtocolExtensionContainer { {
UEMeasurementValueTransmittedPowerListLCR-IEs-ExtIEs} }     OPTIONAL,
    ...

}
UEMeasurementValueTransmittedPowerListLCR-IEs-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


UE-MeasurementValue-Primary-CCPCH-RSCP::= SEQUENCE {
    primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP               OPTIONAL,
    primaryCCPCH-RSCP-Delta             PrimaryCCPCH-RSCP-Delta         OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { UE-MeasurementValue-Primary-
CCPCH-RSCP-ExtIEs} }        OPTIONAL,
    ...
}

UE-MeasurementValue-Primary-CCPCH-RSCP-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UE-MeasurementValue-DL-Timeslot-ISCP ::= SEQUENCE {
    uEMeasurementTimeslotISCPListHCR        UEMeasurementValueTimeslotISCPListHCR   OPTIONAL,
-- Mandatory for 3.84Mcps TDD, Not applicable for 1.28Mcps TDD
    uEMeasurementTimeslotISCPListLCR        UEMeasurementValueTimeslotISCPListLCR   OPTIONAL,
-- Mandatory for 1.28Mcps TDD, Not applicable for 3.84Mcps TDD
    iE-Extensions                               ProtocolExtensionContainer { { UE-MeasurementValue-
DL-Timeslot-ISCP-ExtIEs} }      OPTIONAL,
    ...
}

UE-MeasurementValue-DL-Timeslot-ISCP-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementValueTimeslotISCPListHCR   ::= SEQUENCE (SIZE (1..maxNrOfTS)) OF
UEMeasurementValueTimeslotISCPListHCR-IEs

UEMeasurementValueTimeslotISCPListHCR-IEs ::= SEQUENCE {
    timeSlot                        TimeSlot,
    dL-TimeslotISCP                 DL-TimeslotISCP,
    iE-Extensions                   ProtocolExtensionContainer { {
UEMeasurementValueTimeslotISCPListHCR-IEs-ExtIEs} }     OPTIONAL,
    ...

}
UEMeasurementValueTimeslotISCPListHCR-IEs-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
UEMeasurementValueTimeslotISCPListLCR   ::= SEQUENCE (SIZE (1..maxNrOfTsLCR)) OF
UEMeasurementValueTimeslotISCPListLCR-IEs

UEMeasurementValueTimeslotISCPListLCR-IEs ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    dL-TimeslotISCP                 DL-TimeslotISCP,
    iE-Extensions                   ProtocolExtensionContainer { {
UEMeasurementValueTimeslotISCPListLCR-IEs-ExtIEs} }     OPTIONAL,
    ...

}
UEMeasurementValueTimeslotISCPListLCR-IEs-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementValue-Extension    ::= ProtocolIE-Single-Container {{ UEMeasurementValue-ExtensionIE }}

UEMeasurementValue-ExtensionIE RNSAP-PROTOCOL-IES ::= {
    ...
}

UEMeasurementValueInformation ::= CHOICE {
    measurementAvailable        UEMeasurementValueInformationAvailable,
    measurementnotAvailable     UEMeasurementValueInformationnotAvailable
}

UEMeasurementValueInformationAvailable::= SEQUENCE {
    uEmeasurementValue          UEMeasurementValue,
```

```
    ie-Extensions               ProtocolExtensionContainer { {
UEMeasurementValueInformationAvailableItem-ExtIEs} }        OPTIONAL,
    ...
}

UEMeasurementValueInformationAvailableItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UEMeasurementValueInformationnotAvailable ::= NULL

UE-State ::= CHOICE {
    cell-fach-pch                                           Cell-Fach-Pch-State,
    ura-pch                                                 Ura-Pch-State,
    ...
}



Cell-Fach-Pch-State ::= SEQUENCE {
    d-RNTI                          D-RNTI,
    iE-Extensions                   ProtocolExtensionContainer  { { Cell-Fach-Pch-State-ExtIEs} }
    OPTIONAL,
    ...
}

Cell-Fach-Pch-State-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Ura-Pch-State ::= SEQUENCE {
    srnc-id                         RNC-ID,
    ura-id                          URA-ID,
    iE-Extensions                   ProtocolExtensionContainer  { { Ura-Pch-State-ExtIEs} }
    OPTIONAL,
    ...
}

Ura-Pch-State-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}



UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation ::= ENUMERATED {
   dedicated-pilots-for-channel-estimation-supported
}

UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH ::= ENUMERATED {
   dedicated-pilots-for-channel-estimation-supported
}

UL-DL-mode ::= ENUMERATED {
    ul-only,
    dl-only,
    both-ul-and-dl
}

UL-Timeslot-Information::= SEQUENCE ( SIZE (1..maxNrOfTS)) OF UL-Timeslot-InformationItem

UL-Timeslot-InformationItem ::= SEQUENCE {
    timeSlot                        TimeSlot,
    midambleShiftAndBurstType       MidambleShiftAndBurstType,
    tFCI-Presence                   TFCI-Presence,
    uL-Code-Information             TDD-UL-Code-Information,
    iE-Extensions                   ProtocolExtensionContainer { {UL-Timeslot-InformationItem-
ExtIEs} } OPTIONAL,
    ...
}

UL-Timeslot-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-TimeslotLCR-Information ::= SEQUENCE (SIZE (1..maxNrOfULTsLCR)) OF UL-TimeslotLCR-InformationItem

UL-TimeslotLCR-InformationItem ::= SEQUENCE {
    timeSlotLCR                             TimeSlotLCR,
```

```
    midambleShiftLCR                        MidambleShiftLCR,
    tFCI-Presence                           TFCI-Presence,
    uL-Code-LCR-InformationList         TDD-UL-Code-LCR-Information,
    iE-Extensions                           ProtocolExtensionContainer { { UL-TimeslotLCR-
InformationItem-ExtIEs} }       OPTIONAL,
    ...
}

UL-TimeslotLCR-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-TimeSlot-ISCP-Info ::= SEQUENCE (SIZE (1..maxNrOfULTs)) OF UL-TimeSlot-ISCP-InfoItem

UL-TimeSlot-ISCP-InfoItem ::= SEQUENCE {
    timeSlot                    TimeSlot,
    uL-TimeslotISCP             UL-TimeslotISCP,
    iE-Extensions               ProtocolExtensionContainer { { UL-TimeSlot-ISCP-InfoItem-ExtIEs} }
OPTIONAL,
    ...
}

UL-TimeSlot-ISCP-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-TimeSlot-ISCP-LCR-Info ::= SEQUENCE (SIZE (1..maxNrOfULTsLCR)) OF    UL-TimeSlot-ISCP-LCR-
InfoItem

UL-TimeSlot-ISCP-LCR-InfoItem ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    iSCP                            UL-Timeslot-ISCP-Value,
    iE-Extensions                   ProtocolExtensionContainer { { UL-TimeSlot-ISCP-LCR-InfoItem-
ExtIEs} }       OPTIONAL,
    ...
 }

UL-TimeSlot-ISCP-LCR-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-Timeslot-ISCP-Value ::= UL-TimeslotISCP

UL-Timeslot-ISCP-Value-IncrDecrThres ::= INTEGER(0..126)
-- Unit dB. Step 0.5dB
-- e.g. Value 100 means 50dB

UL-TimingAdvanceCtrl-LCR ::= SEQUENCE {
    sync-UL-codes-bitmap                        BIT STRING (SIZE(8)),
    fPACH-info                                  FPACH-Information,
    prxUpPCHdes                                 INTEGER (-120 .. -58, ...),
    syncUL-procParameter                        SYNC-UL-ProcParameters,
    mMax                                        INTEGER (1..32),
    ...
    }

Uplink-Compressed-Mode-Method   ::= ENUMERATED {
    sFdiv2,
    higher-layer-scheduling,
    ...
}

UL-SIR                  ::= INTEGER (-82..173)
-- The UL-SIR gives the UL-SIR in number of 0.1 dB steps.
-- E.g. Value 173 means 17.3 dB
-- Unit dB. Step 0.1 dB.

UC-ID ::= SEQUENCE {
    rNC-ID              RNC-ID,
    c-ID                C-ID,
    iE-Extensions           ProtocolExtensionContainer { {UC-ID-ExtIEs} } OPTIONAL,
    ...
}

UC-ID-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
UL-DPCCH-SlotFormat         ::= INTEGER (0..5,...)

UL-FP-Mode ::= ENUMERATED {
    normal,
    silent,
    ...
}

UL-PhysCH-SF-Variation ::= ENUMERATED {
    sf-variation-supported,
    sf-variation-not-supported
}

UL-ScramblingCode ::= SEQUENCE {
    ul-ScramblingCodeNumber     UL-ScramblingCodeNumber,
    ul-ScramblingCodeLength     UL-ScramblingCodeLength,
    iE-Extensions           ProtocolExtensionContainer { {UL-ScramblingCode-ExtIEs} } OPTIONAL
}

UL-ScramblingCode-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-ScramblingCodeLength ::= ENUMERATED {
    short,
    long
}

UL-ScramblingCodeNumber         ::= INTEGER (0..16777215)

UL-Synchronisation-Parameters-LCR ::= SEQUENCE {
    uL-Synchronisation-StepSize         UL-Synchronisation-StepSize,
    uL-Synchronisation-Frequency            UL-Synchronisation-Frequency,
    iE-Extensions                   ProtocolExtensionContainer { { UL-Synchronisation-Parameters-
LCR-ExtIEs } }      OPTIONAL,
    ...
}

UL-Synchronisation-Parameters-LCR-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-Synchronisation-StepSize ::= INTEGER (1..8)

UL-Synchronisation-Frequency ::= INTEGER (1..8)

UL-TimeslotISCP         ::= INTEGER (0..127)
-- According to mapping in [14]

UpPTSInterferenceValue  ::= INTEGER (0..127,...)

Unidirectional-DCH-Indicator    ::= ENUMERATED {
    downlink-DCH-only,
    uplink-DCH-only
}

URA-ID                  ::= INTEGER (0..65535)

URA-Information ::= SEQUENCE {
    uRA-ID                              URA-ID,
    multipleURAsIndicator               MultipleURAsIndicator,
    rNCsWithCellsInTheAccessedURA-List  RNCsWithCellsInTheAccessedURA-List  OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { {URA-Information-ExtIEs} }
OPTIONAL,
    ...
}

URA-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

RNCsWithCellsInTheAccessedURA-List ::= SEQUENCE (SIZE (1..maxRNCinURA-1)) OF
RNCsWithCellsInTheAccessedURA-Item

RNCsWithCellsInTheAccessedURA-Item ::= SEQUENCE {
    rNC-ID                          RNC-ID,
    iE-Extensions                   ProtocolExtensionContainer { {RNCsWithCellsInTheAccessedURA-
Item-ExtIEs} } OPTIONAL,
```

```
    ...
}

RNCsWithCellsInTheAccessedURA-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCH-ID                ::= INTEGER (0..255)

USCH-Information ::=  SEQUENCE (SIZE (1..maxNoOfUSCHs)) OF USCH-InformationItem

USCH-InformationItem ::= SEQUENCE {
    uSCH-ID                          USCH-ID,
    ul-CCTrCH-ID                     CCTrCH-ID,
    trChSourceStatisticsDescriptor   TrCH-SrcStatisticsDescr,
    transportFormatSet               TransportFormatSet,
    allocationRetentionPriority     AllocationRetentionPriority,
    schedulingPriorityIndicator      SchedulingPriorityIndicator,
    rb-Info                          RB-Info,
    iE-Extensions                    ProtocolExtensionContainer { {USCH-InformationItem-ExtIEs} }
OPTIONAL,
    ...
}

USCH-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass      PRESENCE mandatory
    }|
    { ID id-BindingID                    CRITICALITY ignore      EXTENSION   BindingID   PRESENCE
    optional    }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID id-TransportLayerAddress        CRITICALITY ignore      EXTENSION
    TransportLayerAddress       PRESENCE    optional    },
    -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

-- V
-- W
-- X
-- Y
-- Z

END
```

9.3.5 Common Definitions

```
-- **************************************************************
--
-- Common definitions
--
-- **************************************************************

RNSAP-CommonDataTypes {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) rnsap (1) version1 (1) rnsap-CommonDataTypes (3)  }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- Extension constants
--
-- **************************************************************

maxPrivateIEs                                   INTEGER ::= 65535
maxProtocolExtensions                           INTEGER ::= 65535
maxProtocolIEs                                  INTEGER ::= 65535

-- **************************************************************
--
-- Common Data Types
--
-- **************************************************************
```

```
Criticality     ::= ENUMERATED { reject, ignore, notify }

Presence        ::= ENUMERATED { optional, conditional, mandatory }

PrivateIE-ID    ::= CHOICE {
    local               INTEGER (0.. maxPrivateIEs),
    global              OBJECT IDENTIFIER
}

ProcedureCode       ::= INTEGER (0..255)

ProcedureID ::= SEQUENCE {
    procedureCode           ProcedureCode,
    ddMode              ENUMERATED { tdd, fdd, common, ... }
}

ProtocolIE-ID       ::= INTEGER (0..maxProtocolIEs)

TransactionID       ::= CHOICE {
    shortTransActionId  INTEGER (0..127),
    longTransActionId   INTEGER (0..32767)
}

TriggeringMessage   ::= ENUMERATED { initiating-message, successful-outcome, unsuccessful-outcome,
outcome }

END
```

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

RNSAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) rnsap (1) version1 (1) rnsap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    ProcedureCode,
    ProtocolIE-ID
FROM RNSAP-CommonDataTypes;

-- **************************************************************
--
-- Elementary Procedures
--
-- **************************************************************

id-commonTransportChannelResourcesInitialisation           ProcedureCode ::= 0
id-commonTransportChannelResourcesRelease                  ProcedureCode ::= 1
id-compressedModeCommand                                   ProcedureCode ::= 2
id-downlinkPowerControl                                    ProcedureCode ::= 3
id-downlinkPowerTimeslotControl                            ProcedureCode ::= 4
id-downlinkSignallingTransfer                              ProcedureCode ::= 5
id-errorIndication                                         ProcedureCode ::= 6
id-dedicatedMeasurementFailure                             ProcedureCode ::= 7
id-dedicatedMeasurementInitiation                          ProcedureCode ::= 8
id-dedicatedMeasurementReporting                           ProcedureCode ::= 9
id-dedicatedMeasurementTermination                         ProcedureCode ::= 10
id-paging                                                  ProcedureCode ::= 11
id-physicalChannelReconfiguration                          ProcedureCode ::= 12
id-privateMessage                                          ProcedureCode ::= 13
id-radioLinkAddition                                       ProcedureCode ::= 14
id-radioLinkCongestion                                     ProcedureCode ::= 34
id-radioLinkDeletion                                       ProcedureCode ::= 15
id-radioLinkFailure                                        ProcedureCode ::= 16
id-radioLinkPreemption                                     ProcedureCode ::= 17
id-radioLinkRestoration                                    ProcedureCode ::= 18
id-radioLinkSetup                                          ProcedureCode ::= 19
```

```
id-relocationCommit                                          ProcedureCode ::= 20
id-synchronisedRadioLinkReconfigurationCancellation          ProcedureCode ::= 21
id-synchronisedRadioLinkReconfigurationCommit                ProcedureCode ::= 22
id-synchronisedRadioLinkReconfigurationPreparation           ProcedureCode ::= 23
id-unSynchronisedRadioLinkReconfiguration                    ProcedureCode ::= 24
id-uplinkSignallingTransfer                                  ProcedureCode ::= 25
id-commonMeasurementFailure                                  ProcedureCode ::= 26
id-commonMeasurementInitiation                               ProcedureCode ::= 27
id-commonMeasurementReporting                                ProcedureCode ::= 28
id-commonMeasurementTermination                              ProcedureCode ::= 29
id-informationExchangeFailure                                ProcedureCode ::= 30
id-informationExchangeInitiation                             ProcedureCode ::= 31
id-informationReporting                                      ProcedureCode ::= 32
id-informationExchangeTermination                            ProcedureCode ::= 33
id-reset                                                     ProcedureCode ::= 35
id-radioLinkActivation                                       ProcedureCode ::= 36
id-gERANuplinkSignallingTransfer                             ProcedureCode ::= 37
id-radioLinkParameterUpdate                                  ProcedureCode ::= 38
id-uEMeasurementFailure                                      ProcedureCode ::= 39
id-uEMeasurementInitiation                                   ProcedureCode ::= 40
id-uEMeasurementReporting                                    ProcedureCode ::= 41
id-uEMeasurementTermination                                  ProcedureCode ::= 42
id-iurDeactivateTrace                                        ProcedureCode ::= 43
id-iurInvokeTrace                                            ProcedureCode ::= 44
id-mBMSAttach                                                ProcedureCode ::= 45
id-mBMSDetach                                                ProcedureCode ::= 46
id-mBMSChannelTypeReconfiguration                            ProcedureCode ::= 47
-- **************************************************************
--
-- Lists
--
-- **************************************************************

maxCodeNumComp-1                        INTEGER ::= 255
maxRateMatching                         INTEGER ::= 256
maxNoCodeGroups                         INTEGER ::= 256
maxNoOfDSCHs                            INTEGER ::= 10
maxNoOfDSCHsLCR                         INTEGER ::= 10
maxNoOfRB                               INTEGER ::= 32
maxNoOfUSCHs                            INTEGER ::= 10
maxNoOfUSCHsLCR                         INTEGER ::= 10
maxNoTFCIGroups                         INTEGER ::= 256
maxNrOfTFCs                             INTEGER ::= 1024
maxNrOfTFs                              INTEGER ::= 32
maxNrOfCCTrCHs                          INTEGER ::= 16
maxNrOfCCTrCHsLCR                       INTEGER ::= 16
maxNrOfDCHs                             INTEGER ::= 128
maxNrOfDL-Codes                         INTEGER ::= 8
maxNrOfDPCHs                            INTEGER ::= 240
maxNrOfDPCHsLCR                         INTEGER ::= 240
maxNrOfErrors                           INTEGER ::= 256
maxNrOfMACcshSDU-Length                 INTEGER ::= 16
maxNrOfMBMSServices                     INTEGER ::= 128
maxNrOfActiveMBMSServices               INTEGER ::= 256
maxNrOfPoints                           INTEGER ::= 15
maxNrOfRLs                              INTEGER ::= 16
maxNrOfRLSets                           INTEGER ::= maxNrOfRLs
maxNrOfRLSets-1                         INTEGER ::= 15  -- maxNrOfRLSets - 1
maxNrOfRLs-1                            INTEGER ::= 15  -- maxNrOfRLs – 1
maxNrOfRLs-2                            INTEGER ::= 14  -- maxNrOfRLs – 2
maxNrOfUEs                              INTEGER ::= xx
maxNrOfULTs                             INTEGER ::= 15
maxNrOfULTsLCR                          INTEGER ::= 6
maxNrOfDLTs                             INTEGER ::= 15
maxNrOfDLTsLCR                          INTEGER ::= 6
maxRNCinURA-1                           INTEGER ::= 15
maxTTI-Count                            INTEGER ::= 4
maxCTFC                                 INTEGER ::= 16777215
maxNrOfNeighbouringRNCs                 INTEGER ::= 10
maxNrOfFDDNeighboursPerRNC              INTEGER ::= 256
maxNrOfGSMNeighboursPerRNC              INTEGER ::= 256
maxNrOfTDDNeighboursPerRNC              INTEGER ::= 256
maxNrOfFACHs                            INTEGER ::= 8
maxNrOfLCRTDDNeighboursPerRNC           INTEGER ::= 256
maxFACHCountPlus1                       INTEGER ::= 10
maxIBSEG                                INTEGER ::= 16
maxNrOfSCCPCHs                          INTEGER ::= 8
maxTFCI1Combs                           INTEGER ::= 512
```

```
maxTFCI2Combs                           INTEGER ::= 1024
maxTFCI2Combs-1                         INTEGER ::= 1023
maxTGPS                                 INTEGER ::= 6
maxNrOfTS                               INTEGER ::= 15
maxNrOfLevels                           INTEGER ::= 256
maxNoOfDSCHs-1                          INTEGER ::= 9
maxNrOfTsLCR                            INTEGER ::= 6
maxNoSat                                INTEGER ::= 16
maxNoGPSTypes                           INTEGER ::= 8
maxNrOfMeasNCell                        INTEGER ::= 96
maxNrOfMeasNCell-1                      INTEGER ::= 95  -- maxNrOfMeasNCell – 1
maxResetContext                         INTEGER ::= 250
maxResetContextGroup                    INTEGER ::= 32
maxNrOfHARQProc                         INTEGER ::= 8
maxNrOfHSSCCHCodes                      INTEGER ::= 4
maxNrOfHSSICHs                          INTEGER ::= 4
maxNrOfMACdFlows                        INTEGER ::= 8
maxNrOfMACdFlows-1                      INTEGER ::= 7   -- maxNrOfMACdFlows - 1
maxNrOfPDUIndexes                       INTEGER ::= 8
maxNrOfPDUIndexes-1                     INTEGER ::= 7   -- maxNrOfPDUIndexes - 1
maxNrOfPrioQueues                       INTEGER ::= 8
maxNrOfPrioQueues-1                     INTEGER ::= 7   -- maxNrOfPrioQueues - 1
maxNrOfSNAs                             INTEGER ::= 65536
maxNrOfSatAlmanac-maxNoSat              INTEGER ::= 16
maxNrOfGERANSI                          INTEGER ::= 8
maxNrOfInterfaces                       INTEGER ::= 16

-- **************************************************************
--
-- IEs
--
-- **************************************************************

id-AllowedQueuingTime                                                   ProtocolIE-ID ::= 4
id-Allowed-Rate-Information                                             ProtocolIE-ID ::= 42
id-AntennaColocationIndicator                                           ProtocolIE-ID ::= 309
id-BindingID                                                            ProtocolIE-ID ::= 5
id-C-ID                                                                 ProtocolIE-ID ::= 6
id-C-RNTI                                                               ProtocolIE-ID ::= 7
id-Cell-Capacity-Class-Value                                            ProtocolIE-ID ::= 303
id-CFN                                                                  ProtocolIE-ID ::= 8
id-CN-CS-DomainIdentifier                                               ProtocolIE-ID ::= 9
id-CN-PS-DomainIdentifier                                               ProtocolIE-ID ::= 10
id-Cause                                                                ProtocolIE-ID ::= 11
id-CoverageIndicator                                                    ProtocolIE-ID ::= 310
id-CriticalityDiagnostics                                               ProtocolIE-ID ::= 20
id-ContextInfoItem-Reset                                                ProtocolIE-ID ::= 211
id-ContextGroupInfoItem-Reset                                           ProtocolIE-ID ::= 515
id-D-RNTI                                                               ProtocolIE-ID ::= 21
id-D-RNTI-ReleaseIndication                                             ProtocolIE-ID ::= 22
id-DCHs-to-Add-FDD                                                      ProtocolIE-ID ::= 26
id-DCHs-to-Add-TDD                                                      ProtocolIE-ID ::= 27
id-DCH-DeleteList-RL-ReconfPrepFDD                                      ProtocolIE-ID ::= 30
id-DCH-DeleteList-RL-ReconfPrepTDD                                      ProtocolIE-ID ::= 31
id-DCH-DeleteList-RL-ReconfRqstFDD                                      ProtocolIE-ID ::= 32
id-DCH-DeleteList-RL-ReconfRqstTDD                                      ProtocolIE-ID ::= 33
id-DCH-FDD-Information                                                  ProtocolIE-ID ::= 34
id-DCH-TDD-Information                                                  ProtocolIE-ID ::= 35
id-FDD-DCHs-to-Modify                                                   ProtocolIE-ID ::= 39
id-TDD-DCHs-to-Modify                                                   ProtocolIE-ID ::= 40
id-DCH-InformationResponse                                              ProtocolIE-ID ::= 43
id-DCH-Rate-InformationItem-RL-CongestInd                               ProtocolIE-ID ::= 38
id-DL-CCTrCH-InformationAddItem-RL-ReconfPrepTDD                        ProtocolIE-ID ::= 44
id-DL-CCTrCH-InformationListIE-RL-ReconfReadyTDD                        ProtocolIE-ID ::= 45
id-DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD                     ProtocolIE-ID ::= 46
id-DL-CCTrCH-InformationItem-RL-SetupRqstTDD                            ProtocolIE-ID ::= 47
id-DL-CCTrCH-InformationListIE-PhyChReconfRqstTDD                       ProtocolIE-ID ::= 48
id-DL-CCTrCH-InformationListIE-RL-AdditionRspTDD                        ProtocolIE-ID ::= 49
id-DL-CCTrCH-InformationListIE-RL-SetupRspTDD                           ProtocolIE-ID ::= 50
id-DL-CCTrCH-InformationAddList-RL-ReconfPrepTDD                        ProtocolIE-ID ::= 51
id-DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD                     ProtocolIE-ID ::= 52
id-DL-CCTrCH-InformationList-RL-SetupRqstTDD                            ProtocolIE-ID ::= 53
id-FDD-DL-CodeInformation                                               ProtocolIE-ID ::= 54
id-DL-DPCH-Information-RL-ReconfPrepFDD                                 ProtocolIE-ID ::= 59
id-DL-DPCH-Information-RL-SetupRqstFDD                                  ProtocolIE-ID ::= 60
id-DL-DPCH-Information-RL-ReconfRqstFDD                                 ProtocolIE-ID ::= 61
id-DL-DPCH-InformationItem-PhyChReconfRqstTDD                           ProtocolIE-ID ::= 62
id-DL-DPCH-InformationItem-RL-AdditionRspTDD                            ProtocolIE-ID ::= 63
```

```
id-DL-DPCH-InformationItem-RL-SetupRspTDD                                ProtocolIE-ID ::= 64
id-DL-DPCH-TimingAdjustment                                              ProtocolIE-ID ::= 278
id-DLReferencePower                                                      ProtocolIE-ID ::= 67
id-DLReferencePowerList-DL-PC-Rqst                                       ProtocolIE-ID ::= 68
id-DL-ReferencePowerInformation-DL-PC-Rqst                               ProtocolIE-ID ::= 69
id-DPC-Mode                                                              ProtocolIE-ID ::= 12
id-DRXCycleLengthCoefficient                                             ProtocolIE-ID ::= 70
id-DedicatedMeasurementObjectType-DM-Fail-Ind                            ProtocolIE-ID ::= 470
id-DedicatedMeasurementObjectType-DM-Fail                                ProtocolIE-ID ::= 471
id-DedicatedMeasurementObjectType-DM-Rprt                                ProtocolIE-ID ::= 71
id-DedicatedMeasurementObjectType-DM-Rqst                                ProtocolIE-ID ::= 72
id-DedicatedMeasurementObjectType-DM-Rsp                                 ProtocolIE-ID ::= 73
id-DedicatedMeasurementType                                              ProtocolIE-ID ::= 74
id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD                     ProtocolIE-ID ::= 82
id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD                     ProtocolIE-ID ::= 83
id-Guaranteed-Rate-Information                                           ProtocolIE-ID ::= 41
id-IMSI                                                                  ProtocolIE-ID ::= 84
id-HCS-Prio                                                              ProtocolIE-ID ::= 311
id-L3-Information                                                        ProtocolIE-ID ::= 85
id-AdjustmentPeriod                                                      ProtocolIE-ID ::= 90
id-MaxAdjustmentStep                                                     ProtocolIE-ID ::= 91
id-MeasurementFilterCoefficient                                          ProtocolIE-ID ::= 92
id-MessageStructure                                                      ProtocolIE-ID ::= 57
id-MeasurementID                                                         ProtocolIE-ID ::= 93
id-Neighbouring-GSM-CellInformation                                      ProtocolIE-ID ::= 13
id-Neighbouring-UMTS-CellInformationItem                                 ProtocolIE-ID ::= 95
id-NRT-Load-Information-Value                                            ProtocolIE-ID ::= 305
id-NRT-Load-Information-Value-IncrDecrThres                              ProtocolIE-ID ::= 306
id-PagingArea-PagingRqst                                                 ProtocolIE-ID ::= 102
id-FACH-FlowControlInformation                                           ProtocolIE-ID ::= 103
id-PartialReportingIndicator                                             ProtocolIE-ID ::= 472
id-Permanent-NAS-UE-Identity                                             ProtocolIE-ID ::= 17
id-PowerAdjustmentType                                                   ProtocolIE-ID ::= 107
id-RANAP-RelocationInformation                                           ProtocolIE-ID ::= 109
id-RL-Information-PhyChReconfRqstFDD                                     ProtocolIE-ID ::= 110
id-RL-Information-PhyChReconfRqstTDD                                     ProtocolIE-ID ::= 111
id-RL-Information-RL-AdditionRqstFDD                                     ProtocolIE-ID ::= 112
id-RL-Information-RL-AdditionRqstTDD                                     ProtocolIE-ID ::= 113
id-RL-Information-RL-DeletionRqst                                        ProtocolIE-ID ::= 114
id-RL-Information-RL-FailureInd                                          ProtocolIE-ID ::= 115
id-RL-Information-RL-ReconfPrepFDD                                       ProtocolIE-ID ::= 116
id-RL-Information-RL-RestoreInd                                          ProtocolIE-ID ::= 117
id-RL-Information-RL-SetupRqstFDD                                        ProtocolIE-ID ::= 118
id-RL-Information-RL-SetupRqstTDD                                        ProtocolIE-ID ::= 119
id-RL-InformationItem-RL-CongestInd                                      ProtocolIE-ID ::= 55
id-RL-InformationItem-DM-Rprt                                            ProtocolIE-ID ::= 120
id-RL-InformationItem-DM-Rqst                                            ProtocolIE-ID ::= 121
id-RL-InformationItem-DM-Rsp                                             ProtocolIE-ID ::= 122
id-RL-InformationItem-RL-PreemptRequiredInd                              ProtocolIE-ID ::= 2
id-RL-InformationItem-RL-SetupRqstFDD                                    ProtocolIE-ID ::= 123
id-RL-InformationList-RL-CongestInd                                      ProtocolIE-ID ::= 56
id-RL-InformationList-RL-AdditionRqstFDD                                 ProtocolIE-ID ::= 124
id-RL-InformationList-RL-DeletionRqst                                    ProtocolIE-ID ::= 125
id-RL-InformationList-RL-PreemptRequiredInd                              ProtocolIE-ID ::= 1
id-RL-InformationList-RL-ReconfPrepFDD                                   ProtocolIE-ID ::= 126
id-RL-InformationResponse-RL-AdditionRspTDD                              ProtocolIE-ID ::= 127
id-RL-InformationResponse-RL-ReconfReadyTDD                              ProtocolIE-ID ::= 128
id-RL-InformationResponse-RL-SetupRspTDD                                 ProtocolIE-ID ::= 129
id-RL-InformationResponseItem-RL-AdditionRspFDD                          ProtocolIE-ID ::= 130
id-RL-InformationResponseItem-RL-ReconfReadyFDD                          ProtocolIE-ID ::= 131
id-RL-InformationResponseItem-RL-ReconfRspFDD                            ProtocolIE-ID ::= 132
id-RL-InformationResponseItem-RL-SetupRspFDD                             ProtocolIE-ID ::= 133
id-RL-InformationResponseList-RL-AdditionRspFDD                          ProtocolIE-ID ::= 134
id-RL-InformationResponseList-RL-ReconfReadyFDD                          ProtocolIE-ID ::= 135
id-RL-InformationResponseList-RL-ReconfRspFDD                            ProtocolIE-ID ::= 136
id-RL-InformationResponse-RL-ReconfRspTDD                                ProtocolIE-ID ::= 28
id-RL-InformationResponseList-RL-SetupRspFDD                             ProtocolIE-ID ::= 137
id-RL-ReconfigurationFailure-RL-ReconfFail                               ProtocolIE-ID ::= 141
id-RL-Set-InformationItem-DM-Rprt                                        ProtocolIE-ID ::= 143
id-RL-Set-InformationItem-DM-Rqst                                        ProtocolIE-ID ::= 144
id-RL-Set-InformationItem-DM-Rsp                                         ProtocolIE-ID ::= 145
id-RL-Set-Information-RL-FailureInd                                      ProtocolIE-ID ::= 146
id-RL-Set-Information-RL-RestoreInd                                      ProtocolIE-ID ::= 147
id-RL-Set-Successful-InformationItem-DM-Fail                             ProtocolIE-ID ::= 473
id-RL-Set-Unsuccessful-InformationItem-DM-Fail                           ProtocolIE-ID ::= 474
id-RL-Set-Unsuccessful-InformationItem-DM-Fail-Ind                       ProtocolIE-ID ::= 475
id-RL-Successful-InformationItem-DM-Fail                                 ProtocolIE-ID ::= 476
id-RL-Unsuccessful-InformationItem-DM-Fail                               ProtocolIE-ID ::= 477
```

```
id-RL-Unsuccessful-InformationItem-DM-Fail-Ind                                ProtocolIE-ID ::= 478
id-ReportCharacteristics                                                     ProtocolIE-ID ::= 152
id-Reporting-Object-RL-FailureInd                                            ProtocolIE-ID ::= 153
id-Reporing-Object-RL-RestoreInd                                             ProtocolIE-ID ::= 154
id-RT-Load-Value                                                             ProtocolIE-ID ::= 307
id-RT-Load-Value-IncrDecrThres                                               ProtocolIE-ID ::= 308
id-S-RNTI                                                                    ProtocolIE-ID ::= 155
id-ResetIndicator                                                            ProtocolIE-ID ::= 244
id-RNC-ID                                                                    ProtocolIE-ID ::= 245
id-SAI                                                                       ProtocolIE-ID ::= 156
id-SRNC-ID                                                                   ProtocolIE-ID ::= 157
id-SuccessfulRL-InformationResponse-RL-AdditionFailureFDD                    ProtocolIE-ID ::= 159
id-SuccessfulRL-InformationResponse-RL-SetupFailureFDD                       ProtocolIE-ID ::= 160
id-TransportBearerID                                                         ProtocolIE-ID ::= 163
id-TransportBearerRequestIndicator                                           ProtocolIE-ID ::= 164
id-TransportLayerAddress                                                     ProtocolIE-ID ::= 165
id-TypeOfError                                                               ProtocolIE-ID ::= 140
id-UC-ID                                                                     ProtocolIE-ID ::= 166
id-UL-CCTrCH-AddInformation-RL-ReconfPrepTDD                                 ProtocolIE-ID ::= 167
id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD                             ProtocolIE-ID ::= 169
id-UL-CCTrCH-InformationItem-RL-SetupRqstTDD                                 ProtocolIE-ID ::= 171
id-UL-CCTrCH-InformationList-RL-SetupRqstTDD                                 ProtocolIE-ID ::= 172
id-UL-CCTrCH-InformationListIE-PhyChReconfRqstTDD                            ProtocolIE-ID ::= 173
id-UL-CCTrCH-InformationListIE-RL-AdditionRspTDD                             ProtocolIE-ID ::= 174
id-UL-CCTrCH-InformationListIE-RL-ReconfReadyTDD                             ProtocolIE-ID ::= 175
id-UL-CCTrCH-InformationListIE-RL-SetupRspTDD                                ProtocolIE-ID ::= 176
id-UL-DPCH-Information-RL-ReconfPrepFDD                                      ProtocolIE-ID ::= 177
id-UL-DPCH-Information-RL-ReconfRqstFDD                                      ProtocolIE-ID ::= 178
id-UL-DPCH-Information-RL-SetupRqstFDD                                       ProtocolIE-ID ::= 179
id-UL-DPCH-InformationItem-PhyChReconfRqstTDD                                ProtocolIE-ID ::= 180
id-UL-DPCH-InformationItem-RL-AdditionRspTDD                                 ProtocolIE-ID ::= 181
id-UL-DPCH-InformationItem-RL-SetupRspTDD                                    ProtocolIE-ID ::= 182
id-UL-DPCH-InformationAddListIE-RL-ReconfReadyTDD                            ProtocolIE-ID ::= 183
id-UL-SIRTarget                                                              ProtocolIE-ID ::= 184
id-URA-Information                                                           ProtocolIE-ID ::= 185
id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD                  ProtocolIE-ID ::= 188
id-UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD                     ProtocolIE-ID ::= 189
id-UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD                     ProtocolIE-ID ::= 190
id-Active-Pattern-Sequence-Information                                       ProtocolIE-ID ::= 193
id-AdjustmentRatio                                                           ProtocolIE-ID ::= 194
id-CauseLevel-RL-AdditionFailureFDD                                          ProtocolIE-ID ::= 197
id-CauseLevel-RL-AdditionFailureTDD                                          ProtocolIE-ID ::= 198
id-CauseLevel-RL-ReconfFailure                                               ProtocolIE-ID ::= 199
id-CauseLevel-RL-SetupFailureFDD                                             ProtocolIE-ID ::= 200
id-CauseLevel-RL-SetupFailureTDD                                             ProtocolIE-ID ::= 201
id-DL-CCTrCH-InformationDeleteItem-RL-ReconfPrepTDD                          ProtocolIE-ID ::= 205
id-DL-CCTrCH-InformationModifyItem-RL-ReconfPrepTDD                          ProtocolIE-ID ::= 206
id-DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD                          ProtocolIE-ID ::= 207
id-DL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD                          ProtocolIE-ID ::= 208
id-DL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD                          ProtocolIE-ID ::= 209
id-DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD                          ProtocolIE-ID ::= 210
id-DL-DPCH-InformationAddListIE-RL-ReconfReadyTDD                            ProtocolIE-ID ::= 212
id-DL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD                         ProtocolIE-ID ::= 213
id-DL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD                         ProtocolIE-ID ::= 214
id-DSCHs-to-Add-TDD                                                          ProtocolIE-ID ::= 215
id-DSCHs-to-Add-FDD                                                          ProtocolIE-ID ::= 216
id-DSCH-DeleteList-RL-ReconfPrepTDD                                          ProtocolIE-ID ::= 217
id-DSCH-Delete-RL-ReconfPrepFDD                                              ProtocolIE-ID ::= 218
id-DSCH-FDD-Information                                                      ProtocolIE-ID ::= 219
id-DSCH-InformationListIE-RL-AdditionRspTDD                                  ProtocolIE-ID ::= 220
id-DSCH-InformationListIEs-RL-SetupRspTDD                                    ProtocolIE-ID ::= 221
id-DSCH-TDD-Information                                                      ProtocolIE-ID ::= 222
id-DSCH-FDD-InformationResponse                                              ProtocolIE-ID ::= 223
id-DSCH-Information-RL-SetupRqstFDD                                          ProtocolIE-ID ::= 226
id-DSCH-ModifyList-RL-ReconfPrepTDD                                          ProtocolIE-ID ::= 227
id-DSCH-Modify-RL-ReconfPrepFDD                                              ProtocolIE-ID ::= 228
id-DSCH-Specific-FDD-Additional-List                                         ProtocolIE-ID ::= 324
id-DSCHsToBeAddedOrModified-FDD                                              ProtocolIE-ID ::= 229
id-DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD                             ProtocolIE-ID ::= 230
id-EnhancedDSCHPC                                                            ProtocolIE-ID ::= 29
id-EnhancedDSCHPCIndicator                                                   ProtocolIE-ID ::= 225
id-GA-Cell                                                                   ProtocolIE-ID ::= 232
id-GA-CellAdditionalShapes                                                   ProtocolIE-ID ::= 3
id-SSDT-CellIDforEDSCHPC                                                     ProtocolIE-ID ::= 246
id-Transmission-Gap-Pattern-Sequence-Information                             ProtocolIE-ID ::= 255
id-UL-CCTrCH-DeleteInformation-RL-ReconfPrepTDD                              ProtocolIE-ID ::= 256
id-UL-CCTrCH-ModifyInformation-RL-ReconfPrepTDD                              ProtocolIE-ID ::= 257
id-UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD                          ProtocolIE-ID ::= 258
```

```
id-UL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD                    ProtocolIE-ID ::= 259
id-UL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD                    ProtocolIE-ID ::= 260
id-UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD                    ProtocolIE-ID ::= 261
id-UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD                    ProtocolIE-ID ::= 262
id-UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD                    ProtocolIE-ID ::= 263
id-UL-DPCH-InformationDeleteListIE-RL-ReconfReadyTDD                   ProtocolIE-ID ::= 264
id-UL-DPCH-InformationModifyListIE-RL-ReconfReadyTDD                   ProtocolIE-ID ::= 265
id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD            ProtocolIE-ID ::= 266
id-USCHs-to-Add                                                        ProtocolIE-ID ::= 267
id-USCH-DeleteList-RL-ReconfPrepTDD                                    ProtocolIE-ID ::= 268
id-USCH-InformationListIE-RL-AdditionRspTDD                            ProtocolIE-ID ::= 269
id-USCH-InformationListIEs-RL-SetupRspTDD                              ProtocolIE-ID ::= 270
id-USCH-Information                                                    ProtocolIE-ID ::= 271
id-USCH-ModifyList-RL-ReconfPrepTDD                                    ProtocolIE-ID ::= 272
id-USCHToBeAddedOrModifiedList-RL-ReconfReadyTDD                       ProtocolIE-ID ::= 273
id-DL-Physical-Channel-Information-RL-SetupRqstTDD                     ProtocolIE-ID ::= 274
id-UL-Physical-Channel-Information-RL-SetupRqstTDD                     ProtocolIE-ID ::= 275
id-ClosedLoopMode1-SupportIndicator                                    ProtocolIE-ID ::= 276
id-ClosedLoopMode2-SupportIndicator                                    ProtocolIE-ID ::= 277
id-STTD-SupportIndicator                                               ProtocolIE-ID ::= 279
id-CFNReportingIndicator                                          ProtocolIE-ID ::= 14
id-CNOriginatedPage-PagingRqst                                         ProtocolIE-ID ::= 23
id-InnerLoopDLPCStatus                                                 ProtocolIE-ID ::= 24
id-PropagationDelay                                                    ProtocolIE-ID ::= 25
id-RxTimingDeviationForTA                                              ProtocolIE-ID ::= 36
id-timeSlot-ISCP                                                       ProtocolIE-ID ::= 37
id-CCTrCH-InformationItem-RL-FailureInd                                ProtocolIE-ID ::= 15
id-CCTrCH-InformationItem-RL-RestoreInd                                ProtocolIE-ID ::= 16
id-CommonMeasurementAccuracy                                           ProtocolIE-ID ::= 280
id-CommonMeasurementObjectType-CM-Rprt                                 ProtocolIE-ID ::= 281
id-CommonMeasurementObjectType-CM-Rqst                                 ProtocolIE-ID ::= 282
id-CommonMeasurementObjectType-CM-Rsp                                  ProtocolIE-ID ::= 283
id-CommonMeasurementType                                               ProtocolIE-ID ::= 284
id-CongestionCause                                                     ProtocolIE-ID ::= 18
id-SFN                                                                 ProtocolIE-ID ::= 285
id-SFNReportingIndicator                                               ProtocolIE-ID ::= 286
id-InformationExchangeID                                               ProtocolIE-ID ::= 287
id-InformationExchangeObjectType-InfEx-Rprt                            ProtocolIE-ID ::= 288
id-InformationExchangeObjectType-InfEx-Rqst                            ProtocolIE-ID ::= 289
id-InformationExchangeObjectType-InfEx-Rsp                             ProtocolIE-ID ::= 290
id-InformationReportCharacteristics                                    ProtocolIE-ID ::= 291
id-InformationType                                                     ProtocolIE-ID ::= 292
id-neighbouring-LCR-TDD-CellInformation                                ProtocolIE-ID ::= 58
id-DL-Timeslot-ISCP-LCR-Information-RL-SetupRqstTDD                    ProtocolIE-ID ::= 65
id-RL-LCR-InformationResponse-RL-SetupRspTDD                           ProtocolIE-ID ::= 66
id-UL-CCTrCH-LCR-InformationListIE-RL-SetupRspTDD                      ProtocolIE-ID ::= 75
id-UL-DPCH-LCR-InformationItem-RL-SetupRspTDD                          ProtocolIE-ID ::= 76
id-DL-CCTrCH-LCR-InformationListIE-RL-SetupRspTDD                      ProtocolIE-ID ::= 77
id-DL-DPCH-LCR-InformationItem-RL-SetupRspTDD                          ProtocolIE-ID ::= 78
id-DSCH-LCR-InformationListIEs-RL-SetupRspTDD                          ProtocolIE-ID ::= 79
id-USCH-LCR-InformationListIEs-RL-SetupRspTDD                          ProtocolIE-ID ::= 80
id-DL-Timeslot-ISCP-LCR-Information-RL-AdditionRqstTDD                 ProtocolIE-ID ::= 81
id-RL-LCR-InformationResponse-RL-AdditionRspTDD                        ProtocolIE-ID ::= 86
id-UL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD                   ProtocolIE-ID ::= 87
id-UL-DPCH-LCR-InformationItem-RL-AdditionRspTDD                       ProtocolIE-ID ::= 88
id-DL-CCTrCH-LCR-InformationListIE-RL-AdditionRspTDD                   ProtocolIE-ID ::= 89
id-DL-DPCH-LCR-InformationItem-RL-AdditionRspTDD                       ProtocolIE-ID ::= 94
id-DSCH-LCR-InformationListIEs-RL-AdditionRspTDD                       ProtocolIE-ID ::= 96
id-USCH-LCR-InformationListIEs-RL-AdditionRspTDD                       ProtocolIE-ID ::= 97
id-UL-DPCH-LCR-InformationAddListIE-RL-ReconfReadyTDD                  ProtocolIE-ID ::= 98
id-UL-Timeslot-LCR-InformationModifyList-RL-ReconfReadyTDD             ProtocolIE-ID ::= 100
id-DL-DPCH-LCR-InformationAddListIE-RL-ReconfReadyTDD                  ProtocolIE-ID ::= 101
id-DL-Timeslot-LCR-InformationModifyList-RL-ReconfReadyTDD             ProtocolIE-ID ::= 104
id-UL-Timeslot-LCR-InformationList-PhyChReconfRqstTDD                  ProtocolIE-ID ::= 105
id-DL-Timeslot-LCR-InformationList-PhyChReconfRqstTDD                  ProtocolIE-ID ::= 106
id-timeSlot-ISCP-LCR-List-DL-PC-Rqst-TDD                               ProtocolIE-ID ::= 138
id-TSTD-Support-Indicator-RL-SetupRqstTDD                              ProtocolIE-ID ::= 139
id-RestrictionStateIndicator                                           ProtocolIE-ID ::= 142
id-Load-Value                                                          ProtocolIE-ID ::= 233
id-Load-Value-IncrDecrThres                                            ProtocolIE-ID ::= 234
id-OnModification                                                      ProtocolIE-ID ::= 235
id-Received-Total-Wideband-Power-Value                                 ProtocolIE-ID ::= 236
id-Received-Total-Wideband-Power-Value-IncrDecrThres                   ProtocolIE-ID ::= 237
id-SFNSFNMeasurementThresholdInformation                               ProtocolIE-ID ::= 238
id-Transmitted-Carrier-Power-Value                                     ProtocolIE-ID ::= 239
id-Transmitted-Carrier-Power-Value-IncrDecrThres                       ProtocolIE-ID ::= 240
id-TUTRANGPSMeasurementThresholdInformation                            ProtocolIE-ID ::= 241
id-UL-Timeslot-ISCP-Value                                              ProtocolIE-ID ::= 242
```

```
id-UL-Timeslot-ISCP-Value-IncrDecrThres                                    ProtocolIE-ID ::= 243
id-Rx-Timing-Deviation-Value-LCR                                           ProtocolIE-ID ::= 293
id-DPC-Mode-Change-SupportIndicator                                        ProtocolIE-ID ::= 19
id-SplitType                                                          ProtocolIE-ID ::= 247
id-LengthOfTFCI2                                                      ProtocolIE-ID ::= 295
id-PrimaryCCPCH-RSCP-RL-ReconfPrepTDD                                      ProtocolIE-ID ::= 202
id-DL-TimeSlot-ISCP-Info-RL-ReconfPrepTDD                                  ProtocolIE-ID ::= 203
id-DL-Timeslot-ISCP-LCR-Information-RL-ReconfPrepTDD                       ProtocolIE-ID ::= 204
id-DSCH-RNTI                                                               ProtocolIE-ID ::= 249
id-DL-PowerBalancing-Information                                           ProtocolIE-ID ::= 296
id-DL-PowerBalancing-ActivationIndicator                                   ProtocolIE-ID ::= 297
id-DL-PowerBalancing-UpdatedIndicator                                      ProtocolIE-ID ::= 298
id-DL-ReferencePowerInformation                                            ProtocolIE-ID ::= 299
id-Enhanced-PrimaryCPICH-EcNo                                              ProtocolIE-ID ::= 224
id-IPDL-TDD-ParametersLCR                                                  ProtocolIE-ID ::= 252
id-CellCapabilityContainer-FDD                                             ProtocolIE-ID ::= 300
id-CellCapabilityContainer-TDD                                             ProtocolIE-ID ::= 301
id-CellCapabilityContainer-TDD-LCR                                         ProtocolIE-ID ::= 302
id-RL-Specific-DCH-Info                                                    ProtocolIE-ID ::= 317
id-RL-ReconfigurationRequestFDD-RL-InformationList                         ProtocolIE-ID ::= 318
id-RL-ReconfigurationRequestFDD-RL-Information-IEs                         ProtocolIE-ID ::= 319
id-RL-ReconfigurationRequestTDD-RL-Information                             ProtocolIE-ID ::= 321
id-CommonTransportChannelResourcesInitialisationNotRequired                ProtocolIE-ID ::= 250
id-DelayedActivation                                                       ProtocolIE-ID ::= 312
id-DelayedActivationList-RL-ActivationCmdFDD                               ProtocolIE-ID ::= 313
id-DelayedActivationInformation-RL-ActivationCmdFDD                        ProtocolIE-ID ::= 314
id-DelayedActivationList-RL-ActivationCmdTDD                               ProtocolIE-ID ::= 315
id-DelayedActivationInformation-RL-ActivationCmdTDD                        ProtocolIE-ID ::= 316
id-neighbouringTDDCellMeasurementInformationLCR                            ProtocolIE-ID ::= 251
id-UL-SIR-Target-CCTrCH-InformationItem-RL-SetupRspTDD                     ProtocolIE-ID ::= 150
id-UL-SIR-Target-CCTrCH-LCR-InformationItem-RL-SetupRspTDD                 ProtocolIE-ID ::= 151
id-PrimCCPCH-RSCP-DL-PC-RqstTDD                                            ProtocolIE-ID ::= 451
id-HSDSCH-FDD-Information                                                  ProtocolIE-ID ::= 452
id-HSDSCH-FDD-Information-Response                                         ProtocolIE-ID ::= 453
id-HSDSCH-FDD-Update-Information                                           ProtocolIE-ID ::= 466
id-HSDSCH-Information-to-Modify                                            ProtocolIE-ID ::= 456
id-HSDSCHMacdFlowSpecificInformationList-RL-PreemptRequiredInd             ProtocolIE-ID ::= 516
id-HSDSCHMacdFlowSpecificInformationItem-RL-PreemptRequiredInd             ProtocolIE-ID ::= 517
id-HSDSCH-RNTI                                                             ProtocolIE-ID ::= 457
id-HSDSCH-TDD-Information                                                  ProtocolIE-ID ::= 458
id-HSDSCH-TDD-Information-Response                                         ProtocolIE-ID ::= 459
id-HSDSCH-TDD-Update-Information                                           ProtocolIE-ID ::= 467
id-HSPDSCH-RL-ID                                                           ProtocolIE-ID ::= 463
id-HSDSCH-MACdFlows-to-Add                                                 ProtocolIE-ID ::= 531
id-HSDSCH-MACdFlows-to-Delete                                              ProtocolIE-ID ::= 532
id-Angle-Of-Arrival-Value-LCR                                              ProtocolIE-ID ::= 148
id-TrafficClass                                                            ProtocolIE-ID ::= 158
id-TFCI-PC-SupportIndicator                                                ProtocolIE-ID ::= 248
id-Qth-Parameter                                                           ProtocolIE-ID ::= 253
id-PDSCH-RL-ID                                                             ProtocolIE-ID ::= 323
id-TimeSlot-RL-SetupRspTDD                                                 ProtocolIE-ID ::= 325
id-GERAN-Cell-Capability                                                   ProtocolIE-ID ::= 468
id-GERAN-Classmark                                                         ProtocolIE-ID ::= 469
id-DSCH-InitialWindowSize                                                  ProtocolIE-ID ::= 480
id-UL-Synchronisation-Parameters-LCR                                       ProtocolIE-ID ::= 464
id-SNA-Information                                                         ProtocolIE-ID ::= 479
id-MAChs-ResetIndicator                                                    ProtocolIE-ID ::= 465
id-TDD-DL-DPCH-TimeSlotFormatModifyItem-LCR-RL-ReconfReadyTDD              ProtocolIE-ID ::= 481
id-TDD-UL-DPCH-TimeSlotFormatModifyItem-LCR-RL-ReconfReadyTDD              ProtocolIE-ID ::= 482
id-TDD-TPC-UplinkStepSize-LCR-RL-SetupRqstTDD                              ProtocolIE-ID ::= 483
id-UL-CCTrCH-InformationList-RL-AdditionRqstTDD                            ProtocolIE-ID ::= 484
id-UL-CCTrCH-InformationItem-RL-AdditionRqstTDD                            ProtocolIE-ID ::= 485
id-DL-CCTrCH-InformationList-RL-AdditionRqstTDD                            ProtocolIE-ID ::= 486
id-DL-CCTrCH-InformationItem-RL-AdditionRqstTDD                            ProtocolIE-ID ::= 487
id-TDD-TPC-UplinkStepSize-InformationAdd-LCR-RL-ReconfPrepTDD              ProtocolIE-ID ::= 488
id-TDD-TPC-UplinkStepSize-InformationModify-LCR-RL-ReconfPrepTDD           ProtocolIE-ID ::= 489
id-TDD-TPC-DownlinkStepSize-InformationAdd-RL-ReconfPrepTDD                ProtocolIE-ID ::= 490
id-TDD-TPC-DownlinkStepSize-InformationModify-RL-ReconfPrepTDD             ProtocolIE-ID ::= 491
id-UL-TimingAdvanceCtrl-LCR                                                ProtocolIE-ID ::= 492
id-HSPDSCH-Timeslot-InformationList-PhyChReconfRqstTDD                     ProtocolIE-ID ::= 493
id-HSPDSCH-Timeslot-InformationListLCR-PhyChReconfRqstTDD                  ProtocolIE-ID ::= 494
id-HS-SICH-Reception-Quality                                               ProtocolIE-ID ::= 495
id-HS-SICH-Reception-Quality-Measurement-Value                             ProtocolIE-ID ::= 496
id-HSSICH-Info-DM-Rprt                                                     ProtocolIE-ID ::= 497
id-HSSICH-Info-DM-Rqst                                                     ProtocolIE-ID ::= 498
id-HSSICH-Info-DM                                                          ProtocolIE-ID ::= 499
id-CCTrCH-Maximum-DL-Power-RL-SetupRspTDD                                  ProtocolIE-ID ::= 500
id-CCTrCH-Minimum-DL-Power-RL-SetupRspTDD                                 ProtocolIE-ID ::= 501
```

```
id-CCTrCH-Maximum-DL-Power-RL-AdditionRspTDD                                    ProtocolIE-ID ::= 502
id-CCTrCH-Minimum-DL-Power-RL-AdditionRspTDD                                    ProtocolIE-ID ::= 503
id-CCTrCH-Maximum-DL-Power-RL-ReconfReadyTDD                                    ProtocolIE-ID ::= 504
id-CCTrCH-Minimum-DL-Power-RL-ReconfReadyTDD                                    ProtocolIE-ID ::= 505
id-Maximum-DL-Power-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD         ProtocolIE-ID ::= 506
id-Minimum-DL-Power-TimeslotLCR-InformationModifyItem-RL-ReconfReadyTDD         ProtocolIE-ID ::= 507
id-DL-CCTrCH-InformationList-RL-ReconfRspTDD                                    ProtocolIE-ID ::= 508
id-DL-DPCH-InformationModifyItem-LCR-RL-ReconfRspTDD                            ProtocolIE-ID ::= 509
id-Maximum-DL-Power-TimeslotLCR-InformationItem                                 ProtocolIE-ID ::= 510
id-Minimum-DL-Power-TimeslotLCR-InformationItem                                 ProtocolIE-ID ::= 511
id-TDD-Support-8PSK                                                             ProtocolIE-ID ::= 512
id-TDD-maxNrDLPhysicalchannels                                                  ProtocolIE-ID ::= 513
id-ExtendedGSMCellIndividualOffset                                              ProtocolIE-ID ::= 514
id-RL-ParameterUpdateIndicationFDD-RL-InformationList                           ProtocolIE-ID ::= 518
id-Primary-CPICH-Usage-For-Channel-Estimation                                   ProtocolIE-ID ::= 519
id-Secondary-CPICH-Information                                                  ProtocolIE-ID ::= 520
id-Secondary-CPICH-Information-Change                                           ProtocolIE-ID ::= 521
id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation                        ProtocolIE-ID ::= 522
id-UE-Support-Of-Dedicated-Pilots-For-Channel-Estimation-Of-HS-DSCH             ProtocolIE-ID ::= 523
id-RL-ParameterUpdateIndicationFDD-RL-Information-Item                          ProtocolIE-ID ::= 524
id-Phase-Reference-Update-Indicator                                             ProtocolIE-ID ::= 525
id-Unidirectional-DCH-Indicator                                                 ProtocolIE-ID ::= 526
id-RL-Information-RL-ReconfPrepTDD                                              ProtocolIE-ID ::= 527
id-Multiple-RL-InformationResponse-RL-ReconfReadyTDD                            ProtocolIE-ID ::= 528
id-RL-ReconfigurationResponseTDD-RL-Information                                 ProtocolIE-ID ::= 529
id-Satellite-Almanac-Information-ExtItem                                        ProtocolIE-ID ::= 530
id-HSDSCH-Information-to-Modify-Unsynchronised                                  ProtocolIE-ID ::= 533
id-TnlQos                                                                       ProtocolIE-ID ::= 534
id-RTLoadValue                                                                  ProtocolIE-ID ::= 535
id-NRTLoadInformationValue                                                      ProtocolIE-ID ::= 536
id-CellPortionID                                                                ProtocolIE-ID ::= 537
id-UpPTSInterferenceValue                                                       ProtocolIE-ID ::= 538
id-PrimaryCCPCH-RSCP-Delta                                                      ProtocolIE-ID ::= 539
id-UEMeasurementType                                                            ProtocolIE-ID ::= 540
id-UEMeasurementTimeslotInfoHCR                                                 ProtocolIE-ID ::= 541
id-UEMeasurementTimeslotInfoLCR                                                 ProtocolIE-ID ::= 542
id-UEMeasurementReportCharacteristics                                           ProtocolIE-ID ::= 543
id-UEMeasurementParameterModAllow                                               ProtocolIE-ID ::= 544
id-UEMeasurementValueInformation                                                ProtocolIE-ID ::= 545
id-InterfacesToTraceItem                                                        ProtocolIE-ID ::= 546
id-ListOfInterfacesToTrace                                                      ProtocolIE-ID ::= 547
id-TraceDepth                                                                   ProtocolIE-ID ::= 548
id-TraceRecordingSessionReference                                               ProtocolIE-ID ::= 549
id-TraceReference                                                               ProtocolIE-ID ::= 550
id-UEIdentity                                                                   ProtocolIE-ID ::= 551
id-NACC-Related-Data                                                            ProtocolIE-ID ::= 552
id-GSM-Cell-InfEx-Rqst                                                          ProtocolIE-ID ::= 553
id-MeasurementRecoveryBehavior                                                  ProtocolIE-ID ::= 554
id-MeasurementRecoveryReportingIndicator                                        ProtocolIE-ID ::= 555
id-MeasurementRecoverySupportIndicator                                          ProtocolIE-ID ::= 556
id-MBMS-Bearer-Service-List                                                     ProtocolIE-ID ::= 560
id-MBMS-Bearer-Service-List-InfEx-Rsp                                           ProtocolIE-ID ::= 561
id-Active-MBMS-Bearer-Service-UplinkSigTrFDD                                    ProtocolIE-ID ::= 562
id-Active-MBMS-Bearer-Service-UplinkSigTrTDD                                    ProtocolIE-ID ::= 563
id-Old-URA-ID                                                                   ProtocolIE-ID ::= 564
id-TMGI                                                                         ProtocolIE-ID ::= 565
id-TransmissionMode                                                             ProtocolIE-ID ::= 566
id-AffectedUEInformationForMBMS                                                 ProtocolIE-ID ::= 567
id-UE-State                                                                     ProtocolIE-ID ::= 568
id-URA-ID                                                                       ProtocolIE-ID ::= 569
id-DRNC-ID                                                                      ProtocolIE-ID ::= 570

END
```

9.3.7 Container Definitions

```
-- **************************************************************
--
-- Container definitions
--
-- **************************************************************

RNSAP-Containers {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) rnsap (1) version1 (1) rnsap-Containers (5)  }
```

```
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    maxPrivateIEs,
    maxProtocolExtensions,
    maxProtocolIEs,
    Criticality,
    Presence,
    PrivateIE-ID,
    ProtocolIE-ID
FROM RNSAP-CommonDataTypes;

-- **************************************************************
--
-- Class Definition for Protocol IEs
--
-- **************************************************************

RNSAP-PROTOCOL-IES ::= CLASS {
    &id             ProtocolIE-ID                   UNIQUE,
    &criticality            Criticality,
    &Value,
    &presence           Presence
}
WITH SYNTAX {
    ID              &id
    CRITICALITY         &criticality
    TYPE                &Value
    PRESENCE            &presence
}

-- **************************************************************
--
-- Class Definition for Protocol IEs
--
-- **************************************************************

RNSAP-PROTOCOL-IES-PAIR ::= CLASS {
    &id             ProtocolIE-ID                   UNIQUE,
    &firstCriticality       Criticality,
    &FirstValue,
    &secondCriticality      Criticality,
    &SecondValue,
    &presence           Presence
}
WITH SYNTAX {
    ID              &id
    FIRST CRITICALITY       &firstCriticality
    FIRST TYPE          &FirstValue
    SECOND CRITICALITY      &secondCriticality
    SECOND TYPE         &SecondValue
    PRESENCE            &presence
}

-- **************************************************************
--
-- Class Definition for Protocol Extensions
--
-- **************************************************************

RNSAP-PROTOCOL-EXTENSION ::= CLASS {
    &id             ProtocolIE-ID               UNIQUE,
    &criticality            Criticality,
    &Extension,
    &presence       Presence
}
WITH SYNTAX {
    ID              &id
    CRITICALITY         &criticality
    EXTENSION           &Extension
```

```
    PRESENCE            &presence
}

-- **************************************************************
--
-- Class Definition for Private IEs
--
-- **************************************************************

RNSAP-PRIVATE-IES ::= CLASS {
    &id             PrivateIE-ID,
    &criticality            Criticality,
    &Value,
    &presence       Presence
}
WITH SYNTAX {
    ID              &id
    CRITICALITY         &criticality
    TYPE            &Value
    PRESENCE            &presence
}

-- **************************************************************
--
-- Container for Protocol IEs
--
-- **************************************************************

ProtocolIE-Container {RNSAP-PROTOCOL-IES : IEsSetParam} ::=
    SEQUENCE (SIZE (0..maxProtocolIEs)) OF
    ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-Single-Container {RNSAP-PROTOCOL-IES : IEsSetParam} ::=
    ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-Field {RNSAP-PROTOCOL-IES : IEsSetParam} ::= SEQUENCE {
    id              RNSAP-PROTOCOL-IES.&id              ({IEsSetParam}),
    criticality         RNSAP-PROTOCOL-IES.&criticality         ({IEsSetParam}{@id}),
    value               RNSAP-PROTOCOL-IES.&Value           ({IEsSetParam}{@id})
}

-- **************************************************************
--
-- Container for Protocol IE Pairs
--
-- **************************************************************

ProtocolIE-ContainerPair {RNSAP-PROTOCOL-IES-PAIR : IEsSetParam} ::=
    SEQUENCE (SIZE (0..maxProtocolIEs)) OF
    ProtocolIE-FieldPair {{IEsSetParam}}

ProtocolIE-FieldPair {RNSAP-PROTOCOL-IES-PAIR : IEsSetParam} ::= SEQUENCE {
    id              RNSAP-PROTOCOL-IES-PAIR.&id         ({IEsSetParam}),
    firstCriticality        RNSAP-PROTOCOL-IES-PAIR.&firstCriticality   ({IEsSetParam}{@id}),
    firstValue          RNSAP-PROTOCOL-IES-PAIR.&FirstValue        ({IEsSetParam}{@id}),
    secondCriticality       RNSAP-PROTOCOL-IES-PAIR.&secondCriticality  ({IEsSetParam}{@id}),
    secondValue         RNSAP-PROTOCOL-IES-PAIR.&SecondValue           ({IEsSetParam}{@id})
}

-- **************************************************************
--
-- Container Lists for Protocol IE Containers
--
-- **************************************************************

ProtocolIE-ContainerList {INTEGER : lowerBound, INTEGER : upperBound, RNSAP-PROTOCOL-IES :
IEsSetParam} ::=
    SEQUENCE (SIZE (lowerBound..upperBound)) OF
    ProtocolIE-Container {{IEsSetParam}}

ProtocolIE-ContainerPairList {INTEGER : lowerBound, INTEGER : upperBound, RNSAP-PROTOCOL-IES-PAIR :
IEsSetParam} ::=
    SEQUENCE (SIZE (lowerBound..upperBound)) OF
    ProtocolIE-ContainerPair {{IEsSetParam}}

-- **************************************************************
--
-- Container for Protocol Extensions
```

```
--
-- **************************************************************

ProtocolExtensionContainer {RNSAP-PROTOCOL-EXTENSION : ExtensionSetParam} ::=
    SEQUENCE (SIZE (1..maxProtocolExtensions)) OF
    ProtocolExtensionField {{ExtensionSetParam}}

ProtocolExtensionField {RNSAP-PROTOCOL-EXTENSION : ExtensionSetParam} ::= SEQUENCE {
    id              RNSAP-PROTOCOL-EXTENSION.&id            ({ExtensionSetParam}),
    criticality         RNSAP-PROTOCOL-EXTENSION.&criticality       ({ExtensionSetParam}{@id}),
    extensionValue          RNSAP-PROTOCOL-EXTENSION.&Extension     ({ExtensionSetParam}{@id})
}

-- **************************************************************
--
-- Container for Private IEs
--
-- **************************************************************

PrivateIE-Container {RNSAP-PRIVATE-IES : IEsSetParam} ::=
    SEQUENCE (SIZE (1..maxPrivateIEs)) OF
    PrivateIE-Field {{IEsSetParam}}

PrivateIE-Field {RNSAP-PRIVATE-IES : IEsSetParam} ::= SEQUENCE {
    id              RNSAP-PRIVATE-IES.&id           ({IEsSetParam}),
    criticality         RNSAP-PRIVATE-IES.&criticality      ({IEsSetParam}{@id}),
    value           RNSAP-PRIVATE-IES.&Value        ({IEsSetParam}{@id})
}

END
```

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CR-Form-v7.1

CHANGE REQUEST

⌘ **25.430** **CR** **57** ⌘ **rev** **1** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Introduction of MBMS in UTRAN
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	10/11/2004
Category:	⌘	***B***
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	This CR contains the proposed changes by the Release-6 WI Multimedia Multicast Broadcast Service.
Summary of change:	⌘	Introduction of MICH for Node B common resources.
Consequences if not approved:	⌘	The MBMS feature cannot be supported.

Clauses affected:	⌘	3.2, 6.2.4.1			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR 095 on 25.401 v 6.4.0 CR 045 on 25.402 v 6.0.0 CR 059 on 25.410 v 6.1.0 CR 706 on 25.413 v 6.3.0 CR 044 on 25.420 v 6.1.0 CR 999 on 25.423 v 6.3.0 CR 1049 on 25.433 v 6.3.0
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Propagation delay (PD): it is the round trip propagation delay of the radio signal from the Node B to the UE and back to the BS in one chip resolution.

Timing Advance (TA): it is the amount of time, expressed in number of chips, by which the transmission of an uplink burst is anticipated by the UE in order to be received by the cell inside the corresponding time slot.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaptation Layer type 2
AAL5	ATM Adaptation Layer type 5
AICH	Acquisition Indication Channel
ALCAP	Access Link Control Application Part
AP-AICH	Access Preamble Acquisition Indication Channel
ATM	Asynchronous Transfer Mode
BCH	Broadcast Channel
BCCH	Broadcast Control Channel
CCH	Control Channel
CD/CA-ICH	Collision Detection/Channel Assignment Indication Channel
CPCH	Common Packet Channel
CPCId	Common Physical Channel Identifier
CPICH	Common Pilot Channel
CSICH	Common Packet Channel Status Indication Channel
CTCId	Common Transport Channel Identifier
CRNC	Controlling Radio Network Controller
DCH	Dedicated Transport Channel
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DRNC	Drift Radio Network Controller
DSCH	Down-link Shared Channel
FACH	Forward Access Channel
FAUSCH	Fast Up-link Signalling Channel
FDD	Frequency Division Duplex
FP	Frame Protocol
HS-DSCH	High Speed Downlink Shared Channel
IP	Internet Protocol
MICH	MBMS notification Indicator Channel
NBAP	Node B Application Part
O&M	Operation and Maintenance
PICH	Page Indication Channel
PCCH	Paging Control Channel
PCCPCH	Primary Common Control Physical Channel
PCPCH	Physical Common Packet Channel
PCPICH	Primary Common Pilot Channel
PCH	Paging Channel
PDSCH	Physical Downlink Shared Channel
PRACH	Physical Random Access Channel
PUSCH	Physical Uplink Shared Channel
RACH	Random Access Channel
RNC	Radio Network Controller

RNS	Radio Network Subsystem
SCCP	Signalling Connection Control Part
SCH	Synchronization Channel
SCCPCH	Secondary Common Control Physical Channel
SCPICH	Secondary Common Pilot Channel
SCTP	Stream Control Transmission Protocol
SRNC	Serving Radio Network Controller
SSCF-UNI	Service Specific Co-ordination Function - User Network Interface
SSCOP	Service Specific Connection Oriented Protocol
TDD	Time Division Duplex
UE	User Equipment
UC-ID	UTRAN Cell Identifier
UDP	User Datagram Protocol
UMTS	Universal Mobile Telecommunication System
USCH	Up-link Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

********** Unchanged parts omitted **********

6.2.4 Radio Network Logical resources

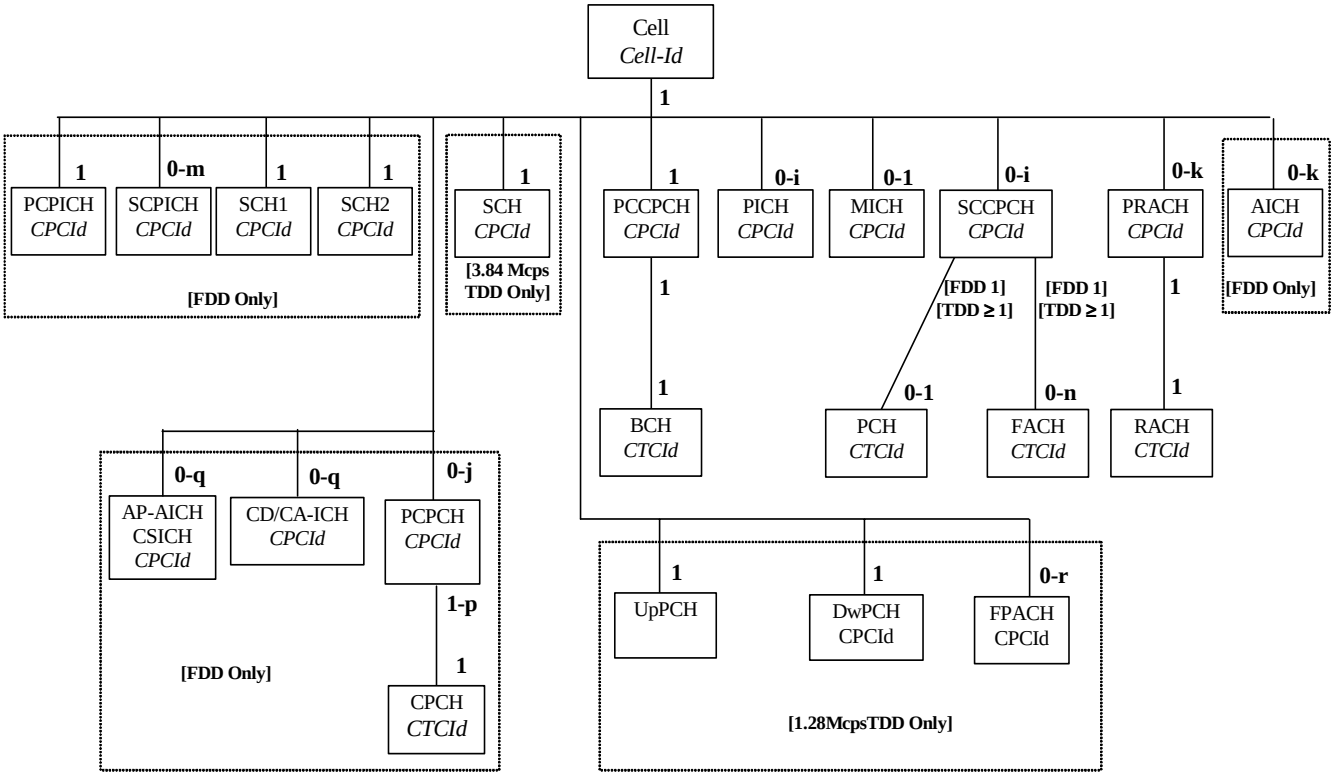
6.2.4.1 Common Resources

The CRNC manages logical radio network resources in Node B and needs to use both common and dedicated resources in a Node B to run a radio network. Therefore, it is the CRNC that orders the Node B to configure, reconfigure and delete these resources. However, if the equipment in Node B cannot fully support the configuration that the CRNC requests, or the equipment breaks down, then Node B can indicate the availability of the common resources (i.e. both downgrade and upgrade).

The common resources are the Cell, the common physical channels and the common transport channels.

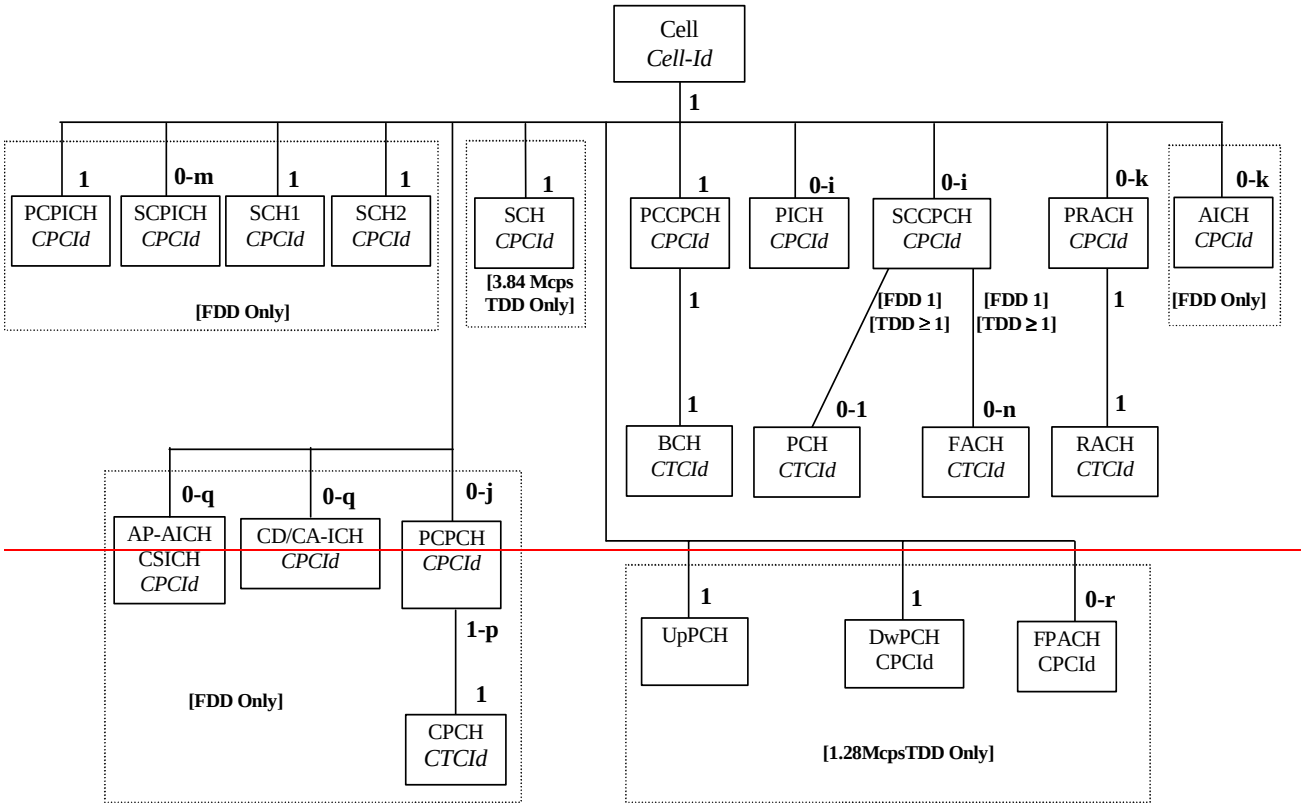
In Node B these common resources have an operational state, that indicates whether they are operational or not, i.e. whether they can carry traffic or not.

Figure 3 shows the common resources that a CRNC is managing in a Node B to be able to run a radio network.



The number or range above each box indicates how many of the channels named in that box can exist as "children" under one instant of a "parent" box to which the "child" box is connected.
The number or range beneath each box indicates how many of the channels named in that box can exist as "parent" boxes for one instant of a "child" channel to which the "parent" box is connected.

CPCId = Common Physical Channel Identifier
CTCId = Common Transport Channel Identifier
[TDD - The number of PICH = the number of PCH]
[FDD - The number of AICH = the number of PRACH]
[TDD – PCH and FACHs can be mapped on one or more SCCPCH]



The number or range above each box indicates how many of the channels named in that box can exist as "children" under one instant of a "parent" box to which the "child" box is connected.
The number or range beneath each box indicates how many of the channels named in that box can exist as "parent" boxes for one instant of a "child" channel to which the "parent" box is connected.
CPCId = Common Physical Channel Identifier
CTCId = Common Transport Channel Identifier
[TDD - The number of PICH = the number of PCH]
[FDD - The number of AICH = the number of PRACH]
[TDD – PCH and FACHs can be mapped on one or more SCCPCH]

Figure 3: Common resources in a Node B that are managed by the CRNC

3GPP TSG-RAN3 Meeting #45
Shin-Yokohama, Japan, 15th – 19th November 2004

Tdoc ⌘R3-041714

CR-Form-v7.1

CHANGE REQUEST

⌘ **25.433** **CR** **1049** ⌘ **rev** **4** ⌘ Current version: **6.3.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Introduction of MBMS
Source:	⌘	RAN3
Work item code:	⌘	MBMS-RAN
Date:	⌘	15/11/2004
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Introduction of the MBMS functionality over the Iub.
Summary of change:	⌘	Introduction of the MBMS functionality in NBAP.
Consequences if not approved:	⌘	MBMS will not be included in the specifications.

Clauses affected:	⌘	3.3, 8.2.1.2, 8.2.2.2, 8.2.3.2, 8.2.x (new), 9.1.3.1, 9.1.3.2, 9.1.6.1, 9.1.6.2, 9.1.17, 9.1.32, 9.1.x (new), 9.2.1.x1 (new), 9.2.1.x2 (new), 9.2.1.x3 (new), 9.2.2.x (new), 9.2.3.x (new), 9.3.2, 9.3.3, 9.3.4, 9.3.6

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	CR 095 on 25.401 v 6.4.0 CR 045 on 25.402 v 6.0.0 CR 059 on 25.410 v 6.1.0 CR 706 on 25.413 v 6.3.0 CR 044 on 25.420 v 6.1.0 CR 999 on 25.423 v 6.3.0 CR 057 on 25.430 v 6.2.0
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

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2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 25.401: "UTRAN Overall Description".

[2] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams".

[3] CCITT Recommendation X.731 (01/92): "Information Technology – Open Systems Interconnection – Systems Management: State Management function".

[4] 3GPP TS 25.215: "Physical layer – Measurements (FDD)".

[5] 3GPP TS 25.225: "Physical layer – Measurements (TDD)".

[6] 3GPP TS 25.430: "UTRAN Iub General Aspect and Principle".

[7] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[8] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".

[9] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[10] 3GPP TS 25.214: "Physical layer procedures (FDD)".

[11] ITU-T Recommendation X.691, (12/97) "Information technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".

[12] ITU-T Recommendation X.680, (12/97) "Information Technology - Abstract Syntax Notation One (ASN.1):Specification of basic notation".

[13] ITU-T Recommendation X.681, (12/97) "Information Technology - Abstract Syntax Notation One (ASN.1): Information object specification".

[14] 3GPP TS 25.104: "UTRA (BS) FDD; Radio Transmission and Reception".

[15] 3GPP TS 25.105: "UTRA (BS) TDD; Radio Transmission and Reception".

[16] 3GPP TS 25.427: "UTRAN Iur/Iub Interface User Plane Protocol for DCH Data Stream".

[17] 3GPP TS 25.402: "Synchronisation in UTRAN Stage2".

[18] 3GPP TS 25.331: "RRC Protocol Specification".

[19] 3GPP TS25.221: "Physical channels and mapping of transport channels onto physical channels[TDD]".

[20] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[21] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".

[22] 3GPP TS 25.133: "Requirements for support of Radio Resource management (FDD)".

[23] 3GPP TS 25.123: "Requirements for support of Radio Resource management (TDD)".

[24] 3GPP TS 25.435: "UTRAN Iub Interface: User Plane Protocols for Common Transport Channel Data Streams".

[25] 3GPP TS 25.302: "Services Provided by the Physical Layer".

[26] 3GPP TR 25.921: "Guidelines and Principles for Protocol Description and Error Handling".

[27] ICD-GPS-200: "Navstar GPS Space Segment/Navigation User Interface".

[28] RTCM-SC104: "RTCM Recommended Standards for Differential GNSS Service (v.2.2)".

[29] IETF RFC 2460 "Internet Protocol, Version 6 (IPv6) Specification".

[30] IETF RFC 768 "User Datagram Protocol", (8/1980)

[31] 3GPP TS 25.434: "UTRAN Iub Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams ".

[32] 3GPP TS 25.321: "MAC protocol specification".

[33] 3GPP TS 25.306: "UE Radio Access capabilities".

[34] 3GPP TS 25.222: "Multiplexing and Channel Coding (TDD)".

[35] IETF RFC 2474 "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".

[36] IETF RFC 2475 "An Architecture for Differentiated Services".

[xx] 3GPP TS 25.304: "User Equipment (UE) procedures in idle mode and procedures for cell reselection in connected mode".

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

A-GPS	Assisted GPS
AICH	Acquisition Indicator Channel
ALCAP	Access Link Control Application Part
AP-AICH	Access Preamble Acquisition Indicator Channel
ASN.1	Abstract Syntax Notation One
BCCH	Broadcast Control Channel
CCPCH	Common Control Physical Channel
CFN	Connection Frame Number
CM	Compressed Mode
CPCH	Common Packet Channel
CPICH	Common Pilot Channel
CRNC	Controlling Radio Network Controller
CSICH	CPCH Status Indicator Channel
DCH	Dedicated Channel
DGPS	Differential GPS
DL	Downlink
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DPDCH	Dedicated Physical Data Channel
DSCH	Downlink Shared Channel
FACH	Forward Access Channel
FDD	Frequency Division Duplex
FP	Frame Protocol
GPS	Global Positioning System
HSDPA	High Speed Downlink Packet Access
HS-DSCH	High Speed Downlink Shared Channel
HS-PDSCH	High Speed Physical Downlink Shared Channel
HS-SCCH	High Speed Shared Control Channel
HS-SICH	High Speed Shared Information Channel
IP	Internet Protocol
IPDL	Idle Periods in the DownLink
ISCP	Interference Signal Code Power
L1	Layer 1
L2	Layer 2
MIB	Master Information Block
MICH	MBMS Notification Indicator Channel
NBAP	Node B Application Part
NI	MBMS Notification Indicator
O&M	Operation and Maintenance
PCCPCH	Primary Common Control Physical Channel
PCH	Paging Channel
PCPCH	Physical Common Packet Channel
PDSCH	Physical Downlink Shared Channel
PICH	Paging Indication Channel
PUSCH	Physical Uplink Shared Channel
RACH	Random Access Channel
RL	Radio Link
RLS	Radio Link Set
RNC	Radio Network Controller
RRC	Radio Resource Control
SB	Scheduling Block
SCCPCH	Secondary Common Control Physical Channel
SCH	Synchronisation Channel
SCTD	Space Code Transmit Diversity
SIB	System Information Block
SRNC	Serving Radio Network Controller
SSDT	Site Selection Diversity Transmission

STTD	Space Time Transmit Diversity
TDD	Time Division Duplex
TFC	Transport Format Combination
TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set
TFS	Transport Format Set
TPC	Transmit Power Control
TSTD	Time Switched Transmit Diversity
UARFCN	UTRA Absolute Radio Frequency Channel Number
UDP	User Datagram Protocol
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunications System
USCH	Uplink Shared Channel
UTRA	Universal Terrestrial Radio Access
UTRAN	Universal Terrestrial Radio Access Network

8.2.1 Common Transport Channel Setup

8.2.1.1 General

This procedure is used for establishing the necessary resources in Node B, regarding Secondary CCPCH, PICH, PRACH, PCPCH [FDD], AICH [FDD], AP_AICH [FDD], CD/CA-ICH [FDD], FACH, PCH, RACH, FPACH [1.28Mcps TDD] and CPCH [FDD].

8.2.1.2 Successful Operation

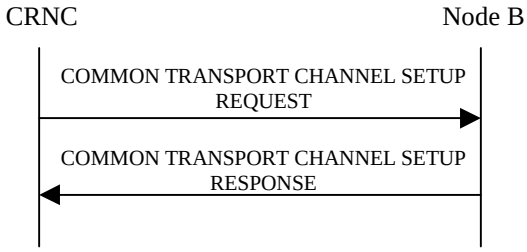

Figure 1: Common Transport Channel Setup procedure, Successful Operation

The procedure is initiated with a COMMON TRANSPORT CHANNEL SETUP REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

One message can configure only one of the following combinations:

- [FDD - one Secondary CCPCH, and FACHs, PCH, ~~and~~ PICH and MICH related to that Secondary CCPCH], or
- [TDD - one CCTrCH consisting of Secondary CCPCHs and FACHs, PCH with the corresponding PICH and MICH related to that group of Secondary CCPCHs], or
- one [1.28Mcps TDD - or more] PRACH, one RACH and one AICH [FDD] and one FPACH[1.28Mcps TDD] related to that PRACH.
- [FDD - PCPCHs, one CPCH, one AP_AICH and one CD/CA-ICH related to that group of PCPCHs.]

Secondary CCPCH:

[FDD - When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, the Node B shall configure and activate the indicated Secondary CCPCH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.]

[TDD - When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, the Node B shall configure and activate the indicated Secondary CCPCH(s) according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.]

[TDD - FACHs and PCH may be mapped onto a CCTrCH which may consist of several Secondary CCPCHs]

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *FACH Parameters* IE, the Node B shall configure and activate the indicated FACH(s) according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *PCH Parameters* IE, the Node B shall configure and activate the concerned PCH and the associated PICH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

[1.28Mcps TDD - If the *PCH Power* IE is included in the *PCH Parameters* IE of the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall use this value as the power at which the PCH shall be transmitted.]

[TDD - If the *TSTD Indicator* IE for the S-CCPCH is included and is set to "active" in the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall activate TSTD diversity for all S-CCPCHs defined in the message that are not beacon channels [19,21]. If the *TSTD Indicator* IE is not included or is set to "not active" in the COMMON

TRANSPORT CHANNEL SETUP REQUEST, the Node B shall not activate TSTD diversity for the S-CCPCHs defined in the message.]

[1.28Mcps TDD - If the *TSTD Indicator* IE for the PICH is included and is set to "active" in the COMMON TRANSPORT CHANNEL SETUP REQUEST message, the Node B shall activate TSTD diversity for the PICH if it is not a beacon channel [19,21]. If the *TSTD Indicator* IE is set to "not active" or the *TSTD Indicator* IE is not included for the PICH in the COMMON TRANSPORT CHANNEL SETUP REQUEST message, the Node B shall not activate TSTD diversity for the PICH.]

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *MICH Parameters* IE, the Node B shall configure and activate the concerned MICH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

PRACH:

When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *PRACH* IE, the Node B shall configure and activate the indicated PRACH and the associated RACH [FDD - and the associated AICH] according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

[1.28Mcps TDD - FPACH]:

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *FPACH* IE, the Node B shall configure and activate the indicated FPACH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

Where more than one FPACH is defined, the FPACH that Node B should use is defined by the UpPCH signature (SYNC_UL) code that the UE used. The FPACH number = N mod M where N denotes the signature number (0..7) and M denotes the number of FPACHs that are defined in a cell. The FPACH number is in ascending order by *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

[FDD - PCPCHs]:

When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *CPCH Parameters* IE, the Node B shall configure and activate the indicated CPCH and the associated PCPCH(s), AP-AICH and CD/CA-ICH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *CD Signatures* IE, the Node B may use only the given CD signatures on CD/CA-ICH. Otherwise, the Node B may use all the CD signatures on CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *CD Sub Channel Numbers* IE, the Node B may use only the given CD Sub Channels on CD/CA-ICH. Otherwise, the Node B may use all the CD Sub Channels on CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *Channel Request Parameters* IE, the Node B shall use the parameters to distinguish the PCPCHs.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *AP Sub Channel Number* IE in *Channel Request Parameters* IE, the Node B shall use only these AP sub channel number to distinguish the configured PCPCH. Otherwise all AP subchannel numbers are used to distinguish the configured PCPCH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *AP Sub Channel Number* IE in *SF Request Parameters* IE, the Node B shall use only these AP sub channel number to distinguish the requested Spreading Factors. Otherwise all AP subchannel numbers are used to distinguish the configured Spreading Factor.

General:

After successfully configuring the requested common transport channels and the common physical channels , the Node B shall store the value of *Configuration Generation ID* IE and it shall respond with the COMMON TRANSPORT CHANNEL SETUP RESPONSE message with the *Common Transport Channel ID* IE, the *Binding ID* IE and the *Transport Layer Address* IE for the configured common transport channels.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes the *Transport Layer Address* and *Binding ID* IEs, the Node B may use the transport layer adress and the binding identifier received from the CRNC when establishing a transport bearer for the indicated common transport channels.

After a successful procedure and once the transport bearers are established, the configured common transport channels and the common physical channels shall adopt the state Enabled [6] in the Node B and the common physical channels exist on the Uu interface.

8.2.1.3 Unsuccessful Operation

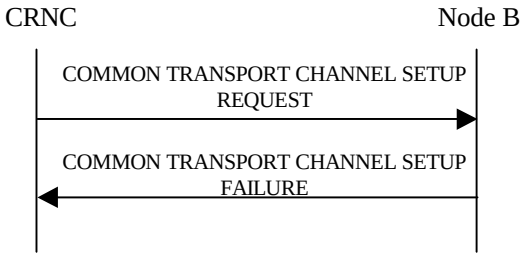

Figure 2: Common Transport Channel Setup procedure, Unsuccessful Operation

If the Node B is not able to support all or part of the configuration, it shall reject the configuration of all the channels in the COMMON TRANSPORT CHANNEL SETUP REQUEST message. The channels in the COMMON TRANSPORT CHANNEL SETUP REQUEST message shall remain in the same state as prior to the procedure. The *Cause* IE shall be set to an appropriate value. The value of *Configuration Generation ID* IE from the COMMON TRANSPORT CHANNEL SETUP REQUEST message shall not be stored.

If the configuration was unsuccessful, the Node B shall respond with a COMMON TRANSPORT CHANNEL SETUP FAILURE message.

Typical cause values are as follows:

Radio Network Layer Cause:

- Cell not available
- Power level not supported
- Node B Resources unavailable
- Requested Tx Diversity Mode not supported
- UL SF not supported
- DL SF not supported
- Common Transport Channel Type not supported
- MICH not supported

Transport Layer Cause:

- Transport Resources Unavailable

Miscellaneous Cause:

- O&M Intervention
- Control processing overload
- HW failure

8.2.1.4 Abnormal Conditions

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, and that IE contains [FDD - neither the *FACH Parameters* IE nor the *PCH Parameters* IE] [TDD – neither the *FACH* IE nor the *PCH* IE], the Node B shall reject the procedure using the COMMON TRANSPORT CHANNEL SETUP FAILURE message.

[FDD - If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *CD Sub Channel Numbers* IE, but the *CD Signatures* IE is not present, then the Node B shall reject the procedure using the COMMON TRANSPORT CHANNEL SETUP FAILURE message.]

[TDD - If the *FACH CCTrCH Id* IE or the *PCH CCTrCH Id* IE does not equal the *SCCPCH CCTrCH Id* IE, the Node B shall regard the Common Transport Channel Setup procedure as having failed and the Node B shall send the COMMON TRANSPORT CHANNEL SETUP FAILURE message to the CRNC.]

[TDD - If the *TDD Physical Channel Offset* IE, the *Repetition Period* IE, and the *Repetition Length* IE are not equal for each SCCPCH configured within the CCTrCH, the Node B shall regard the Common Transport Channel Setup procedure as having failed and the Node B shall send the COMMON TRANSPORT CHANNEL SETUP FAILURE message to the CRNC.]

[1.28Mcps TDD - If the *Common Transport Channel ID* IE, and the *Transport Format Set* IE are not equal for each RACH configured in PRACH, the Node B shall regard the Common Transport Channel Setup procedure as having failed and the Node B shall send the COMMON TRANSPORT CHANNEL SETUP FAILURE message to the CRNC.]

If the state is already Enabled or Disabled [6] for at least one channel in the COMMON TRANSPORT CHANNEL SETUP REQUEST message which is received, the Node B shall reject the configuration of all channels with the *Cause* IE set to "Message not compatible with receiver state".

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport channel intended to be established, the Node B shall reject the procedure using the COMMON TRANSPORT CHANNEL SETUP FAILURE message.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *MICH Parameters* IE but not the *FACH Parameters* IE [FDD – for one S-CCPCH], the Node B shall reject the procedure using the COMMON TRANSPORT CHANNEL SETUP FAILURE message.

8.2.2 Common Transport Channel Reconfiguration

8.2.2.1 General

This procedure is used for reconfiguring common transport channels and/or common physical channels, while they still might be in operation.

8.2.2.2 Successful Operation

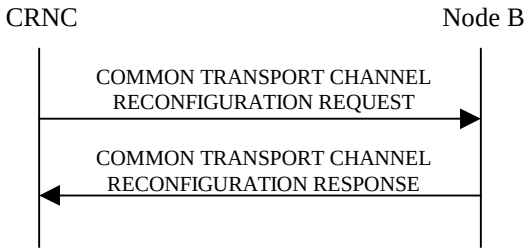

Figure 3: Common Transport Channel Reconfiguration, Successful Operation

The procedure is initiated with a COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

One message can configure only one of the following combinations:

- [FDD - FACHs, one PCH, ~~and/or~~ one PICH and/or one MICH related to one Secondary CCPCH], or
- [TDD - one CCTrCH consisting of Secondary CCPCHs and FACHs, PCH with the corresponding PICH and MICH related to that group of Secondary CCPCHs], or
- one RACH and/or one AICH[FDD])] and/or one FPACH[1.28Mcps TDD] related to one PRACH, or
- [FDD - one CPCH and/or one AP-AICH and/or one CD/CA-ICH related to one CPCH].

SCCPCH:

[TDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *SCCPCH Power* IE, the Node B shall reconfigure the maximum power that the indicated S-CCPCH shall use.]

FACH:

If the *FACH Parameters* IE is present, the Node B shall reconfigure the indicated FACH(s).

[FDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Max FACH Power* IE, the Node B shall reconfigure the maximum power that the indicated FACH may use.]

[1.28Mcps TDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Max FACH Power* IE, the Node B shall reconfigure the maximum power that the indicated FACH may use.]

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWS* IE, the Node B shall reconfigure the time of arrival window startpoint that the indicated FACH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWE* IE, the Node B shall reconfigure the time of arrival window endpoint that the indicated FACH shall use.

PCH:

If the *PCH Parameters* IE is present, the Node B shall reconfigure the indicated PCH.

[FDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *PCH Power* IE, the Node B shall reconfigure the power that the PCH shall use.]

[1.28Mcps TDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *PCH Power* IE, the Node B shall reconfigure the power that the PCH shall use.]

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWS* IE, the Node B shall reconfigure the time of arrival window startpoint that the PCH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWE* IE, the Node B shall reconfigure the time of arrival window endpoint that the PCH shall use.

PICH:

If the *PICH Parameters* IE is present, the Node B shall reconfigure the indicated PICH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *PICH Power* IE, the Node B shall reconfigure the power that the PICH shall use.

MICH:

If the *MICH Parameters* IE is present, the Node B shall reconfigure the MICH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *MICH Power* IE, the Node B shall reconfigure the power that the MICH shall use.

[FDD - PRACH]:

If the *PRACH Parameters* IE is present, the Node B shall reconfigure the indicated PRACH(s).

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Preamble Signatures* IE, the Node B shall reconfigure the preamble signatures that the indicated PRACH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Allowed Slot Format Information* IE, the Node B shall reconfigure the slot formats that the indicated PRACH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *RACH Sub Channel Numbers* IE, the Node B shall reconfigure the sub channel numbers that the indicated PRACH shall use.

[FDD - AICH]:

If the *AICH Parameters* IE is present, the Node B shall reconfigure the indicated AICH(s).

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *AICH Power* IE, the Node B shall reconfigure the power that the indicated AICH shall use.

[FDD - CPCH]:

If the *CPCH Parameters* IE is present, the Node B shall reconfigure the indicated CPCH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *UL SIR* IE, the Node B shall reconfigure the UL SIR for the UL power control for the indicated CPCH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Initial DL Transmission Power* IE, the Node B shall reconfigure the Initial DL Transmission Power for the indicated CPCH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Maximum DL Power* IE, the Node B shall apply this value to the new configuration of the indicated CPCH and never transmit with a higher power on any DL PCPCHs once the new configuration is being used.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Minimum DL Power* IE, the Node B shall apply this value to the new configuration of the indicated CPCH and never transmit with a lower power on any DL PCPCHs once the new configuration is being used.

[FDD - AP-AICH]:

If the *AP-AICH Parameters* IE is present, the Node B shall reconfigure the indicated AP-AICH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *AP-AICH Power* IE, the Node B shall reconfigure the power that the AP-AICH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *CSICH Power* IE, the Node B shall reconfigure the power that the CSICH shall use.

[FDD - CD/CA-ICH]:

If the *CD/CA-ICH Parameters* IE is present, the Node B shall reconfigure the indicated CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *CD/CA-AICH Power* IE, the Node B shall reconfigure the power that the CD/CA-AICH shall use.

[1.28Mcps TDD - FPACH]:

If the *FPACH Parameters* IE is included, the Node B shall reconfigure the indicated FPACH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Max FPACH Power* IE, the Node B shall reconfigure the power that the FPACH shall use.

General:

After a successful procedure, the channels will have adopted the new configuration in the Node B. The channels in the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message shall remain in the same state as prior to the procedure. The Node B shall store the value of *Configuration Generation ID* IE and the Node B shall respond with the COMMON TRANSPORT CHANNEL RECONFIGURATION RESPONSE message.

8.2.2.3 Unsuccessful Operation

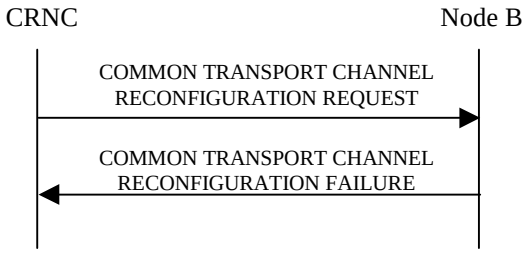

Figure 4: Common Transport Channel Reconfiguration procedure, Unsuccessful Operation

If the Node B is not able to support all or part of the configuration, it shall reject the configuration of all the channels in the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message. The channels in the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message shall remain in the same state as prior to the procedure. The *Cause* IE shall be set to an appropriate value. The value of *Configuration Generation ID* IE from the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message shall not be stored.

If the configuration was unsuccessful, the Node B shall respond with the COMMON TRANSPORT CHANNEL RECONFIGURATION FAILURE message.

Typical cause values are as follows:

Radio Network Layer Cause:

- Cell not available
- Power level not supported
- Node B Resources unavailable

Transport Layer Cause:

- Transport Resources Unavailable

Miscellaneous Cause:

- O&M Intervention
- Control processing overload
- HW failure

8.2.2.4 Abnormal Conditions

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8.2.3 Common Transport Channel Deletion

8.2.3.1 General

This procedure is used for deleting common physical channels and common transport channels.

8.2.3.2 Successful Operation

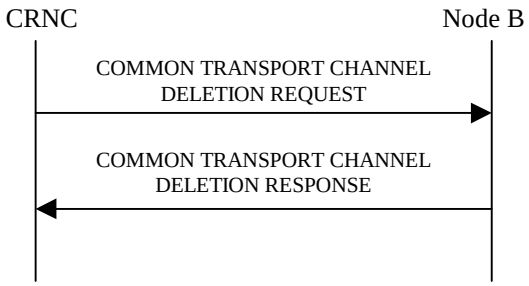

Figure 5: Common Transport Channel Deletion procedure, Successful Operation

The procedure is initiated with a COMMON TRANSPORT CHANNEL DELETION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Secondary CCPCH:

If the *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL DELETION REQUEST message indicates a Secondary CCPCH, the Node B shall delete the indicated channel and the FACHs and PCH supported by that Secondary CCPCH. If there is a PCH that is deleted, the PICH associated with that PCH shall also be deleted. If an S-CCPCH is deleted, the MICH associated with that S-CCPCH shall also be deleted.

PRACH:

If the *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL DELETION REQUEST message indicates a PRACH, the Node B shall delete the indicated channel and the RACH supported by the PRACH. [FDD - The AICH associated with the RACH shall also be deleted.]

[FDD - PCPCHs]:

If the *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL DELETION REQUEST message indicates one of the PCPCHs for a CPCH, the Node B shall delete all PCPCHs associated with the indicated channel and the CPCH supported by these PCPCHs. The AP-AICH and CD/CA-ICH associated with the CPCH shall also be deleted.

General:

[TDD - If the requested common physical channel is a part of a CCTrCH, all common transport channels and all common physical channels associated with this CCTrCH shall be deleted.]

After a successful procedure, the channels are deleted in the Node B. The channels in the COMMON TRANSPORT CHANNEL DELETION REQUEST message shall be set to state Not Existing ref. [6]. The Node B shall store the received value of the *Configuration Generation ID* IE and respond with the COMMON TRANSPORT CHANNEL DELETION RESPONSE message.

8.2.3.3 Unsuccessful Operation

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8.2.3.4 Abnormal Conditions

If the C-ID in the COMMON TRANSPORT CHANNEL DELETION REQUEST message is not existing in the Node B or the Common Physical Channel ID does not exist in the Cell, the Node B shall respond with the COMMON TRANSPORT CHANNEL DELETION RESPONSE message.

8.2.x MBMS Notification Update

8.2.x.1 General

This procedure is used to update the MBMS Notification Indicators to be sent over the MICH.

8.2.x.2 Successful Operation

Figure x1: MBMS Notification Update procedure, Successful Operation

The procedure is initiated with an MBMS NOTIFICATION UPDATE COMMAND message sent from the CRNC to the Node B using the Node B Control Port.

The Node B shall use the different NIs in the *NI Information* IE to generate, as specified in ref. [7], the notification indicators it shall transmit on the MICH starting at the next coming MICH CFN equal to the value in the *MICH CFN* IE and for a duration equal to the Modification Period.

If the *Modification Period* IE is included in the MBMS NOTIFICATION UPDATE COMMAND message, the Node B shall use this as the new Modification Period starting at the next coming MICH CFN equal to the value in the *MICH CFN* IE.

8.2.x.3 Abnormal Conditions

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9.1.3 COMMON TRANSPORT CHANNEL SETUP REQUEST

9.1.3.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
CHOICE *Common Physical Channel To Be Configured*	M				YES	ignore
>Secondary CCPCH					–	
>>Secondary CCPCH		*1*			–	
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>FDD SCCPCH Offset	M		9.2.2.15	Corresponds to [7]: $S\text{-}CCPCH,k$	–	
>>>DL Scrambling Code	C-PCH		9.2.2.13		–	
>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>TFCS	M		9.2.1.58	For the DL.	–	
>>>Secondary CCPCH Slot Format	M		9.2.2.43		–	
>>>TFCI Presence	C-SlotFormat		9.2.1.57	Refer to TS [7]	–	
>>>Multiplexing Position	M		9.2.2.23		–	
>>>Power Offset Information		*1*			–	
>>>>PO1	M		Power Offset 9.2.2.29	Power offset for the TFCI bits	–	
>>>>PO3	M		Power Offset 9.2.2.29	Power offset for the pilot bits	–	
>>>STTD Indicator	M		9.2.2.48		–	
>>>FACH Parameters		*0..<maxnoofFACHs>*			GLOBAL	reject
>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>Transport Format Set	M		9.2.1.59	For the DL.	–	
>>>>ToAWS	M		9.2.1.61		–	
>>>>ToAWE	M		9.2.1.60		–	
>>>>Max FACH Power	M		DL Power 9.2.1.21	Maximum allowed power on the FACH.	–	
>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if	YES	ignore

				bearer establishment with ALCAP.		
>>>PCH Parameters		*0..1*			YES	reject
>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>Transport Format Set	M		9.2.1.59	For the DL.	–	
>>>>ToAWS	M		9.2.1.61		–	
>>>>ToAWE	M		9.2.1.60		–	
>>>>PCH Power	M		DL Power 9.2.1.21		–	
>>>>PICH Parameters		*1*			–	
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>>>PICH Power	M		9.2.1.49A		–	
>>>>>PICH Mode	M		9.2.2.26	Number of PI per frame	–	
>>>>>STTD Indicator	M		9.2.2.48		–	
>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>MICH Parameters		*0..1*			YES	reject
>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>>MICH Power	M		PICH Power 9.2.1.49A		–	
>>>>MICH Mode	M		9.2.2.x	Number of NI per frame	–	
>>>>STTD Indicator	M		9.2.2.48		–	
>PRACH					–	
>>PRACH		*1*			–	
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>Scrambling Code Number	M		9.2.2.42		–	
>>>TFCS	M		9.2.1.58	For the UL.	–	
>>>Preamble Signatures	M		9.2.2.31		–	
>>>Allowed Slot Format Information		*1..<maxnoofSlotFormatsPRACH*			–	

		>				
>>>>RACH Slot Format	M		9.2.2.37		–	
>>>RACH Sub Channel Numbers	M		9.2.2.38		–	
>>>Puncture Limit	M		9.2.1.50	For the UL	–	
>>>Preamble Threshold	M		9.2.2.32		–	
>>>RACH Parameters		*1*			YES	reject
>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>Transport Format Set	M		9.2.1.59	For the UL.	–	
>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>AICH Parameters		*1*			–	
>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>AICH Transmission Timing	M		9.2.2.1		–	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>>AICH Power	M		9.2.2.D		–	
>>>>STTD Indicator	M		9.2.2.48		–	
>PCPCHs					–	
>>CPCH Parameters		*1*			–	
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>Transport Format Set	M		9.2.1.59	For the UL.	–	
>>>AP Preamble Scrambling Code	M		CPCH Scrambling Code Number 9.2.2.4B		–	
>>>CD Preamble Scrambling Code	M		CPCH Scrambling Code Number 9.2.2.4B		–	
>>>TFCS	M		9.2.1.58	For the UL	–	
>>>CD Signatures	O		Preamble Signatures 9.2.2.31	Note: When not present, all CD signatures are to be used.	–	
>>>CD Sub Channel Numbers	O		9.2.2.1C		–	
>>>Puncture Limit	M		9.2.1.50	For the UL	–	
>>>CPCH UL DPCCH Slot Format	M		9.2.2.4C	For UL CPCH message	–	

				control part		
>>>UL SIR	M		9.2.1.67A		–	
>>>Initial DL Transmission Power	M		DL Power 9.2.1.21		–	
>>>Maximum DL Power	M		DL Power 9.2.1.21		–	
>>>Minimum DL Power	M		DL Power 9.2.1.21		–	
>>>PO2	M		Power Offset 9.2.2.29	Power offset for the TPC bits relative to the pilot bits.	–	
>>>FDD TPC DL Step Size	M		9.2.2.16		–	
>>>N_Start_Message	M		9.2.2.23C		–	
>>>N_EOT	M		9.2.2.23A		–	
>>>Channel Assignment Indication	M		9.2.2.1D		–	
>>>CPCH Allowed Total Rate	M		9.2.2.4A		–	
>>>PCPCH Channel Information		*1..<maxnoofPCPCHs>*			–	
>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>CPCH Scrambling Code Number	M		9.2.2.4B	For UL PCPCH	–	
>>>>DL Scrambling Code	M		9.2.2.13	For DL CPCH message part	–	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14	For DL CPCH message part	–	
>>>>PCP Length	M		9.2.2.24A		–	
>>>>UCSM Information	C-NCA	*1*			–	
>>>>>Min UL Channelisation Code Length	M		9.2.2.22		–	
>>>>>NF_max	M		9.2.2.23B		–	
>>>>>Channel Request Parameters		*0..<maxAPSigNum>*			–	
>>>>>>AP Preamble Signature	M		9.2.2.1A		–	
>>>>>AP Sub Channel Number	O		9.2.2.1B		–	
>>>VCAM Mapping Information	C-CA	*1..<maxnoofLen>*		Refer to TS [18]	–	
>>>>Min UL Channelisation Code Length	M		9.2.2.22		–	
>>>>NF_max	M		9.2.2.23B		–	
>>>>Max Number of PCPCHs	M		9.2.2.20A		–	
>>>>SF Request Parameters		*1..<maxAPSigNum>*			–	

>>>>>AP Preamble Signature	M		9.2.2.1A		–	
>>>>>AP Sub Channel Number	O		9.2.2.1B		–	
>>>AP-AICH Parameters		*1*			–	
>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>>AP-AICH Power	M		AICH Power 9.2.2.D		–	
>>>>CSICH Power	M		AICH Power 9.2.2.D	For CSICH bits at end of AP-AICH slot	–	
>>>>STTD Indicator	M		9.2.2.48		–	
>>>CD/CA-ICH Parameters		*1*			–	
>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>>CD/CA-ICH Power	M		AICH Power 9.2.2.D		–	
>>>>STTD Indicator	M		9.2.2.48		–	
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore

Condition	Explanation
SlotFormat	The IE shall be present if the *Secondary CCPCH Slot Format* IE is set to any of the values from 8 to 17.
CA	The IE shall be present if the *Channel Assignment Indication* IE is set to "CA Active".
NCA	The IE shall be present if the *Channel Assignment Indication* IE is set to "CA Inactive".
PCH	The IE shall be present if the *PCH Parameters* IE is not present.

Range Bound	Explanation
maxnoofFACHs	Maximum number of FACHs that can be defined on a Secondary CCPCH
maxnoofPCPCHs	Maximum number of PCPCHs for a CPCH
maxnoofLen	Maximum number of Min UL Channelisation Code Length
maxnoofSlotFormatsPRACH	Maximum number of SF for a PRACH
maxAPSigNum	Maximum number of AP Signatures

9.1.3.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
CHOICE *Common Physical Channel To Be Configured*	M				YES	ignore
>Secondary CCPCHs					–	
>>SCCPCH CCTrCH ID	M		CCTrCH ID 9.2.3.3	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>>TFCS	M		9.2.1.58	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>>TFCI Coding	M		9.2.3.22		–	
>>Puncture Limit	M		9.2.1.50		–	
>>CHOICE *HCR or LCR*	M			See note 1 below	–	
>>>3.84Mcps TDD					–	
>>>>Secondary CCPCH		*1..<maxnoofSCCPCHs>*		See note 2 below	GLOBAL	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>>>Time Slot	M		9.2.3.23		–	
>>>>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>>>Repetition Period	M		9.2.3.16		–	
>>>>>Repetition Length	M		9.2.3.15		–	
>>>>>SCCPCH Power	M		DL Power 9.2.1.21		–	
>>>1.28Mcps TDD					–	
>>>>Secondary CCPCH LCR		*1..<maxnoofSCCPCHsLCR>*		See note 2 below	GLOBAL	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	

>>>>>Time Slot LCR	M		9.2.3.24A		–	
>>>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>>>Repetition Period	M		9.2.3.16		–	
>>>>>Repetition Length	M		9.2.3.15		–	
>>>>>SCCPCH Power	M		DL Power 9.2.1.21		–	
>>>>> SCCPCH Time Slot Format LCR	M		TDD DL DPCH Time Slot Format LCR 9.2.3.19D		–	
>>FACH Parameters		*0..<maxnoofFACHs>*			GLOBAL	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>FACH CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
>>>Transport Format Set	M		9.2.1.59	For the DL.	–	
>>>ToAWS	M		9.2.1.61		–	
>>>ToAWE	M		9.2.1.60		–	
>>>Max FACH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>PCH Parameters		*0..1*			YES	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>PCH CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
>>>Transport Format Set	M		9.2.1.59	For the DL.	–	
>>>ToAWS	M		9.2.1.61		–	
>>>ToAWE	M		9.2.1.60		–	
>>>CHOICE *HCR or LCR*	M			See note 1 below	–	
>>>>3.84Mcps TDD					–	
>>>>>PICH Parameters		*0..1*			YES	reject
>>>>>>Common Physical Channel ID	M		9.2.1.13		–	

>>>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>>>>Time Slot	M		9.2.3.23		–	
>>>>>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>>>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>>>>Repetition Period	M		9.2.3.16		–	
>>>>>>Repetition Length	M		9.2.3.15		–	
>>>>>>Paging Indicator Length	M		9.2.3.8		–	
>>>>>>PICH Power	M		9.2.1.49A		–	
>>>>1.28Mcps TDD					–	
>>>>>PICH Parameters LCR		*1*			YES	reject
>>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>>>>>Time Slot LCR	M		9.2.3.24A		–	
>>>>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>>>>Repetition Period	M		9.2.3.16		–	
>>>>>>Repetition Length	M		9.2.3.15		–	
>>>>>>Paging Indicator Length	M		9.2.3.8		–	
>>>>>>PICH Power	M		9.2.1.49A		–	
>>>>>>Second TDD Channelisation Code LCR	M		TDD Channelisation Code LCR 9.2.3.19a		–	
>>>>>>TSTD Indicator	O		9.2.1.64		YES	reject
>>>PCH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore

>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>TSTD Indicator	O		9.2.1.64		YES	reject
>>MICH Parameters		*0..1*			YES	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>Notification Indicator Length	M		9.2.3.x		–	
>>>MICH Power	M		PICH Power 9.2.1.49A		–	
>>>CHOICE *HCR or LCR*	M				–	
>>>>3.84Mcps TDD					–	
>>>>>MICH Parameters HCR		*1*			YES	reject
>>>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>>>>Time Slot	M		9.2.3.23		–	
>>>>>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>>>1.28Mcps TDD					–	
>>>>>MICH Parameters LCR		*1*			YES	reject
>>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>>>>>Time Slot LCR	M		9.2.3.24A		–	
>>>>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>>>>Second TDD Channelisation Code LCR	M		TDD Channelisation Code LCR 9.2.3.19a		–	
>>>>>>TSTD Indicator	M		9.2.1.64		–	
>PRACH					–	
>>CHOICE *HCR or LCR*	M			See note 1 below	–	
>>>3.84Mcps TDD					–	
>>>>PRACH		*1*			YES	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TFCS	M		9.2.1.58		–	
>>>>>Time Slot	M		9.2.3.23		–	
>>>>>TDD Channelisation Code	M		9.2.3.19		–	

>>>>>Max PRACH Midamble Shifts	M		9.2.3.6		–	
>>>>>PRACH Midamble	M		9.2.3.14		–	
>>>>>RACH		*1*			YES	reject
>>>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>>>Transport Format Set	M		9.2.1.59	For the UL	–	
>>>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>1.28Mcps TDD					–	
>>>>PRACH LCR		*1..<maxnoofPRACHLCRs>*			GLOBAL	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TFCS	M		9.2.1.58		–	
>>>>>Time Slot LCR	M		9.2.3.24A		–	
>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>>>RACH		*1*			YES	reject
>>>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>>>Transport Format Set	M		9.2.1.59	For the UL	–	
>>>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>FPACH		*0..1*		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	

>>>Time Slot LCR	M		9.2.3.24A		–	
>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>Max FPACH Power	M		9.2.3.5E		–	

Note 1: This information element is a simplified representation of the ASN.1. The choice is in reality performed through the use of ProtocolIE-Single-Container within the ASN.1.

Note 2: This information element is a simplified representation of the ASN.1. Repetitions 1 to 8 and repetitions 9 to maxnoofSCCPCHs / maxnoofSCCPCHsLCR are represented by separate ASN.1 structures.

Range Bound	Explanation
maxnoofSCCPCHs	Maximum number of Secondary CCPCHs per CCTrCH for 3.84Mcps TDD
maxnoofSCCPCHsLCR	Maximum number of Secondary CCPCHs per CCTrCH for 1.28Mcps TDD
maxnoofFACHs	Maximum number of FACHs that can be defined on a Secondary CCPCH
maxnoofPRACHLCRs	Maximum number of PRACHs LCR that can be defined on a RACH for 1.28Mcps TDD

9.1.6 COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST

9.1.6.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
CHOICE *Common Physical Channel To Be Configured*	M				YES	reject
>Secondary CCPCH					–	
>>FACH Parameters		*0..<maxFACHCell>*			GLOBAL	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>Max FACH Power	O		DL Power 9.2.1.21	Maximum allowed power on the FACH.	–	
>>>ToAWS	O		9.2.1.61		–	
>>>ToAWE	O		9.2.1.60		–	
>>PCH Parameters		*0..1*			YES	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>PCH Power	O		DL Power 9.2.1.21	Power to be used on the PCH.	–	
>>>ToAWS	O		9.2.1.61		–	
>>>ToAWE	O		9.2.1.60		–	
>>PICH Parameters		*0..1*			YES	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>PICH Power	O		9.2.1.49A		–	
>>MICH Parameters		*0..1*			YES	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>MICH Power	O		PICH Power 9.2.1.49A		–	
>PRACH					–	
>>PRACH Parameters		*0..<maxPRACHCell>*			GLOBAL	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>Preamble Signatures	O		9.2.2.31		–	
>>>Allowed Slot Format Information		*0..<maxnoofSlotFormatsPRACH>*			–	
>>>>RACH Slot Format	M		9.2.2.37		–	

>>>RACH Sub Channel Numbers	O		9.2.2.38		–	
>>AICH Parameters		*0..<maxPRACHCell>*			GLOBAL	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>AICH Power	O		9.2.2.D		–	
>CPCH					–	
>>CPCH Parameters		*0..<maxnoofCPCHs>*			GLOBAL	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>UL SIR	O		9.2.1.67A		–	
>>>Initial DL Transmission Power	O		DL Power 9.2.1.21		–	
>>>Maximum DL Power	O		DL Power 9.2.1.21		–	
>>>Minimum DL Power	O		DL Power 9.2.1.21		–	
>>AP-AICH Parameters		*0..<maxnoofCPCHs>*			GLOBAL	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>AP-AICH Power	O		AICH Power 9.2.2.D		–	
>>>CSICH Power	O		AICH Power 9.2.2.D	For CSICH bits at end of AP-AICH slot	–	
>>CD/CA-ICH Parameters		*0..<maxnoofCPCHs>*			GLOBAL	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>CD/CA-ICH Power	O		AICH Power 9.2.2.D		–	

Range Bound	Explanation
maxFACHCell	Maximum number of FACHs that can be defined in a Cell
maxnoofCPCHs	Maximum number of CPCHs that can be defined in a Cell
maxPRACHCell	Maximum number of PRACHs and AICHs that can be defined in a Cell
maxnoofSlotFormatsPRACH	Maximum number of SF for a PRACH

9.1.6.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
Secondary CCPCH Parameters		*0..1*			YES	reject

>CCTrCH ID	M		9.2.3.3	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>Secondary CCPCHs To Be Configured		*0..<maxnoofSCCPCHs>*		See note 1 below	GLOBAL	reject
>>Common Physical Channel ID	M		9.2.1.13		–	
>>SCCPCH Power	O		DL power 9.2.1.21		–	
PICH Parameters		*0..1*			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>PICH Power	O		9.2.1.49A		–	
FACH Parameters		*0..<maxnoofFACHs>*			GLOBAL	reject
>Common Transport Channel ID	M		9.2.1.14		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60			
>Max FACH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
PCH Parameters		*0..1*			YES	reject
>Common Transport Channel ID	M		9.2.1.14		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60		–	
>PCH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
FPACH Parameters		*0..1*		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Max FPACH Power	O		9.2.3.5E		–	
MICH Parameters		*0..1*			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>MICH Power	O		PICH Power 9.2.1.49A		–	

Note 1: This information element is a simplified representation of the ASN.1. Repetitions 1 to 8 and repetitions 9 to maxnoofSCCPCHs are represented by separate ASN.1 structures. Furthermore, maxnoofSCCPCHs has different values in the ASN.1 for each of the two TDD options.

Range Bound	Explanation
maxnoofSCCPCHs	Maximum number of SCCPCHs that can be repeated in a Cell
maxnoofFACHs	Maximum number of FACHs that can be repeated in a Cell

9.1.17 AUDIT RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
End Of Audit Sequence Indicator	M		9.2.1.29A		YES	ignore
Cell Information		*0..<maxCellinNodeB>*			EACH	ignore
>C-ID	M		9.2.1.9		–	
>Configuration Generation ID	M		9.2.1.16		–	
>Resource Operational State	M		9.2.1.52		–	
>Availability Status	M		9.2.1.2		–	
>Local Cell ID	M		9.2.1.38	The local cell that the cell is configured on	–	
>Primary SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to FDD only	YES	ignore
>Secondary SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to FDD only	YES	ignore
>Primary CPICH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to FDD only	YES	ignore
>Secondary CPICH Information		*0..<maxSCPICHCell>*		Applicable to FDD only	EACH	ignore
>>Secondary CPICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>Primary CCPCH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>BCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore
>Secondary CCPCH		*0..<maxS*		See note 1	EACH	ignore

Information		*CCPCHCell>*		below		
>>Secondary CCPCH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>PCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore
>PICH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>FACH Information		*0..<maxFACHCell>*			EACH	ignore
>>FACH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
>PRACH Information		*0..<maxPRACHCell>*			EACH	ignore
>>PRACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>RACH Information		*0..<maxRACHCell>*			EACH	ignore
>>RACH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
>AICH Information		*0..<maxPRACHCell>*		Applicable to FDD only	EACH	ignore
>>AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>PCPCH Information		*0..<maxPCPCHCell>*		Applicable to FDD only	EACH	ignore
>>PCPCH Individual Information	M		Common Physical Channel		–	

			Status Information 9.2.1.13A			
>CPCH Information		*0..<maxCPCHCell>*		Applicable to FDD only	EACH	ignore
>>CPCH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
>AP-AICH Information		*0..<maxCPCHCell>*		Applicable to FDD only	EACH	ignore
>>AP-AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>CD/CA-ICH Information		*0..<maxCPCHCell>*		Applicable to FDD only	EACH	ignore
>>CD/CA-ICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	TDD Sync Channel Applicable to 3.84Mcps TDD only	YES	ignore
>FPACH Information		*0..<maxFPACHCell>*		Applicable to 1.28Mcps TDD only	EACH	ignore
>>FPACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>DwPCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to 1.28Mcps TDD only	YES	ignore
>HS-DSCH Resources Information		*0..1*			YES	ignore
>>Resource Operational State	M		9.2.1.52		–	
>>Availability Status	M		9.2.1.2		–	
>MICH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore

Communication Control Port Information		*0..<maxCCPinNodeB>*			EACH	ignore
>Communication Control Port ID	M		9.2.1.15		–	
>Resource Operational State	M		9.2.1.52		–	
>Availability Status	M		9.2.1.2		–	
Local Cell Information		*0..<maxLocalCellinNodeB>*			EACH	ignore
>Local Cell ID	M		9.2.1.38		–	
>DL Or Global Capacity Credit	M		9.2.1.20B		–	
>UL Capacity Credit	O		9.2.1.65A		–	
>Common Channels Capacity Consumption Law	M		9.2.1.9A		–	
>Dedicated Channels Capacity Consumption Law	M		9.2.1.20A		–	
>Maximum DL Power Capability	O		9.2.1.39		–	
>Minimum Spreading Factor	O		9.2.1.47		–	
>Minimum DL Power Capability	O		9.2.1.46A		–	
>Local Cell Group ID	O		9.2.1.37A		–	
>Reference Clock Availability	O		9.2.3.14A	TDD only	YES	ignore
>Power Local Cell Group ID	O		9.2.1.49B		YES	ignore
>HSDPA Capability	O		9.2.1.31Ga		YES	ignore
Local Cell Group Information		*0..<maxLocalCellinNodeB>*			EACH	ignore
>Local Cell Group ID	M		9.2.1.37A		–	
>DL Or Global Capacity Credit	M		9.2.1.20B		–	
>UL Capacity Credit	O		9.2.1.65A		–	
>Common Channels Capacity Consumption Law	M		9.2.1.9A		–	
>Dedicated Channels Capacity Consumption Law	M		9.2.1.20A		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore
Power Local Cell Group Information		*0..<maxLocalCellinNodeB>*			EACH	ignore
>Power Local Cell Group ID	M		9.2.1.49B		–	
>Maximum DL Power Capability	M		9.2.1.39		–	

Note 1: This information element is a simplified representation of the ASN.1. [TDD – Repetitions 1 to 8 and repetitions 9 to maxSCCPCHCell are represented by separate ASN.1 structures.] Furthermore, maxSCCPCHCell has different values in the ASN.1 for FDD and for each of the two TDD options.

Range Bound	Explanation
maxCellinNodeB	Maximum number of Cells that can be configured in Node B
maxCCPinNodeB	Maximum number of Communication Control Ports that can exist in the Node B
maxCPCHCell	Maximum number of CPCHs that can be defined in a Cell
maxLocalCellinNodeB	Maximum number of Local Cells that can exist in the Node B
maxPCPCHCell	Maximum number of PCPCHs that can be defined in a Cell
maxSCPICHCell	Maximum number of Secondary CPICHs that can be defined in a Cell.
maxSCCPCHCell	Maximum number of Secondary CCPCHs that can be defined in a Cell.
maxFACHCell	Maximum number of FACHs that can be defined in a Cell
maxPRACHCell	Maximum number of PRACHs that can be defined in a Cell
maxRACHCell	Maximum number of RACHs that can be defined in a Cell
maxFPACHCell	Maximum number of FPACHs that can be defined in a Cell

9.1.32 RESOURCE STATUS INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CHOICE *Indication Type*	M				YES	ignore
>No Failure					–	
>>Local Cell Information		*1..<max LocalCellinNodeB>*			EACH	ignore
>>>Local Cell ID	M		9.2.1.38		–	
>>>Add/Delete Indicator	M		9.2.1.1		–	
>>>DL Or Global Capacity Credit	C-add		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	C-add		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	C-add		9.2.1.20A		–	
>>>Maximum DL Power Capability	C-add		9.2.1.39		–	
>>>Minimum Spreading Factor	C-add		9.2.1.47		–	
>>>Minimum DL Power Capability	C-add		9.2.1.46A		–	
>>>Local Cell Group ID	O		9.2.1.37A		–	
>>>Reference Clock Availability	O		9.2.3.14A	TDD only	YES	ignore
>>>Power Local Cell Group ID	O		9.2.1.49B		YES	ignore
>>>HSDPA Capability	O		9.2.1.31Ga		YES	ignore
>>Local Cell Group Information		*0..<maxLocalCellinNodeB>*			EACH	ignore
>>>Local Cell Group ID	M		9.2.1.37A		–	
>>>DL Or Global Capacity Credit	M		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	M		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	M		9.2.1.20A		–	
>>Power Local Cell Group Information		*0..<maxLocalCellinNodeB>*			EACH	ignore
>>>Power Local Cell Group ID	M		9.2.1.49B		–	
>>>Maximum DL Power Capability	M		9.2.1.39		–	
>Service Impacting					–	
>>Local Cell Information		*0..<maxLocalCellinNodeB>*			EACH	ignore

>>>Local Cell ID	M		9.2.1.38		–	
>>>DL Or Global Capacity Credit	O		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	O		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	O		9.2.1.20A		–	
>>>Maximum DL Power Capability	O		9.2.1.39		–	
>>>Minimum Spreading Factor	O		9.2.1.47		–	
>>>Minimum DL Power Capability	O		9.2.1.46A		–	
>>>Reference Clock Availability	O		9.2.3.14A	TDD only	YES	ignore
>>>HSDPA Capability	O		9.2.1.31Ga		YES	ignore
>>Local Cell Group Information		*0..<maxLocalCellinNodeB>*			EACH	ignore
>>>Local Cell Group ID	M		9.2.1.37A		–	
>>>DL Or Global Capacity Credit	O		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	O		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	O		9.2.1.20A		–	
>>Communication Control Port Information		*0..<maxCCPinNodeB>*			EACH	ignore
>>>Communication Control Port ID	M		9.2.1.15		–	
>>>Resource Operational State	M		9.2.1.52		–	
>>>Availability Status	M		9.2.1.2		–	
>>Cell Information		*0..<maxCellinNodeB>*			EACH	ignore
>>>C-ID	M		9.2.1.9		–	
>>>Resource Operational State	O		9.2.1.52		–	
>>>Availability Status	O		9.2.1.2		–	
>>>Primary SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	FDD only	YES	ignore
>>>Secondary SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	FDD only	YES	ignore
>>>Primary CPICH Information	O		Common Physical	FDD only	YES	ignore

			Channel Status Information 9.2.1.13A			
>>>Secondary CPICH Information		*0..<maxSCPICHCell>*		FDD only	EACH	ignore
>>>>Secondary CPICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>Primary CCPCH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>>>BCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore
>>>Secondary CCPCH Information		*0..<maxSCCPCHCell>*		See note 1 below	EACH	ignore
>>>>Secondary CCPCH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>PCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore
>>>PICH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>>>FACH Information		*0..<maxFACHCell>*			EACH	ignore
>>>>FACH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
>>>PRACH Information		*0..<maxPRACHCell>*			EACH	ignore
>>>>PRACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>RACH Information		*0..<maxPRACHCell>*			EACH	ignore
>>>>RACH Individual	M		Common Transport		–	

Information			Channel Status Information 9.2.1.14B			
>>>AICH Information		*0..<maxPRACHCell>*		FDD only	EACH	ignore
>>>>AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>PCPCH Information		*0..<maxPCPCHCell>*		FDD only	EACH	ignore
>>>>PCPCH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>CPCH Information		*0..<maxCPCHCell>*		FDD only	EACH	ignore
>>>>CPCH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
>>>AP-AICH Information		*0..<maxCPCHCell>*		FDD only	EACH	ignore
>>>>AP-AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>CD/CA-ICH Information		*0..<maxCPCHCell>*		FDD only	EACH	ignore
>>>>CD/CA-ICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to 3.84Mcps TDD only	YES	ignore
>>>FPACH Information		*0..<maxFPACHCell>*		Applicable to 1.28Mcps TDD only	EACH	ignore
>>>>FPACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>DwPCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to 1.28Mcps TDD only	YES	ignore

>>>HS-DSCH Resources Information		*0..1*			YES	ignore
>>>>Resource Operational State	M		9.2.1.52		–	
>>>>Availability Status	M		9.2.1.2		–	
>>>MICH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>>Power Local Cell Group Information		*0..<maxLocalCellinNodeB>*			EACH	ignore
>>>Power Local Cell Group ID	M		9.2.1.49B		–	
>>>Maximum DL Power Capability	M		9.2.1.39		–	
Cause	O		9.2.1.6		YES	ignore

Note 1: This information element is a simplified representation of the ASN.1. [TDD – Repetitions 1 to 8 and repetitions 9 to maxSCCPCHCell are represented by separate ASN.1 structures.] Furthermore, maxSCCPCHCell has different values in the ASN.1 for FDD and for each of the two TDD options.

Condition	Explanation
add	The IE shall be present if the *Add/Delete Indicator* IE is set to "Add".

Range Bound	Explanation
maxLocalCellinNodeB	Maximum number of Local Cells that can exist in the Node B
maxCellinNodeB	Maximum number of C-IDs that can be configured in the Node B
maxCPCHCell	Maximum number of CPCHs that can be defined in a Cell
maxSCPICHCell	Maximum number of Secondary CPICHs that can be defined in a Cell.
maxSCCPCHCell	Maximum number of Secondary CCPCHs that can be defined in a Cell.
maxFACHCell	Maximum number of FACHs that can be defined in a Cell
maxPCPCHCell	Maximum number of PCPCHs that can be defined in a Cell
maxPRACHCell	Maximum number of PRACHs and AICHs that can be defined in a Cell
maxCCPinNodeB	Maximum number of Communication Control Ports that can exist in the Node B
maxFPACHCell	Maximum number of FPACHs that can be defined in a Cell

9.1.x MBMS NOTIFICATION UPDATE COMMAND

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	ignore
Common Physical Channel ID	M		9.2.1.13		YES	ignore
Modification Period	O		9.2.1.x3		YES	ignore
MICH CFN	M		9.2.1.x1		YES	ignore
NI Information		*1..<maxNoofNIs>*			GLOBAL	ignore
>NI	M		9.2.1.x3		–	

Range Bound	Explanation
maxNoofNIs	Maximum number of NIs

9.2.1.6 Cause

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE *Cause Group*	M			
>*Radio Network Layer*				
>>Radio Network Layer Cause	M		ENUMERATED (unknown C-ID, Cell not available, Power level not supported, DL radio resources not available, UL radio resources not available, RL Already Activated/allocated, Node B Resources Unavailable, Measurement not supported for the object, Combining Resources not available, Requested configuration not supported, Synchronization failure, Priority transport channel established, SIB Origination in Node B not Supported, Requested Tx Diversity Mode not supported, Unspecified, BCCH scheduling error, Measurement Temporarily not Available, Invalid CM Setting, Reconfiguration CFN not elapsed, Number of DL codes not supported, S-CPICH not supported, Combining not supported, UL SF not supported, DL SF not supported, Common Transport Channel Type not supported, Dedicated Transport Channel Type not supported, Downlink Shared Channel Type not supported, Uplink Shared Channel Type not supported, CM not supported, Tx diversity no longer supported, Unknown Local Cell ID, …, Number of UL codes not supported, Information temporarily not available, Information Provision not supported for the object, Cell Synchronisation not supported, Cell Synchronisation Adjustment not supported, DPC Mode Change not Supported,	

			IPDL already activated, IPDL not supported, IPDL parameters not available, Frequency Acquisition not supported, Power Balancing status not compatible, Requested type of Bearer Re-arrangement not supported, Signalling Bearer Re-arrangement not supported, Bearer Re-arrangement needed, Delayed Activation not Supported, RL Timing Adjustment not supported, MICH not supported)	
>Transport Layer				
>>Transport Layer Cause	M		ENUMERATED (Transport resource unavailable, Unspecified, …)	
>Protocol				
>>Protocol Cause	M		ENUMERATED (Transfer syntax error, Abstract syntax error (reject), Abstract syntax error (ignore and notify), Message not compatible with receiver state, Semantic error, Unspecified, Abstract syntax error (falsely constructed message), …)	
>Misc				
>>Miscellaneous Cause	M		ENUMERATED (Control processing overload Hardware failure, O&M intervention, Not enough user plane processing resources, Unspecified, …)	

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the concerned capability is missing. On the other hand, "not available" cause values indicate that the concerned capability is present, but insufficient resources were available to perform the requested action.

Radio Network Layer cause	Meaning
BCCH scheduling error	The Node B has detected an illegal BCCH schedule update (see subclause 8.2.16.3).
Bearer Re-arrangement needed	The Node B cannot perform the requested Radio Link Reconfiguration without bearer re-arrangement.

Cell not Available	The concerned cell or local cell is not available.
Cell Synchronisation not supported	The concernedcell(s) do not support Cell Synchronisation.
Combining not supported	The Node B does not support RL combining for the concernedcells.
Combining Resources Not Available	The value of the received *Diversity Control Field* IE was set to "Must", but the Node B cannot perform the requested combining.
CM not supported	The concerned cell(s) do not support Compressed Mode.
Common Transport Channel Type not supported	The concerned cell(s) do not support the RACH and/or FACH and/or CPCH Common Transport Channel Type.
Dedicated Transport Channel Type not supported	The concerned cell(s) do not support the Dedicated Transport Channel Type.
Delayed Activation not Supported	The concerned cell(s) do not support delayed activation of RLs.
DL Radio Resources not Available	The Node B does not have sufficient DL radio resources available.
DL SF not supported	The concerned cell(s) do not support the requested DL SF.
DL Shared Channel Type not supported	The concerned cell(s) do not support the Downlink Shared Channel Type.
DPC Mode Change not Supported	The concerned cells do not support DPC mode changes.
Frequency Acquisition not supported	The concerned cell(s) do not support Frequency Acquisition.
Information Provision not supported for the object	The requested information provision is not supported for the concerned object types.
Information temporarily not available	The requested information can temporarily not be provided.
Invalid CM Settings	The concerned cell(s) consider the requested Compressed Mode settings invalid.
IPDL already activated	The concerned cell(s) have already active IPDL ongoing.
IPDL not supported	The concerned cell(s) do not support the IPDL.
IPDL parameters not available	The concerned cell(s) do not have IPDL parameters defining IPDL to be applied.
Measurement not Supported For The Object	At least one of the concerned cell(s) does not support the requested measurement on the concerned object type.
Measurement Temporarily not Available	The Node B can temporarily not provide the requested measurement value.
MICH not supported	The concerned cell does not support MICH.
Node B resources unavailable	The Node B does not have sufficient resources available.
Number of DL codes not supported	The concerned cell(s) do not support the requested number of DL codes.
Number of UL codes not supported	The concerned cell(s) do not support the requested number of UL codes.
Power Level not Supported	A DL power level was requested which the concerned cell(s) do not support.
Power Balancing status not compatible	The power balancing status in the SRNC is not compatible with that of the Node B.
Priority transport channel established	The CRNC cannot perform the requested blocking since a transport channel with a high priority is present.
RL Timing Adjustment not Supported	The concerned cell(s) do not support adjustments of the RL timing.
Reconfiguration CFN not elapsed	The requested action cannot be performed due to that a RADIO LINK RECONFIGURATION COMMIT message was received previously, but the concerned CFN has not yet elapsed.
Requested Configuration not Supported	The concerned cell(s) do not support the requested configuration i.e. power levels, Transport Formats, physical channel parameters.
Requested Type of Bearer Re-arrangement not supported	The Node B does not support the requested type of bearer re-arrangement.
Requested Tx Diversity mode not supported	The concerned cell(s) do not support the requested transmit diversity mode.
RL already Activated/ allocated	The Node B has already allocated an RL with the requested RL-id for this UE context.
S-CPICH not supported	The concerned cell(s) do not support S-CPICH.
SIB Orgination in Node B not Supported	The Node B does not support the origination of the requested SIB for the concerned cell.
Signalling Bearer Re-arrangement not supported	The Node B does not support the Signalling bearer re-arrangement.
Synchronisation Failure	Loss of UL Uu synchronisation.
Cell Synchronisation Adjustment not supported	The concerned cell(s) do not support Cell Synchronisation Adjustment.

Tx diversity no longer supported	Tx diversity can no longer be supported in the concerned cell.
UL Radio Resources not Available	The Node B does not have sufficient UL radio resources available.
UL SF not supported	The concerned cell(s) do not support the requested minimum UL SF.
UL Shared Channel Type not supported	The concerned cell(s) do not support the Uplink Shared Channel Type.
Unknown C-ID	The Node B is not aware of a cell with the provided C-ID.
Unknown Local Cell ID	The Node B is not aware of a local cell with the provided Local Cell ID
Unspecified	Sent when none of the above cause values applies but still the cause is Radio Network layer related.

Transport Network Layer cause	**Meaning**
Transport resource unavailable	The required transport resources are not available.
Unspecified	Sent when none of the above cause values applies but still the cause is Transport Network layer related.

Protocol cause	**Meaning**
Abstract Syntax Error (Reject)	The received message included an abstract syntax error and the concerned criticality indicated "reject" (see subclause 10.3).
Abstract Syntax Error (Ignore and Notify)	The received message included an abstract syntax error and the concerned criticality indicated "ignore and notify" (see subclause 10.3).
Abstract syntax error (falsely constructed message)	The received message contained IEs in wrong order or with too many occurrences (see subclause 10.3).
Message not Compatible with Receiver State	The received message was not compatible with the receiver state (see subclause 10.4).
Semantic Error	The received message included a semantic error (see subclause 10.4).
Transfer Syntax Error	The received message included a transfer syntax error (see subclause 10.2).
Unspecified	Sent when none of the above cause values applies but still the cause is protocol related.

Miscellaneous cause	**Meaning**
Control Processing Overload	Node B control processing overload.
Hardware Failure	Node B hardware failure.
Not enough User Plane Processing Resources	Node B has insufficient user plane processing resources available.
O&M Intervention	Operation and Maintenance intervention related to Node B equipment.
Unspecified	Sent when none of the above cause values applies and the cause is not related to any of the categories Radio Network Layer, Transport Network Layer or Protocol.

9.2.1.x1 MICH CFN

The MICH CFN indicates the Connection Frame Number for the MICH. It corresponds to the Cell SFN of the frame in which the start of the S-CCPCH frame is located, see ref [7].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
MICH CFN			INTEGER (0..4095)	

9.2.1.x2 Modification Period

The Modification Period of the MICH, see ref. [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Modification Period			ENUMERATED (5120, 10240,…)	Unit: ms

9.2.1.46 Message Type

The Message Type uniquely identifies the message being sent.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Procedure ID	M	*1*		
>Procedure Code	M		INTEGER (0..255)	"0" = Audit "1" = Audit Required "2" = Block Resource "3" = Cell Deletion "4" = Cell Reconfiguration "5" = Cell Setup "6" = Common Measurement Failure "7" = Common Measurement Initiation "8" = Common Measurement Report "9" = Common Measurement Termination "10" = Common Transport Channel Delete "11" = Common Transport Channel Reconfigure "12" = Common Transport Channel Setup "13" = Reset "14" = Compressed Mode Command "16" = Dedicated Measurement Failure "17" = Dedicated Measurement Initiation "18" = Dedicated Measurement Report "19" = Dedicated Measurement Termination "20" = Downlink Power Control "21" = Error Indication (For Dedicated Procedures) "23" = Radio Link Addition "24" = Radio Link Deletion "25" = Radio Link Failure "26" = Radio Link Restoration "27" = Radio Link Setup "28" = Resource Status Indication "29" = Synchronised Radio Link Reconfiguration Cancellation "30" = Synchronised Radio Link Reconfiguration Commit "31" = Synchronised Radio Link Reconfiguration Preparation "32" = System Information Update "33" = Unblock Resource "34" = Unsynchronised Radio Link Reconfiguration "35" = Error Indication (For Common Procedures) "37" = Physical Shared Channel Reconfiguration "38" = Downlink Power Timeslot Control "39" = Radio Link Preemption "40" = Information Exchange Failure "41" = Information Exchange Initiation "42" = Information Exchange Termination "43" = Information Reporting "44" = Cell Synchronisation Adjustment "45" = Cell Synchronisation Initiation "46" = Cell Synchronisation Reconfiguration "47" = Cell Synchronisation Reporting "48" = Cell Synchronisation Termination "49" = Cell Synchronisation Failure "50" = Bearer Rearrangement "51" = Radio Link Activation “52” = Radio Link Parameter Update "53" = MBMS Notification Update
>Ddmode	M		ENUMERATED (TDD, FDD, Common, …)	Common = common to FDD and TDD.

Type of Message	M		ENUMERATED (Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome)	

9.2.1.49A PICH Power

The *PICH Power* IE indicates a power level relative to the [FDD - Primary CPICH power] [TDD - Primary CCPCH power] configured in a cell. If Transmit Diversity is applied to the PICH (resp. the MICH), the *PICH Power* IE indicates the power offset between the linear sum of the power for the PICH (resp. the MICH) on all branches and the [FDD - Primary CPICH power] [TDD - Primary CCPCH power] configured in a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PICH Power			INTEGER (-10..+5)	Unit: dB Range: -10 .. +5 dB Step: 1dB

9.2.1.x3 NI

The *NI* IE provides a Notification Indicator determined as specified in [xx].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
NI			INTEGER (0..65535)	

9.2.2.x MICH Mode

The number of Notification Indicators (NIs) transmitted in a MICH frame.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
MICH Mode			ENUMERATED (18, 36, 72, 144,…)	Number of NIs per frame

9.2.3.x Notification Indicator Length

The Notification Indicator Length indicates the number of symbols for Notification Indication transmitted in one timeslot (see ref [19]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Notification Indicator Length			ENUMERATED (2, 4, 8,…)	

9.3.2 Elementary Procedure Definitions

```
-- **************************************************************
--
-- Elementary Procedure definitions
--
-- **************************************************************

NBAP-PDU-Discriptions {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) nbap (2) version1 (1) nbap-PDU-Descriptions (0) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    Criticality,
    ProcedureID,
    MessageDiscriminator,
    TransactionID
FROM NBAP-CommonDataTypes

    CommonTransportChannelSetupRequestFDD,
    CommonTransportChannelSetupRequestTDD,
    CommonTransportChannelSetupResponse,
    CommonTransportChannelSetupFailure,
    CommonTransportChannelReconfigurationRequestFDD,
    CommonTransportChannelReconfigurationRequestTDD,
    CommonTransportChannelReconfigurationResponse,
    CommonTransportChannelReconfigurationFailure,
    CommonTransportChannelDeletionRequest,
    CommonTransportChannelDeletionResponse,
    BlockResourceRequest,
    BlockResourceResponse,
    BlockResourceFailure,
    UnblockResourceIndication,
    AuditFailure,
    AuditRequiredIndication,
    AuditRequest,
    AuditResponse,
    CommonMeasurementInitiationRequest,
    CommonMeasurementInitiationResponse,
    CommonMeasurementInitiationFailure,
    CommonMeasurementReport,
```

```
    CommonMeasurementTerminationRequest,
    CommonMeasurementFailureIndication,
    CellSetupRequestFDD,
    CellSetupRequestTDD,
    CellSetupResponse,
    CellSetupFailure,
    CellReconfigurationRequestFDD,
    CellReconfigurationRequestTDD,
    CellReconfigurationResponse,
    CellReconfigurationFailure,
    CellDeletionRequest,
    CellDeletionResponse,
    InformationExchangeInitiationRequest,
    InformationExchangeInitiationResponse,
    InformationExchangeInitiationFailure,
    InformationReport,
    InformationExchangeTerminationRequest,
    InformationExchangeFailureIndication,
    BearerRearrangementIndication,
    ResourceStatusIndication,
    SystemInformationUpdateRequest,
    SystemInformationUpdateResponse,
    SystemInformationUpdateFailure,
    ResetRequest,
    ResetResponse,
    RadioLinkActivationCommandFDD,
    RadioLinkActivationCommandTDD,
    RadioLinkPreemptionRequiredIndication,
    RadioLinkSetupRequestFDD,
    RadioLinkSetupRequestTDD,
    RadioLinkSetupResponseFDD,
    RadioLinkSetupResponseTDD,
    RadioLinkSetupFailureFDD,
    RadioLinkSetupFailureTDD,
    RadioLinkAdditionRequestFDD,
    RadioLinkAdditionRequestTDD,
    RadioLinkAdditionResponseFDD,
    RadioLinkAdditionResponseTDD,
    RadioLinkAdditionFailureFDD,
    RadioLinkAdditionFailureTDD,
    RadioLinkParameterUpdateIndicationFDD,
    RadioLinkParameterUpdateIndicationTDD,
    RadioLinkReconfigurationPrepareFDD,
    RadioLinkReconfigurationPrepareTDD,
    RadioLinkReconfigurationReady,
    RadioLinkReconfigurationFailure,
    RadioLinkReconfigurationCommit,
    RadioLinkReconfigurationCancel,
    RadioLinkReconfigurationRequestFDD,
    RadioLinkReconfigurationRequestTDD,
    RadioLinkReconfigurationResponse,
    RadioLinkDeletionRequest,
    RadioLinkDeletionResponse,
```

```
    DL-PowerControlRequest,
    DL-PowerTimeslotControlRequest,
    DedicatedMeasurementInitiationRequest,
    DedicatedMeasurementInitiationResponse,
    DedicatedMeasurementInitiationFailure,
    DedicatedMeasurementReport,
    DedicatedMeasurementTerminationRequest,
    DedicatedMeasurementFailureIndication,
    RadioLinkFailureIndication,
    RadioLinkRestoreIndication,
    CompressedModeCommand,
    ErrorIndication,
    PrivateMessage,
    PhysicalSharedChannelReconfigurationRequestTDD,
    PhysicalSharedChannelReconfigurationRequestFDD,
    PhysicalSharedChannelReconfigurationResponse,
    PhysicalSharedChannelReconfigurationFailure,
    CellSynchronisationInitiationRequestTDD,
    CellSynchronisationInitiationResponseTDD,
    CellSynchronisationInitiationFailureTDD,
    CellSynchronisationReconfigurationRequestTDD,
    CellSynchronisationReconfigurationResponseTDD,
    CellSynchronisationReconfigurationFailureTDD,
    CellSynchronisationAdjustmentRequestTDD,
    CellSynchronisationAdjustmentResponseTDD,
    CellSynchronisationAdjustmentFailureTDD,
    CellSynchronisationReportTDD,
    CellSynchronisationTerminationRequestTDD,
    CellSynchronisationFailureIndicationTDD,
    MBMSNotificationUpdateCommand
FROM NBAP-PDU-Contents

    id-audit,
    id-auditRequired,
    id-blockResource,
    id-cellDeletion,
    id-cellReconfiguration,
    id-cellSetup,
    id-cellSynchronisationInitiation,
    id-cellSynchronisationReconfiguration,
    id-cellSynchronisationReporting,
    id-cellSynchronisationTermination,
    id-cellSynchronisationFailure,
    id-commonMeasurementFailure,
    id-commonMeasurementInitiation,
    id-commonMeasurementReport,
    id-commonMeasurementTermination,
    id-commonTransportChannelDelete,
    id-commonTransportChannelReconfigure,
    id-commonTransportChannelSetup,
    id-compressedModeCommand,
    id-dedicatedMeasurementFailure,
    id-dedicatedMeasurementInitiation,
```

```
    id-dedicatedMeasurementReport,
    id-dedicatedMeasurementTermination,
    id-downlinkPowerControl,
    id-downlinkPowerTimeslotControl,
    id-errorIndicationForDedicated,
    id-errorIndicationForCommon,
    id-informationExchangeFailure,
    id-informationExchangeInitiation,
    id-informationReporting,
    id-informationExchangeTermination,
    id-BearerRearrangement,
    id-mBMSNotificationUpdate,
    id-physicalSharedChannelReconfiguration,
    id-privateMessageForDedicated,
    id-privateMessageForCommon,
    id-radioLinkActivation,
    id-radioLinkAddition,
    id-radioLinkDeletion,
    id-radioLinkFailure,
    id-radioLinkParameterUpdate,
    id-radioLinkPreemption,
    id-radioLinkRestoration,
    id-radioLinkSetup,
    id-reset,
    id-resourceStatusIndication,
    id-cellSynchronisationAdjustment,
    id-synchronisedRadioLinkReconfigurationCancellation,
    id-synchronisedRadioLinkReconfigurationCommit,
    id-synchronisedRadioLinkReconfigurationPreparation,
    id-systemInformationUpdate,
    id-unblockResource,
    id-unSynchronisedRadioLinkReconfiguration
FROM NBAP-Constants;

UNCHANGED TEXT IS REMOVED

-- **************************************************************
--
-- Interface Elementary Procedure List
--
-- **************************************************************

NBAP-ELEMENTARY-PROCEDURES NBAP-ELEMENTARY-PROCEDURE ::= {
    NBAP-ELEMENTARY-PROCEDURES-CLASS-1          |
    NBAP-ELEMENTARY-PROCEDURES-CLASS-2          ,
    ...
}

NBAP-ELEMENTARY-PROCEDURES-CLASS-1 NBAP-ELEMENTARY-PROCEDURE ::= {
    cellSetupFDD                                |
    cellSetupTDD                                |
    cellReconfigurationFDD                      |
    cellReconfigurationTDD                      |
```

```
    cellDeletion                                        |
    commonTransportChannelSetupFDD                      |
    commonTransportChannelSetupTDD                      |
    commonTransportChannelReconfigureFDD                |
    commonTransportChannelReconfigureTDD                |
    commonTransportChannelDelete                        |
    audit                                               |
    blockResource                                       |
    radioLinkSetupFDD                                   |
    radioLinkSetupTDD                                   |
    systemInformationUpdate                             |
    commonMeasurementInitiation                         |
    radioLinkAdditionFDD                                |
    radioLinkAdditionTDD                                |
    radioLinkDeletion                                   |
    reset                                               |
    synchronisedRadioLinkReconfigurationPreparationFDD  |
    synchronisedRadioLinkReconfigurationPreparationTDD  |
    unSynchronisedRadioLinkReconfigurationFDD           |
    unSynchronisedRadioLinkReconfigurationTDD           |
    dedicatedMeasurementInitiation                      |
    physicalSharedChannelReconfigurationTDD            ,
    ...,
    informationExchangeInitiation                       |
    cellSynchronisationInitiationTDD                    |
    cellSynchronisationReconfigurationTDD               |
    cellSynchronisationAdjustmentTDD                    |
    physicalSharedChannelReconfigurationFDD
}

NBAP-ELEMENTARY-PROCEDURES-CLASS-2 NBAP-ELEMENTARY-PROCEDURE ::= {
    resourceStatusIndication                            |
    auditRequired                                       |
    commonMeasurementReport                             |
    commonMeasurementTermination                        |
    commonMeasurementFailure                            |
    synchronisedRadioLinkReconfigurationCommit          |
    synchronisedRadioLinkReconfigurationCancellation    |
    radioLinkFailure                                    |
    radioLinkPreemption                                 |
    radioLinkRestoration                                |
    dedicatedMeasurementReport                          |
    dedicatedMeasurementTermination                     |
    dedicatedMeasurementFailure                         |
    downlinkPowerControlFDD                             |
    downlinkPowerTimeslotControl                        |
    compressedModeCommand                               |
    unblockResource                                     |
    errorIndicationForDedicated                         |
    errorIndicationForCommon                            |
    privateMessageForDedicated                          |
    privateMessageForCommon                            ,
    ...,
```

```
    informationReporting                            |
    informationExchangeTermination                  |
    informationExchangeFailure                      |
    cellSynchronisationReportingTDD                 |
    cellSynchronisationTerminationTDD               |
    cellSynchronisationFailureTDD                   |
    bearerRearrangement                             |
    radioLinkActivationFDD                          |
    radioLinkActivationTDD                          |
    radioLinkParameterUpdateFDD                     |
    radioLinkParameterUpdateTDD                     |
    mBMSNotificationUpdate
}

-- **************************************************************
--
-- Interface Elementary Procedures
--
-- **************************************************************


UNCHANGED TEXT IS REMOVED

-- Class 2

UNCHANGED TEXT IS REMOVED


-- *** RadioLinkParameterUpdate (TDD) ***
radioLinkParameterUpdateTDD NBAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      RadioLinkParameterUpdateIndicationTDD
    MESSAGE DISCRIMINATOR   dedicated
    PROCEDURE ID            { procedureCode id-radioLinkParameterUpdate, ddMode tdd }
    CRITICALITY             ignore
}

-- *** MBMSNotificationUpdate ***
mBMSNotificationUpdate NBAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      MBMSNotificationUpdateCommand
    MESSAGE DISCRIMINATOR   common
    PROCEDURE ID            { procedureCode id-mBMSNotificationUpdate, ddMode common }
    CRITICALITY             ignore
}

END
```

9.3.3 PDU Definitions

```
-- **************************************************************
--
-- PDU definitions for NBAP.
--
-- **************************************************************

NBAP-PDU-Contents {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) nbap (2) version1 (1) nbap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    Active-Pattern-Sequence-Information,
    AddorDeleteIndicator,
    AICH-Power,
    AICH-TransmissionTiming,
    AllocationRetentionPriority,
    APPreambleSignature,
    APSubChannelNumber,
    AvailabilityStatus,
    BCCH-ModificationTime,
    BindingID,
    BlockingPriorityIndicator,
    SCTD-Indicator,
    Cause,
    CCTrCH-ID,
    CDSubChannelNumbers,
    CellParameterID,
    CellPortionID,
    CellSyncBurstCode,
    CellSyncBurstCodeShift,
    CellSyncBurstRepetitionPeriod,
    CellSyncBurstSIR,
    CellSyncBurstTiming,
    CellSyncBurstTimingThreshold,
    CFN,
    Channel-Assignment-Indication,
    ChipOffset,
    C-ID,
    Closedlooptimingadjustmentmode,
    CommonChannelsCapacityConsumptionLaw,
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```
    Compressed-Mode-Deactivation-Flag,
    CommonMeasurementAccuracy,
    CommonMeasurementType,
    CommonMeasurementValue,
    CommonMeasurementValueInformation,
    CommonPhysicalChannelID,
    Common-PhysicalChannel-Status-Information,
    Common-TransportChannel-Status-Information,
    CommonTransportChannelID,
    CommonTransportChannel-InformationResponse,
    CommunicationControlPortID,
    ConfigurationGenerationID,
    ConstantValue,
    CriticalityDiagnostics,
    CPCH-Allowed-Total-Rate,
    CPCHScramblingCodeNumber,
    CPCH-UL-DPCCH-SlotFormat,
    CRNC-CommunicationContextID,
    CSBMeasurementID,
    CSBTransmissionID,
    DCH-FDD-Information,
    DCH-InformationResponse,
    DCH-ID,
    FDD-DCHs-to-Modify,
    TDD-DCHs-to-Modify,
    DCH-TDD-Information,
    DedicatedChannelsCapacityConsumptionLaw,
    DedicatedMeasurementType,
    DedicatedMeasurementValue,
    DedicatedMeasurementValueInformation,
    DelayedActivation,
    DelayedActivationUpdate,
    DiversityControlField,
    DiversityMode,
    DL-DPCH-SlotFormat,
    DL-DPCH-TimingAdjustment,
    DL-or-Global-CapacityCredit,
    DL-Power,
    DL-PowerBalancing-Information,
    DL-PowerBalancing-ActivationIndicator,
    DLPowerAveragingWindowSize,
    DL-PowerBalancing-UpdatedIndicator,
    DL-ScramblingCode,
    DL-TimeslotISCP,
    DL-Timeslot-Information,
    DL-TimeslotLCR-Information,
    DL-TimeslotISCPInfo,
    DL-TimeslotISCPInfoLCR,
    DL-TPC-Pattern01Count,
    DPC-Mode,
    DPCH-ID,
    DSCH-ID,
    DSCH-FDD-Common-Information,
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    DSCH-FDD-Information,
    DSCH-InformationResponse,
    DSCH-TDD-Information,
    DwPCH-Power,
    End-Of-Audit-Sequence-Indicator,
    EnhancedDSCHPC,
    EnhancedDSCHPCCounter,
    EnhancedDSCHPCIndicator,
    EnhancedDSCHPCWnd,
    EnhancedDSCHPowerOffset,
    FDD-DL-ChannelisationCodeNumber,
    FDD-DL-CodeInformation,
    FDD-S-CCPCH-Offset,
    FDD-TPC-DownlinkStepSize,
    FirstRLS-Indicator,
    FNReportingIndicator,
    FPACH-Power,
    FrameAdjustmentValue,
    FrameHandlingPriority,
    FrameOffset,
    HSDPA-Capability,
    HS-PDSCH-FDD-Code-Information,
    HS-SCCH-ID,
    HS-SCCH-FDD-Code-Information,
    HS-SICH-ID,
    IB-OC-ID,
    IB-SG-DATA,
    IB-SG-POS,
    IB-SG-REP,
    IB-Type,
    InformationExchangeID,
    InformationReportCharacteristics,
    InformationType,
    InnerLoopDLPCStatus,
    IPDL-FDD-Parameters,
    IPDL-TDD-Parameters,
    IPDL-Indicator,
    IPDL-TDD-Parameters-LCR,
    LimitedPowerIncrease,
    Local-Cell-ID,
    MaximumDL-PowerCapability,
    Maximum-PDSCH-Power,
    MaximumTransmissionPower,
    Max-Number-of-PCPCHes,
    MaxNrOfUL-DPDCHs,
    MaxPRACH-MidambleShifts,
    MeasurementFilterCoefficient,
    MeasurementID,
    MeasurementRecoveryBehavior,
    MeasurementRecoveryReportingIndicator,
    MeasurementRecoverySupportIndicator,
    MICH-CFN,
    MICH-Mode,
```

```
    MidambleAllocationMode,
    MidambleShiftAndBurstType,
    MidambleShiftLCR,
    MinimumDL-PowerCapability,
    MinSpreadingFactor,
    MinUL-ChannelisationCodeLength,
    Modification-Period,
    MultiplexingPosition,
    NEOT,
    NCyclesPerSFNperiod,
    NFmax,
    NRepetitionsPerCyclePeriod,
    N-INSYNC-IND,
    N-OUTSYNC-IND,
    NeighbouringCellMeasurementInformation,
    NeighbouringFDDCellMeasurementInformation,
    NeighbouringTDDCellMeasurementInformation,
    NI-Information,
    NodeB-CommunicationContextID,
    NotificationIndicatorLength,
    NumberOfReportedCellPortions,
    NStartMessage,
    NSubCyclesPerCyclePeriod,
    PagingIndicatorLength,
    PayloadCRC-PresenceIndicator,
    PCCPCH-Power,
    PCP-Length,
    PDSCH-CodeMapping,
    PDSCHSet-ID,
    PDSCH-ID,
    PICH-Mode,
    PICH-Power,
    PowerAdjustmentType,
    PowerOffset,
    PowerRaiseLimit,
    PRACH-Midamble,
    PreambleSignatures,
    PreambleThreshold,
    PredictedSFNSFNDeviationLimit,
    PredictedTUTRANGPSDeviationLimit,
    PrimaryCPICH-Power,
    Primary-CPICH-Usage-for-Channel-Estimation,
    PrimaryScramblingCode,
    PropagationDelay,
    SCH-TimeSlot,
    PunctureLimit,
    PUSCHSet-ID,
    PUSCH-ID,
    QE-Selector,
    Qth-Parameter,
    RACH-SlotFormat,
    RACH-SubChannelNumbers,
    ReferenceClockAvailability,
```

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    ReferenceSFNoffset,
    RepetitionLength,
    RepetitionPeriod,
    ReportCharacteristics,
    RequestedDataValue,
    RequestedDataValueInformation,
    ResourceOperationalState,
    RL-Set-ID,
    RL-ID,
    RL-Specific-DCH-Info,
    Received-total-wide-band-power-Value,
    AdjustmentPeriod,
    ScaledAdjustmentRatio,
    MaxAdjustmentStep,
    RNC-ID,
    ScramblingCodeNumber,
    Secondary-CPICH-Information-Change,
    SecondaryCCPCH-SlotFormat,
    Segment-Type,
    S-FieldLength,
    SFN,
    SFNSFNChangeLimit,
    SFNSFNDriftRate,
    SFNSFNDriftRateQuality,
    SFNSFNQuality,
    ShutdownTimer,
    SIB-Originator,
    SpecialBurstScheduling,
    SignallingBearerRequestIndicator,
    SSDT-Cell-Identity,
    SSDT-CellID-Length,
    SSDT-Indication,
    Start-Of-Audit-Sequence-Indicator,
    STTD-Indicator,
    SSDT-SupportIndicator,
    SyncCase,
    SYNCDlCodeId,
    SyncFrameNumber,
    SynchronisationReportCharacteristics,
    SynchronisationReportType,
    T-Cell,
    T-RLFAILURE,
    TDD-ChannelisationCode,
    TDD-ChannelisationCodeLCR,
    TDD-DL-Code-LCR-Information,
    TDD-DPCHOffset,
    TDD-TPC-DownlinkStepSize,
    TDD-PhysicalChannelOffset,
    TDD-UL-Code-LCR-Information,
    TFCI2-BearerInformationResponse,
    TFCI2BearerRequestIndicator,
    TFCI-Coding,
    TFCI-Presence,
```

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    TFCI-SignallingMode,
    TFCS,
    TimeSlot,
    TimeSlotLCR,
    TimeSlotDirection,
    TimeSlotStatus,
    TimingAdjustmentValue,
    TimingAdvanceApplied,
    TnlQos,
    ToAWE,
    ToAWS,
    TransmissionDiversityApplied,
    TransmitDiversityIndicator,
    TransmissionGapPatternSequenceCodeInformation,
    Transmission-Gap-Pattern-Sequence-Information,
    TransportBearerRequestIndicator,
    TransportFormatSet,
    TransportLayerAddress,
    TSTD-Indicator,
    TUTRANGPS,
    TUTRANGPSChangeLimit,
    TUTRANGPSDriftRate,
    TUTRANGPSDriftRateQuality,
    TUTRANGPSQuality,
    UARFCN,
    UC-Id,
    USCH-Information,
    USCH-InformationResponse,
    UL-CapacityCredit,
    UL-DPCCH-SlotFormat,
    UL-SIR,
    UL-FP-Mode,
    UL-PhysCH-SF-Variation,
    UL-ScramblingCode,
    UL-Timeslot-Information,
    UL-TimeslotLCR-Information,
    UL-TimeSlot-ISCP-Info,
    UL-TimeSlot-ISCP-LCR-Info,
    UL-TimeslotISCP-Value,
    UL-TimeslotISCP-Value-IncrDecrThres,
    USCH-ID,
    HSDSCH-FDD-Information,
    HSDSCH-FDD-Information-Response,
    HSDSCH-Information-to-Modify,
    HSDSCH-Information-to-Modify-Unsynchronised,
    HSDSCH-MACdFlow-ID,
    HSDSCH-MACdFlows-Information,
    HSDSCH-MACdFlows-to-Delete,
    HSDSCH-RNTI,
    HSDSCH-TDD-Information,
    HSDSCH-TDD-Information-Response,
    PrimaryCCPCH-RSCP,
```

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    HSDSCH-FDD-Update-Information,
    HSDSCH-TDD-Update-Information,
    UL-Synchronisation-Parameters-LCR,
    TDD-DL-DPCH-TimeSlotFormat-LCR,
    TDD-UL-DPCH-TimeSlotFormat-LCR,
    TDD-TPC-UplinkStepSize-LCR,
    CellSyncBurstTimingLCR,
    TimingAdjustmentValueLCR,
    PrimaryCCPCH-RSCP-Delta
FROM NBAP-IEs

    PrivateIE-Container{},
    ProtocolExtensionContainer{},
    ProtocolIE-Container{},
    ProtocolIE-Single-Container{},
    ProtocolIE-ContainerList{},
    NBAP-PRIVATE-IES,
    NBAP-PROTOCOL-IES,
    NBAP-PROTOCOL-EXTENSION
FROM NBAP-Containers

    id-Active-Pattern-Sequence-Information,
    id-Additional-S-CCPCH-Parameters-CTCH-ReconfRqstTDD,
    id-Additional-S-CCPCH-Parameters-CTCH-SetupRqstTDD,
    id-Additional-S-CCPCH-LCR-Parameters-CTCH-ReconfRqstTDD,
    id-Additional-S-CCPCH-LCR-Parameters-CTCH-SetupRqstTDD,
    id-AdjustmentRatio,
    id-AICH-Information,
    id-AICH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-AP-AICH-Information,
    id-AP-AICH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-BCH-Information,
    id-BCCH-ModificationTime,
    id-bindingID,
    id-BlockingPriorityIndicator,
    id-Cause,
    id-CauseLevel-PSCH-ReconfFailure,
    id-CauseLevel-RL-AdditionFailureFDD,
    id-CauseLevel-RL-AdditionFailureTDD,
    id-CauseLevel-RL-ReconfFailure,
    id-CauseLevel-RL-SetupFailureFDD,
    id-CauseLevel-RL-SetupFailureTDD,
    id-CauseLevel-SyncAdjustmntFailureTDD,
    id-CCP-InformationItem-AuditRsp,
    id-CCP-InformationList-AuditRsp,
    id-CCP-InformationItem-ResourceStatusInd,
    id-CCTrCH-InformationItem-RL-FailureInd,
    id-CCTrCH-InformationItem-RL-RestoreInd,
    id-CCTrCH-Initial-DL-Power-RL-AdditionRqstTDD,
    id-CCTrCH-Initial-DL-Power-RL-ReconfPrepTDD,
    id-CCTrCH-Initial-DL-Power-RL-SetupRqstTDD,
    id-CDCA-ICH-Information,
    id-CDCA-ICH-ParametersListIE-CTCH-ReconfRqstFDD,
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    id-CellAdjustmentInfo-SyncAdjustmntRqstTDD,
    id-CellAdjustmentInfoItem-SyncAdjustmentRqstTDD,
    id-Cell-InformationItem-AuditRsp,
    id-Cell-InformationItem-ResourceStatusInd,
    id-Cell-InformationList-AuditRsp,
    id-CellParameterID,
    id-CellPortion-InformationItem-Cell-SetupRqstFDD,
    id-CellPortion-InformationList-Cell-SetupRqstFDD,
    id-CellSyncBurstTransInit-CellSyncInitiationRqstTDD,
    id-CellSyncBurstMeasureInit-CellSyncInitiationRqstTDD,
    id-cellSyncBurstRepetitionPeriod,
    id-CellSyncBurstTransReconfiguration-CellSyncReconfRqstTDD,
    id-CellSyncBurstTransReconfInfo-CellSyncReconfRqstTDD,
    id-CellSyncBurstMeasReconfiguration-CellSyncReconfRqstTDD,
    id-CellSyncBurstMeasInfoList-CellSyncReconfRqstTDD,
    id-CellSyncBurstInfoList-CellSyncReconfRqstTDD,
    id-CellSyncInfo-CellSyncReprtTDD,
    id-CFN,
    id-CFNReportingIndicator,
    id-C-ID,
    id-Closed-Loop-Timing-Adjustment-Mode,
    id-CommonMeasurementAccuracy,
    id-CommonMeasurementObjectType-CM-Rprt,
    id-CommonMeasurementObjectType-CM-Rqst,
    id-CommonMeasurementObjectType-CM-Rsp,
    id-CommonMeasurementType,
    id-CommonPhysicalChannelID,
    id-CommonPhysicalChannelType-CTCH-ReconfRqstFDD,
    id-CommonPhysicalChannelType-CTCH-SetupRqstFDD,
    id-CommonPhysicalChannelType-CTCH-SetupRqstTDD,
    id-CommunicationContextInfoItem-Reset,
    id-CommunicationControlPortID,
    id-CommunicationControlPortInfoItem-Reset,
    id-Compressed-Mode-Deactivation-Flag,
    id-ConfigurationGenerationID,
    id-CPCH-Information,
    id-CPCH-Parameters-CTCH-SetupRsp,
    id-CPCH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-CRNC-CommunicationContextID,
    id-CriticalityDiagnostics,
    id-CSBTransmissionID,
    id-CSBMeasurementID,
    id-DCHs-to-Add-FDD,
    id-DCHs-to-Add-TDD,
    id-DCH-AddList-RL-ReconfPrepTDD,
    id-DCH-DeleteList-RL-ReconfPrepFDD,
    id-DCH-DeleteList-RL-ReconfPrepTDD,
    id-DCH-DeleteList-RL-ReconfRqstFDD,
    id-DCH-DeleteList-RL-ReconfRqstTDD,
    id-DCH-FDD-Information,
    id-DCH-TDD-Information,
    id-DCH-InformationResponse,
    id-DCH-RearrangeList-Bearer-RearrangeInd,
```

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    id-DSCH-RearrangeList-Bearer-RearrangeInd,
    id-FDD-DCHs-to-Modify,
    id-TDD-DCHs-to-Modify,
    id-DedicatedMeasurementObjectType-DM-Rprt,
    id-DedicatedMeasurementObjectType-DM-Rqst,
    id-DedicatedMeasurementObjectType-DM-Rsp,
    id-DedicatedMeasurementType,
    id-DelayedActivation,
    id-DelayedActivationList-RL-ActivationCmdFDD,
    id-DelayedActivationList-RL-ActivationCmdTDD,
    id-DelayedActivationInformation-RL-ActivationCmdFDD,
    id-DelayedActivationInformation-RL-ActivationCmdTDD,
    id-DL-CCTrCH-InformationAddList-RL-ReconfPrepTDD,
    id-DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD,
    id-DL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD,
    id-DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD,
    id-DL-CCTrCH-InformationItem-RL-SetupRqstTDD,
    id-DL-CCTrCH-InformationList-RL-AdditionRqstTDD,
    id-DL-CCTrCH-InformationList-RL-SetupRqstTDD,
    id-DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD,
    id-DL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD,
    id-DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD,
    id-DL-DPCH-InformationAddListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-InformationItem-RL-AdditionRqstTDD,
    id-DL-DPCH-InformationList-RL-SetupRqstTDD,
    id-DL-DPCH-InformationModify-AddListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-InformationModify-DeleteListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-InformationModify-ModifyListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-Information-RL-ReconfPrepFDD,
    id-DL-DPCH-Information-RL-ReconfRqstFDD,
    id-DL-DPCH-Information-RL-SetupRqstFDD,
    id-DL-DPCH-TimingAdjustment,
    id-DL-PowerBalancing-Information,
    id-DL-PowerBalancing-ActivationIndicator,
    id-DL-ReferencePowerInformationItem-DL-PC-Rqst,
    id-DL-PowerBalancing-UpdatedIndicator,
    id-DLReferencePower,
    id-DLReferencePowerList-DL-PC-Rqst,
    id-DL-TPC-Pattern01Count,
    id-DPC-Mode,
    id-DPCHConstant,
    id-DSCH-AddItem-RL-ReconfPrepFDD,
    id-DSCHs-to-Add-FDD,
    id-DSCH-DeleteItem-RL-ReconfPrepFDD,
    id-DSCH-DeleteList-RL-ReconfPrepFDD,
    id-DSCHs-to-Add-TDD,
    id-DSCH-Information-DeleteList-RL-ReconfPrepTDD,
    id-DSCH-Information-ModifyList-RL-ReconfPrepTDD,
    id-DSCH-InformationResponse,
    id-DSCH-FDD-Information,
    id-DSCH-FDD-Common-Information,
    id-DSCH-TDD-Information,
    id-DSCH-ModifyItem-RL-ReconfPrepFDD,
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    id-DSCH-ModifyList-RL-ReconfPrepFDD,
    id-End-Of-Audit-Sequence-Indicator,
    id-EnhancedDSCHPC,
    id-EnhancedDSCHPCIndicator,
    id-FACH-Information,
    id-FACH-ParametersList-CTCH-ReconfRqstTDD,
    id-FACH-ParametersList-CTCH-SetupRsp,
    id-FACH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-FACH-ParametersListIE-CTCH-SetupRqstFDD,
    id-FACH-ParametersListIE-CTCH-SetupRqstTDD,
    id-IndicationType-ResourceStatusInd,
    id-InformationExchangeID,
    id-InformationExchangeObjectType-InfEx-Rqst,
    id-InformationExchangeObjectType-InfEx-Rsp,
    id-InformationExchangeObjectType-InfEx-Rprt,
    id-InformationReportCharacteristics,
    id-InformationType,
    id-InitDL-Power,
    id-InnerLoopDLPCStatus,
    id-IntStdPhCellSyncInfoItem-CellSyncReprtTDD,
    id-IPDLParameter-Information-Cell-ReconfRqstFDD,
    id-IPDLParameter-Information-Cell-SetupRqstFDD,
    id-IPDLParameter-Information-Cell-ReconfRqstTDD,
    id-IPDLParameter-Information-Cell-SetupRqstTDD,
    id-LateEntranceCellSyncInfoItem-CellSyncReprtTDD,
    id-Limited-power-increase-information-Cell-SetupRqstFDD,
    id-Local-Cell-ID,
    id-Local-Cell-Group-InformationItem-AuditRsp,
    id-Local-Cell-Group-InformationItem-ResourceStatusInd,
    id-Local-Cell-Group-InformationItem2-ResourceStatusInd,
    id-Local-Cell-Group-InformationList-AuditRsp,
    id-Local-Cell-InformationItem-AuditRsp,
    id-Local-Cell-InformationItem-ResourceStatusInd,
    id-Local-Cell-InformationItem2-ResourceStatusInd,
    id-Local-Cell-InformationList-AuditRsp,
    id-AdjustmentPeriod,
    id-MaxAdjustmentStep,
    id-MaximumTransmissionPower,
    id-MeasurementFilterCoefficient,
    id-MeasurementID,
    id-MeasurementRecoveryBehavior,
    id-MeasurementRecoveryReportingIndicator,
    id-MeasurementRecoverySupportIndicator,
    id-MIB-SB-SIB-InformationList-SystemInfoUpdateRqst,
    id-MICH-CFN,
    id-MICH-Information-AuditRsp,
    id-MICH-Information-ResourceStatusInd,
    id-MICH-Parameters-CTCH-ReconfRqstFDD,
    id-MICH-Parameters-CTCH-ReconfRqstTDD,
    id-MICH-Parameters-CTCH-SetupRqstFDD,
    id-MICH-Parameters-CTCH-SetupRqstTDD,
    id-Modification-Period,
    id-multipleRL-dl-DPCH-InformationList,
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    id-multipleRL-dl-DPCH-InformationModifyList,
    id-multipleRL-ul-DPCH-InformationList,
    id-multipleRL-ul-DPCH-InformationModifyList,
    id-NCyclesPerSFNperiod,
    id-NeighbouringCellMeasurementInformation,
    id-NI-Information-NotifUpdateCmd,
    id-NodeB-CommunicationContextID,
    id-NRepetitionsPerCyclePeriod,
    id-NumberOfReportedCellPortions,
    id-P-CCPCH-Information,
    id-P-CPICH-Information,
    id-P-SCH-Information,
    id-PCCPCH-Information-Cell-ReconfRqstTDD,
    id-PCCPCH-Information-Cell-SetupRqstTDD,
    id-PCH-Parameters-CTCH-ReconfRqstTDD,
    id-PCH-Parameters-CTCH-SetupRsp,
    id-PCH-ParametersItem-CTCH-ReconfRqstFDD,
    id-PCH-ParametersItem-CTCH-SetupRqstFDD,
    id-PCH-ParametersItem-CTCH-SetupRqstTDD,
    id-PCH-Information,
    id-PCPCH-Information,
    id-PICH-ParametersItem-CTCH-ReconfRqstFDD,
    id-PDSCH-Information-AddListIE-PSCH-ReconfRqst,
    id-PDSCH-Information-Cell-SetupRqstFDD,
    id-PDSCH-Information-Cell-ReconfRqstFDD,
    id-PDSCH-Information-ModifyListIE-PSCH-ReconfRqst,
    id-PDSCH-RL-ID,
    id-PDSCHSets-AddList-PSCH-ReconfRqst,
    id-PDSCHSets-DeleteList-PSCH-ReconfRqst,
    id-PDSCHSets-ModifyList-PSCH-ReconfRqst,
    id-PICH-Information,
    id-PICH-Parameters-CTCH-ReconfRqstTDD,
    id-PICH-ParametersItem-CTCH-SetupRqstTDD,
    id-PowerAdjustmentType,
    id-Power-Local-Cell-Group-InformationItem-AuditRsp,
    id-Power-Local-Cell-Group-InformationItem-ResourceStatusInd,
    id-Power-Local-Cell-Group-InformationItem2-ResourceStatusInd,
    id-Power-Local-Cell-Group-InformationList-AuditRsp,
    id-Power-Local-Cell-Group-InformationList-ResourceStatusInd,
    id-Power-Local-Cell-Group-InformationList2-ResourceStatusInd,
    id-Power-Local-Cell-Group-ID,
    id-PRACH-Information,
    id-PRACHConstant,
    id-PRACH-ParametersItem-CTCH-SetupRqstTDD,
    id-PRACH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-PrimaryCCPCH-Information-Cell-ReconfRqstFDD,
    id-PrimaryCCPCH-Information-Cell-SetupRqstFDD,
    id-PrimaryCPICH-Information-Cell-ReconfRqstFDD,
    id-PrimaryCPICH-Information-Cell-SetupRqstFDD,
    id-Primary-CPICH-Usage-for-Channel-Estimation,
    id-PrimarySCH-Information-Cell-ReconfRqstFDD,
    id-PrimarySCH-Information-Cell-SetupRqstFDD,
    id-PrimaryScramblingCode,
```

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    id-SCH-Information-Cell-ReconfRqstTDD,
    id-SCH-Information-Cell-SetupRqstTDD,
    id-PUSCH-Information-AddListIE-PSCH-ReconfRqst,
    id-PUSCH-Information-ModifyListIE-PSCH-ReconfRqst,
    id-PUSCHConstant,
    id-PUSCHSets-AddList-PSCH-ReconfRqst,
    id-PUSCHSets-DeleteList-PSCH-ReconfRqst,
    id-PUSCHSets-ModifyList-PSCH-ReconfRqst,
    id-Qth-Parameter,
    id-RACH-Information,
    id-RACH-Parameters-CTCH-SetupRsp,
    id-RACH-ParametersItem-CTCH-SetupRqstFDD,
    id-RACH-ParameterItem-CTCH-SetupRqstTDD,
    id-ReferenceClockAvailability,
    id-ReferenceSFNoffset,
    id-ReportCharacteristics,
    id-Reporting-Object-RL-FailureInd,
    id-Reporting-Object-RL-RestoreInd,
    id-ResetIndicator,
    id-RL-ID,
    id-RL-InformationItem-DM-Rprt,
    id-RL-InformationItem-DM-Rqst,
    id-RL-InformationItem-DM-Rsp,
    id-RL-InformationItem-RL-AdditionRqstFDD,
    id-RL-informationItem-RL-DeletionRqst,
    id-RL-InformationItem-RL-FailureInd,
    id-RL-InformationItem-RL-PreemptRequiredInd,
    id-RL-InformationItem-RL-ReconfPrepFDD,
    id-RL-InformationItem-RL-ReconfRqstFDD,
    id-RL-InformationItem-RL-RestoreInd,
    id-RL-InformationItem-RL-SetupRqstFDD,
    id-RL-InformationList-RL-AdditionRqstFDD,
    id-RL-informationList-RL-DeletionRqst,
    id-RL-InformationList-RL-PreemptRequiredInd,
    id-RL-InformationList-RL-ReconfPrepFDD,
    id-RL-InformationList-RL-ReconfRqstFDD,
    id-RL-InformationList-RL-SetupRqstFDD,
    id-RL-InformationResponseItem-RL-AdditionRspFDD,
    id-RL-InformationResponseItem-RL-ReconfReady,
    id-RL-InformationResponseItem-RL-ReconfRsp,
    id-RL-InformationResponseItem-RL-SetupRspFDD,
    id-RL-InformationResponseList-RL-AdditionRspFDD,
    id-RL-InformationResponseList-RL-ReconfReady,
    id-RL-InformationResponseList-RL-ReconfRsp,
    id-RL-InformationResponseList-RL-SetupRspFDD,
    id-RL-InformationResponse-RL-AdditionRspTDD,
    id-RL-InformationResponse-RL-SetupRspTDD,
    id-RL-Information-RL-AdditionRqstTDD,
    id-RL-Information-RL-ReconfRqstTDD,
    id-RL-Information-RL-ReconfPrepTDD,
    id-RL-Information-RL-SetupRqstTDD,
    id-RL-ReconfigurationFailureItem-RL-ReconfFailure,
    id-RL-Set-InformationItem-DM-Rprt,
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    id-RL-Set-InformationItem-DM-Rsp,
    id-RL-Set-InformationItem-RL-FailureInd,
    id-RL-Set-InformationItem-RL-RestoreInd,
    id-RL-Specific-DCH-Info,
    id-S-CCPCH-Information,
    id-S-CCPCH-InformationListExt-AuditRsp,
    id-S-CCPCH-InformationListExt-ResourceStatusInd,
    id-S-CCPCH-LCR-InformationListExt-AuditRsp,
    id-S-CCPCH-LCR-InformationListExt-ResourceStatusInd,
    id-S-CPICH-Information,
    id-SCH-Information,
    id-S-SCH-Information,
    id-Secondary-CCPCHListIE-CTCH-ReconfRqstTDD,
    id-Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD,
    id-Secondary-CCPCH-Parameters-CTCH-ReconfRqstTDD,
    id-Secondary-CPICH-Information,
    id-SecondaryCPICH-InformationItem-Cell-ReconfRqstFDD,
    id-SecondaryCPICH-InformationItem-Cell-SetupRqstFDD,
    id-SecondaryCPICH-InformationList-Cell-ReconfRqstFDD,
    id-SecondaryCPICH-InformationList-Cell-SetupRqstFDD,
    id-Secondary-CPICH-Information-Change,
    id-SecondarySCH-Information-Cell-ReconfRqstFDD,
    id-SecondarySCH-Information-Cell-SetupRqstFDD,
    id-SegmentInformationListIE-SystemInfoUpdate,
    id-SFN,
    id-SFNReportingIndicator,
    id-ShutdownTimer,
    id-SignallingBearerRequestIndicator,
    id-SSDT-CellIDforEDSCHPC,
    id-Start-Of-Audit-Sequence-Indicator,
    id-Successful-RL-InformationRespItem-RL-AdditionFailureFDD,
    id-Successful-RL-InformationRespItem-RL-SetupFailureFDD,
    id-Synchronisation-Configuration-Cell-ReconfRqst,
    id-Synchronisation-Configuration-Cell-SetupRqst,
    id-SyncCase,
    id-SyncCaseIndicatorItem-Cell-SetupRqstTDD-PSCH,
    id-SyncFrameNumber,
    id-SynchronisationReportType,
    id-SynchronisationReportCharacteristics,
    id-SyncReportType-CellSyncReprtTDD,
    id-T-Cell,
    id-TargetCommunicationControlPortID,
    id-TFCI2-Bearer-Information-RL-SetupRqstFDD,
    id-TFCI2-BearerInformationResponse,
    id-TFCI2BearerRequestIndicator,
    id-TFCI2-BearerSpecificInformation-RL-ReconfPrepFDD,
    id-Transmission-Gap-Pattern-Sequence-Information,
    id-TimeSlotConfigurationList-Cell-ReconfRqstTDD,
    id-TimeSlotConfigurationList-Cell-SetupRqstTDD,
    id-timeslotInfo-CellSyncInitiationRqstTDD,
    id-TimeslotISCPInfo,
    id-TimingAdvanceApplied,
    id-TnlQos,
```

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    id-TransmissionDiversityApplied,
    id-transportlayeraddress,
    id-Tstd-indicator,
    id-UARFCNforNt,
    id-UARFCNforNd,
    id-UARFCNforNu,
    id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationItem-RL-SetupRqstTDD,
    id-UL-CCTrCH-InformationList-RL-AdditionRqstTDD,
    id-UL-CCTrCH-InformationList-RL-SetupRqstTDD,
    id-UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD,
    id-UL-DPCH-InformationAddListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-InformationItem-RL-AdditionRqstTDD,
    id-UL-DPCH-InformationList-RL-SetupRqstTDD,
    id-UL-DPCH-InformationModify-AddListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-InformationModify-DeleteListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-InformationModify-ModifyListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-Information-RL-ReconfPrepFDD,
    id-UL-DPCH-Information-RL-ReconfRqstFDD,
    id-UL-DPCH-Information-RL-SetupRqstFDD,
    id-Unsuccessful-cell-InformationRespItem-SyncAdjustmntFailureTDD,
    id-Unsuccessful-PDSCHSetItem-PSCH-ReconfFailureTDD,
    id-Unsuccessful-PUSCHSetItem-PSCH-ReconfFailureTDD,
    id-Unsuccessful-RL-InformationRespItem-RL-AdditionFailureFDD,
    id-Unsuccessful-RL-InformationRespItem-RL-SetupFailureFDD,
    id-Unsuccessful-RL-InformationResp-RL-AdditionFailureTDD,
    id-Unsuccessful-RL-InformationResp-RL-SetupFailureTDD,
    id-USCH-Information-Add,
    id-USCH-Information-DeleteList-RL-ReconfPrepTDD,
    id-USCH-Information-ModifyList-RL-ReconfPrepTDD,
    id-USCH-InformationResponse,
    id-USCH-Information,
    id-USCH-RearrangeList-Bearer-RearrangeInd,
    id-DL-DPCH-LCR-Information-RL-SetupRqstTDD,
    id-DwPCH-LCR-Information    ,
    id-DwPCH-LCR-InformationList-AuditRsp,
    id-DwPCH-LCR-Information-Cell-SetupRqstTDD,
    id-DwPCH-LCR-Information-Cell-ReconfRqstTDD,
    id-DwPCH-LCR-Information-ResourceStatusInd,
    id-maxFACH-Power-LCR-CTCH-SetupRqstTDD,
    id-maxFACH-Power-LCR-CTCH-ReconfRqstTDD,
    id-FPACH-LCR-Information,
    id-FPACH-LCR-Information-AuditRsp,
    id-FPACH-LCR-InformationList-AuditRsp,
    id-FPACH-LCR-InformationList-ResourceStatusInd,
    id-FPACH-LCR-Parameters-CTCH-SetupRqstTDD,
    id-FPACH-LCR-Parameters-CTCH-ReconfRqstTDD,
    id-PCCPCH-LCR-Information-Cell-SetupRqstTDD,
```

```
    id-PCH-Power-LCR-CTCH-SetupRqstTDD,
    id-PCH-Power-LCR-CTCH-ReconfRqstTDD,
    id-PICH-LCR-Parameters-CTCH-SetupRqstTDD,
    id-PRACH-LCR-ParametersList-CTCH-SetupRqstTDD,
    id-RL-InformationResponse-LCR-RL-SetupRspTDD    ,
    id-Secondary-CCPCH-LCR-parameterList-CTCH-SetupRqstTDD,
    id-TimeSlot,
    id-TimeSlotConfigurationList-LCR-Cell-ReconfRqstTDD,
    id-TimeSlotConfigurationList-LCR-Cell-SetupRqstTDD,
    id-TimeslotISCP-LCR-InfoList-RL-SetupRqstTDD,
    id-TimeSlotLCR-CM-Rqst,
    id-UL-DPCH-LCR-Information-RL-SetupRqstTDD,
    id-DL-DPCH-InformationItem-LCR-RL-AdditionRqstTDD,
    id-UL-DPCH-InformationItem-LCR-RL-AdditionRqstTDD,
    id-TimeslotISCP-InformationList-LCR-RL-AdditionRqstTDD,
    id-DL-DPCH-LCR-InformationAddList-RL-ReconfPrepTDD,
    id-DL-DPCH-LCR-InformationModify-AddList-RL-ReconfPrepTDD,
    id-DL-Timeslot-LCR-InformationModify-ModifyList-RL-ReconfPrepTDD,
    id-TimeslotISCPInfoList-LCR-DL-PC-RqstTDD,
    id-UL-DPCH-LCR-InformationAddListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-LCR-InformationModify-AddList,
    id-UL-TimeslotLCR-Information-RL-ReconfPrepTDD,
    id-UL-SIRTarget,
    id-PDSCH-AddInformation-LCR-PSCH-ReconfRqst,
    id-PDSCH-AddInformation-LCR-AddListIE-PSCH-ReconfRqst,
    id-PDSCH-ModifyInformation-LCR-PSCH-ReconfRqst,
    id-PDSCH-ModifyInformation-LCR-ModifyListIE-PSCH-ReconfRqst,
    id-PUSCH-AddInformation-LCR-PSCH-ReconfRqst,
    id-PUSCH-AddInformation-LCR-AddListIE-PSCH-ReconfRqst,
    id-PUSCH-ModifyInformation-LCR-PSCH-ReconfRqst,
    id-PUSCH-ModifyInformation-LCR-ModifyListIE-PSCH-ReconfRqst,
    id-PUSCH-Info-DM-Rqst,
    id-PUSCH-Info-DM-Rsp,
    id-PUSCH-Info-DM-Rprt,
    id-RL-InformationResponse-LCR-RL-AdditionRspTDD,
    id-IPDLParameter-Information-LCR-Cell-SetupRqstTDD,
    id-IPDLParameter-Information-LCR-Cell-ReconfRqstTDD,
    id-HS-PDSCH-HS-SCCH-MaxPower-PSCH-ReconfRqst,
    id-HS-PDSCH-HS-SCCH-ScramblingCode-PSCH-ReconfRqst,
    id-HS-PDSCH-FDD-Code-Information-PSCH-ReconfRqst,
    id-HS-SCCH-FDD-Code-Information-PSCH-ReconfRqst,
    id-HS-PDSCH-TDD-Information-PSCH-ReconfRqst,
    id-Add-To-HS-SCCH-Resource-Pool-PSCH-ReconfRqst,
    id-Modify-HS-SCCH-Resource-Pool-PSCH-ReconfRqst,
    id-Delete-From-HS-SCCH-Resource-Pool-PSCH-ReconfRqst,
    id-SYNCDlCodeId-TransInitLCR-CellSyncInitiationRqstTDD,
    id-SYNCDlCodeId-MeasureInitLCR-CellSyncInitiationRqstTDD,
    id-SYNCDlCodeIdTransReconfInfoLCR-CellSyncReconfRqstTDD,
    id-SYNCDlCodeIdMeasReconfigurationLCR-CellSyncReconfRqstTDD,
    id-SYNCDlCodeIdMeasInfoList-CellSyncReconfRqstTDD,
    id-SyncDLCodeIdsMeasInfoList-CellSyncReprtTDD,
    id-NSubCyclesPerCyclePeriod-CellSyncReconfRqstTDD,
    id-DwPCH-Power,
```

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    id-AccumulatedClockupdate-CellSyncReprtTDD,
    id-HSDPA-Capability,
    id-HSDSCH-FDD-Information,
    id-HSDSCH-FDD-Information-Response,
    id-HSDSCH-Information-to-Modify,
    id-HSDSCH-Information-to-Modify-Unsynchronised,
    id-HSDSCH-MACdFlows-to-Add,
    id-HSDSCH-MACdFlows-to-Delete,
    id-HSDSCH-RearrangeList-Bearer-RearrangeInd,
    id-HSDSCH-Resources-Information-AuditRsp,
    id-HSDSCH-Resources-Information-ResourceStatusInd,
    id-HSDSCH-RNTI,
    id-HSDSCH-TDD-Information,
    id-HSDSCH-TDD-Information-Response,
    id-HSPDSCH-RL-ID,
    id-HSSICH-Info-DM-Rprt,
    id-HSSICH-Info-DM-Rqst,
    id-HSSICH-Info-DM-Rsp,
    id-PrimCCPCH-RSCP-DL-PC-RqstTDD,
    id-HSDSCH-FDD-Update-Information,
    id-HSDSCH-TDD-Update-Information,
    id-UL-Synchronisation-Parameters-LCR,
    id-DL-DPCH-TimeSlotFormat-LCR-ModifyItem-RL-ReconfPrepTDD,
    id-UL-DPCH-TimeSlotFormat-LCR-ModifyItem-RL-ReconfPrepTDD,
    id-CCTrCH-Maximum-DL-Power-RL-SetupRqstTDD,
    id-CCTrCH-Minimum-DL-Power-RL-SetupRqstTDD,
    id-CCTrCH-Maximum-DL-Power-RL-AdditionRqstTDD,
    id-CCTrCH-Minimum-DL-Power-RL-AdditionRqstTDD,
    id-CCTrCH-Maximum-DL-Power-InformationAdd-RL-ReconfPrepTDD,
    id-CCTrCH-Minimum-DL-Power-InformationAdd-RL-ReconfPrepTDD,
    id-CCTrCH-Maximum-DL-Power-InformationModify-RL-ReconfPrepTDD,
    id-CCTrCH-Minimum-DL-Power-InformationModify-RL-ReconfPrepTDD,
    id-Maximum-DL-Power-Modify-LCR-InformationModify-RL-ReconfPrepTDD,
    id-Minimum-DL-Power-Modify-LCR-InformationModify-RL-ReconfPrepTDD,
    id-DL-DPCH-LCR-InformationModify-ModifyList-RL-ReconfRqstTDD,
    id-CCTrCH-Maximum-DL-Power-InformationModify-RL-ReconfRqstTDD,
    id-CCTrCH-Minimum-DL-Power-InformationModify-RL-ReconfRqstTDD,
    id-TDD-TPC-UplinkStepSize-LCR-RL-SetupRqstTDD,
    id-TDD-TPC-UplinkStepSize-LCR-RL-AdditionRqstTDD,
    id-TDD-TPC-DownlinkStepSize-RL-AdditionRqstTDD,
    id-TDD-TPC-UplinkStepSize-InformationAdd-LCR-RL-ReconfPrepTDD,
    id-TDD-TPC-UplinkStepSize-InformationModify-LCR-RL-ReconfPrepTDD,
    id-TDD-TPC-DownlinkStepSize-InformationModify-RL-ReconfPrepTDD,
    id-TDD-TPC-DownlinkStepSize-InformationAdd-RL-ReconfPrepTDD,
    id-TimeslotISCP-LCR-InfoList-RL-ReconfPrepTDD,
    id-TimingAdjustmentValueLCR,
    id-PrimaryCCPCH-RSCP-Delta,


    maxNrOfCCTrCHs,
    maxNrOfCellSyncBursts,
    maxNrOfCodes,
    maxNrOfCPCHs,
```

```
    maxNrOfDCHs,
    maxNrOfDLTSs,
    maxNrOfDLTSLCRs,
    maxNrOfDPCHs,
    maxNrOfDPCHLCRs,
    maxNrOfDSCHs,
    maxNrOfFACHs,
    maxNrOfRLs,
    maxNrOfRLs-1,
    maxNrOfRLs-2,
    maxNrOfRLSets,
    maxNrOfPCPCHs,
    maxNrOfPDSCHs,
    maxNrOfPUSCHs,
    maxNrOfPRACHLCRs,
    maxNrOfPDSCHSets,
    maxNrOfPUSCHSets,
    maxNrOfReceptsPerSyncFrame,
    maxNrOfSCCPCHs,
    maxNrOfSCCPCHsinExt,
    maxNrOfSCCPCHLCRs,
    maxNrOfSCCPCHsLCRinExt,
    maxNrOfULTSs,
    maxNrOfULTSLCRs,
    maxNrOfUSCHs,
    maxAPSigNum,
    maxCPCHCell,
    maxFACHCell,
    maxFPACHCell,
    maxNoofLen,
    maxRACHCell,
    maxPCPCHCell,
    maxPRACHCell,
    maxSCCPCHCell,
    maxSCCPCHCellinExt,
    maxSCCPCHCellinExtLCR,
    maxSCPICHCell,
    maxCellinNodeB,
    maxCCPinNodeB,
    maxCommunicationContext,
    maxLocalCellinNodeB,
    maxNrOfSlotFormatsPRACH,
    maxIB,
    maxIBSEG,
    maxNrOfCellPortionsPerCell,
    maxNrOfHSSCCHs,
    maxNrOfHSSICHs,
    maxNrOfHSPDSCHs,
    maxNrOfSyncFramesLCR,
    maxNrOfReceptionsperSyncFrameLCR,
    maxNrOfSyncDLCodesLCR,
    maxNrOfMACdFlows
FROM NBAP-Constants;
```

```
-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL SETUP REQUEST FDD
--
-- **************************************************************

CommonTransportChannelSetupRequestFDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonTransportChannelSetupRequestFDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonTransportChannelSetupRequestFDD-Extensions}}     OPTIONAL,
    ...
}

CommonTransportChannelSetupRequestFDD-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

CommonTransportChannelSetupRequestFDD-IEs NBAP-PROTOCOL-IES ::= {
    { ID    id-C-ID                                         CRITICALITY reject      TYPE    C-ID                        PRESENCE mandatory   }|
    { ID    id-ConfigurationGenerationID                    CRITICALITY reject      TYPE    ConfigurationGenerationID   PRESENCE mandatory   }|
    { ID    id-CommonPhysicalChannelType-CTCH-SetupRqstFDD      CRITICALITY ignore      TYPE    CommonPhysicalChannelType-CTCH-SetupRqstFDD   PRESENCE
    mandatory   },
    ...
}

CommonPhysicalChannelType-CTCH-SetupRqstFDD ::= CHOICE {
    secondary-CCPCH-parameters      Secondary-CCPCH-CTCH-SetupRqstFDD,
    pRACH-parameters                PRACH-CTCH-SetupRqstFDD,
    pCPCHes-parameters              PCPCH-CTCH-SetupRqstFDD,
    ...
}

Secondary-CCPCH-CTCH-SetupRqstFDD ::= SEQUENCE {
    commonPhysicalChannelID                 CommonPhysicalChannelID,
    fdd-S-CCPCH-Offset                      FDD-S-CCPCH-Offset,
    dl-ScramblingCode                       DL-ScramblingCode   OPTIONAL,
    -- This IE shall be present if the PCH Parameters IE is not present
    fdd-DL-ChannelisationCodeNumber         FDD-DL-ChannelisationCodeNumber,
    tFCS                                    TFCS,
    secondary-CCPCH-SlotFormat              SecondaryCCPCH-SlotFormat,
    tFCI-Presence                           TFCI-Presence   OPTIONAL,
    -- This IE shall be present if the Secondary CCPCH Slot Format is set to any of the values from 8 to 17
    multiplexingPosition                    MultiplexingPosition,
    powerOffsetInformation                  PowerOffsetInformation-CTCH-SetupRqstFDD,
    sTTD-Indicator                          STTD-Indicator,
    fACH-Parameters                         FACH-ParametersList-CTCH-SetupRqstFDD       OPTIONAL,
    pCH-Parameters                          PCH-Parameters-CTCH-SetupRqstFDD            OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer  { { Secondary-CCPCHItem-CTCH-SetupRqstFDD-ExtIEs} }    OPTIONAL,
    ...
}

Secondary-CCPCHItem-CTCH-SetupRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-MICH-Parameters-CTCH-SetupRqstFDD       CRITICALITY reject  EXTENSION MICH-Parameters-CTCH-SetupRqstFDD    PRESENCE optional },
```

```
    ...
}

PowerOffsetInformation-CTCH-SetupRqstFDD ::= SEQUENCE {
    pO1-ForTFCI-Bits                    PowerOffset,
    pO3-ForPilotBits                    PowerOffset,
    iE-Extensions                       ProtocolExtensionContainer { { PowerOffsetInformation-CTCH-SetupRqstFDD-ExtIEs} }  OPTIONAL,
    ...
}

PowerOffsetInformation-CTCH-SetupRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

FACH-ParametersList-CTCH-SetupRqstFDD ::= ProtocolIE-Single-Container {{ FACH-ParametersListIEs-CTCH-SetupRqstFDD }}

FACH-ParametersListIEs-CTCH-SetupRqstFDD NBAP-PROTOCOL-IES ::= {
    { ID id-FACH-ParametersListIE-CTCH-SetupRqstFDD   CRITICALITY reject    TYPE FACH-ParametersListIE-CTCH-SetupRqstFDD PRESENCE mandatory }
}

FACH-ParametersListIE-CTCH-SetupRqstFDD ::= SEQUENCE (SIZE (1..maxNrOfFACHs)) OF FACH-ParametersItem-CTCH-SetupRqstFDD

FACH-ParametersItem-CTCH-SetupRqstFDD ::= SEQUENCE {
    commonTransportChannelID            CommonTransportChannelID,
    transportFormatSet                  TransportFormatSet,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    maxFACH-Power                       DL-Power,
    iE-Extensions                       ProtocolExtensionContainer  { { FACH-ParametersItem-CTCH-SetupRqstFDD-ExtIEs} }     OPTIONAL,
    ...
}

FACH-ParametersItem-CTCH-SetupRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
{ ID    id-bindingID                        CRITICALITY ignore      EXTENSION   BindingID                           PRESENCE    optional }|
{ ID    id-transportlayeraddress            CRITICALITY ignore      EXTENSION   TransportLayerAddress               PRESENCE    optional },
    ...
}

PCH-Parameters-CTCH-SetupRqstFDD ::= ProtocolIE-Single-Container {{ PCH-ParametersIE-CTCH-SetupRqstFDD }}

PCH-ParametersIE-CTCH-SetupRqstFDD NBAP-PROTOCOL-IES ::= {
    { ID id-PCH-ParametersItem-CTCH-SetupRqstFDD   CRITICALITY reject   TYPE PCH-ParametersItem-CTCH-SetupRqstFDD   PRESENCE mandatory }
}

PCH-ParametersItem-CTCH-SetupRqstFDD ::= SEQUENCE {
    commonTransportChannelID            CommonTransportChannelID,
    transportFormatSet                  TransportFormatSet,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    pCH-Power                           DL-Power,
    pICH-Parameters                     PICH-Parameters-CTCH-SetupRqstFDD,
    iE-Extensions                       ProtocolExtensionContainer  { { PCH-ParametersItem-CTCH-SetupRqstFDD-ExtIEs} }   OPTIONAL,
    ...
```

```
}

PCH-ParametersItem-CTCH-SetupRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-bindingID                    CRITICALITY ignore      EXTENSION   BindingID                   PRESENCE    optional }|
    { ID    id-transportlayeraddress        CRITICALITY ignore      EXTENSION   TransportLayerAddress       PRESENCE    optional },
    ...
}

PICH-Parameters-CTCH-SetupRqstFDD ::= SEQUENCE {
    commonPhysicalChannelID                 CommonPhysicalChannelID,
    fdd-dl-ChannelisationCodeNumber         FDD-DL-ChannelisationCodeNumber,
    pICH-Power                              PICH-Power,
    pICH-Mode                               PICH-Mode,
    sTTD-Indicator                          STTD-Indicator,
    iE-Extensions                           ProtocolExtensionContainer { { PICH-Parameters-CTCH-SetupRqstFDD-ExtIEs} }     OPTIONAL,
    ...
}

PICH-Parameters-CTCH-SetupRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MICH-Parameters-CTCH-SetupRqstFDD ::= SEQUENCE {
    commonPhysicalChannelID                 CommonPhysicalChannelID,
    fdd-dl-ChannelisationCodeNumber         FDD-DL-ChannelisationCodeNumber,
    mICH-Power                              PICH-Power,
    mICH-Mode                               MICH-Mode,
    sTTD-Indicator                          STTD-Indicator,
    iE-Extensions                           ProtocolExtensionContainer { { PICH-Parameters-CTCH-SetupRqstFDD-ExtIEs} }     OPTIONAL,
    ...
}

PICH-Parameters-CTCH-SetupRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRACH-CTCH-SetupRqstFDD ::= SEQUENCE {
    commonPhysicalChannelID                 CommonPhysicalChannelID,
    scramblingCodeNumber                    ScramblingCodeNumber,
    tFCS                                    TFCS,
    preambleSignatures                      PreambleSignatures,
    allowedSlotFormatInformation            AllowedSlotFormatInformationList-CTCH-SetupRqstFDD,
    rACH-SubChannelNumbers                  RACH-SubChannelNumbers,
    ul-punctureLimit                        PunctureLimit,
    preambleThreshold                       PreambleThreshold,
    rACH-Parameters                         RACH-Parameters-CTCH-SetupRqstFDD,
    aICH-Parameters                         AICH-Parameters-CTCH-SetupRqstFDD,
    iE-Extensions                           ProtocolExtensionContainer { { PRACHItem-CTCH-SetupRqstFDD-ExtIEs} }     OPTIONAL,
    ...
}

PRACHItem-CTCH-SetupRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
```

```
}
```

UNCHANGED TEXT IS REMOVED

```
-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL SETUP REQUEST TDD
--
-- **************************************************************

CommonTransportChannelSetupRequestTDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonTransportChannelSetupRequestTDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonTransportChannelSetupRequestTDD-Extensions}}          OPTIONAL,
    ...
}

CommonTransportChannelSetupRequestTDD-IEs NBAP-PROTOCOL-IES ::= {
    { ID    id-C-ID                                     CRITICALITY reject  TYPE C-ID                                   PRESENCE mandatory   }|
    { ID    id-ConfigurationGenerationID                CRITICALITY reject  TYPE ConfigurationGenerationID           PRESENCE mandatory   }|
    { ID    id-CommonPhysicalChannelType-CTCH-SetupRqstTDD  CRITICALITY ignore  TYPE CommonPhysicalChannelType-CTCH-SetupRqstTDD     PRESENCE
    mandatory   },
    ...
}

CommonTransportChannelSetupRequestTDD-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

CommonPhysicalChannelType-CTCH-SetupRqstTDD ::= CHOICE {
    secondary-CCPCH-parameters                  Secondary-CCPCH-CTCH-SetupRqstTDD,
    pRACH-parameters                            PRACH-CTCH-SetupRqstTDD,
    ...
}

Secondary-CCPCH-CTCH-SetupRqstTDD ::= SEQUENCE {
    sCCPCH-CCTrCH-ID                            CCTrCH-ID,  -- For DL CCTrCH supporting one or several Secondary CCPCHs
    tFCS                                        TFCS,       -- For DL CCTrCH supporting one or several Secondary CCPCHs
    tFCI-Coding                                 TFCI-Coding,
    punctureLimit                               PunctureLimit,
    secondaryCCPCH-parameterList                Secondary-CCPCH-parameterList-CTCH-SetupRqstTDD,
    fACH-ParametersList                         FACH-ParametersList-CTCH-SetupRqstTDD       OPTIONAL,
    pCH-Parameters                              PCH-Parameters-CTCH-SetupRqstTDD            OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer  {{Secondary-CCPCHItem-CTCH-SetupRqstTDD-ExtIEs}}   OPTIONAL,
    ...
}

Secondary-CCPCHItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-Tstd-indicator                      CRITICALITY reject  EXTENSION TSTD-Indicator    PRESENCE
optional    }|,
    { ID id-MICH-Parameters-CTCH-SetupRqstTDD          CRITICALITY reject  EXTENSION MICH-Parameters-CTCH-SetupRqstTDD     PRESENCE optional }|
    { ID id-Additional-S-CCPCH-Parameters-CTCH-SetupRqstTDD         CRITICALITY reject  EXTENSION Secondary-CCPCH-parameterExtendedList-CTCH-
SetupRqstTDD        PRESENCE optional   }|
    -- Applicable to 3.84Mcps TDD only, used when more than maxNrOfSCCPCHs SCCPCHs are to be established.
```

```
    { ID id-Additional-S-CCPCH-LCR-Parameters-CTCH-SetupRqstTDD     CRITICALITY reject  EXTENSION Secondary-CCPCH-LCR-parameterExtendedList-CTCH-SetupRqstTDD        PRESENCE optional   },
    -- Applicable to 1.28Mcps TDD only, used when more than maxNrOfSCCPCHLCRs SCCPCHs are to be established.
    ...
}

Secondary-CCPCH-parameterList-CTCH-SetupRqstTDD ::= ProtocolIE-Single-Container {{ Secondary-CCPCH-parameterListIEs-CTCH-SetupRqstTDD }}

Secondary-CCPCH-parameterListIEs-CTCH-SetupRqstTDD NBAP-PROTOCOL-IES ::= {
    { ID id-Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD   CRITICALITY reject  TYPE Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD    PRESENCE optional }|
    { ID id-Secondary-CCPCH-LCR-parameterList-CTCH-SetupRqstTDD CRITICALITY reject  TYPE Secondary-CCPCH-LCR-parameterList-CTCH-SetupRqstTDD  PRESENCE optional }
}

Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHs)) OF Secondary-CCPCH-parameterItem-CTCH-SetupRqstTDD

Secondary-CCPCH-parameterItem-CTCH-SetupRqstTDD ::= SEQUENCE {
    commonPhysicalChannelID                     CommonPhysicalChannelID,
    tdd-ChannelisationCode                      TDD-ChannelisationCode,
    timeslot                                    TimeSlot,
    midambleShiftandBurstType                   MidambleShiftAndBurstType,
    tdd-PhysicalChannelOffset                   TDD-PhysicalChannelOffset,
    repetitionPeriod                            RepetitionPeriod,
    repetitionLength                            RepetitionLength,
    s-CCPCH-Power                               DL-Power,
    iE-Extensions                               ProtocolExtensionContainer { { Secondary-CCPCH-parameterItem-CTCH-SetupRqstTDD-ExtIEs} }   OPTIONAL,
    ...
}

Secondary-CCPCH-parameterItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

FACH-ParametersList-CTCH-SetupRqstTDD ::= ProtocolIE-Single-Container {{ FACH-ParametersListIEs-CTCH-SetupRqstTDD }}

FACH-ParametersListIEs-CTCH-SetupRqstTDD NBAP-PROTOCOL-IES ::= {
    { ID id-FACH-ParametersListIE-CTCH-SetupRqstTDD   CRITICALITY reject    TYPE FACH-ParametersListIE-CTCH-SetupRqstTDD PRESENCE mandatory }
}

FACH-ParametersListIE-CTCH-SetupRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfFACHs)) OF FACH-ParametersItem-CTCH-SetupRqstTDD

FACH-ParametersItem-CTCH-SetupRqstTDD ::= SEQUENCE {
    commonTransportChannelID                CommonTransportChannelID,
    fACH-CCTrCH-ID                          CCTrCH-ID,
    dl-TransportFormatSet                   TransportFormatSet,
    toAWS                                   ToAWS,
    toAWE                                   ToAWE,
    iE-Extensions                           ProtocolExtensionContainer  { { FACH-ParametersItem-CTCH-SetupRqstTDD-ExtIEs} }    OPTIONAL,
    ...
}

FACH-ParametersItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
```

```
    { ID    id-maxFACH-Power-LCR-CTCH-SetupRqstTDD  CRITICALITY reject  EXTENSION DL-Power                          PRESENCE optional }|
    -- Applicable to 1.28Mcps TDD only
    { ID    id-bindingID                            CRITICALITY ignore  EXTENSION BindingID                      PRESENCE optional }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID    id-transportlayeraddress                CRITICALITY ignore  EXTENSION TransportLayerAddress         PRESENCE optional },
    -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

PCH-Parameters-CTCH-SetupRqstTDD ::= ProtocolIE-Single-Container {{ PCH-ParametersIE-CTCH-SetupRqstTDD }}

PCH-ParametersIE-CTCH-SetupRqstTDD NBAP-PROTOCOL-IES ::= {
    { ID id-PCH-ParametersItem-CTCH-SetupRqstTDD   CRITICALITY reject   TYPE PCH-ParametersItem-CTCH-SetupRqstTDD   PRESENCE mandatory }
}

PCH-ParametersItem-CTCH-SetupRqstTDD ::= SEQUENCE {
    commonTransportChannelID                CommonTransportChannelID,
    pCH-CCTrCH-ID                           CCTrCH-ID,
    dl-TransportFormatSet                   TransportFormatSet, -- For the DL.
    toAWS                                   ToAWS,
    toAWE                                   ToAWE,
    pICH-Parameters                         PICH-Parameters-CTCH-SetupRqstTDD,
    iE-Extensions                           ProtocolExtensionContainer  { { PCH-ParametersItem-CTCH-SetupRqstTDD-ExtIEs} }     OPTIONAL,
    ...
}

PCH-ParametersItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-PCH-Power-LCR-CTCH-SetupRqstTDD          CRITICALITY reject  EXTENSION DL-Power                  PRESENCE optional }|
    { ID    id-bindingID                                CRITICALITY ignore  EXTENSION BindingID                 PRESENCE optional }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID    id-transportlayeraddress                    CRITICALITY ignore  EXTENSION TransportLayerAddress     PRESENCE optional },
    -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

PICH-Parameters-CTCH-SetupRqstTDD ::= ProtocolIE-Single-Container {{ PICH-ParametersIE-CTCH-SetupRqstTDD }}

PICH-ParametersIE-CTCH-SetupRqstTDD NBAP-PROTOCOL-IES ::= {
    { ID id-PICH-ParametersItem-CTCH-SetupRqstTDD   CRITICALITY reject  TYPE PICH-ParametersItem-CTCH-SetupRqstTDD  PRESENCE optional }|
    { ID id-PICH-LCR-Parameters-CTCH-SetupRqstTDD   CRITICALITY reject  TYPE PICH-LCR-Parameters-CTCH-SetupRqstTDD  PRESENCE optional }
}

PICH-ParametersItem-CTCH-SetupRqstTDD ::= SEQUENCE {
    commonPhysicalChannelID                 CommonPhysicalChannelID,
    tdd-ChannelisationCode                  TDD-ChannelisationCode,
    timeSlot                                TimeSlot,
    midambleshiftAndBurstType               MidambleShiftAndBurstType,
    tdd-PhysicalChannelOffset               TDD-PhysicalChannelOffset,
    repetitionPeriod                        RepetitionPeriod,
    repetitionLength                        RepetitionLength,
    pagingIndicatorLength                   PagingIndicatorLength,
    pICH-Power                              PICH-Power,
    iE-Extensions                           ProtocolExtensionContainer  { { PICH-ParametersItem-CTCH-SetupRqstTDD-ExtIEs} }    OPTIONAL,
```

```
    ...
}

PICH-ParametersItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PICH-LCR-Parameters-CTCH-SetupRqstTDD ::= SEQUENCE {
    commonPhysicalChannelID                 CommonPhysicalChannelID,
    tdd-ChannelisationCodeLCR               TDD-ChannelisationCodeLCR,
    timeSlotLCR                             TimeSlotLCR,
    midambleShiftLCR                        MidambleShiftLCR,
    tdd-PhysicalChannelOffset               TDD-PhysicalChannelOffset,
    repetitionPeriod                        RepetitionPeriod,
    repetitionLength                        RepetitionLength,
    pagingIndicatorLength                   PagingIndicatorLength,
    pICH-Power                              PICH-Power,
    second-TDD-ChannelisationCodeLCR        TDD-ChannelisationCodeLCR,
    iE-Extensions                           ProtocolExtensionContainer  { { PICH-LCR-ParametersItem-CTCH-SetupRqstTDD-ExtIEs} }   OPTIONAL,
    ...
}

PICH-LCR-ParametersItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
{ ID    id-Tstd-indicator           CRITICALITY reject      EXTENSION   TSTD-Indicator      PRESENCE                optional },
    -- Applicable to 1.28 Mcps TDD only
    ...
}

Secondary-CCPCH-LCR-parameterList-CTCH-SetupRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHLCRs)) OF Secondary-CCPCH-LCR-parameterItem-CTCH-SetupRqstTDD

Secondary-CCPCH-LCR-parameterItem-CTCH-SetupRqstTDD ::= SEQUENCE {
    commonPhysicalChannelID                     CommonPhysicalChannelID,
    tdd-ChannelisationCodeLCR                   TDD-ChannelisationCodeLCR,
    timeslotLCR                                 TimeSlotLCR,
    midambleShiftLCR                            MidambleShiftLCR,
    tdd-PhysicalChannelOffset                   TDD-PhysicalChannelOffset,
    repetitionPeriod                            RepetitionPeriod,
    repetitionLength                            RepetitionLength,
    s-CCPCH-Power                               DL-Power,
    s-CCPCH-TimeSlotFormat-LCR                  TDD-DL-DPCH-TimeSlotFormat-LCR,
    iE-Extensions                               ProtocolExtensionContainer { { Secondary-CCPCH-LCR-parameterItem-CTCH-SetupRqstTDD-ExtIEs} }
    OPTIONAL,
    ...
}

Secondary-CCPCH-LCR-parameterItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MICH-Parameters-CTCH-SetupRqstTDD ::= SEQUENCE {
    commonPhysicalChannelID                 CommonPhysicalChannelID,
    tdd-PhysicalChannelOffset               TDD-PhysicalChannelOffset,
    repetitionPeriod                        RepetitionPeriod,
```

```
    repetitionLength                        RepetitionLength,
    notificationIndicatorLength             NotificationIndicatorLength,
    mICH-Power                              PICH-Power,
    mICH-TDDOption-Specific-Parameters      MICH-TDDOption-Specific-Parameters-CTCH-SetupRqstTDD,
    iE-Extensions                           ProtocolExtensionContainer  { { MICH-Parameters-CTCH-SetupRqstTDD-ExtIEs} }      OPTIONAL,
    ...
}

MICH-Parameters-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MICH-TDDOption-Specific-Parameters-CTCH-SetupRqstTDD ::= CHOICE {
    hCR-TDD                                 MICH-HCR-Parameters-CTCH-SetupRqstTDD,
    lCR-TDD                                 MICH-LCR-Parameters-CTCH-SetupRqstTDD,
    ...
}

MICH-HCR-Parameters-CTCH-SetupRqstTDD ::= SEQUENCE {
    tdd-ChannelisationCode                  TDD-ChannelisationCode,
    timeSlot                                TimeSlot,
    midambleshiftAndBurstType               MidambleShiftAndBurstType,
    iE-Extensions                           ProtocolExtensionContainer { { MICH-HCR-Parameters-CTCH-SetupRqstTDD-ExtIEs } }     OPTIONAL,
    ...
}

MICH-HCR-Parameters-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MICH-LCR-Parameters-CTCH-SetupRqstTDD ::= SEQUENCE {
    tdd-ChannelisationCodeLCR               TDD-ChannelisationCodeLCR,
    timeSlotLCR                             TimeSlotLCR,
    midambleShiftLCR                        MidambleShiftLCR,
    second-TDD-ChannelisationCodeLCR        TDD-ChannelisationCodeLCR,
    tSTD-Indicator                          TSTD-Indicator,
    iE-Extensions                           ProtocolExtensionContainer { { MICH-LCR-Parameters-CTCH-SetupRqstTDD-ExtIEs } }     OPTIONAL,
    ...
}

MICH-LCR-Parameters-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-CCPCH-parameterExtendedList-CTCH-SetupRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHsinExt)) OF Secondary-CCPCH-parameterItem-CTCH-
SetupRqstTDD
    -- Applicable to 3.84Mcps TDD only, used when more than maxNrOfSCCPCHs SCCPCHs are to be established.

Secondary-CCPCH-LCR-parameterExtendedList-CTCH-SetupRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHsLCRinExt)) OF Secondary-CCPCH-LCR-parameterItem-CTCH-
SetupRqstTDD
    -- Applicable to 1.28Mcps TDD only, used when more than maxNrOfSCCPCHLCRs SCCPCHs are to be established.

PRACH-CTCH-SetupRqstTDD ::= SEQUENCE {
```

```
    pRACH-Parameters-CTCH-SetupRqstTDD          PRACH-Parameters-CTCH-SetupRqstTDD,
    iE-Extensions                               ProtocolExtensionContainer  { { PRACH-CTCH-SetupRqstTDD-ExtIEs } }    OPTIONAL,
    ...
}

PRACH-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-FPACH-LCR-Parameters-CTCH-SetupRqstTDD  CRITICALITY reject  EXTENSION FPACH-LCR-Parameters-CTCH-SetupRqstTDD  PRESENCE optional },
    -- Mandatory for 1.28Mcps TDD, Not Applicable to 3.84Mcps TDD
    ...
}
```

UNCHANGED TEXT IS REMOVED

```
-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST FDD
--
-- **************************************************************

CommonTransportChannelReconfigurationRequestFDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonTransportChannelReconfigurationRequestFDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonTransportChannelReconfigurationRequestFDD-Extensions}}   OPTIONAL,
    ...
}

CommonTransportChannelReconfigurationRequestFDD-IEs NBAP-PROTOCOL-IES ::= {
    { ID id-C-ID                                    CRITICALITY reject  TYPE C-ID                                       PRESENCE mandatory }|
    { ID id-ConfigurationGenerationID               CRITICALITY reject  TYPE ConfigurationGenerationID                  PRESENCE mandatory }|
    { ID id-CommonPhysicalChannelType-CTCH-ReconfRqstFDD    CRITICALITY reject  TYPE CommonPhysicalChannelType-CTCH-ReconfRqstFDD PRESENCE mandatory
},
    ...
}

CommonTransportChannelReconfigurationRequestFDD-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

CommonPhysicalChannelType-CTCH-ReconfRqstFDD ::= CHOICE {
    secondary-CCPCH-parameters      Secondary-CCPCHList-CTCH-ReconfRqstFDD,
    pRACH-parameters                PRACHList-CTCH-ReconfRqstFDD,
    cPCH-parameters                 CPCHList-CTCH-ReconfRqstFDD,
    ...
}

Secondary-CCPCHList-CTCH-ReconfRqstFDD ::= SEQUENCE {
    fACH-ParametersList-CTCH-ReconfRqstFDD      FACH-ParametersList-CTCH-ReconfRqstFDD  OPTIONAL,
    pCH-Parameters-CTCH-ReconfRqstFDD           PCH-Parameters-CTCH-ReconfRqstFDD       OPTIONAL,
    pICH-Parameters-CTCH-ReconfRqstFDD          PICH-Parameters-CTCH-ReconfRqstFDD      OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { Secondary-CCPCH-CTCH-ReconfRqstFDD-ExtIEs} } OPTIONAL,
    ...
}

Secondary-CCPCH-CTCH-ReconfRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-MICH-Parameters-CTCH-ReconfRqstFDD      CRITICALITY reject  EXTENSION MICH-Parameters-CTCH-ReconfRqstFDD        PRESENCE optional },
    ...
}

FACH-ParametersList-CTCH-ReconfRqstFDD ::= ProtocolIE-Single-Container {{ FACH-ParametersListIEs-CTCH-ReconfRqstFDD }}

FACH-ParametersListIEs-CTCH-ReconfRqstFDD NBAP-PROTOCOL-IES ::= {
    { ID id-FACH-ParametersListIE-CTCH-ReconfRqstFDD    CRITICALITY reject  TYPE FACH-ParametersListIE-CTCH-ReconfRqstFDD   PRESENCE mandatory }
}

FACH-ParametersListIE-CTCH-ReconfRqstFDD ::= SEQUENCE (SIZE (1..maxFACHCell)) OF FACH-ParametersItem-CTCH-ReconfRqstFDD

FACH-ParametersItem-CTCH-ReconfRqstFDD ::= SEQUENCE {
```

```
    commonTransportChannelID                CommonTransportChannelID,
    maxFACH-Power                           DL-Power        OPTIONAL,
    toAWS                                   ToAWS           OPTIONAL,
    toAWE                                   ToAWE           OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer  { { FACH-ParametersItem-CTCH-ReconfRqstFDD-ExtIEs} }   OPTIONAL,
    ...
}

FACH-ParametersItem-CTCH-ReconfRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PCH-Parameters-CTCH-ReconfRqstFDD ::= ProtocolIE-Single-Container {{ PCH-ParametersIE-CTCH-ReconfRqstFDD }}

PCH-ParametersIE-CTCH-ReconfRqstFDD NBAP-PROTOCOL-IES ::= {
    { ID id-PCH-ParametersItem-CTCH-ReconfRqstFDD   CRITICALITY reject  TYPE PCH-ParametersItem-CTCH-ReconfRqstFDD  PRESENCE mandatory }
}

PCH-ParametersItem-CTCH-ReconfRqstFDD ::= SEQUENCE {
    commonTransportChannelID                CommonTransportChannelID,
    pCH-Power                               DL-Power        OPTIONAL,
    toAWS                                   ToAWS           OPTIONAL,
    toAWE                                   ToAWE           OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer  { { PCH-ParametersItem-CTCH-ReconfRqstFDD-ExtIEs} }       OPTIONAL,
    ...
}

PCH-ParametersItem-CTCH-ReconfRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PICH-Parameters-CTCH-ReconfRqstFDD ::= ProtocolIE-Single-Container {{ PICH-ParametersIE-CTCH-ReconfRqstFDD }}

PICH-ParametersIE-CTCH-ReconfRqstFDD NBAP-PROTOCOL-IES ::= {
    { ID id-PICH-ParametersItem-CTCH-ReconfRqstFDD  CRITICALITY reject  TYPE PICH-ParametersItem-CTCH-ReconfRqstFDD   PRESENCE mandatory }
}

PICH-ParametersItem-CTCH-ReconfRqstFDD ::= SEQUENCE {
    commonPhysicalChannelID             CommonPhysicalChannelID,
    pICH-Power                          PICH-Power      OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer  { { PICH-ParametersItem-CTCH-ReconfRqstFDD-ExtIEs} }    OPTIONAL,
    ...
}

PICH-ParametersItem-CTCH-ReconfRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MICH-Parameters-CTCH-ReconfRqstFDD ::= SEQUENCE {
    commonPhysicalChannelID             CommonPhysicalChannelID,
    mICH-Power                          PICH-Power                                                              OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer  { { MICH-Parameters-CTCH-ReconfRqstFDD-ExtIEs} }    OPTIONAL,
    ...
```

```
}

MICH-Parameters-CTCH-ReconfRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PRACHList-CTCH-ReconfRqstFDD ::= SEQUENCE {
    pRACH-ParametersList-CTCH-ReconfRqstFDD     PRACH-ParametersList-CTCH-ReconfRqstFDD OPTIONAL,
    aICH-ParametersList-CTCH-ReconfRqstFDD      AICH-ParametersList-CTCH-ReconfRqstFDD  OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { PRACH-CTCH-ReconfRqstFDD-ExtIEs} } OPTIONAL,
    ...
}

PRACH-CTCH-ReconfRqstFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

UNCHANGED TEXT IS REMOVED
```

```
-- **************************************************************
--
-- COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST TDD
--
-- **************************************************************

CommonTransportChannelReconfigurationRequestTDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{CommonTransportChannelReconfigurationRequestTDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{CommonTransportChannelReconfigurationRequestTDD-Extensions}}   OPTIONAL,
    ...
}

CommonTransportChannelReconfigurationRequestTDD-IEs NBAP-PROTOCOL-IES ::= {
    { ID id-C-ID                                CRITICALITY reject  TYPE C-ID                                       PRESENCE mandatory }|
    { ID id-ConfigurationGenerationID           CRITICALITY reject  TYPE ConfigurationGenerationID                  PRESENCE mandatory }|
    { ID id-Secondary-CCPCH-Parameters-CTCH-ReconfRqstTDD   CRITICALITY reject  TYPE Secondary-CCPCH-Parameters-CTCH-ReconfRqstTDD   PRESENCE optional
    }|
    { ID id-PICH-Parameters-CTCH-ReconfRqstTDD      CRITICALITY reject  TYPE PICH-Parameters-CTCH-ReconfRqstTDD      PRESENCE optional }|
    { ID id-FACH-ParametersList-CTCH-ReconfRqstTDD  CRITICALITY reject  TYPE FACH-ParametersList-CTCH-ReconfRqstTDD  PRESENCE optional }|
    { ID id-PCH-Parameters-CTCH-ReconfRqstTDD       CRITICALITY reject  TYPE PCH-Parameters-CTCH-ReconfRqstTDD       PRESENCE optional },
    ...
}

CommonTransportChannelReconfigurationRequestTDD-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-FPACH-LCR-Parameters-CTCH-ReconfRqstTDD     CRITICALITY reject  EXTENSION FPACH-LCR-Parameters-CTCH-ReconfRqstTDD  PRESENCE optional }|
    -- Mandatory For 1.28Mcps TDD, Not Applicable to 3.84Mcps TDD
    { ID id-MICH-Parameters-CTCH-ReconfRqstTDD          CRITICALITY reject  EXTENSION MICH-Parameters-CTCH-ReconfRqstTDD       PRESENCE optional },
    ...
}

Secondary-CCPCH-Parameters-CTCH-ReconfRqstTDD::= SEQUENCE {
    cCTrCH-ID                       CCTrCH-ID,
    secondaryCCPCHList              Secondary-CCPCHList-CTCH-ReconfRqstTDD          OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer  { { Secondary-CCPCH-CTCH-ReconfRqstTDD-ExtIEs} }      OPTIONAL,
    ...
}

Secondary-CCPCH-CTCH-ReconfRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-Additional-S-CCPCH-Parameters-CTCH-ReconfRqstTDD           CRITICALITY reject  EXTENSION Secondary-CCPCH-parameterExtendedList-CTCH-
ReconfRqstTDD       PRESENCE optional   }|
    -- Applicable to 3.84Mcps TDD only, used when more than maxNrOfSCCPCHs SCCPCHs are to be reconfigured.
    { ID id-Additional-S-CCPCH-LCR-Parameters-CTCH-ReconfRqstTDD        CRITICALITY reject  EXTENSION Secondary-CCPCH-LCR-parameterExtendedList-CTCH-
ReconfRqstTDD       PRESENCE optional   },
    -- Applicable to 1.28Mcps TDD only, used when more than maxNrOfSCCPCHs SCCPCHs are to be reconfigured.
    ...
}

Secondary-CCPCHList-CTCH-ReconfRqstTDD ::= ProtocolIE-Single-Container {{ Secondary-CCPCHListIEs-CTCH-ReconfRqstTDD }}

Secondary-CCPCHListIEs-CTCH-ReconfRqstTDD NBAP-PROTOCOL-IES ::= {
    { ID id-Secondary-CCPCHListIE-CTCH-ReconfRqstTDD    CRITICALITY reject  TYPE Secondary-CCPCHListIE-CTCH-ReconfRqstTDD   PRESENCE mandatory }
}
```

```
Secondary-CCPCHListIE-CTCH-ReconfRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHs)) OF Secondary-CCPCHItem-CTCH-ReconfRqstTDD

Secondary-CCPCHItem-CTCH-ReconfRqstTDD ::= SEQUENCE {
    commonPhysicalChannelID             CommonPhysicalChannelID,
    sCCPCH-Power                        DL-Power        OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer  { { Secondary-CCPCHItem-CTCH-ReconfRqstTDD-ExtIEs} }    OPTIONAL,
    ...
}

Secondary-CCPCHItem-CTCH-ReconfRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PICH-Parameters-CTCH-ReconfRqstTDD   ::= SEQUENCE {
    commonPhysicalChannelID             CommonPhysicalChannelID,
    pICH-Power                          PICH-Power      OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer  { { PICH-Parameters-CTCH-ReconfRqstTDD-ExtIEs} }     OPTIONAL,
    ...
}

PICH-Parameters-CTCH-ReconfRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

FACH-ParametersList-CTCH-ReconfRqstTDD ::= SEQUENCE (SIZE (0..maxNrOfFACHs)) OF FACH-ParametersItem-CTCH-ReconfRqstTDD

FACH-ParametersItem-CTCH-ReconfRqstTDD ::= SEQUENCE {
    commonTransportChannelID        CommonTransportChannelID,
    toAWS                           ToAWS           OPTIONAL,
    toAWE                           ToAWE           OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer  { { FACH-ParametersItem-CTCH-ReconfRqstTDD-ExtIEs} }     OPTIONAL,
    ...
}

FACH-ParametersItem-CTCH-ReconfRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-maxFACH-Power-LCR-CTCH-ReconfRqstTDD         CRITICALITY reject      EXTENSION   DL-Power              PRESENCE    optional },
    --  Applicable to 1.28Mcps TDD only
    ...
}

PCH-Parameters-CTCH-ReconfRqstTDD ::= SEQUENCE {
    commonTransportChannelID        CommonTransportChannelID,
    toAWS                           ToAWS           OPTIONAL,
    toAWE                           ToAWE           OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer  { { PCH-Parameters-CTCH-ReconfRqstTDD-ExtIEs} }       OPTIONAL,
    ...
}

PCH-Parameters-CTCH-ReconfRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-PCH-Power-LCR-CTCH-ReconfRqstTDD        CRITICALITY reject      EXTENSION DL-Power                      PRESENCE optional },
    ... -- Applicable to 1.28Mcps TDD only
}
```

```
FPACH-LCR-Parameters-CTCH-ReconfRqstTDD ::= SEQUENCE {
    commonPhysicalChannelId         CommonPhysicalChannelID,
    fPACHPower                      FPACH-Power     OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer  { { FPACH-LCR-Parameters-CTCH-ReconfRqstTDD-ExtIEs} }    OPTIONAL,
    ...
}

FPACH-LCR-Parameters-CTCH-ReconfRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MICH-Parameters-CTCH-ReconfRqstTDD ::= SEQUENCE {
    commonPhysicalChannelID             CommonPhysicalChannelID,
    mICH-Power                          PICH-Power                                                                  OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer  { { MICH-Parameters-CTCH-ReconfRqstTDD-ExtIEs} }    OPTIONAL,
    ...
}

MICH-Parameters-CTCH-ReconfRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Secondary-CCPCH-parameterExtendedList-CTCH-ReconfRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHsinExt)) OF Secondary-CCPCHItem-CTCH-ReconfRqstTDD
    -- Applicable to 3.84Mcps TDD only, used when more than maxNrOfSCCPCHs SCCPCHs are to be reconfigured.

Secondary-CCPCH-LCR-parameterExtendedList-CTCH-ReconfRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHsLCRinExt)) OF S Secondary-CCPCHItem-CTCH-
ReconfRqstTDD
    -- Applicable to 1.28Mcps TDD only, used when more than maxNrOfSCCPCHs SCCPCHs are to be reconfigured.
```

UNCHANGED TEXT IS REMOVED

```
-- **************************************************************
--
-- AUDIT RESPONSE
--
-- **************************************************************

AuditResponse ::= SEQUENCE {
    protocolIEs                 ProtocolIE-Container    {{AuditResponse-IEs}},
    protocolExtensions          ProtocolExtensionContainer  {{AuditResponse-Extensions}}        OPTIONAL,
    ...
}

AuditResponse-IEs NBAP-PROTOCOL-IES ::= {
    { ID id-End-Of-Audit-Sequence-Indicator             CRITICALITY ignore  TYPE End-Of-Audit-Sequence-Indicator            PRESENCE mandatory }|
    { ID id-Cell-InformationList-AuditRsp               CRITICALITY ignore  TYPE Cell-InformationList-AuditRsp              PRESENCE optional }|
    { ID id-CCP-InformationList-AuditRsp                CRITICALITY ignore  TYPE CCP-InformationList-AuditRsp               PRESENCE optional }|
    -- CCP (Communication Control Port) --
    { ID id-Local-Cell-InformationList-AuditRsp         CRITICALITY ignore  TYPE Local-Cell-InformationList-AuditRsp        PRESENCE optional }|
    { ID id-Local-Cell-Group-InformationList-AuditRsp   CRITICALITY ignore  TYPE Local-Cell-Group-InformationList-AuditRsp  PRESENCE optional }|
    { ID id-CriticalityDiagnostics                      CRITICALITY ignore  TYPE CriticalityDiagnostics                     PRESENCE optional },
    ...
}

AuditResponse-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-Power-Local-Cell-Group-InformationList-AuditRsp CRITICALITY ignore  EXTENSION Power-Local-Cell-Group-InformationList-AuditRsp     PRESENCE
optional },
    ...
}

Cell-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxCellinNodeB)) OF ProtocolIE-Single-Container {{ Cell-InformationItemIE-AuditRsp}}

Cell-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID    id-Cell-InformationItem-AuditRsp        CRITICALITY ignore      TYPE Cell-InformationItem-AuditRsp           PRESENCE optional }
}

Cell-InformationItem-AuditRsp ::= SEQUENCE {
    c-ID                                C-ID,
    configurationGenerationID           ConfigurationGenerationID,
    resourceOperationalState            ResourceOperationalState,
    availabilityStatus                  AvailabilityStatus,
    local-Cell-ID                       Local-Cell-ID,
    primary-SCH-Information             P-SCH-Information-AuditRsp              OPTIONAL,
    secondary-SCH-Information           S-SCH-Information-AuditRsp              OPTIONAL,
    primary-CPICH-Information           P-CPICH-Information-AuditRsp            OPTIONAL,
    secondary-CPICH-InformationList     S-CPICH-InformationList-AuditRsp        OPTIONAL,
    primary-CCPCH-Information           P-CCPCH-Information-AuditRsp            OPTIONAL,
    bCH-Information                     BCH-Information-AuditRsp                OPTIONAL,
    secondary-CCPCH-InformationList     S-CCPCH-InformationList-AuditRsp        OPTIONAL,
    pCH-Information                     PCH-Information-AuditRsp                OPTIONAL,
    pICH-Information                    PICH-Information-AuditRsp               OPTIONAL,
    fACH-InformationList                FACH-InformationList-AuditRsp           OPTIONAL,
    pRACH-InformationList               PRACH-InformationList-AuditRsp          OPTIONAL,
    rACH-InformationList                RACH-InformationList-AuditRsp           OPTIONAL,
```

```
    aICH-InformationList                AICH-InformationList-AuditRsp             OPTIONAL,
    pCPCH-InformationList               PCPCH-InformationList-AuditRsp            OPTIONAL,
    cPCH-InformationList                CPCH-InformationList-AuditRsp             OPTIONAL,
    aP-AICH-InformationList             AP-AICH-InformationList-AuditRsp          OPTIONAL,
    cDCA-ICH-InformationList            CDCA-ICH-InformationList-AuditRsp         OPTIONAL,
    sCH-Information                     SCH-Information-AuditRsp                  OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer  { { Cell-InformationItem-AuditRsp-ExtIEs} }   OPTIONAL,
    ...
}

Cell-InformationItem-AuditRsp-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-FPACH-LCR-InformationList-AuditRsp      CRITICALITY ignore  EXTENSION FPACH-LCR-InformationList-AuditRsp        PRESENCE optional }|
    -- Applicable to 1.28Mcps TDD only
    { ID id-DwPCH-LCR-InformationList-AuditRsp      CRITICALITY ignore  EXTENSION Common-PhysicalChannel-Status-Information PRESENCE optional }|
    -- Applicable to 1.28Mcps TDD only
    { ID id-HSDSCH-Resources-Information-AuditRsp   CRITICALITY ignore  EXTENSION HS-DSCH-Resources-Information-AuditRsp    PRESENCE optional }|
    { ID id-MICH-Information-AuditRsp               CRITICALITY ignore  EXTENSION Common-PhysicalChannel-Status-Information PRESENCE optional }|
    { ID id-S-CCPCH-InformationListExt-AuditRsp     CRITICALITY ignore  EXTENSION S-CCPCH-InformationListExt-AuditRsp       PRESENCE optional }|
    -- Applicable to 3.84Mcps TDD only, used when there are more than maxSCCPCHCell SCCPCHs in the cell.
    { ID id-S-CCPCH-LCR-InformationListExt-AuditRsp CRITICALITY ignore  EXTENSION S-CCPCH-LCR-InformationListExt-AuditRsp   PRESENCE optional },
    -- Applicable to 1.28Mcps TDD only, used when there are more than maxSCCPCHCell SCCPCHs in the cell.
    ...
}

P-SCH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ P-SCH-InformationIE-AuditRsp }}

P-SCH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-P-SCH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

S-SCH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ S-SCH-InformationIE-AuditRsp }}

S-SCH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-S-SCH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

P-CPICH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ P-CPICH-InformationIE-AuditRsp }}

P-CPICH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-P-CPICH-Information CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

S-CPICH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxSCPICHCell)) OF ProtocolIE-Single-Container {{ S-CPICH-InformationItemIE-AuditRsp }}

S-CPICH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-S-CPICH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information              PRESENCE mandatory }
}

P-CCPCH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ P-CCPCH-InformationIE-AuditRsp }}

P-CCPCH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-P-CCPCH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information              PRESENCE mandatory }
}
```

```
BCH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ BCH-InformationIE-AuditRsp }}

BCH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-BCH-Information   CRITICALITY ignore    TYPE Common-TransportChannel-Status-Information                  PRESENCE mandatory }
}

S-CCPCH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxSCCPCHCell)) OF ProtocolIE-Single-Container {{ S-CCPCH-InformationItemIE-AuditRsp }}

S-CCPCH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-S-CCPCH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information               PRESENCE mandatory }
}
PCH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ PCH-InformationIE-AuditRsp }}

PCH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-PCH-Information   CRITICALITY ignore    TYPE Common-TransportChannel-Status-Information                  PRESENCE mandatory }
}

PICH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ PICH-InformationIE-AuditRsp }}

PICH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-PICH-Information   CRITICALITY ignore   TYPE Common-PhysicalChannel-Status-Information                   PRESENCE mandatory }
}

FACH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxFACHCell)) OF ProtocolIE-Single-Container {{ FACH-InformationItemIE-AuditRsp }}

FACH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-FACH-Information   CRITICALITY ignore   TYPE Common-TransportChannel-Status-Information                  PRESENCE mandatory }
}

PRACH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxPRACHCell)) OF ProtocolIE-Single-Container {{ PRACH-InformationItemIE-AuditRsp }}

PRACH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-PRACH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                   PRESENCE mandatory }
}

RACH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxRACHCell)) OF ProtocolIE-Single-Container {{ RACH-InformationItemIE-AuditRsp }}

RACH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-RACH-Information   CRITICALITY ignore   TYPE Common-TransportChannel-Status-Information                  PRESENCE mandatory }
}

AICH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxPRACHCell)) OF ProtocolIE-Single-Container {{ AICH-InformationItemIE-AuditRsp }}

AICH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-AICH-Information   CRITICALITY ignore   TYPE Common-PhysicalChannel-Status-Information                   PRESENCE mandatory }
}

PCPCH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxPCPCHCell)) OF ProtocolIE-Single-Container {{ PCPCH-InformationItemIE-AuditRsp }}

PCPCH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-PCPCH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                   PRESENCE optional }
}
```

```
CPCH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxCPCHCell)) OF ProtocolIE-Single-Container {{ CPCH-InformationItemIE-AuditRsp }}

CPCH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-CPCH-Information   CRITICALITY ignore   TYPE Common-TransportChannel-Status-Information                  PRESENCE optional }
}

AP-AICH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxCPCHCell)) OF ProtocolIE-Single-Container {{ AP-AICH-InformationItemIE-AuditRsp }}

AP-AICH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-AP-AICH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information               PRESENCE mandatory }
}

CDCA-ICH-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxCPCHCell)) OF ProtocolIE-Single-Container {{ CDCA-ICH-InformationItemIE-AuditRsp }}

CDCA-ICH-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-CDCA-ICH-Information   CRITICALITY ignore   TYPE Common-PhysicalChannel-Status-Information               PRESENCE mandatory }
}

SCH-Information-AuditRsp ::= ProtocolIE-Single-Container {{ SCH-InformationIE-AuditRsp }}

SCH-InformationIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-SCH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information                  PRESENCE mandatory }
}

CCP-InformationList-AuditRsp ::=SEQUENCE (SIZE (1..maxCCPinNodeB)) OF ProtocolIE-Single-Container {{ CCP-InformationItemIE-AuditRsp }}

CCP-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    {ID id-CCP-InformationItem-AuditRsp         CRITICALITY     ignore          TYPE    CCP-InformationItem-AuditRsp        PRESENCE mandatory}
}

CCP-InformationItem-AuditRsp ::= SEQUENCE {
    communicationControlPortID          CommunicationControlPortID,
    resourceOperationalState            ResourceOperationalState,
    availabilityStatus                  AvailabilityStatus,
    iE-Extensions                       ProtocolExtensionContainer  {{ CCP-InformationItem-AuditRsp-ExtIEs }}         OPTIONAL,
    ...
}

CCP-InformationItem-AuditRsp-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

FPACH-LCR-InformationList-AuditRsp ::= SEQUENCE (SIZE (1..maxFPACHCell)) OF ProtocolIE-Single-Container {{ FPACH-LCR-InformationItemIE-AuditRsp }}

FPACH-LCR-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-FPACH-LCR-Information-AuditRsp   CRITICALITY ignore TYPE Common-PhysicalChannel-Status-Information        PRESENCE mandatory }
}

HS-DSCH-Resources-Information-AuditRsp ::= SEQUENCE {
    resourceOperationalState            ResourceOperationalState,
    availabilityStatus                  AvailabilityStatus,
    iE-Extensions                       ProtocolExtensionContainer  {{ HS-DSCH-Resources-Information-AuditRsp-ExtIEs }}     OPTIONAL,
```

```
    ...
}

HS-DSCH-Resources-Information-AuditRsp-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

S-CCPCH-InformationListExt-AuditRsp ::= SEQUENCE (SIZE (1..maxSCCPCHCellinExt)) OF ProtocolIE-Single-Container {{ S-CCPCH-InformationItemIE-AuditRsp }}

S-CCPCH-LCR-InformationListExt-AuditRsp ::= SEQUENCE (SIZE (1..maxSCCPCHCellinExtLCR)) OF ProtocolIE-Single-Container {{ S-CCPCH-InformationItemIE-AuditRsp }}

Local-Cell-InformationList-AuditRsp  ::=SEQUENCE (SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Local-Cell-InformationItemIE-AuditRsp }}

Local-Cell-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-Local-Cell-InformationItem-AuditRsp     CRITICALITY ignore  TYPE Local-Cell-InformationItem-AuditRsp    PRESENCE mandatory}
}

Local-Cell-InformationItem-AuditRsp ::= SEQUENCE {
    local-Cell-ID                           Local-Cell-ID,
    dl-or-global-capacityCredit             DL-or-Global-CapacityCredit,
    ul-capacityCredit                       UL-CapacityCredit                                                   OPTIONAL,
    commonChannelsCapacityConsumptionLaw    CommonChannelsCapacityConsumptionLaw,
    dedicatedChannelsCapacityConsumptionLaw DedicatedChannelsCapacityConsumptionLaw,
    maximumDL-PowerCapability               MaximumDL-PowerCapability                                           OPTIONAL,
    minSpreadingFactor                      MinSpreadingFactor                                                  OPTIONAL,
    minimumDL-PowerCapability               MinimumDL-PowerCapability                                           OPTIONAL,
    local-Cell-Group-ID                     Local-Cell-ID                                                       OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer  {{ Local-Cell-InformationItem-AuditRsp-ExtIEs}}    OPTIONAL,
    ...
}

Local-Cell-InformationItem-AuditRsp-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-ReferenceClockAvailability       CRITICALITY ignore          EXTENSION ReferenceClockAvailability        PRESENCE optional }|
    { ID    id-Power-Local-Cell-Group-ID        CRITICALITY ignore          EXTENSION Local-Cell-ID                     PRESENCE optional }|
    { ID    id-HSDPA-Capability                 CRITICALITY ignore          EXTENSION HSDPA-Capability                  PRESENCE optional },
    ...
}

Local-Cell-Group-InformationList-AuditRsp    ::= SEQUENCE (SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Local-Cell-Group-InformationItemIE-AuditRsp }}

Local-Cell-Group-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID id-Local-Cell-Group-InformationItem-AuditRsp   CRITICALITY ignore  TYPE Local-Cell-Group-InformationItem-AuditRsp  PRESENCE mandatory}
}

Local-Cell-Group-InformationItem-AuditRsp ::= SEQUENCE {
    local-Cell-Group-ID                     Local-Cell-ID,
    dl-or-global-capacityCredit             DL-or-Global-CapacityCredit,
    ul-capacityCredit                       UL-CapacityCredit                       OPTIONAL,
    commonChannelsCapacityConsumptionLaw    CommonChannelsCapacityConsumptionLaw,
```

```
    dedicatedChannelsCapacityConsumptionLaw     DedicatedChannelsCapacityConsumptionLaw,
    iE-Extensions                               ProtocolExtensionContainer  {{ Local-Cell-Group-InformationItem-AuditRsp-ExtIEs}}    OPTIONAL,
    ...
}

Local-Cell-Group-InformationItem-AuditRsp-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Power-Local-Cell-Group-InformationList-AuditRsp  ::= SEQUENCE (SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Power-Local-Cell-
Group-InformationItemIE-AuditRsp }}

Power-Local-Cell-Group-InformationItemIE-AuditRsp NBAP-PROTOCOL-IES ::= {
    { ID    id-Power-Local-Cell-Group-InformationItem-AuditRsp          CRITICALITY     ignore      TYPE  Power-Local-Cell-Group-InformationItem-
AuditRsp        PRESENCE    mandatory}
}

Power-Local-Cell-Group-InformationItem-AuditRsp ::= SEQUENCE {
    power-Local-Cell-Group-ID                   Local-Cell-ID,
    maximumDL-PowerCapability                   MaximumDL-PowerCapability,
    iE-Extensions                               ProtocolExtensionContainer  {{ Power-Local-Cell-Group-InformationItem-AuditRsp-ExtIEs}}    OPTIONAL,
    ...
}

Power-Local-Cell-Group-InformationItem-AuditRsp-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

UNCHANGED TEXT IS REMOVED

```
-- **************************************************************
--
-- RESOURCE STATUS INDICATION
--
-- **************************************************************

ResourceStatusIndication ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{ResourceStatusIndication-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{ResourceStatusIndication-Extensions}}                    OPTIONAL,
    ...
}

ResourceStatusIndication-IEs NBAP-PROTOCOL-IES ::= {
    { ID id-IndicationType-ResourceStatusInd    CRITICALITY ignore  TYPE IndicationType-ResourceStatusInd            PRESENCE mandatory }|
    { ID id-Cause                               CRITICALITY ignore  TYPE Cause                                      PRESENCE optional },
    ...
}

ResourceStatusIndication-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

IndicationType-ResourceStatusInd ::= CHOICE {
    no-Failure                          No-Failure-ResourceStatusInd,
    serviceImpacting                    ServiceImpacting-ResourceStatusInd,
    ...
}

No-Failure-ResourceStatusInd ::= SEQUENCE {
    local-Cell-InformationList              Local-Cell-InformationList-ResourceStatusInd,
    local-Cell-Group-InformationList        Local-Cell-Group-InformationList-ResourceStatusInd  OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { No-FailureItem-ResourceStatusInd-ExtIEs} } OPTIONAL,
    ...
}

No-FailureItem-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-Power-Local-Cell-Group-InformationList-ResourceStatusInd     CRITICALITY     ignore                      EXTENSION   Power-Local-Cell-
Group-InformationList-ResourceStatusInd     PRESENCE    optional    },
    ...
}

Local-Cell-InformationList-ResourceStatusInd ::= SEQUENCE(SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Local-Cell-
InformationItemIE-ResourceStatusInd }}

Local-Cell-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-Local-Cell-InformationItem-ResourceStatusInd   CRITICALITY ignore   TYPE Local-Cell-InformationItem-ResourceStatusInd    PRESENCE
mandatory }
}

Local-Cell-InformationItem-ResourceStatusInd ::= SEQUENCE {
    local-CellID                            Local-Cell-ID,
    addorDeleteIndicator                    AddorDeleteIndicator,
    dl-or-global-capacityCredit             DL-or-Global-CapacityCredit             OPTIONAL,
```

```
    -- This IE shall be present if AddorDeleteIndicator IE is set to “add”
    ul-capacityCredit                       UL-CapacityCredit                       OPTIONAL,
    commonChannelsCapacityConsumptionLaw    CommonChannelsCapacityConsumptionLaw    OPTIONAL,
    -- This IE shall be present if AddorDeleteIndicator IE is set to “add”
    dedicatedChannelsCapacityConsumptionLaw DedicatedChannelsCapacityConsumptionLaw OPTIONAL,
    -- This IE shall be present if AddorDeleteIndicator IE is set to “add”
    maximumDL-PowerCapability               MaximumDL-PowerCapability               OPTIONAL,
    -- This IE shall be present if AddorDeleteIndicator IE is set to “add”
    minSpreadingFactor                      MinSpreadingFactor                      OPTIONAL,
    -- This IE shall be present if AddorDeleteIndicator IE is set to “add”
    minimumDL-PowerCapability               MinimumDL-PowerCapability               OPTIONAL,
    -- This IE shall be present if AddorDeleteIndicator IE is set to “add”
    local-Cell-Group-ID                     Local-Cell-ID                           OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { Local-Cell-InformationItem-ResourceStatusInd-ExtIEs} }OPTIONAL,
    ...
}

Local-Cell-InformationItem-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-ReferenceClockAvailability       CRITICALITY     ignore          EXTENSION ReferenceClockAvailability        PRESENCE optional }|
    -- This IE shall be present if AddorDeleteIndicator IE is set to “add“ and the Local Cell is related to a TDD cell
    { ID    id-Power-Local-Cell-Group-ID        CRITICALITY     ignore          EXTENSION   Local-Cell-ID                   PRESENCE optional }|
    { ID    id-HSDPA-Capability                 CRITICALITY     ignore          EXTENSION   HSDPA-Capability                PRESENCE optional },
    ...
}

Local-Cell-Group-InformationList-ResourceStatusInd ::= SEQUENCE(SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Local-Cell-Group-
InformationItemIE-ResourceStatusInd }}

Local-Cell-Group-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-Local-Cell-Group-InformationItem-ResourceStatusInd   CRITICALITY ignore TYPE Local-Cell-Group-InformationItem-ResourceStatusInd   PRESENCE
mandatory }
}

Local-Cell-Group-InformationItem-ResourceStatusInd::= SEQUENCE {
    local-Cell-Group-ID                     Local-Cell-ID,
    dl-or-global-capacityCredit             DL-or-Global-CapacityCredit,
    ul-capacityCredit                       UL-CapacityCredit       OPTIONAL,
    commonChannelsCapacityConsumptionLaw    CommonChannelsCapacityConsumptionLaw,
    dedicatedChannelsCapacityConsumptionLaw DedicatedChannelsCapacityConsumptionLaw,
    iE-Extensions                           ProtocolExtensionContainer { { Local-Cell-Group-InformationItem-ResourceStatusInd-ExtIEs} }OPTIONAL,
    ...
}

Local-Cell-Group-InformationItem-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Power-Local-Cell-Group-InformationList-ResourceStatusInd ::= SEQUENCE(SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Power-Local-
Cell-Group-InformationItemIE-ResourceStatusInd }}

Power-Local-Cell-Group-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID    id-Power-Local-Cell-Group-InformationItem-ResourceStatusInd CRITICALITY ignore  TYPE  Power-Local-Cell-Group-InformationItem-
ResourceStatusInd       PRESENCE    mandatory   }
```

```
}

Power-Local-Cell-Group-InformationItem-ResourceStatusInd::= SEQUENCE {
    power-Local-Cell-Group-ID                   Local-Cell-ID,
    maximumDL-PowerCapability                   MaximumDL-PowerCapability,
    iE-Extensions                               ProtocolExtensionContainer { { Power-Local-Cell-Group-InformationItem-ResourceStatusInd-ExtIEs} }
    OPTIONAL,
    ...
}

Power-Local-Cell-Group-InformationItem-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

ServiceImpacting-ResourceStatusInd ::= SEQUENCE {
    local-Cell-InformationList              Local-Cell-InformationList2-ResourceStatusInd   OPTIONAL,
    local-Cell-Group-InformationList        Local-Cell-Group-InformationList2-ResourceStatusInd OPTIONAL,
    cCP-InformationList                     CCP-InformationList-ResourceStatusInd           OPTIONAL,
    cell-InformationList                    Cell-InformationList-ResourceStatusInd          OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { ServiceImpactingItem-ResourceStatusInd-ExtIEs} }    OPTIONAL,
    ...
}

ServiceImpactingItem-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-Power-Local-Cell-Group-InformationList2-ResourceStatusInd        CRITICALITY     ignore                  EXTENSION   Power-Local-Cell-
Group-InformationList2-ResourceStatusInd        PRESENCE    optional    },
    ...
}

Local-Cell-InformationList2-ResourceStatusInd ::= SEQUENCE(SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Local-Cell-
InformationItemIE2-ResourceStatusInd }}

Local-Cell-InformationItemIE2-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-Local-Cell-InformationItem2-ResourceStatusInd   CRITICALITY ignore  TYPE Local-Cell-InformationItem2-ResourceStatusInd   PRESENCE
mandatory }
}

Local-Cell-InformationItem2-ResourceStatusInd ::= SEQUENCE {
    local-Cell-ID                           Local-Cell-ID,
    dl-or-global-capacityCredit             DL-or-Global-CapacityCredit             OPTIONAL,
    ul-capacityCredit                       UL-CapacityCredit                       OPTIONAL,
    commonChannelsCapacityConsumptionLaw    CommonChannelsCapacityConsumptionLaw    OPTIONAL,
    dedicatedChannelsCapacityConsumptionLaw DedicatedChannelsCapacityConsumptionLaw OPTIONAL,
    maximum-DL-PowerCapability              MaximumDL-PowerCapability               OPTIONAL,
    minSpreadingFactor                      MinSpreadingFactor                      OPTIONAL,
    minimumDL-PowerCapability               MinimumDL-PowerCapability               OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { Local-Cell-InformationItem2-ResourceStatusInd-ExtIEs} }   OPTIONAL,
    ...
}

Local-Cell-InformationItem2-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID    id-ReferenceClockAvailability       CRITICALITY     ignore          EXTENSION ReferenceClockAvailability        PRESENCE optional }|
    { ID    id-HSDPA-Capability                 CRITICALITY     ignore          EXTENSION   HSDPA-Capability                PRESENCE optional },
```

```
    ...
}

Local-Cell-Group-InformationList2-ResourceStatusInd ::= SEQUENCE(SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Local-Cell-Group-
InformationItemIE2-ResourceStatusInd }}

Local-Cell-Group-InformationItemIE2-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-Local-Cell-Group-InformationItem2-ResourceStatusInd   CRITICALITY ignore    TYPE Local-Cell-Group-InformationItem2-ResourceStatusInd
    PRESENCE mandatory }
}

Local-Cell-Group-InformationItem2-ResourceStatusInd ::= SEQUENCE {
    local-Cell-Group-ID                       Local-Cell-ID,
    dl-or-global-capacityCredit               DL-or-Global-CapacityCredit               OPTIONAL,
    ul-capacityCredit                         UL-CapacityCredit                         OPTIONAL,
    commonChannelsCapacityConsumptionLaw      CommonChannelsCapacityConsumptionLaw      OPTIONAL,
    dedicatedChannelsCapacityConsumptionLaw   DedicatedChannelsCapacityConsumptionLaw   OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer { { Local-Cell-Group-InformationItem2-ResourceStatusInd-ExtIEs} }   OPTIONAL,
    ...
}

Local-Cell-Group-InformationItem2-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Power-Local-Cell-Group-InformationList2-ResourceStatusInd ::= SEQUENCE(SIZE (1..maxLocalCellinNodeB)) OF ProtocolIE-Single-Container {{ Power-Local-
Cell-Group-InformationItemIE2-ResourceStatusInd }}

Power-Local-Cell-Group-InformationItemIE2-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID    id-Power-Local-Cell-Group-InformationItem2-ResourceStatusInd    CRITICALITY ignore  TYPE Power-Local-Cell-Group-InformationItem2-
ResourceStatusInd       PRESENCE    mandatory   }
}

Power-Local-Cell-Group-InformationItem2-ResourceStatusInd::= SEQUENCE {
    power-Local-Cell-Group-ID                 Local-Cell-ID,
    maximumDL-PowerCapability                 MaximumDL-PowerCapability,
    iE-Extensions                             ProtocolExtensionContainer { { Power-Local-Cell-Group-InformationItem2-ResourceStatusInd-ExtIEs} }
    OPTIONAL,
    ...
}

Power-Local-Cell-Group-InformationItem2-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

CCP-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxCCPinNodeB)) OF ProtocolIE-Single-Container {{ CCP-InformationItemIE-ResourceStatusInd
}}

CCP-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-CCP-InformationItem-ResourceStatusInd   CRITICALITY ignore  TYPE CCP-InformationItem-ResourceStatusInd    PRESENCE mandatory }
}

CCP-InformationItem-ResourceStatusInd ::= SEQUENCE {
```

```
    communicationControlPortID              CommunicationControlPortID,
    resourceOperationalState                ResourceOperationalState,
    availabilityStatus                      AvailabilityStatus,
    iE-Extensions                           ProtocolExtensionContainer { { CCP-InformationItem-ResourceStatusInd-ExtIEs} }     OPTIONAL,
    ...
}

CCP-InformationItem-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Cell-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxCellinNodeB)) OF ProtocolIE-Single-Container {{ Cell-InformationItemIE-
ResourceStatusInd }}

Cell-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-Cell-InformationItem-ResourceStatusInd   CRITICALITY ignore TYPE Cell-InformationItem-ResourceStatusInd   PRESENCE mandatory }
}

Cell-InformationItem-ResourceStatusInd  ::= SEQUENCE {
    c-ID                                    C-ID,
    resourceOperationalState                ResourceOperationalState                    OPTIONAL,
    availabilityStatus                      AvailabilityStatus                          OPTIONAL,
    primary-SCH-Information                 P-SCH-Information-ResourceStatusInd         OPTIONAL, -- FDD only
    secondary-SCH-Information               S-SCH-Information-ResourceStatusInd         OPTIONAL, -- FDD only
    primary-CPICH-Information               P-CPICH-Information-ResourceStatusInd       OPTIONAL, -- FDD only
    secondary-CPICH-Information             S-CPICH-InformationList-ResourceStatusInd   OPTIONAL, -- FDD only
    primary-CCPCH-Information               P-CCPCH-Information-ResourceStatusInd       OPTIONAL,
    bCH-Information                         BCH-Information-ResourceStatusInd           OPTIONAL,
    secondary-CCPCH-InformationList         S-CCPCH-InformationList-ResourceStatusInd   OPTIONAL,
    pCH-Information                         PCH-Information-ResourceStatusInd           OPTIONAL,
    pICH-Information                        PICH-Information-ResourceStatusInd          OPTIONAL,
    fACH-InformationList                    FACH-InformationList-ResourceStatusInd      OPTIONAL,
    pRACH-InformationList                   PRACH-InformationList-ResourceStatusInd     OPTIONAL,
    rACH-InformationList                    RACH-InformationList-ResourceStatusInd      OPTIONAL,
    aICH-InformationList                    AICH-InformationList-ResourceStatusInd      OPTIONAL, -- FDD only
    pCPCH-InformationList                   PCPCH-InformationList-ResourceStatusInd     OPTIONAL, -- FDD only
    cPCH-InformationList                    CPCH-InformationList-ResourceStatusInd      OPTIONAL, -- FDD only
    aP-AICH-InformationList                 AP-AICH-InformationList-ResourceStatusInd   OPTIONAL, -- FDD only
    cDCA-ICH-InformationList                CDCA-ICH-InformationList-ResourceStatusInd  OPTIONAL, -- FDD only
    sCH-Information                         SCH-Information-ResourceStatusInd           OPTIONAL, -- Applicable to 3.84Mcps TDD only
    iE-Extensions                           ProtocolExtensionContainer { { Cell-InformationItem-ResourceStatusInd-ExtIEs} } OPTIONAL,
    ...
}

Cell-InformationItem-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-FPACH-LCR-InformationList-ResourceStatusInd      CRITICALITY ignore  EXTENSION FPACH-LCR-InformationList-
ResourceStatusInd          PRESENCE optional   }|  -- Applicable to 1.28Mcps TDD only
    { ID id-DwPCH-LCR-Information-ResourceStatusInd          CRITICALITY ignore  EXTENSION DwPCH-LCR-Information-
ResourceStatusInd          PRESENCE optional   }|  -- Applicable to 1.28Mcps TDD only
    { ID id-HSDSCH-Resources-Information-ResourceStatusInd   CRITICALITY ignore  EXTENSION HS-DSCH-Resources-Information-
ResourceStatusInd          PRESENCE optional   }
    { ID id-MICH-Information-ResourceStatusInd               CRITICALITY ignore  EXTENSION Common-PhysicalChannel-Status-Information
    PRESENCE optional   }|
```

```
    { ID id-S-CCPCH-InformationListExt-ResourceStatusInd        CRITICALITY ignore  EXTENSION S-CCPCH-InformationListExt-ResourceStatusInd
    PRESENCE optional }|
    -- Applicable to 3.84Mcps TDD only, used when there are more than maxSCCPCHCell SCCPCHs in the message.
    { ID id-S-CCPCH-LCR-InformationListExt-ResourceStatusInd    CRITICALITY ignore  EXTENSION S-CCPCH-LCR-InformationListExt-ResourceStatusInd
    PRESENCE optional },
    -- Applicable to 1.28Mcps TDD only, used when there are more than maxSCCPCHCell SCCPCHs in the message.
    ...
}

P-SCH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ P-SCH-InformationIE-ResourceStatusInd }}

P-SCH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-P-SCH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                    PRESENCE mandatory }
}

S-SCH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ S-SCH-InformationIE-ResourceStatusInd }}

S-SCH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-S-SCH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                    PRESENCE mandatory }
}

P-CPICH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ P-CPICH-InformationIE-ResourceStatusInd }}

P-CPICH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-P-CPICH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

S-CPICH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxSCPICHCell)) OF ProtocolIE-Single-Container {{ S-CPICH-InformationItemIE-
ResourceStatusInd }}

S-CPICH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-S-CPICH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

P-CCPCH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ P-CCPCH-InformationIE-ResourceStatusInd }}

P-CCPCH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-P-CCPCH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

BCH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ BCH-InformationIE-ResourceStatusInd }}

BCH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-BCH-Information   CRITICALITY ignore    TYPE Common-TransportChannel-Status-Information                PRESENCE mandatory }
}

S-CCPCH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxSCCPCHCell)) OF ProtocolIE-Single-Container {{ S-CCPCH-InformationItemIE-
ResourceStatusInd }}

S-CCPCH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-S-CCPCH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}
```

```
PCH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ PCH-InformationIE-ResourceStatusInd }}

PCH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-PCH-Information   CRITICALITY ignore    TYPE Common-TransportChannel-Status-Information                  PRESENCE mandatory }
}

PICH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ PICH-InformationIE-ResourceStatusInd }}

PICH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-PICH-Information   CRITICALITY ignore   TYPE Common-PhysicalChannel-Status-Information                  PRESENCE mandatory }
}

FACH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxFACHCell)) OF ProtocolIE-Single-Container {{ FACH-InformationItemIE-ResourceStatusInd
}}

FACH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-FACH-Information   CRITICALITY ignore   TYPE Common-TransportChannel-Status-Information                  PRESENCE mandatory }
}

PRACH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxPRACHCell)) OF ProtocolIE-Single-Container {{ PRACH-InformationItemIE-
ResourceStatusInd }}

PRACH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-PRACH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                  PRESENCE mandatory }
}

RACH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxPRACHCell)) OF ProtocolIE-Single-Container {{ RACH-InformationItemIE-
ResourceStatusInd }}

RACH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-RACH-Information   CRITICALITY ignore   TYPE Common-TransportChannel-Status-Information                  PRESENCE mandatory }
}

AICH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxPRACHCell)) OF ProtocolIE-Single-Container {{ AICH-InformationItemIE-
ResourceStatusInd }}

AICH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-AICH-Information   CRITICALITY ignore   TYPE Common-PhysicalChannel-Status-Information                  PRESENCE mandatory }
}

PCPCH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxPCPCHCell)) OF ProtocolIE-Single-Container {{ PCPCH-InformationItemIE-
ResourceStatusInd }}

PCPCH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-PCPCH-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                  PRESENCE optional }
}

CPCH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxCPCHCell)) OF ProtocolIE-Single-Container {{ CPCH-InformationItemIE-ResourceStatusInd
}}

CPCH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-CPCH-Information   CRITICALITY ignore   TYPE Common-TransportChannel-Status-Information                  PRESENCE optional }
}
```

```
AP-AICH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxCPCHCell)) OF ProtocolIE-Single-Container {{ AP-AICH-InformationItemIE-
ResourceStatusInd }}

AP-AICH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-AP-AICH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information                PRESENCE optional }
}

CDCA-ICH-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxCPCHCell)) OF ProtocolIE-Single-Container {{ CDCA-ICH-InformationItemIE-
ResourceStatusInd }}

CDCA-ICH-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-CDCA-ICH-Information   CRITICALITY ignore   TYPE Common-PhysicalChannel-Status-Information                PRESENCE optional }
}

SCH-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ SCH-InformationIE-ResourceStatusInd }}

SCH-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-SCH-Information   CRITICALITY ignore    TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

FPACH-LCR-InformationList-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxFPACHCell)) OF ProtocolIE-Single-Container {{ FPACH-LCR-InformationItemIE-
ResourceStatusInd }}

FPACH-LCR-InformationItemIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-FPACH-LCR-Information  CRITICALITY ignore   TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

DwPCH-LCR-Information-ResourceStatusInd ::= ProtocolIE-Single-Container {{ DwPCH-LCR-InformationIE-ResourceStatusInd }}

DwPCH-LCR-InformationIE-ResourceStatusInd NBAP-PROTOCOL-IES ::= {
    { ID id-DwPCH-LCR-Information   CRITICALITY ignore  TYPE Common-PhysicalChannel-Status-Information                PRESENCE mandatory }
}

HS-DSCH-Resources-Information-ResourceStatusInd ::= SEQUENCE {
    resourceOperationalState           ResourceOperationalState,
    availabilityStatus                 AvailabilityStatus,
    iE-Extensions                      ProtocolExtensionContainer  {{ HS-DSCH-Resources-Information-ResourceStatusInd-ExtIEs }}     OPTIONAL,
    ...
}

HS-DSCH-Resources-Information-ResourceStatusInd-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

S-CCPCH-InformationListExt-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxSCCPCHCellinExt)) OF ProtocolIE-Single-Container {{ S-CCPCH-InformationItemIE-
ResourceStatusInd }}

S-CCPCH-LCR-InformationListExt-ResourceStatusInd ::= SEQUENCE (SIZE (1..maxSCCPCHCellinExtLCR)) OF ProtocolIE-Single-Container {{ S-CCPCH-
InformationItemIE-ResourceStatusInd }}
```

UNCHANGED TEXT IS REMOVED

```
-- **************************************************************
--
-- RADIO LINK PARAMETER UPDATE INDICATION TDD
--
-- **************************************************************

RadioLinkParameterUpdateIndicationTDD ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{RadioLinkParameterUpdateIndicationTDD-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{RadioLinkParameterUpdateIndicationTDD-Extensions}}          OPTIONAL,
    ...
}

RadioLinkParameterUpdateIndicationTDD-IEs NBAP-PROTOCOL-IES ::= {
    { ID id-CRNC-CommunicationContextID         CRITICALITY     ignore      TYPE    CRNC-CommunicationContextID          PRESENCE mandatory   } |
    { ID id-HSDSCH-TDD-Update-Information       CRITICALITY     ignore      TYPE    HSDSCH-TDD-Update-Information        PRESENCE optional },
    ...
}

RadioLinkParameterUpdateIndicationTDD-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- **************************************************************
--
-- MBMS NOTIFICATION UPDATE COMMAND
--
-- **************************************************************

MBMSNotificationUpdateCommand ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{ MBMSNotificationUpdateCommand-IEs}},
    protocolExtensions      ProtocolExtensionContainer  {{ MBMSNotificationUpdateCommand-Extensions}}               OPTIONAL,
    ...
}

MBMSNotificationUpdateCommand-IEs NBAP-PROTOCOL-IES ::= {
    { ID id-C-ID                                CRITICALITY ignore  TYPE C-ID                                       PRESENCE mandatory   }|
    { ID id-CommonPhysicalChannelID             CRITICALITY ignore  TYPE CommonPhysicalChannelID                    PRESENCE mandatory   }|
    { ID id-Modification-Period                 CRITICALITY ignore  TYPE Modification-Period                        PRESENCE optional    }|
    { ID id-MICH-CFN                            CRITICALITY ignore  TYPE MICH-CFN                                   PRESENCE mandatory   }|
    { ID id-NI-Information-NotifUpdateCmd       CRITICALITY ignore  TYPE NI-Information                             PRESENCE mandatory   },
    ...
}

MBMSNotificationUpdateCommand-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

END
```

9.3.4 Information Element Definitions

```
--**************************************************************************
--
-- Information Element Definitions
--
--**************************************************************************

NBAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) nbap (2) version1 (1) nbap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=
BEGIN

IMPORTS
    maxNrOfRLs,
    maxNrOfTFCs,
    maxNrOfErrors,
    maxCTFC,
    maxNrOfTFs,
    maxTTI-count,
    maxRateMatching,
    maxCodeNrComp-1,
    maxHS-PDSCHCodeNrComp-1,
    maxHS-SCCHCodeNrComp-1,
    maxNrOfCellSyncBursts,
    maxNrOfCodeGroups,
    maxNrOfMeasNCell,
    maxNrOfMeasNCell-1,
    maxNrOfReceptsPerSyncFrame,
    maxNrOfTFCIGroups,
    maxNrOfTFCI1Combs,
    maxNrOfTFCI2Combs,
    maxNrOfTFCI2Combs-1,
    maxNrOfSF,
    maxTGPS,
    maxNrOfUSCHs,
    maxNrOfULTSs,
    maxNrOfULTSLCRs,
    maxNrOfDPCHs,
    maxNrOfDPCHLCRs,
    maxNrOfCodes,
    maxNrOfDSCHs,
    maxNrOfDLTSs,
    maxNrOfDLTSLCRs,
    maxNrOfDCHs,
    maxNrOfLevels,
    maxNoGPSItems,
    maxNoSat,
    maxNrOfCellPortionsPerCell,
    maxNrOfCellPortionsPerCell-1,
```

```
    maxNrOfHSSCCHs,
    maxNrOfHSSCCHCodes,
    maxNrOfMACdFlows,
    maxNrOfMACdFlows-1,
    maxNrOfMACdPDUIndexes,
    maxNrOfMACdPDUIndexes-1,
    maxNrOfNIs,
    maxNrOfPriorityQueues,
    maxNrOfPriorityQueues-1,
    maxNrOfHARQProcesses,
    maxNrOfSyncDLCodesLCR,
    maxNrOfSyncFramesLCR,
    maxNrOfContextsOnUeList,
    maxNrOfPriorityClasses,
    maxNrOfSatAlmanac-maxNoSat,

    id-MessageStructure,
    id-ReportCharacteristicsType-OnModification,
    id-Rx-Timing-Deviation-Value-LCR,
    id-SFNSFNMeasurementValueInformation,
    id-SFNSFNMeasurementThresholdInformation,
    id-TUTRANGPSMeasurementValueInformation,
    id-TUTRANGPSMeasurementThresholdInformation,
    id-TypeOfError,
    id-transportlayeraddress,
    id-bindingID,
    id-Angle-Of-Arrival-Value-LCR,
    id-SyncDLCodeIdThreInfoLCR,
    id-neighbouringTDDCellMeasurementInformationLCR,
    id-HS-SICH-Reception-Quality,
    id-HS-SICH-Reception-Quality-Measurement-Value,
    id-Initial-DL-Power-TimeslotLCR-InformationItem,
    id-Maximum-DL-Power-TimeslotLCR-InformationItem,
    id-Minimum-DL-Power-TimeslotLCR-InformationItem,
    id-Received-total-wide-band-power-For-CellPortion,
    id-Received-total-wide-band-power-For-CellPortion-Value,
    id-Transmitted-Carrier-Power-For-CellPortion,
    id-Transmitted-Carrier-Power-For-CellPortion-Value,
    id-TransmittedCarrierPowerOfAllCodesNotUsedForHS-PDSCHOrHS-SCCHTransmission,
    id-TransmittedCarrierPowerOfAllCodesNotUsedForHS-PDSCHOrHS-SCCHTransmissionCellPortion,
    id-TransmittedCarrierPowerOfAllCodesNotUsedForHS-PDSCHOrHS-SCCHTransmissionCellPortionValue,
    id-HS-DSCHRequiredPowerValueInformation,
    id-HS-DSCHProvidedBitRateValueInformation,
    id-HS-DSCHRequiredPowerValue,
    id-Best-Cell-Portions-Value,
    id-Unidirectional-DCH-Indicator,
    id-SAT-Info-Almanac-ExtItem,
    id-TnlQos,
    id-UpPTSInterferenceValue
FROM NBAP-Constants

    Criticality,
    ProcedureID,
    ProtocolIE-ID,
```

```
    TransactionID,
    TriggeringMessage
FROM NBAP-CommonDataTypes

    NBAP-PROTOCOL-IES,
    ProtocolExtensionContainer{},
    ProtocolIE-Single-Container{},
    NBAP-PROTOCOL-EXTENSION
FROM NBAP-Containers;
```

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-- ========================================

Cause ::= CHOICE {
    radioNetwork            CauseRadioNetwork,
    transport           CauseTransport,
    protocol                CauseProtocol,
    misc                    CauseMisc,
    ...
}

CauseMisc ::= ENUMERATED {
    control-processing-overload,
    hardware-failure,
    oam-intervention,
    not-enough-user-plane-processing-resources,
    unspecified,
    ...
}

CauseProtocol ::= ENUMERATED {
    transfer-syntax-error,
    abstract-syntax-error-reject,
    abstract-syntax-error-ignore-and-notify,
    message-not-compatible-with-receiver-state,
    semantic-error,
    unspecified,
    abstract-syntax-error-falsely-constructed-message,
    ...
}

CauseRadioNetwork ::= ENUMERATED {
    unknown-C-ID,
    cell-not-available,
    power-level-not-supported,
    dl-radio-resources-not-available,
    ul-radio-resources-not-available,
    rl-already-ActivatedOrAllocated,
    nodeB-Resources-unavailable,
    measurement-not-supported-for-the-object,
```

```
    combining-resources-not-available,
    requested-configuration-not-supported,
    synchronisation-failure,
    priority-transport-channel-established,
    sIB-Origination-in-Node-B-not-Supported,
    requested-tx-diversity-mode-not-supported,
    unspecified,
    bCCH-scheduling-error,
    measurement-temporarily-not-available,
    invalid-CM-settings,
    reconfiguration-CFN-not-elapsed,
    number-of-DL-codes-not-supported,
    s-cipch-not-supported,
    combining-not-supported,
    ul-sf-not-supported,
    dl-SF-not-supported,
    common-transport-channel-type-not-supported,
    dedicated-transport-channel-type-not-supported,
    downlink-shared-channel-type-not-supported,
    uplink-shared-channel-type-not-supported,
    cm-not-supported,
    tx-diversity-no-longer-supported,
    unknown-Local-Cell-ID,
    ...,
    number-of-UL-codes-not-supported,
    information-temporarily-not-available,
    information-provision-not-supported-for-the-object,
    cell-synchronisation-not-supported,
    cell-synchronisation-adjustment-not-supported,
    dpc-mode-change-not-supported,
    iPDL-already-activated,
    iPDL-not-supported,
    iPDL-parameters-not-available,
    frequency-acquisition-not-supported,
    power-balancing-status-not-compatible,
    requested-typeofbearer-re-arrangement-not-supported,
    signalling-Bearer-Re-arrangement-not-supported,
    bearer-Re-arrangement-needed,
    delayed-activation-not-supported,
    rl-timing-adjustment-not-supported,
    mich-not-supported
}

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MessageStructure ::= SEQUENCE (SIZE (1..maxNrOfLevels)) OF
```

```
    SEQUENCE {
        iE-ID                   ProtocolIE-ID,
        repetitionNumber        RepetitionNumber1       OPTIONAL,
        iE-Extensions           ProtocolExtensionContainer { {MessageStructure-ExtIEs} } OPTIONAL,
        ...
    }

MessageStructure-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MICH-CFN ::= INTEGER (0..4095)

MICH-Mode ::= ENUMERATED {
    v18,
    v36,
    v72,
    v144,
    ...
}

MidambleConfigurationLCR ::=    ENUMERATED {v2, v4, v6, v8, v10, v12, v14, v16, ...}

MidambleConfigurationBurstType1And3 ::=     ENUMERATED {v4, v8, v16}

MidambleConfigurationBurstType2 ::=     ENUMERATED {v3, v6}

MidambleShiftAndBurstType ::=       CHOICE {
    type1                               SEQUENCE {
        midambleConfigurationBurstType1And3 MidambleConfigurationBurstType1And3,
        midambleAllocationMode              CHOICE {
            defaultMidamble                     NULL,
            commonMidamble                      NULL,
            ueSpecificMidamble                  MidambleShiftLong,
            ...
        },
    ...
    },
    type2                               SEQUENCE {
        midambleConfigurationBurstType2     MidambleConfigurationBurstType2,
        midambleAllocationMode              CHOICE {
            defaultMidamble                     NULL,
            commonMidamble                      NULL,
            ueSpecificMidamble                  MidambleShiftShort,
            ...
        },
        ...
    },
    type3                               SEQUENCE {
        midambleConfigurationBurstType1And3 MidambleConfigurationBurstType1And3,
        midambleAllocationMode              CHOICE {
            defaultMidamble                     NULL,
            ueSpecificMidamble                  MidambleShiftLong,
```

```
        ...
        },
        ...
    },
    ...
}

MidambleShiftLong ::=               INTEGER (0..15)

MidambleShiftShort ::=              INTEGER (0..5)

MidambleShiftLCR ::= SEQUENCE {
    midambleAllocationMode      MidambleAllocationMode,
    midambleShift               MidambleShiftLong       OPTIONAL,
    -- The IE shall be present if the Midamble Allocation Mode IE is set to "UE specific midamble".
    midambleConfigurationLCR        MidambleConfigurationLCR,
    iE-Extensions               ProtocolExtensionContainer { {MidambleShiftLCR-ExtIEs} }        OPTIONAL,
    ...
    }

MidambleAllocationMode ::= ENUMERATED {
    defaultMidamble,
    commonMidamble,
    uESpecificMidamble,
    ...
    }

MidambleShiftLCR-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

MinimumDL-PowerCapability ::=  INTEGER(0..800)
-- Unit dBm, Range -30dBm .. 50dBm, Step +0.1dB

MinSpreadingFactor ::= ENUMERATED {
        v4,
        v8,
        v16,
        v32,
        v64,
        v128,
        v256,
        v512
}
--  TDD Mapping scheme for the minimum spreading factor 1 and 2: "256" means 1, "512" means 2

Modification-Period ::= ENUMERATED {v5120, v10240,...}

ModifyPriorityQueue ::= CHOICE {
    addPriorityQueue            PriorityQueue-InfoItem-to-Add,
    modifyPriorityQueue         PriorityQueue-InfoItem-to-Modify,
    deletePriorityQueue         PriorityQueue-Id,
    ...
```

```
}

Modulation ::= ENUMERATED {
    qPSK,
    eightPSK,
    ...
}

MinUL-ChannelisationCodeLength ::= ENUMERATED {
    v4,
    v8,
    v16,
    v32,
    v64,
    v128,
    v256,
    ...
}

MultiplexingPosition ::= ENUMERATED {
    fixed,
    flexible
}

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-- ========================================

UNCHANGED TEXT IS REMOVED

Nack-Power-Offset ::= INTEGER (0..8,...)
-- According to mapping in ref. [9] subclause 4.2.1

NCyclesPerSFNperiod ::= ENUMERATED {
    v1,
    v2,
    v4,
    v8,
    ...,
    v16,
    v32,
    v64
}

NEOT ::= INTEGER (0..8)

NFmax ::= INTEGER (1..64,...)

NRepetitionsPerCyclePeriod ::= INTEGER (2..10)

N-INSYNC-IND ::= INTEGER (1..256)
```

```
N-OUTSYNC-IND ::= INTEGER (1..256)

NeighbouringCellMeasurementInformation ::= SEQUENCE (SIZE (1..maxNrOfMeasNCell)) OF
        CHOICE {
                neighbouringFDDCellMeasurementInformation       NeighbouringFDDCellMeasurementInformation, -- FDD only
                neighbouringTDDCellMeasurementInformation       NeighbouringTDDCellMeasurementInformation,
                -- Applicable to 3.84Mcps TDD only
                ...,
                extension-neighbouringCellMeasurementInformation    Extension-neighbouringCellMeasurementInformation
            }

Extension-neighbouringCellMeasurementInformation    ::= ProtocolIE-Single-Container {{ Extension-neighbouringCellMeasurementInformationIE }}

Extension-neighbouringCellMeasurementInformationIE NBAP-PROTOCOL-IES ::= {
    { ID id-neighbouringTDDCellMeasurementInformationLCR    CRITICALITY reject  TYPE NeighbouringTDDCellMeasurementInformationLCR PRESENCE mandatory
},  -- Applicable to 1.28Mcps TDD only
    ...
}

NeighbouringFDDCellMeasurementInformation ::= SEQUENCE {
    uC-Id                               UC-Id,
    uARFCN                              UARFCN,
    primaryScramblingCode               PrimaryScramblingCode,
    iE-Extensions                       ProtocolExtensionContainer { { NeighbouringFDDCellMeasurementInformationItem-ExtIEs} } OPTIONAL,
    ...
}

NeighbouringFDDCellMeasurementInformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

NeighbouringTDDCellMeasurementInformation ::= SEQUENCE {
    uC-Id                               UC-Id,
    uARFCN                              UARFCN,
    cellParameterID                     CellParameterID,
    timeSlot                            TimeSlot                        OPTIONAL,
    midambleShiftAndBurstType           MidambleShiftAndBurstType       OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { NeighbouringTDDCellMeasurementInformationItem-ExtIEs} } OPTIONAL,
    ...
}

NeighbouringTDDCellMeasurementInformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

NeighbouringTDDCellMeasurementInformationLCR ::= SEQUENCE {
    uC-Id                               UC-Id,
    uARFCN                              UARFCN,
    cellParameterID                     CellParameterID,
    timeSlotLCR                         TimeSlotLCR             OPTIONAL,
```

```
    midambleShiftLCR                    MidambleShiftLCR        OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { NeighbouringTDDCellMeasurementInformationLCRItem-ExtIEs} } OPTIONAL,
    ...
}

NeighbouringTDDCellMeasurementInformationLCRItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

NI-Information ::= SEQUENCE (SIZE (1..maxNrOfNIs)) OF Notification-Indicator

Notification-Indicator ::= INTEGER (0..65535)

NodeB-CommunicationContextID ::= INTEGER (0..1048575)

NotificationIndicatorLength :: ENUMERATED {
    v2,
    v4,
    v8,
    ...
}


NumberOfReportedCellPortions ::= INTEGER (1..maxNrOfCellPortionsPerCell,...)

NStartMessage ::= INTEGER (1..8)

NSubCyclesPerCyclePeriod ::= INTEGER (1..16,...)

UNCHANGED TEXT IS REMOVED
```

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

NBAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) nbap (2) version1 (1) nbap-Constants (4)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    ProcedureCode,
    ProtocolIE-ID
FROM NBAP-CommonDataTypes;

-- **************************************************************
--
-- Elementary Procedures
--
-- **************************************************************

id-audit                                        ProcedureCode ::= 0
id-auditRequired                                ProcedureCode ::= 1
id-blockResource                                ProcedureCode ::= 2
id-cellDeletion                                 ProcedureCode ::= 3
id-cellReconfiguration                          ProcedureCode ::= 4
id-cellSetup                                    ProcedureCode ::= 5
id-cellSynchronisationInitiation                ProcedureCode ::= 45
id-cellSynchronisationReconfiguration           ProcedureCode ::= 46
id-cellSynchronisationReporting                 ProcedureCode ::= 47
id-cellSynchronisationTermination               ProcedureCode ::= 48
id-cellSynchronisationFailure                   ProcedureCode ::= 49
id-commonMeasurementFailure                     ProcedureCode ::= 6
id-commonMeasurementInitiation                  ProcedureCode ::= 7
id-commonMeasurementReport                      ProcedureCode ::= 8
id-commonMeasurementTermination                 ProcedureCode ::= 9
id-commonTransportChannelDelete                 ProcedureCode ::= 10
id-commonTransportChannelReconfigure            ProcedureCode ::= 11
id-commonTransportChannelSetup                  ProcedureCode ::= 12
id-compressedModeCommand                        ProcedureCode ::= 14
id-dedicatedMeasurementFailure                  ProcedureCode ::= 16
id-dedicatedMeasurementInitiation               ProcedureCode ::= 17
id-dedicatedMeasurementReport                   ProcedureCode ::= 18
id-dedicatedMeasurementTermination              ProcedureCode ::= 19
id-downlinkPowerControl                         ProcedureCode ::= 20
id-downlinkPowerTimeslotControl                 ProcedureCode ::= 38
```

```
id-errorIndicationForCommon                          ProcedureCode ::= 35
id-errorIndicationForDedicated                       ProcedureCode ::= 21
id-informationExchangeFailure                        ProcedureCode ::= 40
id-informationExchangeInitiation                     ProcedureCode ::= 41
id-informationExchangeTermination                    ProcedureCode ::= 42
id-informationReporting                              ProcedureCode ::= 43
id-BearerRearrangement                               ProcedureCode ::= 50
id-mBMSNotificationUpdate                            ProcedureCode ::= 53
id-physicalSharedChannelReconfiguration              ProcedureCode ::= 37
id-privateMessageForCommon                           ProcedureCode ::= 36
id-privateMessageForDedicated                        ProcedureCode ::= 22
id-radioLinkAddition                                 ProcedureCode ::= 23
id-radioLinkDeletion                                 ProcedureCode ::= 24
id-radioLinkFailure                                  ProcedureCode ::= 25
id-radioLinkPreemption                               ProcedureCode ::= 39
id-radioLinkRestoration                              ProcedureCode ::= 26
id-radioLinkSetup                                    ProcedureCode ::= 27
id-reset                                             ProcedureCode ::= 13
id-resourceStatusIndication                          ProcedureCode ::= 28
id-cellSynchronisationAdjustment                     ProcedureCode ::= 44
id-synchronisedRadioLinkReconfigurationCancellation  ProcedureCode ::= 29
id-synchronisedRadioLinkReconfigurationCommit        ProcedureCode ::= 30
id-synchronisedRadioLinkReconfigurationPreparation   ProcedureCode ::= 31
id-systemInformationUpdate                           ProcedureCode ::= 32
id-unblockResource                                   ProcedureCode ::= 33
id-unSynchronisedRadioLinkReconfiguration            ProcedureCode ::= 34
id-radioLinkActivation                               ProcedureCode ::= 51
id-radioLinkParameterUpdate                          ProcedureCode ::= 52

-- **************************************************************
--
-- Lists
--
-- **************************************************************

maxNrOfCodes                INTEGER ::= 10
maxNrOfDLTSs                INTEGER ::= 15
maxNrOfDLTSLCRs             INTEGER ::= 6
maxNrOfErrors               INTEGER ::= 256
maxNrOfTFs                  INTEGER ::= 32
maxNrOfTFCs                 INTEGER ::= 1024
maxNrOfRLs                  INTEGER ::= 16
maxNrOfRLs-1                INTEGER ::= 15  -- maxNrOfRLs – 1
maxNrOfRLs-2                INTEGER ::= 14  -- maxNrOfRLs – 2
maxNrOfRLSets               INTEGER ::= maxNrOfRLs
maxNrOfDPCHs                INTEGER ::= 240
maxNrOfDPCHLCRs             INTEGER ::= 240
maxNrOfSCCPCHs              INTEGER ::= 8
maxNrOfSCCPCHsinExt         INTEGER ::= 232
maxNrOfCPCHs                INTEGER ::= 16
maxNrOfPCPCHs               INTEGER ::= 64
maxNrOfDCHs                 INTEGER ::= 128
maxNrOfDSCHs                INTEGER ::= 32
```

```
maxNrOfFACHs                INTEGER ::= 8
maxNrOfCCTrCHs              INTEGER ::= 16
maxNrOfPDSCHs               INTEGER ::= 256
maxNrOfHSPDSCHs             INTEGER ::= 16
maxNrOfPUSCHs               INTEGER ::= 256
maxNrOfPDSCHSets            INTEGER ::= 256
maxNrOfPRACHLCRs            INTEGER ::= 8
maxNrOfPUSCHSets            INTEGER ::= 256
maxNrOfSCCPCHLCRs           INTEGER ::= 8
maxNrOfSCCPCHsLCRinExt      INTEGER ::= 88
maxNrOfULTSs                INTEGER ::= 15
maxNrOfULTSLCRs             INTEGER ::= 6
maxNrOfUSCHs                INTEGER ::= 32
maxAPSigNum                 INTEGER ::= 16
maxNrOfSlotFormatsPRACH     INTEGER ::= 8
maxCellinNodeB              INTEGER ::= 256
maxCCPinNodeB               INTEGER ::= 256
maxCPCHCell                 INTEGER ::= maxNrOfCPCHs
maxCTFC                     INTEGER ::= 16777215
maxLocalCellinNodeB         INTEGER ::= maxCellinNodeB
maxNoofLen                  INTEGER ::= 7
maxFPACHCell                INTEGER ::= 8
maxRACHCell                 INTEGER ::= maxPRACHCell
maxPRACHCell                INTEGER ::= 16
maxPCPCHCell                INTEGER ::= 64
maxSCCPCHCell               INTEGER ::= 32
maxSCCPCHCellinExt          INTEGER ::= 208 -- maxNrOfSCCPCHs + maxNrOfSCCPCHsinExt - maxSCCPCHCell
maxSCCPCHCellinExtLCR       INTEGER ::= 64  -- maxNrOfSCCPCHLCRs + maxNrOfSCCPCHsLCRinExt - maxSCCPCHCell
maxSCPICHCell               INTEGER ::= 32
maxTTI-count                INTEGER ::= 4
maxIBSEG                    INTEGER ::= 16
maxIB                       INTEGER ::= 64
maxFACHCell                 INTEGER ::= 256 -- maxNrOfFACHs * maxSCCPCHCell
maxRateMatching             INTEGER ::= 256
maxCodeNrComp-1             INTEGER ::= 256
maxHS-PDSCHCodeNrComp-1     INTEGER ::= 15
maxHS-SCCHCodeNrComp-1      INTEGER ::= 127
maxNrOfCellSyncBursts       INTEGER ::= 10
maxNrOfCodeGroups           INTEGER ::= 256
maxNrOfReceptsPerSyncFrame  INTEGER ::= 16
maxNrOfMeasNCell            INTEGER ::= 96
maxNrOfMeasNCell-1          INTEGER ::= 95  -- maxNrOfMeasNCell – 1
maxNrOfTFCIGroups           INTEGER ::= 256
maxNrOfTFCI1Combs           INTEGER ::= 512
maxNrOfTFCI2Combs           INTEGER ::= 1024
maxNrOfTFCI2Combs-1         INTEGER ::= 1023
maxNrOfSF                   INTEGER ::= 8
maxTGPS                     INTEGER ::= 6
maxCommunicationContext     INTEGER ::= 1048575
maxNrOfLevels               INTEGER ::= 256
maxNoSat                    INTEGER ::= 16
maxNoGPSItems               INTEGER ::= 8
maxNrOfHSSCCHs              INTEGER ::= 32
```

```
maxNrOfHSSICHs              INTEGER ::= 4
maxNrOfSyncFramesLCR        INTEGER ::= 512
maxNrOfReceptionsperSyncFrameLCR    INTEGER ::= 8
maxNrOfSyncDLCodesLCR       INTEGER ::= 32
maxNrOfHSSCCHCodes          INTEGER ::= 4
maxNrOfMACdFlows            INTEGER ::= 8
maxNrOfMACdFlows-1          INTEGER ::= 7   -- maxNrOfMACdFlows - 1
maxNrOfMACdPDUIndexes       INTEGER ::= 8
maxNrOfMACdPDUIndexes-1     INTEGER ::= 7   -- maxNoOfMACdPDUIndexes - 1
maxNrOfNIs                  INTEGER ::= 256
maxNrOfPriorityQueues       INTEGER ::= 8
maxNrOfPriorityQueues-1     INTEGER ::= 7   -- maxNoOfPriorityQueues - 1
maxNrOfHARQProcesses        INTEGER ::= 8
maxNrOfContextsOnUeList     INTEGER ::= 16
maxNrOfCellPortionsPerCell      INTEGER ::= 64
maxNrOfCellPortionsPerCell-1    INTEGER ::= 63
maxNrOfPriorityClasses          INTEGER ::= 16
maxNrOfSatAlmanac-maxNoSat      INTEGER ::= 16  -- maxNrofSatAlmanac - maxNoSat
```

```
-- **************************************************************
--
-- IEs
--
-- **************************************************************
```

UNCHANGED TEXT IS REMOVED

```
id-Secondary-CPICH-Information                                                  ProtocolIE-ID ::= 600
id-Received-total-wide-band-power-For-CellPortion                              ProtocolIE-ID ::= 601
id-Unidirectional-DCH-Indicator                                                ProtocolIE-ID ::= 602
id-TimingAdjustmentValueLCR                                                    ProtocolIE-ID ::= 603
id-multipleRL-dl-DPCH-InformationList                                          ProtocolIE-ID ::= 604
id-multipleRL-dl-DPCH-InformationModifyList                                    ProtocolIE-ID ::= 605
id-multipleRL-ul-DPCH-InformationList                                          ProtocolIE-ID ::= 606
id-multipleRL-ul-DPCH-InformationModifyList                                    ProtocolIE-ID ::= 607
id-RL-ID                                                                       ProtocolIE-ID ::= 608
id-SAT-Info-Almanac-ExtItem                                                    ProtocolIE-ID ::= 609
id-HSDPA-Capability                                                            ProtocolIE-ID ::= 610
id-HSDSCH-Resources-Information-AuditRsp                                       ProtocolIE-ID ::= 611
id-HSDSCH-Resources-Information-ResourceStatusInd                              ProtocolIE-ID ::= 612
id-HSDSCH-MACdFlows-to-Add                                                     ProtocolIE-ID ::= 613
id-HSDSCH-MACdFlows-to-Delete                                                  ProtocolIE-ID ::= 614
id-HSDSCH-Information-to-Modify-Unsynchronised                                 ProtocolIE-ID ::= 615
id-TnlQos                                                                      ProtocolIE-ID ::= 616
id-Received-total-wide-band-power-For-CellPortion-Value                        ProtocolIE-ID ::= 617
id-Transmitted-Carrier-Power-For-CellPortion                                   ProtocolIE-ID ::= 618
id-Transmitted-Carrier-Power-For-CellPortion-Value                             ProtocolIE-ID ::= 619
id-TransmittedCarrierPowerOfAllCodesNotUsedForHS-PDSCHOrHS-SCCHTransmissionCellPortion      ProtocolIE-ID ::= 620
id-TransmittedCarrierPowerOfAllCodesNotUsedForHS-PDSCHOrHS-SCCHTransmissionCellPortionValue ProtocolIE-ID ::= 621
id-UpPTSInterferenceValue                                                      ProtocolIE-ID ::= 622
id-PrimaryCCPCH-RSCP-Delta                                                     ProtocolIE-ID ::= 623
id-MeasurementRecoveryBehavior                                                 ProtocolIE-ID ::= 624
id-MeasurementRecoveryReportingIndicator                                       ProtocolIE-ID ::= 625
id-MeasurementRecoverySupportIndicator                                         ProtocolIE-ID ::= 626
id-Tstd-indicator                                                              ProtocolIE-ID ::= 627
id-Additional-S-CCPCH-Parameters-CTCH-ReconfRqstTDD                            ProtocolIE-ID ::= 633
id-Additional-S-CCPCH-Parameters-CTCH-SetupRqstTDD                             ProtocolIE-ID ::= 634
id-Additional-S-CCPCH-LCR-Parameters-CTCH-ReconfRqstTDD                        ProtocolIE-ID ::= 635
id-Additional-S-CCPCH-LCR-Parameters-CTCH-SetupRqstTDD                         ProtocolIE-ID ::= 636
id-MICH-CFN                                                                    ProtocolIE-ID ::= 637
id-MICH-Information-AuditRsp                                                   ProtocolIE-ID ::= 638
id-MICH-Information-ResourceStatusInd                                          ProtocolIE-ID ::= 639
id-MICH-Parameters-CTCH-ReconfRqstFDD                                          ProtocolIE-ID ::= 640
id-MICH-Parameters-CTCH-ReconfRqstTDD                                          ProtocolIE-ID ::= 641
id-MICH-Parameters-CTCH-SetupRqstFDD                                           ProtocolIE-ID ::= 642
id-MICH-Parameters-CTCH-SetupRqstTDD                                           ProtocolIE-ID ::= 643
id-Modification-Period                                                         ProtocolIE-ID ::= 644
id-NI-Information-NotifUpdateCmd                                               ProtocolIE-ID ::= 645
id-S-CCPCH-InformationListExt-AuditRsp                                         ProtocolIE-ID ::= 646
id-S-CCPCH-InformationListExt-ResourceStatusInd                                ProtocolIE-ID ::= 647
id-S-CCPCH-LCR-InformationListExt-AuditRsp                                     ProtocolIE-ID ::= 648
id-S-CCPCH-LCR-InformationListExt-ResourceStatusInd                            ProtocolIE-ID ::= 649
```

```
END
```