

**TSG-RAN Meeting #11
Palm Springs, CA, U.S.A., 13-16 March 2001**

RP-010118

Title: Agreed CRs to TS 25.423

Source: TSG-RAN WG3

Agenda item: 5.3.3

Tdoc_Num	Specification	CR_Num	Revision_Num	CR_Subject	CR_Category	WG_Status	Cur_Ver_Num	New_Ver_Num
R3-010676	25.423	305		Time measurement granularity	F	agreed	3.4.0	3.5.0
R3-011021	25.423	306	2	Measurement range modification	F	agreed	3.4.0	3.5.0
R3-010917	25.423	307	1	SCH Timeslot IE definition	F	agreed	3.4.0	3.5.0
R3-010919	25.423	308	1	DL Timeslot ISCP report correction	F	agreed	3.4.0	3.5.0
R3-010927	25.423	311	1	Paging Cause	F	agreed	3.4.0	3.5.0
R3-010760	25.423	313		Handling of the Procedures Triggering an Error Indication Procedure	F	agreed	3.4.0	3.5.0
R3-010764	25.423	314		Mapping of TFS and TFI	F	agreed	3.4.0	3.5.0
R3-010767	25.423	315		Release of Common Transport Channel Resources in the DRNS	F	agreed	3.4.0	3.5.0
R3-011064	25.423	316	1	Miscellaneous Corrections	F	agreed	3.4.0	3.5.0
R3-010769	25.423	317		Removal of IE Group Name for Groups with only one Repetition	F	agreed	3.4.0	3.5.0
R3-011025	25.423	318	2	Forward Compatibility of RNSAP with regards to Dedicated Measurements	F	agreed	3.4.0	3.5.0
R3-011008	25.423	319	1	Remaining Errors after CR Implementation	F	agreed	3.4.0	3.5.0

R3-011085	25.423	329	2	Erroneous Criticality Diagnostics IE	F	agreed	3.4.0	3.5.0
R3-010784	25.423	332		Handling of Not Comprehended and Missing IEs Leading to Incapability to Compile a Response Message	F	agreed	3.4.0	3.5.0
R3-011024	25.423	334	1	Merged Clarifications to the Measurement Procedures	F	agreed	3.4.0	3.5.0
R3-011032	25.423	335	1	Introduction of the PC Preamble and SRB Delay IEs.	F	agreed	3.4.0	3.5.0

CHANGE REQUEST

⌘ **25.423 CR 305** ⌘ re **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Time measurement granularity				
Source:	⌘ R-WG3				
Work item code:	⌘	Date:	⌘ February 2001		
Category:	⌘ F	Release:	⌘ R99		
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)		
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.				

Reason for change:	⌘ As for the RTT measurement for FDD, RAN WG4 changed the granularity of the Rx Timing Deviation for TDD. This CR reflects the changes made in 25.123 and incorporates this new definition in 25.423.
Summary of change:	⌘ Modification of dated reference of WG4 spec 25.123 to V3.5 Modification of dedicated measurement value and measurement threshold
Consequences if not approved:	⌘ Inconsistency between WG3 and WG4 specs. <u>Backward compatibility:</u> Although not Backward compatible it is necessary for consistency

Clauses affected:	⌘ 2, 9.2.1.19, 9.2.1.39, 9.3.4
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications ⌘ 25.123 , R4-010363 25.433 CR351, <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

- [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 (12/94): "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 (V3.3): "Requirements for support of Radio Resource management (FDD)".

- [24] 3GPP TS 25.123 (V3.35): "Requirements for support of Radio Resource management (TDD)".
- [25] 3GPP TS 23.003: "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"

9.2.1.19 Dedicated Measurement Value

The Dedicated Measurement Value shall be the most recent value for this measurement, for which the reporting criteria were met.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Dedicated measurement Value				
>SIR Value	C <i>MeasValue</i>		INTEGER(0. .63)	According to mapping in ref. [23] and [24]
>SIR Error Value	C <i>MeasValue</i>		INTEGER(0. .125)	According to mapping in [23], (FDD only)
>Transmitted Code Power Value	C <i>MeasValue</i>		INTEGER(0. .127)	According to mapping in ref. [23] and [24]
>RSCP	C <i>MeasValue</i>		INTEGER(0. .81)	According to mapping in ref. [24] (TDD only)
>Rx Timing Deviation	C <i>MeasValue</i>		INTEGER(0. .20478191)	According to mapping in [24] [TDD only]
>Round Trip Time	C <i>MeasValue</i>		INTEGER(0. .32767)	According to mapping in [23] [FDD only]

Condition	Explanation
<i>MeasValue</i>	Only one measurement value can be present at the same time.

9.2.1.39 Measurement Threshold

The Measurement Threshold defines which threshold that shall trigger Event A, B, E or F.

Information Element / Group Name	Presence	Range	IE Type and Reference	Semantics Description
SIR	<i>C – Threshold</i>		INTEGER(0..63)	According to mapping in ref. [23] and [24].
SIR Error	<i>C – Threshold</i>		INTEGER(0..125)	According to mapping in [23], (FDD only)
Transmitted Code Power	<i>C – Threshold</i>		INTEGER(0..127)	According to mapping in ref. [23] and [24].
RSCP	<i>C – Threshold</i>		INTEGER(0..81)	According to mapping in ref. [24] (TDD only)
Rx Timing Deviation	<i>C - Threshold</i>		INTEGER(0..29478191)	According to mapping in [24] (TDD only)
Round Trip Time	<i>C – Threshold</i>		INTEGER(0..32767)	According to mapping in [23] (FDD only)

Condition	Explanation
<i>Threshold</i>	Only one measurement threshold can be present at the same time.

9.3.4 Information Element Definitions

```

-- *****
--
-- Information Element Definitions
--
-- *****

-- R

RAC ::= OCTET STRING (SIZE(1))

RANAP-RelocationInformation ::= BIT STRING

RateMatchingAttribute ::= INTEGER (1..maxRateMatching)

RB-Identity ::= INTEGER (0..31)

RB-Info ::= SEQUENCE (SIZE(1..maxNoOfRB)) OF RB-Identity

RefTFCNumber ::= INTEGER (0..15)

RepetitionLength ::= INTEGER (1..63)

RepetitionPeriod ::= ENUMERATED {
    v1,
    v2,
    v4,
    v8,
    v16,
    v32,
    v64
}

RepetitionNumber ::= INTEGER (1..256)

ReportCharacteristics ::= CHOICE {
    onDemand          NULL,
    periodic          Periodic,
    eventA            EventA,
    eventB            EventB,
    eventC            EventC,
    eventD            EventD,
    eventE            EventE,
    eventF            EventF,
    ...
}

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
    ...
}

RL-ID ::= INTEGER (0..31)

RL-Set-ID ::= INTEGER (0..31)

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..81)
-- According to mapping in [24]

RSCP-Value-IncrDecrThres ::= INTEGER (0..80)

Received-total-wide-band-power ::= INTEGER (0..621)

```

```
-- According to mapping in [23]
RxTimingDeviationForTA ::= INTEGER (0..127)
-- As specified in [5], ch. 6.2.7.6
| Rx-Timing-Deviation-Value ::= INTEGER (0..20478191)
```

CR-Form-v3

CHANGE REQUEST

⌘ **25.423 CR 306** ⌘ re **2** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Measurement range modifications		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February 2001
Category:	⌘ F	Release:	⌘ R99
<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ RAN WG4 changed the ranges of UL Timeslot ISCP and RSCP measurements. This CR reflects the changes made in 25.123 and incorporates this new definition in 25.423.
Summary of change:	⌘ Reference to WG4 document 25.123 updated to V3.5 Reporting range and thresholds of UL Timeslot ISCP and RSCP measurement are extended. Rev 1: Change of ranges according last WG4 definitions Rev 2: Correction of Increase/Decrease Threshold range
Consequences if not approved:	⌘ Inconsistency between WG3 and WG4 specs. <u>Backward compatibility:</u> Although not Backward compatible it is necessary for consistency

Clauses affected:	⌘ 2, 9.2.1.19, 9.2.1.38, 9.2.1.39, 9.2.3.13A, 9.3.4		
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘ 25.123 R4-010273R4-010452	⌘ 25.433 CR352
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘		

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- [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 (12/94): "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 (V3.3): "Requirements for support of Radio Resource management (FDD)".

- [24] 3GPP TS 25.123 (V3.35): "Requirements for support of Radio Resource management (TDD)".
- [25] 3GPP TS 23.003: "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"

9.2.1.19 Dedicated Measurement Value

The Dedicated Measurement Value shall be the most recent value for this measurement, for which the reporting criteria were met.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Dedicated measurement Value				
>SIR Value	C <i>MeasValue</i>		INTEGER(0. .63)	According to mapping in ref. [23] and [24]
>SIR Error Value	C <i>MeasValue</i>		INTEGER(0. .125)	According to mapping in [23], (FDD only)
>Transmitted Code Power Value	C <i>MeasValue</i>		INTEGER(0. .127)	According to mapping in ref. [23] and [24]
>RSCP	C <i>MeasValue</i>		INTEGER(0. .84127)	According to mapping in ref. [24] (TDD only)
>Rx Timing Deviation	C <i>MeasValue</i>		INTEGER(0. .2047)	According to mapping in [24] [TDD only]
>Round Trip Time	C <i>MeasValue</i>		INTEGER(0. .32767)	According to mapping in [23] [FDD only]

Condition	Explanation
<i>MeasValue</i>	Only one measurement value can be present at the same time.

9.2.1.38 Measurement Increase/Decrease Threshold

The Measurement Increase/Decrease Threshold defines the threshold that shall trigger Event C or D.

Information Element / Group Name	Presence	Range	IE Type and Reference	Semantics Description
SIR	C – Threshold		INTEGER(0..62)	0: 0 dB 1: 0.5 dB 2: 1 dB ... 62: 31dB
SIR Error	C – Threshold		INTEGER(0..124)	0: 0 dB 1: 0.5 dB 2: 1 dB ... 124: 62 dB (FDD only)
Transmitted Code Power	C – Threshold		INTEGER(0..112,...)	0: 0 dB 1: 0.5 dB 2: 1 dB ... 112: 56 dB
RSCP	C – Threshold		INTEGER(0..80126)	0: 0 dB 1: 0.5 dB 2: 1 dB ... 80-40126: 63dB (TDD only)
Round Trip Time	C – Threshold		INTEGER(0..32766)	0: 0 chips 1: 0.0625 chips 2: 0.1250 chips ... 32766: 2047.875 chips (FDD only)

Condition	Explanation
Threshold	Only one measurement threshold can be present at the same time.

9.2.1.39 Measurement Threshold

The Measurement Threshold defines which threshold that shall trigger Event A, B, E or F.

Information Element / Group Name	Presence	Range	IE Type and Reference	Semantics Description
SIR	C – Threshold		INTEGER(0..63)	According to mapping in ref. [23] and [24].
SIR Error	C – Threshold		INTEGER(0..125)	According to mapping in [23], (FDD only)
Transmitted Code Power	C – Threshold		INTEGER(0..127)	According to mapping in ref. [23] and [24].
RSCP	C – Threshold		INTEGER(0..84127)	According to mapping in ref. [24] (TDD only)
Rx Timing Deviation	C – Threshold		INTEGER(0..2047)	According to mapping in [24] (TDD only)
Round Trip Time	C – Threshold		INTEGER(0..32767)	According to mapping in [23] (FDD only)

Condition	Explanation

<i>Threshold</i>	Only one measurement threshold can be present at the same time.
------------------	---

9.2.3.13A UL Timeslot ISCP

UL Timeslot ISCP is the measured interference in a uplink timeslot at the DRNS, see ref. [14].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UL Timeslot ISCP			INTEGER (0.. 81 127)	According to mapping in [24].

9.3.4 Information Element Definitions

```

-- *****
--
-- Information Element Definitions
--
-- *****

-- R

RAC ::= OCTET STRING (SIZE(1))

RANAP-RelocationInformation ::= BIT STRING

RateMatchingAttribute ::= INTEGER (1..maxRateMatching)

RB-Identity ::= INTEGER (0..31)

RB-Info ::= SEQUENCE (SIZE(1..maxNoOfRB)) OF RB-Identity

RefTFCNumber ::= INTEGER (0..15)

RepetitionLength ::= INTEGER (1..63)

RepetitionPeriod ::= ENUMERATED {
    v1,
    v2,
    v4,
    v8,
    v16,
    v32,
    v64
}

RepetitionNumber ::= INTEGER (1..256)

ReportCharacteristics ::= CHOICE {
    onDemand          NULL,
    periodic          Periodic,
    eventA            EventA,
    eventB            EventB,
    eventC            EventC,
    eventD            EventD,
    eventE            EventE,
    eventF            EventF,
    ...
}

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
    ...
}

RL-ID ::= INTEGER (0..31)

RL-Set-ID ::= INTEGER (0..31)

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..81127)
-- According to mapping in [24]

| RSCP-Value-IncrDecrThres ::= INTEGER (0..80126)

```

```

Received-total-wide-band-power ::= INTEGER (0..621)
-- According to mapping in [23]

RxTimingDeviationForTA ::= INTEGER (0..127)
-- As specified in [5], ch. 6.2.7.6

Rx-Timing-Deviation-Value ::= INTEGER (0..2047)

-- U

UARFCN ::= INTEGER (0..16383,...)
-- Corresponds to: 0.0Hz..3276.6Mhz. See 25.101, 25.105

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-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 ::= {
    ...
}

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-TimeslotISCP          ::= INTEGER (0..91127)
-- According to mapping in [14]

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 ::= {
    ...
}

```

CHANGE REQUEST

⌘ **25.423 CR 307** ⌘ re **1** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ SCH Timeslot IE definition		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February 2001
Category:	⌘ F	Release:	⌘ Release 99
<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ At RNSAP review from RAN3#18 meeting, it was commented that the SCH Time slot IE definition should be improved (currently not a description). This CR therefore improves the IE definition.		
Summary of change:	⌘ Improvement of SCH time slot IE definition		
Consequences if not approved:	⌘ SCH Time slot IE definition is further unclear. <u>Backward compatibility:</u> This CR is backward compatible with the previous version of RNSAP		

Clauses affected:	⌘ 9.2.1.51		
Other specs affected:	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	25.433 CR355
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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

9.2.1.51 SCH Time Slot

The *SCH Time Slot IE* represents the first time slot (k) of a pair of time slots inside a Radio Frame that is assigned to the Physical Channel SCH. The *SCH Time Slot IE* is only applicable if the value of *Sync Case IE* is Case 2 since in this case the SCH is allocated in TS#k and TS#k+8.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SCH Time Slot			INTEGER(0..6)	

CHANGE REQUEST

⌘ **25.423 CR 308** ⌘ re **1** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ DL Timeslot ISCP report correction		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February 2001
Category:	⌘ F	Release:	⌘ Release 99
<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ As within NBAP, this CR removes the RL-ID from the DL Timeslot ISCP Information since not necessary.
Summary of change:	⌘ Remove RL-ID from DL Timeslot ISCP Information Refer to <i>DL Time slot ISCP info</i> IE for IE alignment Rev 1: Criticality added in tabular format Timeslot ISCPInfo for DL Power Timeslot Control Request in ASN.1 indicated with global significance
Consequences if not approved:	⌘ If this CR is not approved an unnecessary IE will be defined. In addition this CR aligns the usage of IEs in different messages. Not doing this will increase the risk of an inconsistent specification also in future releases. <u>Backward compatibility:</u> Not Backward compatible due to different transfer syntax, although functionally no change

Clauses affected:	⌘ 9.1.40, 9.3.3, 9.3.6		
Other specs affected:	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	25.433 CR356r1
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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

9.1.40 DL POWER TIMESLOT CONTROL REQUEST [TDD]

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		-	
DL Time Slot ISCP Info	M		9.2.3.2D		YES	ignore
DL Timeslot ISCP Information		1..<maxnoof DLts>			GLOBAL	ignore
>RL-ID	M		9.2.1.49		-	
>Time-slot	M		9.2.1.56		-	
>DL Timeslot ISCP	M		9.2.3.12			

Range bound	Explanation
MaxnoofDLts	Maximum number of Downlink time slots per Radio Link

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 ::=

-- *****
--
-- IE parameter types from other modules.
--
-- *****

IMPORTS
    Active-Pattern-Sequence-Information,
    AllocationRetentionPriority,
    AllowedQueuingTime,
    AlphaValue,
    BLER,
    Block-STTD-Indicator,
    BindingID,
    C-ID,
    C-RNTI,
    CCTrCH-ID,
    CFN,
    ClosedLoopModel1-SupportIndicator,
    ClosedLoopMode2-SupportIndicator,
    Closedlooptimingadjustmentmode,
    CN-CS-DomainIdentifier,
    CN-PS-DomainIdentifier,
    CNDomainType,
    Cause,
    CellParameterID,
    ChipOffset,
    CriticalityDiagnostics,
    D-RNTI,
    D-RNTI-ReleaseIndication,
    DCH-FDD-Information,
    DCH-ID,
    DCH-InformationResponse,
    DCH-TDD-Information,
    DL-DPCH-SlotFormat,
    DL-TimeslotISCP,
    DL-Power,
    DL-ScramblingCode,
    DL-Timeslot-Information,
    DL-TimeSlot-ISCP-Info,
    DPCH-ID,
    DRACControl,
    DRXCycleLengthCoefficient,
    DedicatedMeasurementType,
    DedicatedMeasurementValue,
    DedicatedMeasurementValueInformation,
    DiversityControlField,
    DiversityMode,
    DSCH-FDD-Information,
    DSCH-FDD-InformationResponse,
    DSCH-FlowControlInformation,
    DSCH-FlowControlItem,
    DSCH-TDD-Information,
    DSCH-ID,
    SchedulingPriorityIndicator,
    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,
IMSI,
InnerLoopDLPCStatus,
L3-Information,
LimitedPowerIncrease,
MaximumAllowedULTxPower,
MaxNrDLPhysicalchannels,
MaxNrOFUL-DPCHs,
MaxNrTimeslots,
MaxNrULPhysicalchannels,
MeasurementFilterCoefficient,
MeasurementID,
MidambleShiftAndBurstType,
MinimumSpreadingFactor,
MinUL-ChannelisationCodeLength,
MultiplexingPosition,
Neighbouring-GSM-CellInformation,
Neighbouring-UMTS-CellInformation,
NrOfDLchannelisationcodes,
PagingCause,
PagingRecordType,
PDSCHCodeMapping,
PayloadCRC-PresenceIndicator,
PowerAdjustmentType,
PowerOffset,
PrimaryCCPCH-RSCP,
PrimaryCPICH-EcNo,
PrimaryCPICH-Power,
PrimaryScramblingCode,
PropagationDelay,
PunctureLimit,
QE-Selector,
RANAP-RelocationInformation,
RB-Info,
RL-ID,
RL-Set-ID,
RNC-ID,
RepetitionLength,
RepetitionPeriod,
ReportCharacteristics,
Received-total-wide-band-power,
RxTimingDeviationForTA,
S-FieldLength,
S-RNTI,
SCH-TimeSlot,
SAI,
SN,
Secondary-CCPCH-Info,
SSDT-CellID,
SSDT-CellID-Length,
SSDT-Indication,
SSDT-SupportIndicator,
STTD-Indicator,
STTD-SupportIndicator,
AdjustmentPeriod,
ScaledAdjustmentRatio,
MaxAdjustmentStep,
SecondaryCCPCH-SlotFormat,
SyncCase,
TDD-ChannelisationCode,
TDD-DCHs-to-Modify,
TDD-DL-Code-Information,
TDD-DPCHoffset,
TDD-PhysicalChannelOffset,
TDD-TPC-DownlinkStepSize,
TDD-UL-Code-Information,
TFCI-Coding,
TFCI-Presence,
TFCI-SignallingMode,
TimeSlot,
TimingAdvanceApplied,
ToAWE,
ToAWS,
TransmitDiversityIndicator,
TransportBearerID,

TransportBearerRequestIndicator,
 TFCS,
 Transmission-Gap-Pattern-Sequence-Information,
 Transmission-Gap-Pattern-Sequence-ScramblingCode-Information,
 TransportFormatManagement,
 TransportFormatSet,
 TransportLayerAddress,
 TrCH-SrcStatisticsDescr,
 UARFCN,
 UC-ID,
 UL-DPCCH-SlotFormat,
 UL-SIR,
 UL-FP-Mode,
 UL-PhysCH-SF-Variation,
 UL-ScramblingCode,
 UL-Timeslot-Information,
 UL-TimeSlot-ISCP-Info,
 URA-ID,
 URA-Information,
 USCH-ID,
 USCH-Information
 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,
 maxNrOfRLs,
 maxNrOfRLSets,
 maxNrOfRLs-1,
 maxNrOfRLs-2,
 maxNrOfULTs,
 maxNrOfDLTs,

id-Active-Pattern-Sequence-Information,
 id-AdjustmentRatio,
 id-AllowedQueuingTime,
 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-ClosedLoopMode1-SupportIndicator,
 id-ClosedLoopMode2-SupportIndicator,
 id-CNOriginatedPage-PagingRqst,
 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-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-Physical-Channel-Information-RL-SetupRqstTDD,
 id-DLReferencePower,
 id-DLReferencePowerList-DL-PC-Rqst,
 id-DL-ReferencePowerInformation-DL-PC-Rqst,
 id-DRXCycleLengthCoefficient,
 id-DedicatedMeasurementObjectType-DM-Rprt,
 id-DedicatedMeasurementObjectType-DM-Rqst,
 id-DedicatedMeasurementObjectType-DM-Rsp,
 id-DedicatedMeasurementType,
 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-DSCHsToBeAddedOrModified-FDD,
 id-DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD,
 id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD,
 id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD,
 id-GA-AccessPointPosition,
 id-GA-Cell,
 id-IMSI,
 id-InnerLoopDLPCStatus,
 id-L3-Information,
 id-AdjustmentPeriod,
 id-MaxAdjustmentStep,
 id-MeasurementFilterCoefficient,
 id-MeasurementID,
 id-Neighbouring-GSM-CellInformation,
 id-PagingArea-PagingRqst,
 id-FACH-FlowControlInformation,
 id-PowerAdjustmentType,
 id-ProcedureScope-DL-PC-Rqst,
 id-PropagationDelay,
 id-RANAP-RelocationInformation,
 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-RestoreInd,

id-RL-Information-RL-SetupRqstFDD,
 id-RL-Information-RL-SetupRqstTDD,
 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-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-ReconfigurationFailure-RL-ReconfFail,
 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-ReportCharacteristics,
 id-Reporting-Object-RL-FailureInd,
 id-Reporting-Object-RL-RestoreInd,
 id-RxTimingDeviationForTA,
 id-S-RNTI,
 id-SAI,
 id-SRNC-ID,
 id-STTD-SupportIndicator,
 id-SuccessfulRL-InformationResponse-RL-AdditionFailureFDD,
 id-SuccessfulRL-InformationResponse-RL-SetupFailureFDD,
 id-SuccessfulRL-InformationResponseList-RL-AdditionFailureFDD,
 id-SuccessfulRL-InformationResponseList-RL-SetupFailureFDD,
 id-timeSlot-ISCP ~~List-DE-PC-Rqst-TDD~~,
 id-TransportBearerID,
 id-TransportBearerRequestIndicator,
 id-TransportLayerAddress,
 id-UC-ID,
 id-Transmission-Gap-Pattern-Sequence-Information,
 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-Information,
 id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD,
 id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD,
 id-UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD,


```

id-UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD,
id-UnsuccessfulRL-InformationResponseList-RL-AdditionFailureFDD,
id-UnsuccessfulRL-InformationResponseList-RL-SetupFailureFDD,
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
FROM RNSAP-Constants;

```

***** TEXT SKIPPED *****

```

-- *****
--
-- 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 List-DL-PC-Rqst-TDD CRITICALITY ignore TYPE DL-TimeSlot-ISCP-
InfoTimeSlot-ISCPList-DL-PC-Rqst-TDD PRESENCE mandatory},
    ...
}

```

```

TimeSlot-ISCPList-DL-PC-Rqst-TDD ::= SEQUENCE (SIZE (0..maxNrOfDLTs)) OF Timeslot-ISCPItem-DL-PC-
Rqst-TDD

```

```

Timeslot-ISCPItem-DL-PC-Rqst-TDD ::= SEQUENCE {
rl-ID RL-ID,
timeSlot TimeSlot,
dl-TimeSlotISCP DL-TimeSlotISCP,
ie-Extensions ProtocolExtensionContainer { { Timeslot-ISCPItem-DL-PC-Rqst-TDD-
ExtIEs} } OPTIONAL,
...
}

```

```

Timeslot-ISCPItem-DL-PC-Rqst-TDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
...
}

```

```

DL-PowerTimeslotControlRequest-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

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-measurementFailure                               ProcedureCode ::= 7
id-measurementInitiation                           ProcedureCode ::= 8
id-measurementReporting                             ProcedureCode ::= 9
id-measurementTermination                           ProcedureCode ::= 10
id-paging                                            ProcedureCode ::= 11
id-physicalChannelReconfiguration                   ProcedureCode ::= 12
id-privateMessage                                   ProcedureCode ::= 13
id-radioLinkAddition                                ProcedureCode ::= 14
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

-- *****

--
-- Lists
--
-- *****

maxCodeNumComp-1      INTEGER ::= 255
maxRateMatching       INTEGER ::= 256
maxNoCodeGroups       INTEGER ::= 256
maxNoOfDSCHs          INTEGER ::= 10
maxNoOfRB             INTEGER ::= 32
maxNoOfUSCHs          INTEGER ::= 10
maxNoTFCIGroups       INTEGER ::= 256
maxNrOfTFCs           INTEGER ::= 1024
maxNrOfTFs            INTEGER ::= 32
maxNrOfCCTrCHs        INTEGER ::= 16
maxNrOfDCHs           INTEGER ::= 128
maxNrOfDL-Codes       INTEGER ::= 8
maxNrOfDPCHs          INTEGER ::= 240
maxNrOfErrors         INTEGER ::= 256
maxNrOfMACcshSDU-Length INTEGER ::= 16
maxNrOfPoints         INTEGER ::= 15
maxNrOfRLs            INTEGER ::= 16
maxNrOfRLSets         INTEGER ::= maxNrOfRLs
maxNrOfRLs-1          INTEGER ::= 15 -- maxNrOfRLs - 1
maxNrOfRLs-2          INTEGER ::= 14 -- maxNrOfRLs - 2
maxNrOfULTs           INTEGER ::= 15
maxNrOfDLTs           INTEGER ::= 15
maxRNCinURA-1        INTEGER ::= 15
maxTTI-Count          INTEGER ::= 4
maxCTFC               INTEGER ::= 16777215
maxNrOfNeighbouringRNCs INTEGER ::= 10
maxNrOfFDDNeighboursPerRNC INTEGER ::= 256
maxNrOfGSMNeighboursPerRNC INTEGER ::= 256
maxNrOfTDDNeighboursPerRNC INTEGER ::= 256
maxFACHCountPlus1     INTEGER ::= 10
maxIBSEG              INTEGER ::= 16
maxTFCI1Combs         INTEGER ::= 512
maxTFCI2Combs         INTEGER ::= 1024
maxTFCI2Combs-1       INTEGER ::= 1023
maxTGPS               INTEGER ::= 6
maxNrOfTS             INTEGER ::= 15

-- *****

--
-- IEs

```

```
--
-- *****
```

id-AllowedQueuingTime	ProtocolIE-ID ::= 4
id-BindingID	ProtocolIE-ID ::= 5
id-C-ID	ProtocolIE-ID ::= 6
id-C-RNTI	ProtocolIE-ID ::= 7
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-CriticalityDiagnostics	ProtocolIE-ID ::= 20
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-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-DLReferencePower	ProtocolIE-ID ::= 67
id-DLReferencePowerList-DL-PC-Rqst	ProtocolIE-ID ::= 68
id-DL-ReferencePowerInformation-DL-PC-Rqst	ProtocolIE-ID ::= 69
id-DRXCycleLengthCoefficient	ProtocolIE-ID ::= 70
id-DedicatedMeasurementObjectType-DM-Rpirt	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-IMSI	ProtocolIE-ID ::= 84
id-L3-Information	ProtocolIE-ID ::= 85
id-AdjustmentPeriod	ProtocolIE-ID ::= 90
id-MaxAdjustmentStep	ProtocolIE-ID ::= 91
id-MeasurementFilterCoefficient	ProtocolIE-ID ::= 92
id-MeasurementID	ProtocolIE-ID ::= 93
id-Neighbouring-GSM-CellInformation	ProtocolIE-ID ::= 13
id-Neighbouring-UMTS-CellInformationItem	ProtocolIE-ID ::= 95
id-PagingArea-PagingRqst	ProtocolIE-ID ::= 102
id-FACH-FlowControlInformation	ProtocolIE-ID ::= 103
id-PowerAdjustmentType	ProtocolIE-ID ::= 107
id-ProcedureScope-DL-PC-Rqst	ProtocolIE-ID ::= 108
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-DM-Rpirt	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-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-ReportCharacteristics	ProtocolIE-ID ::= 152
id-Reporting-Object-RL-FailureInd	ProtocolIE-ID ::= 153
id-Reporting-Object-RL-RestoreInd	ProtocolIE-ID ::= 154
id-S-RNTI	ProtocolIE-ID ::= 155
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-SuccessfulRL-InformationResponseList-RL-AdditionFailureFDD	ProtocolIE-ID ::= 161
id-SuccessfulRL-InformationResponseList-RL-SetupFailureFDD	ProtocolIE-ID ::= 162
id-TransportBearerID	ProtocolIE-ID ::= 163
id-TransportBearerRequestIndicator	ProtocolIE-ID ::= 164
id-TransportLayerAddress	ProtocolIE-ID ::= 165
id-UC-ID	ProtocolIE-ID ::= 166
id-UL-CCTrCH-AddInformation-RL-ReconfPrepTDD	ProtocolIE-ID ::= 167
id-UL-CCTrCH-InformationAddItem-RL-ReconfRqstTDD	ProtocolIE-ID ::= 168
id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD	ProtocolIE-ID ::= 169
id-UL-CCTrCH-InformationAddList-RL-ReconfRqstTDD	ProtocolIE-ID ::= 170
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-UnsuccessfulRL-InformationResponseList-RL-AdditionFailureFDD	ProtocolIE-ID ::= 191
id-UnsuccessfulRL-InformationResponseList-RL-SetupFailureFDD	ProtocolIE-ID ::= 192
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-DSCHsToBeAddedOrModified-FDD	ProtocolIE-ID ::= 229
id-DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD	ProtocolIE-ID ::= 230
id-GA-AccessPointPosition	ProtocolIE-ID ::= 231
id-GA-Cell	ProtocolIE-ID ::= 232
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-ClosedLoopModel-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 List-UL-PC-Rqst-TDD	ProtocolIE-ID ::= 37

END

CHANGE REQUEST

25.423 CR 311

rev **1**

Current version: **3.4.0**

Proposed change affects: (U)SIM ME/UE Radio Access Network Core Network

Title:	Paging Cause		
Source:	R-WG3		
Work item code:		Date:	Feb 2001
Category:	F	Release:	R99
	Use <u>one</u> of the following categories: F (essential 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 <u>one</u> 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)

Reason for change:	During RAN2 #19 meeting, more value of Paging Cause in RRC was added(R2-010380 CR659) and this is in line with RANAP too. This contribution proposes to modify Paging Cause in RNSAP to align with RRC change.
Summary of change:	New values were added in <i>Paging Cause</i> IE.
Consequences if not approved:	There are inconsistency between RNSAP and RRC/RANAP. Backward compatibility : This CR is backward compatible.

Clauses affected:	9.2.1.41E, 9.3.4	
Other specs affected:	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	TS25.331 CR659, TS25.413 CR240
Other comments:		

9.2.1.41E Paging Cause

Cause for a CN originated page.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Paging Cause			ENUMERATED(Terminating Conversational Call, Terminating Streaming Call, Terminating Interactive Call, Terminating Background Call, SMS Terminating Low Priority Signalling... , Terminating High Priority Signalling , Terminating – cause unknown)	See in [16]

9.3.4 Information Element Definitions

```
-- *****
--
-- Information Element Definitions
--
-- *****
```

```
.
.
.
<Parts of the ASN.1 module is omitted>
.
.
.
```

```
-- P
```

```
PagingCause ::= ENUMERATED {
    terminating-conversational-call,
    terminating-streaming-call,
    terminating-interactive-call,
    terminating-background-call,
    smsterminating-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]
```

```
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
```

```
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-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 ::= {
    ...
}

Periodic ::= SEQUENCE {
    reportPeriodicity       ReportPeriodicity,
    iE-Extensions           ProtocolExtensionContainer { {Periodic-ExtIEs} } OPTIONAL,
    ...
}

Periodic-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PLMN-ID ::= OCTET STRING (SIZE(3))

PowerAdjustmentType ::= ENUMERATED {
    none,
    common,
    individual
}

PowerOffset ::= INTEGER (0..24)

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PrimaryCPICH-Power ::= INTEGER (-100..500)
-- step 0.1 (Range -10.0..50.0) Unit is dBm

PrimaryCPICH-EcNo ::= INTEGER (-30..30)

PrimaryCCPCH-RSCP ::= INTEGER (0..91)
-- According to mapping in [14]

PrimaryScramblingCode ::= INTEGER (0..511)

```

```
PriorityLevel ::= INTEGER (0..15)
-- 0 = spare, 1 = highest priority, ...14 = lowest priority and 15 = no priority
```

```
PropagationDelay ::= INTEGER (0..255)
```

```
PunctureLimit ::= INTEGER (0..15)
-- 0: 40%; 1: 44%; ... 14: 96%; 15: 100
```

```
•
•
•
```

```
<Parts of the ASN.1 module is omitted>
```

```
•
•
•
```

CR-Form-v3
CHANGE REQUEST
⌘ 25.423 CR 313 ⌘ rev - ⌘ Current version: 3.4.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Handling of the Procedures Triggering an Error Indication Procedure		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February, 2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ In the current RNSAP specification it is not 100% clear what happens to a procedure that triggers an Error Indication.
Summary of change:	⌘ The CR clarifies that when a procedure triggers the Error Indication procedure in any of the following cases the “triggering” procedure shall be terminated: a) Not comprehended IE (other than the Procedure ID) with criticality set to “reject”, b) Missing IE with criticality set to “reject”, c) IE in wrong order or with too many occurrences, and d) Logical Error.
Consequences if not approved:	⌘ If this CR is not approved the above described unclear description will remain in the specification. Backward compatibility: This CR is backward compatible with the previous version of RNSAP.

Clauses affected:	⌘ 10.		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

10 Handling of Unknown, Unforeseen and Erroneous Protocol Data

10.1 General

Protocol Error cases can be divided into three classes:

1. Transfer Syntax Error;
2. Abstract Syntax Error;
3. Logical Error.

Protocol errors can occur in the following functions within a receiving node.

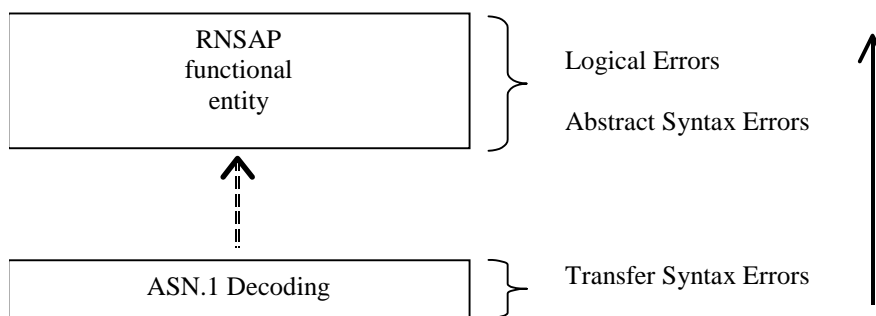


Figure 34: Protocol Errors in RNSAP

10.2 Transfer Syntax Error

A Transfer Syntax Error occurs when the receiver is not able to decode the received physical message. Transfer syntax errors are always detected in the process of ASN.1 decoding. If a Transfer Syntax Error occurs, the receiver should initiate Error Indication procedure with appropriate cause value for the Transfer Syntax protocol error.

Examples for Transfer Syntax Errors are:

- violation of value ranges in ASN.1 definition of messages. e.g.: If an IE has a defined value range of 0 to 10 (ASN.1: INTEGER (0..10)), and 12 will be received, then this will be treated as a transfer syntax error;
- violation in list element constraints. e.g.: If a list is defined as containing 1 to 10 elements, and 12 elements will be received, then this case will be handled as a transfer syntax error;
- missing mandatory elements in ASN.1 SEQUENCE definitions (as sent by the originator of the message);
- wrong order of elements in ASN.1 SEQUENCE definitions (as sent by the originator of the message).

10.3 Abstract Syntax Error

10.3.1 General

An Abstract Syntax Error occurs when the receiving functional RNSAP entity:

1. receives IEs or IE groups that cannot be understood (unknown IE id);
2. receives IEs for which the logical range is violated (e.g.: ASN.1 definition: 0 to 15, the logical range is 0 to 10 (values 11 to 15 are undefined), and 12 will be received; this case will be handled as an abstract syntax error using criticality information sent by the originator of the message);

- 3 does not receive IEs or IE groups but according to the specified presence of the concerning object, the IEs or IE groups should have been present in the received message
- 4 receives IEs or IE groups that are defined to be part of that message in wrong order or with too many occurrences of the same IE or IE group

Cases 1 and 2 (not comprehended IE/IE group) are handled based on received Criticality information. Case 3 (missing IE/IE group) is handled based on Criticality information and Presence information for the missing IE/IE group specified in the version of the specification used by the receiver. Case 4 (IEs or IE groups in wrong order or with too many occurrences) results in rejecting the procedure.

If an Abstract Syntax Error occurs, the receiver shall read the remaining message and shall then for each detected Abstract Syntax Error that belong to cases 1-3 act according to the Criticality Information and Presence Information for the IE/IE group due to which Abstract Syntax Error occurred in accordance with subclauses 10.3.4 and 10.3.5. The handling of case 4 is specified in subclause 10.3.7.

10.3.2 Criticality Information

In the RNSAP messages there is criticality information set for individual IEs and/or IE groups. This criticality information instructs the receiver how to act when receiving an IE or an IE group that is not comprehended, i.e. the entire item (IE or IE group) which is not (fully or partially) comprehended shall be treated in accordance with its own criticality information as specified in subclause 10.3.4.

In addition, the criticality information is used in case of the missing IE/IE group abstract syntax error (see subclause 10.3.5).

The receiving node shall take different actions depending on the value of the Criticality Information. The three possible values of the Criticality Information for an IE/IE group are:

1. Reject IE;
2. Ignore IE and Notify Sender;
3. Ignore IE.

The following rules restrict when a receiving entity may consider an IE, an IE group or an EP not comprehended (not implemented), and when action based on criticality information is applicable:

1. IE or IE group: When one new or modified IE or IE group is implemented for one EP from a standard version, then other new or modified IEs or IE groups specified for that EP in that standard version shall be considered comprehended by a receiving entity (some may still remain unsupported).

Note that this restriction is not applicable to a sending entity for constructing messages.

2. EP: The comprehension of different EPs within a standard version or between different standard versions is not mandated. Any EP that is not supported may be considered not comprehended, even if another EP from that standard version is comprehended, and action based on criticality shall be applied.

10.3.3 Presence Information

For many IEs/IE groups which are optional according to the ASN.1 transfer syntax, RNSAP specifies separately if the presence of these IEs/IE groups is optional or mandatory with respect to RNS application by means of the presence field of the concerning object of class RNSAP-PROTOCOL-IES, RNSAP-PROTOCOL-IES-PAIR, RNSAP-PROTOCOL-EXTENSION or RNSAP-PRIVATE-IES.

The presence field of the indicated classes supports three values:

1. Optional;
2. Conditional;
3. Mandatory.

If an IE/IE group is not included in a received message and the presence of the IE/IE group is mandatory or the presence is conditional and the condition is true according to the version of the specification used by the receiver, an abstract syntax error occurs due to a missing IE/IE group.

10.3.4 Not Comprehended IE/IE group

10.3.4.1 Procedure ID

The receiving node shall treat the different types of received criticality information of the *Procedure ID* according to the following:

Reject IE:

- if a message is received with a *Procedure ID* marked with "*Reject IE*" which the receiving node does not comprehend, the receiving node shall reject the procedure using the Error Indication procedure.

Ignore IE and Notify Sender:

- if a message is received with a *Procedure ID* marked with "*Ignore IE and Notify Sender*" which the receiving node does not comprehend, the receiving node shall ignore the procedure and initiate the Error Indication procedure.

Ignore IE:

- if a message is received with a *Procedure ID* marked with "*Ignore IE*" which the receiving node does not comprehend, the receiving node shall ignore the procedure.

When using the Error Indication procedure to reject a procedure or to report an ignored procedure it shall include the *Procedure ID IE*, the *Triggering Message IE*, and the *Procedure Criticality IE* in the *Criticality Diagnostics IE*.

10.3.4.2 IEs other than the Procedure ID

The receiving node shall treat the different types of received criticality information of an IE/IE group other than the *Procedure ID* according to the following:

Reject IE:

- if a message *initiating* a procedure is received containing one or more IEs/IE groups marked with "*Reject IE*" which the receiving node does not comprehend; none of the functional requests of the message shall be executed. The receiving node shall reject the procedure and report the rejection of one or more IEs/IE groups using the message normally used to report unsuccessful outcome of the procedure.
- if a message *initiating* a procedure that does not have a message to report unsuccessful outcome is received containing one or more IEs/IE groups marked with "*Reject IE*" which the receiving node does not comprehend, the receiving node shall **terminate the procedure and** initiate the Error Indication procedure.
- if a *response* message is received containing one or more IEs/IE groups marked with "*Reject IE*", that the receiving node does not comprehend, the receiving node shall initiate local error handling.

Ignore IE and Notify Sender:

- if a message *initiating* a procedure is received containing one or more IEs/IE groups marked with "*Ignore IE and Notify Sender*" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups, continue with the procedure as if the not comprehended IEs/IE groups were not received (except for the reporting) using the understood IEs/IE groups, and report in the response message of the procedure that one or more IEs/IE groups have been ignored.
- if a message *initiating* a procedure that does not have a message to report the outcome of the procedure is received containing one or more IEs/IE groups marked with "*Ignore IE and Notify Sender*" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups, continue with the procedure as if the not comprehended IEs/IE groups were not received (except for the reporting) using the understood IEs/IE groups, and initiate the Error Indication procedure to report that one or more IEs/IE groups have been ignored.
- if a *response* message is received containing one or more IEs/IE groups marked with "*Ignore IE and Notify Sender*" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups and initiate the Error Indication procedure.

Ignore IE:

- if a message *initiating* a procedure is received containing one or more IEs/IE groups marked with "*Ignore IE*" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups and continue with the procedure as if the not comprehended IEs/IE groups were not received using the understood IEs/IE groups.

When reporting not comprehended IEs/IE groups marked with "*Reject IE*" or "*Ignore IE and Notify Sender*" using a response message defined for the procedure, the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group. The *Repetition Number* IE shall be included in the *Information Element Criticality Diagnostics* IE if the reported IE/IE group was part of a "SEQUENCE OF" definition.

When reporting not comprehended IEs/IE groups marked with "*Reject IE*" or "*Ignore IE and Notify Sender*" using the Error Indication procedure, the *Procedure ID* IE, the *Triggering Message* IE, *Procedure Criticality* IE, the *Transaction Id* IE, and the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group. The *Repetition Number* IE shall be included in the *Information Element Criticality Diagnostics* IE if the reported IE/IE group was part of a "SEQUENCE OF" definition.

10.3.5 Missing IE or IE group

The receiving node shall treat the missing IE/IE group according to the criticality information for the missing IE/IE group in the received message specified in the version of this specification used by the receiver:

Reject IE:

- if a received message *initiating* a procedure is missing one or more IEs/IE groups with specified criticality "*Reject IE*"; none of the functional requests of the message shall be executed. The receiving node shall reject the procedure and report the missing IEs/IE groups using the message normally used to report unsuccessful outcome of the procedure.
- if a received message *initiating* a procedure that does not have a message to report unsuccessful outcome is missing one or more IEs/IE groups with specified criticality "*Reject IE*", the receiving node shall **terminate the procedure and** initiate the Error Indication procedure.
- if a received *response* message is missing one or more IEs/IE groups with specified criticality "*Reject IE*", the receiving node shall initiate local error handling.

Ignore IE and Notify Sender:

- if a received message *initiating* a procedure is missing one or more IEs/IE groups with specified criticality "*Ignore IE and Notify Sender*", the receiving node shall continue with the procedure based on the other IEs/IE groups present in the message and report in the response message of the procedure that one or more IEs/IE groups were missing.
- if a received message *initiating* a procedure that does not have a message to report the outcome of the procedure is missing one or more IEs/IE groups with specified criticality "*Ignore IE and Notify Sender*", the receiving node shall continue with the procedure based on the other IEs/IE groups present in the message and initiate the Error Indication procedure to report that one or more IEs/IE groups were missing.
- if a received *response* message is missing one or more IEs/IE groups with specified criticality "*Ignore IE and Notify Sender*", the receiving node shall initiate the Error Indication procedure.

Ignore IE:

- if a received message *initiating* a procedure is missing one or more IEs/IE groups with specified criticality "*Ignore IE*", the receiving node shall continue with the procedure based on the other IEs/IE groups present in the message.

When reporting missing IEs/IE groups with specified criticality "*Reject IE*" or "*Ignore IE and Notify Sender*" using a response message defined for the procedure, the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group.

When reporting missing IEs/IE groups with specified criticality "*Reject IE*" or "*Ignore IE and Notify Sender*" using the Error Indication procedure, the *Procedure ID* IE, the *Triggering Message* IE, *Procedure Criticality* IE, the *Transaction Id* IE, and the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group.

10.3.6 IEs or IE groups received in wrong order or with too many occurrences

If a message with IEs or IE groups in wrong order or with too many occurrences is received, the receiving node shall behave according to the following:

- If a message *initiating* a procedure is received containing IEs or IE groups in wrong order or with too many occurrences, none of the functional requests of the message shall be executed. The receiving node shall reject the procedure and report the cause value "Abstract Syntax Error (Falsely Constructed Message)" using the message normally used to report unsuccessful outcome of the procedure.
- If a message *initiating* a procedure that does not have a message to report unsuccessful outcome is received containing IEs or IE groups in wrong order or with too many occurrences, the receiving node shall **terminate the procedure and** initiate the Error Indication procedure, and use cause value "Abstract Syntax Error (Falsely Constructed Message)".
- If a *response* message is received containing IEs or IE groups in wrong order or with too many occurrences, the receiving node shall initiate local error handling.

10.4 Logical Error

Logical error situations occur when a message is comprehended correctly, but the information contained within the message is not valid (i.e. semantic error), or describes a procedure which is not compatible with the state of the receiver. In these conditions, the following behaviour shall be performed (unless otherwise specified) as defined by the class of the elementary procedure, irrespective of the criticality information of the IEs/IE groups containing the erroneous values.

Class 1:

Where the logical error occurs in a request message of a class 1 procedure, and the procedure has a failure message, the failure message shall be sent with an appropriate cause value. Typical cause values are:

Protocol Causes:

1. Semantic Error;
2. Message not Compatible with Receiver State.

Where the logical error is contained in a request message of a class 1 procedure, and the procedure does not have a failure message, the **procedure shall be terminated and the** Error Indication procedure shall be initiated with an appropriate cause value.

Where the logical error exists in a response message of a class 1 procedure, local error handling shall be initiated.

Class 2:

Where the logical error occurs in a message of a class 2 procedure, the **procedure shall be terminated and the** Error Indication procedure shall be initiated with an appropriate cause value.

CHANGE REQUEST

⌘ **25.423** **CR 314** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Mapping of TFS to TFI				
Source:	⌘ R-WG3				
Work item code:	⌘	Date:	⌘ February 2001		
Category:	⌘ F	Release:	⌘ R99		
		Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900.					

Reason for change:	⌘ The mapping of TFS to TFI values is not clarified in the TFS IE.
Summary of change:	⌘ In the tabular format of the TFS IE a description has been added to clarify that the first instance of the TF parameter corresponds to TFI zero, the second to 1 and so on.
Consequences if not approved:	⌘ The mapping of TFS to TFI values is not clear and may cause confusion and problems in multivendor environment. The correction is backward compatible.

Clauses affected:	⌘ 9.2.1.64
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.htm. Below is a brief summary:

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- 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://www.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

9.2.1.64 Transport Format Set

The Transport Format Set is defined as the set of Transport Formats associated to a Transport Channel, e.g. DCH.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transport Format Set				
>Dynamic Transport Format Information		1..<maxTFcount>		The first instance of the <u>parameter corresponds to TFI zero, the second to 1 and so on.</u>
>>Number of Transport blocks	M		INTEGER (0..512)	
>>Transport Block Size	C – Blocks		INTEGER (0..5000)	Bits
>>CHOICE Mode	M			
>>>TDD				
>>>>Transmission Time Interval Information	C-TTIdynamic	1..<maxTTIcount>		
>>>>Transmission Time Interval	M		ENUMERATED(10, 20, 40, 80,...)	msec
>Semi-static Transport Format Information		1		
>>Transmission Time Interval	M		ENUMERATED (10, 20, 40, 80, dynamic, ...)	msec Value "dynamic" for TDD only
>>Type of Channel Coding	M		ENUMERATED (No coding, Convolutional, Turbo,...)	
>>Coding Rate	C – Coding		ENUMERATED (1/2, 1/3,...)	
>>Rate Matching Attribute	M		INTEGER (1..maxRM)	
>>CRC size	M		ENUMERATED (0, 8, 12, 16, 24,...)	
>>CHOICE Mode	M			
>>>TDD				
>>>>2 nd Interleaving Mode	M		ENUMERATED(Frame related, Timeslot related,...)	

Condition	Explanation
Blocks	This IE is only present if "Number of Transport Blocks" is greater than 0.
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional" or "Turbo"
TTIdynamic	This IE is mandatory if the "Transmission Time Interval" of the "Semi-static Transport Format Information" is "dynamic" Otherwise it is absent.

Range bound	Explanation
<i>MaxTFcount</i>	The maximum number of different transport formats that can be included in the Transport format set for one transport channel.
<i>MaxRM</i>	The maximum number that could be set as rate matching attribute for a transport channel.
<i>MaxTTIcount</i>	The amount of different TTI that are possible for that transport format is.

CHANGE REQUEST

⌘ **25.423 CR 315** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Release of Common Transport Channel Resources in the DRNS		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ January, 2001
Category:	⌘ F	Release:	⌘ R99
Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900.			

Reason for change:	⌘ In the current RNSAP there are cases of release of common transport channel resources in the DRNS is not clearly specified. Common transport channel resources in the DRNS shall be released in the following cases: a) By the Common Transport Channel Resources Release procedure, b) By the DL Signalling Transfer procedure (with the D-RNTI Release Indicator = release), c) at UL Signalling Transfer (to avoid resources being allocated in more than one cell), and d) for completeness; by the Common Transport Channel Resources Initialisation procedure (to avoid resources being allocated in more than one cell). All cases but the last case are already covered by the current RNSAP specification.
Summary of change:	⌘ The CR includes release of common transport channel resources in the last of the above-described cases.
Consequences if not approved:	⌘ If this CR is not approved the above described ambiguity will remain in the specification. Backward compatibility: This CR is backward compatible with the previous version of RNSAP. However, since the CR relates to an unclear behaviour some implementations may not be compatible with this CR.

Clauses affected:	⌘ 8.4.1.2		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘		

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- 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.

8.4.1.2 Successful Operation

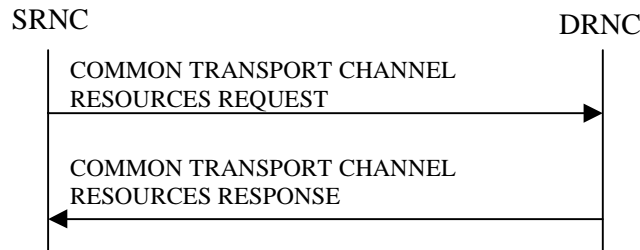


Figure 27: Common Transport Channel Resources Initialisation procedure, Successful Operation

The SRNC initiates the procedure by sending the message COMMON TRANSPORT CHANNEL RESOURCES REQUEST to the DRNC.

Upon reception of the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall respond by sending a COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message to the SRNC.

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 and include the *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 for the 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.

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 where resources are currently being allocated, the DRNS shall release the previously allocated RACH, [FDD - CPCH,] and/or FACH resources.

CHANGE REQUEST

⌘ **25.423 CR 316** ⌘ rev **1** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Miscellaneous Corrections		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February, 2001
Category:	⌘ F	Release:	⌘ R99
Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900.			

Reason for change: ⌘ AT RAN WG3 #18 there was a review of the RNSAP specification. This resulted in a number of comments on the RNSAP specification. Comments have also been received from other sources, e.g. the review of the NBAP specification at the same meeting.

Summary of change: ⌘ The following comments have been taken into account in this CR, affected chapter in parenthesis.

1. From the RNSAP review at RAN WG3 #18:

- Include control plane somewhere in the scope definition (1)
- UE Context definition: clarify that the DL-Signalling-Transfer with DRNTI-release indicator set can also release the context (3.1)
- SDU should stand for Service Data Unit (3.3)
- First paragraph, should be clarified that this only as far as the DRNC is aware that the UE is camping in another cell (8.2.2.3)
- General: should describe that the procedure is initiated by the source RNC (8.2.3.1)
- Should DRAC S-CCPCH Info be included in the RL-SETUP-RESPONSE for all RL's or only for RL's established in cells where DRAC is activated? Can DRAC be active in individual cells? (8.3.1.2./General)
- DRAC paragraph: reformulate: if the IE to be received on the FACH or is the S-CCPCH information indicating the FACH on which the DRAC information is sent to the UE. (8.3.1.2./General)
- Frame handling priority is not applicable to DSCH (8.3.1.2)
- Second paragraph shall be Rephrased to only in successful case respond with Response message (8.4.1.2)
- Add cause value: Transport layer resources not available as typical cause value. (8.4.1.3)
- M presence for RL Information should be removed (9.1.18)
- INTEGER should be an ENUMERATED (9.2.1.43)

- Presence should be removed (9.2.1.36, 9.2.2.14, 9.2.3.11)

Comments from the RNSAP review, not included in this CR, reason in block parenthesis:

- Handling of neighbouring cell information should be clarified (8.3.1/8.3.2) [Not considered a Rapporteur's task]
- Should talk about "Dedicated measurements" (8.3.11/12/13/14, tabular + ASN.1) [included in CR318]
- Can remove the statement that in case of overlap, a RL_Failure should be initiated. This is already described in RL_Failure proc (8.3.16.2 + several other cases) [included in CR288]
- Scope for uniqueness of measurement id: uniquely identifies a measurement within a UE context (9.2.1.37) [included in CR318]

2. The following comments from the NBAP review at RAN WG3 #18 were considered relevant also for RNSAP:

- Should be period after all references (2)
- Class 1 EP: successful case: successfully completed should be replace by "has been successfully completed" (3.1)
- Class 1 EP unsuccessful case: remove second bullet (3.1)
- Missing are: ISCP, STTD, TSTD, PCH, P-CCPCH, S-CCPCH, ... (3.3)
- Change definition if UTRAN to Universal..... (3.3)
- "explicitely" should be "explicitly" (two times) (4.1)
- Remove first sentence (hanging sentence) (5)
- Rephrase to: "one protocol peer shall have a maximum of one ongoing" (5.1)
- First sentence: "The NBAP protocol provides the following functions" (7)
- Timer column should be removed (8.1)
- First paragraph: remove last line "Unless specified....." (8.3.12.2)
- Paragraphs on UL FP mode, TOAWS and TOAWE should not talk about a new value or a new configuration. (8.3.1.2)
- In those procedures where we talk about obtaining synchronisation in relation to the radio interface, we should explicitly refer to the Uu interface e.g. "obtaining Uu synchronisation" (General)
- UARCFN should be replaced by UARFCN (General)
- Replace "an appropriate failure message" by "an appropriate response message" (8.5.1.1)
- Replace RRC connection by UE-UTRAN connection (8.3.1.2)
- In semantics behind 100%: add no puncturing (9.2.1.46)
- PCCPCH power definition: in comments, Step should be "0.1dB" (9.3.4)
- Remove last sentence of the definition (The length of this parameter is variable) since already clear from definition (9.2.1.3)

3. The following "other" comments have also been taken into account in this CR (highlighted in blue):

- Setup of RLs should be establishment of RLs (General)
- The reference to "set of co-ordinated DCHs" is sometimes not fully correct, e.g. when referring to the set as a whole or when referring to DCH_s within a set of co-ordinated DCHs. (General)
- The specification reference of the GAD specification is incorrect (2)
- The name of the module is Basic Mobility Procedures module. (5.1)
- Tagging of CPCH is missing. (8.2.1.2)
- The name of the *Transmit Diversity Indicator* IE is incorrect (8.3.1.2)
- Make sure that when referring to the start of transmission it is the DL (of the Uu). (8.3.1.2 and 8.3.2.2)
- The paragraph on the *Diversity Mode* IE is superfluous (wrong since the IE does not exist in the RL ADDITION REQUEST message) (8.3.2.2)

- The description of the handling of the *Transmit Diversity Indicator* IE is not clear. (8.3.2.2)
- The order of the paragraphs is not logical under DCH Modification (the paragraph about how to detect that the received DCH Information relate to a set of co-ordinated DCHs should be first) (8.3.4.2)
- The paragraphs (under the sub-heading “Physical Channel Modification) relating to the *Transmission Gap Pattern Sequence Information* IE are using paragraph style “B1” when they should be using the style “Normal” (since they do not relate to contents of the *DL DPCH Information* IE). (8.3.4.2)
- The paragraphs (under the sub-heading “DSCH Addition/Modification/Deletion) relating to the *DSCH Info* IE are using paragraph style “B1” when they should be using the style “B2” (since they are related to contents of the *DSCH to Modify* IE). (8.3.4.2)
- Remove the text “and the *Reference to System Information blocks* IE” since no such IE exist. (8.3.7.2)
- Change “report detected errors in an incoming message” to “report detected errors in one incoming a received message” (since normally we mention sending or receiving messages). (8.5.1.1)
- The conditions for IEs shall be expressed as requirements (shall be) not descriptions (is). (9.1 and 9.2)
- The chapter reference for the *Limited Power Increase* IE is incorrect (should be 9.2.2.21A). (9.1.3.1, 9.1.11.1, and 9.1.16.1)
- The chapter reference for the *Diversity Control Field* IE is incorrect (should be 9.2.1.20). (9.1.3.1 and 9.1.6)
- The chapter reference for the *Transmit Diversity Indicator* IE is incorrect (should be 9.2.2.48). (9.1.3.1 and 9.1.6.1)
- The chapter reference for the *Diversity Indication* IE is incorrect (should be 9.2.1.21). (9.1.4.1, 9.1.5.1, 9.1.7, and 9.1.8.1)
- The chapter reference for the *DCHs to Modify* IE is incorrect (should be 9.2.2.13C). (9.1.11.1 and 9.1.16.1)
- The chapter reference for the *SSDT Indication* IE is incorrect (should be 9.2.2.42). (9.1.11.1)
- The chapter reference for the *Adjustment Period* IE is incorrect (should be 9.2.2.B). (9.1.20)
- Remove the table for range bounds. (9.1.36)
- The chapter “Measurement Availability Indicator” should be “void” (not used any more) and remove the corresponding IE in the ASN.1. (9.2.1.35 + the corresponding IE in 9.3.4)
- The value “RL Pre-emption” is missing. (9.2.1.40)
- The definition of the Scheduling Priority Indicator does not mention FACH, even though FACH also uses this IE (9.2.1.51A).
- The DCH TDD Information Response IE is defined but never used (9.2.3.2B).
- The chapter reference is incorrect (should be 10.3.6) (9.3.0)
- The ASN.1 IEs “successfulOutcome” and “unsuccessfulOutcome” are misspelled. (9.3.2)
- The value “unsuccessfull-outcome” of ASN.1 IEs “TriggeringMessage” is misspelled. (9.3.5)
- The IE “Transmission-Gap-Pattern-Sequence-ScramblingCode-Information” is imported even though not used. (9.3.3)

Consequences if not approved:

⌘ If this CR is not approved the ambiguities/errors/problems/... commented above will remain in the specification.

Backward compatibility:

This CR is backward compatible with the previous version of RNSAP.

Clauses affected:

⌘ 1, 2, 3, 4.1, 5, 7, 8.1, 8.2.1.2, 8.2.2.3, 8.2.3.1, 8.3.1, 8.3.2, 8.3.3.2, 8.3.4.2, 8.3.5.3, 8.3.7.2, 8.3.9.2, 8.3.10, 8.3.12.2, 8.4.1, 8.5.1.1, 9.1.3.1, 9.1.4.1, 9.1.5.1, 9.1.6, 9.1.7, 9.1.8.1, 9.1.11, 9.1.16.1, 9.1.18, 9.1.20, 9.1.36, 9.2.1.3, 9.2.1.7, 9.2.1.35A, 9.2.1.36, 9.2.1.40, 9.2.1.41D, 9.2.1.43, 9.2.1.44, 9.2.1.46, 9.2.1.51A,

	9.2.2.14, 9.2.2.37BV, 9.2.2.50, 9.2.3.2A, 9.2.3.2B, 9.2.3.11, 9.3.0, 9.3.2, 9.3.3, 9.3.4, and 9.3.5.	
Other specs affected:	⌘ <input type="checkbox"/>	Other core specifications ⌘ <input type="checkbox"/>
	<input type="checkbox"/>	Test specifications <input type="checkbox"/>
	<input type="checkbox"/>	O&M Specifications <input type="checkbox"/>
Other comments:	⌘ <input type="checkbox"/>	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

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.

- [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 (12/94): "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 (V3.3): "Requirements for support of Radio Resource management (FDD)".

- [24] 3GPP TS 25.123 (V3.3): "Requirements for support of Radio Resource management (TDD)".
- [25] 3GPP TS 23.003: "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"

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.

~~— On time supervision expiry (i.e. absence of expected response). Whether or not any Class 1 procedure will have a timer on RNSAP is FFS. To be sorted out when discussing the details of the error cases.~~

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 for communication 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. The UE Context is deleted by the Radio Link Deletion procedure, ~~or~~ 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 concerning 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.

3.2 Symbols

Void.

3.3 Abbreviations

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

ASN.1	Abstract Syntax Notation One
BLER	Block Error Rate
CCCH	Common Control Channel
CCPCH	Common Control Physical Channel
CCTrCH	Coded Composite Transport Channel
CFN	Connection Frame Number
CM	Compressed Mode

CN	Core Network
<u>CPCH</u>	<u>Common Packet Channel</u>
CPICH	Common Pilot Channel
CRNC	Controlling RNC
DCH	Dedicated Channel
DL	Downlink
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DRNC	Drift RNC
DRNS	Drift RNS
DRX	Discontinuous Reception
DSCH	Downlink Shared Channel
EP	Elementary Procedure
FACH	Forward Access Channel
FDD	Frequency Division Duplex
FP	Frame Protocol
IE	Information Element
<u>ISCP</u>	<u>Interference Signal Code Power</u>
MAC	Medium Access Control
<u>O&M</u>	<u>Operation and Maintenance</u>
<u>P-CCPCH</u>	<u>Primary CCPCH</u>
<u>PCH</u>	<u>Paging Channel</u>
<u>P-CIPCH</u>	<u>Primary CIPCH</u>
PCPCH	Physical Common Packet Channel
PDU	Protocol Data Unit
<u>PICH</u>	<u>Paging Indication Channel</u>
PRACH	Physical Random Access Channel
RAB	Radio Access Bearer
RACH	Random Access Channel
RL	Radio Link
RLC	Radio Link Control
RLS	Radio Link Set
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTI	Radio Network Temporary Identifier
RRC	Radio Resource Control
RSCP	Received Signal Code Power
<u>S-CCPCH</u>	<u>Secondary CCPCH</u>
SCH	Synchronisation Channel
SDU	Signalling-Service Data Unit
SFN	System Frame Number
<u>SIR</u>	<u>Signal-to-Interference Ratio</u>
SRNC	Serving RNC
SRNS	Serving RNS
SSDT	Site Selection Diversity Transmi <u>ssion</u> t
<u>STTD</u>	<u>Space Time Transmit Diversity</u>
TDD	Time Division Duplex
TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set
TFS	Transport Format Set
TPC	Transmit Power Control
<u>TSTD</u>	<u>Time Switched Transmit Diversity</u>
UARFCN	UTRA Absolute Radio Frequency Channel Number
UE	User Equipment
UL	Uplink
URA	UTRAN Registration Area
USCH	Uplink Shared Channel
<u>UTRA</u>	<u>Universal Terrestrial Radio Access</u>
UTRAN	UMTS-Universal Terrestrial Radio Access Network

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 is an exception from this principle.

The following specification principles have been applied for the procedure text in chapter 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~~explicitly indicated in the procedure text. If the procedure text does not ~~explicitly~~explicitly indicate that an optional IE shall be included in a response message, the optional IE shall not be included.

5 RNSAP Services

~~The RNSAP offers the following 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.

The Basic **Mobility** Procedures module contains procedures used to handle the mobility within UTRAN.

The DCH Procedures module contains procedures that are used to handle DCHs between two RNSs. If procedures from this module are not used in a specific Iur, then the usage of DCH 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 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.

5.2 Parallel Transactions

Unless explicitly indicated in the procedure specification, at any instance in time one protocol peer shall have ~~initiated a~~ maximum ~~of~~ one ongoing RNSAP DCH procedure related to a certain UE.

7 Functions of RNSAP

The RNSAP protocol ~~provides~~ ~~has~~ 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;
- 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;
- Paging. This function allows the SRNC to page a UE in a URA 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 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.

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-emption
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) Measurement Initiation b) Measurement Reporting c) Measurement Termination d) Measurement Failure
DL Power Drifting Correction [FDD]	Downlink Power Control
CCCH Signalling Transfer	a) 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
DL Power Timeslot Correction [TDD]	Downlink Power Timeslot Control

8.1 Elementary Procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

Table 2: Class 1

Elementary Procedure	Initiating Message	Successful Outcome	Unsuccessful Outcome	
		Response message	Response message	Timer
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	
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	

~~The need for Timers will be defined on a per procedure basis. The content of this column is thus FFS.~~

Table 3: Class 2

Elementary Procedure	Initiating Message
Uplink Signalling Transfer	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
Measurement Reporting	DEDICATED MEASUREMENT REPORT
Measurement Termination	DEDICATED MEASUREMENT TERMINATION REQUEST
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

8.2.1.2 Successful Operation

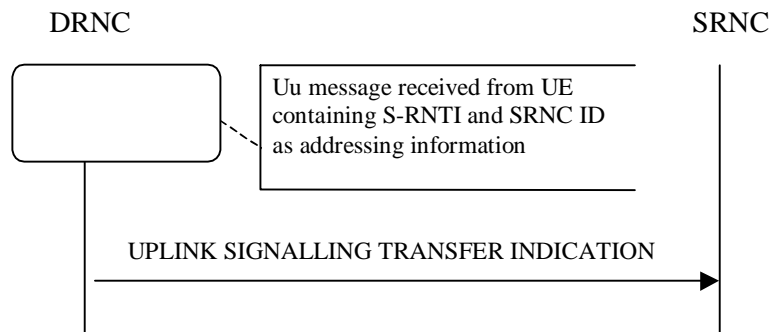


Figure 1: Uplink Signalling Transfer procedure, Successful Operation

When the DRNC receives an Uu message on the CCCH where 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.

The DRNC shall include the URA Identity of the cell where the Uu message was received (the accessed cell), an indication on whether or not the accessed cell belongs to multiple URAs, 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, and CPCH resources allocated for the UE identified by the U-RNTI in another cell that the accessed cell, the DRNS shall release these RACH, [FDD - CPCH,] and/or FACH resources.

If the message received from the UE was the first message from that 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 where the Uu message was received in the UPLINK SIGNALLING TRANSFER INDICATION message.

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 is not camping in the cell identified by the *C-Id* IE in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the message shall be ignored.

If the D-RNTI is allocated to one UE context whose status does not allow the sending of the L3 information from the DRNC, then the DOWNLINK SIGNALLING TRANSFER REQUEST message shall be ignored.

8.2.3.1 General

The Relocation Commit procedure is used by ~~target-source~~ RNC to execute the Relocation. This procedure supports the Relocation procedures described in [2].

This procedure shall use the signalling bearer mode specified below.

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

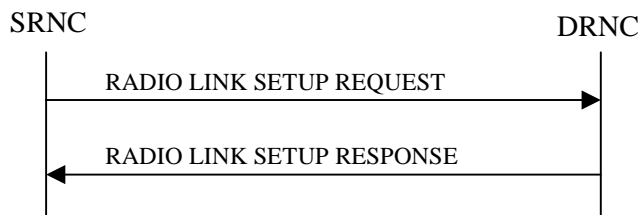


Figure 5: Radio Link Setup procedure: Successful Operation

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 RRC** connection, the RADIO LINK SETUP REQUEST message is sent to the corresponding DRNC to request **setup establishment** of the radio link(s).

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall assign a new *D-RNTI* for this UE.

[FDD - The *First RLS Indicator* IE indicates if the concerning RL shall be considered part of the first RLS established towards this UE. If the *First RLS indicator* IE is set to "first RLS", the DRNS shall use a TPC pattern of $n \cdot "01" + "1"$ in the DL of the concerning RL and all RLs which are part of the same RLS, until UL synchronisation is achieved on the Uu. The TPC pattern shall continuously be repeated but shall be restarted at the beginning of every frame with $CFN \bmod 4 = 0$. For all other RLs, the DRNS shall use a TPC pattern of all "1"s in the DL until UL synchronisation is achieved on the Uu.]

[FDD - The *Diversity Control Field* IE indicates for each RL except for the first RL whether the DRNS shall combine the RL with any of the other RLs or not on the Iur. If the *Diversity Control Field* IE is set to "May" (be combined with another RL), then the DRNS shall decide for any of the alternatives. If the *Diversity Control Field* IE is set to "Must", the DRNS shall combine the RL with one of the other RL. When an RL is to be combined the DRNS shall choose which RL(s) to combine it with.]

[FDD - If the *Propagation Delay* IE is included, the DRNS may use this information to speed up the detection of **L+UL** synchronisation **on the Uu interface**.]

If the RADIO LINK SETUP REQUEST message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

[FDD - If the *Initial DL TX Power* IE and *Uplink SIR Target* IE are present in the message, the DRNS shall use the indicated DL TX Power and Uplink SIR Target as initial value. If the value of the *Initial DL TX Power* IE is outside the configured DL TX power range, the DRNS shall apply these constraints when setting the initial DL TX power. The DRNS shall also include the configured DL TX power range defined by *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK SETUP RESPONSE message.]

[FDD - If the *Primary CPICH Ec/No* IE is present, the DRNC should use the indicated value when deciding the Initial DL TX Power.]

[TDD - If the *Primary CCPCH RSCP* IE and/or the *DL Time Slot ISCP Info* IE are present, the DRNC should use the indicated values when deciding the Initial DL TX Power.]

[FDD - If the received *Limited Power Increase* IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control.]

[FDD – If the received *Inner Loop DL PC Status IE* is set to “Active”, the DRNS shall activate the inner loop DL power control for all RLS. If *Inner Loop DL PC Status IE* is set to “Inactive”, the DRNS shall deactivate the inner loop DL power control for all RLS according to ref. [10]]

[FDD – The DRNS shall start the DL transmission using the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL until UL synchronisation is achieved on the Uu interface for the concerning RLS or a DL POWER CONTROL REQUEST message is received. No innerloop power control or power balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10] subclause 5.2.1.2) with DPC_MODE=0 and the power control procedure (see 8.3.7).]

[TDD – The DRNS shall start the DL transmission using the decided DL TX power level on each DL channelisation code and on each Time Slot of a RL until UL synchronisation is achieved on the Uu interface for the concerning RL. No innerloop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22] subclause 4.2.3.3).]

[TDD - If the *DCH Information IE* is present in RADIO LINK SETUP REQUEST message, the DRNS shall configure the new DCHs according to the parameters given in the message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information IE* with multiple *DCH Specific Info IEs* then the DRNS shall treat the DCHs in the *DCH Information IE* as a set of co-ordinated DCHs.

[FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector IE* set to "selected ", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the *QE-Selector* is set to "non-selected ", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]

For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector IE* set to "selected " shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector IE* set to "non-selected " the Physical channel BER shall be used for the QE, ref. [4].]

The DRNS shall prioritise resource allocation for the RL(s) to be established according to Annex A.

The *Frame Handling Priority IE* defines the priority level that should be used by the DRNS to prioritise the discard/delay of the data frames of the DCH~~s~~ and DSCH (if any).

The DRNS shall use the included *UL DCH FP Mode IE* for a DCH or a set of co-ordinated DCHs as the ~~new~~-DCH FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWS IE* for a DCH or a set of co-ordinated DCHs as the ~~new~~-Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWE IE* for a DCH or a set of co-ordinated DCHs as the ~~new~~-Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity IE*, the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity IE* and *SSDT Cell Identity Length IE*.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information IE*, the DRNS shall store the information about the Transmission Gap Pattern Sequences to be used in the Compressed Mode Configuration. This Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information IE* and the *Active Pattern Sequence Information IE*, the DRNS shall immediately activate the indicated Transmission Gap Pattern Sequences: for each sequence the *TGCFN* refers to latest passed CFN with that value. If during the compressed mode measurement the gaps of two or more pattern sequences overlap, the DRNS shall behave as specified in subclause 8.3.9.]

[TDD – The DRNS shall use the list of RB Identities in the *RB Info IE* in the *USCH information IE* to map each *RB Identity IE* to the corresponding USCH.]

At the reception of the RADIO LINK SETUP REQUEST message, DRNS allocates requested type of channelisation codes and other physical channel resources for each RL and assigns a binding identifier and a transport layer address for

each DCH or set of co-ordinated DCHs and for each DSCH [TDD – and USCH]. This information shall be sent to the SRNC in the message RADIO LINK SETUP RESPONSE when all the RLs have been successfully ~~setup~~ established.

If the *DSCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNC shall establish the requested DSCH's [FDD - on the RL indicated by the PDSCH RL ID IE]. In addition, the DRNC shall send a valid set of *DSCH Scheduling Priority* IE and *MAC-c/sh SDU Length* IE parameters to the SRNC in the message RADIO LINK SETUP RESPONSE message.

[FDD - If the *Initial DL TX Power* and the *Uplink SIR Target* IEs are not present in the RADIO LINK SETUP REQUEST message, then DRNC shall include the determined initial Uplink SIR Target in the RADIO LINK SETUP RESPONSE message.]

[FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When p number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to “*PhCH number 1*”, the second to “*PhCH number 2*”, and so on until the p th to “*PhCH number p*”.]

[FDD – For each RL not having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message a value that uniquely identifies the RL Set within the UE context.]

[FDD – For all RLs having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message the same value. This value shall uniquely identify the RL Set within the UE context.]

[FDD - In the case of combining one or more RLs the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message with the *Diversity Indication* IE that the RL is combined with another RL. In this case the Reference *RL ID* IE shall be included to indicate with which RL the combination is performed. The Reference *RL ID* IE shall be included for all but one of the combined RLs, for which the *Transport Layer Address* IE and the *Binding ID* IE shall be included.]

[FDD - In the case of not combining an RL with another RL, the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message with the *Diversity Indication* IE that no combining is performed. In this case the DRNC shall include both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH and DSCH of the RL in the RADIO LINK SETUP RESPONSE message.]

[TDD - The DRNC shall always include in the RADIO LINK SETUP RESPONSE message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH, DSCH and USCH of the RL.]

In case of a set of coordinated DCHs requiring a new transport bearer on Iur the *Binding ID* IE and the *Transport Layer Address* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

[FDD – If the cell in which the RL is being set up is capable to provide Close loop Tx diversity, the DRNC shall include the *Closed Loop Timing Adjustment Mode* IE in the RADIO LINK SETUP RESPONSE message indicating the configured Closed loop timing adjustment mode of the cell.]

For any cell neighbouring a cell in which a RL was established, the DRNS shall also provide the SRNC with the UTRAN Cell Identifier (UC-Id), the Frequency Number, the [FDD - Primary Scrambling Code], the [TDD - Cell Parameter ID, the Sync Case, the SCH Time Slot information, the Block STTD Indicator] and the node identification of the CN nodes connected to the RNC controlling the neighbouring cell if the UMTS neighbouring cell is not controlled by the DRNC. In addition, if the information is available, the DRNC shall also provide the [FDD - CPICH Power level, cell individual offset]/[TDD - PCCPCH Power level, DPCH Constant Value] and Frame Offset of the UMTS neighbouring cell.

If a UMTS neighbouring cell is controlled by another RNC, the DRNC shall report also the node identifications (i.e. RNC and CN domain nodes) of the RNC controlling the UMTS neighbouring cell. [FDD – If the information is available, the DRNC shall include the *Tx Diversity Indicator* IE and Tx diversity capability (i.e. *STTD Support Indicator* IE, *Closed Loop Mode1 Support Indicator* IE, and *Closed Loop Mode2 Support Indicator* IE) in the *Neighbouring FDD Cell Information* IE].

If there are GSM neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include the *Neighbouring GSM Cell Information* IE in the RADIO LINK SETUP RESPONSE message for each of the GSM neighbouring cells. If available the DRNC shall include the *GSM Output Power* IE in the *Neighbouring GSM Cell Information* IE.

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall include the node identifications of the CN Domain nodes that the RNC is connected to (using LAC and RAC of the current cell), and the *D-RNTI* IE in the RADIO LINK SETUP RESPONSE message.

[FDD - If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include the *Primary Scrambling Code* IE, the *UL UARFCN* IE, the *DL UARFCN* IE, and the *Primary CPICH Power* IE in the RADIO LINK SETUP RESPONSE message.]

[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 DRNC supports the DRAC, the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message the *Secondary CCPCH Info IE* ~~for the to be received on~~ FACH ~~where the DRAC information is sent~~, for each ~~added~~ Radio Link ~~established in a cell where DRAC is active~~. If the DRNC does not support DRAC, ~~if the DRNC~~ shall not provide these IEs in the RADIO LINK SETUP RESPONSE message.]

Depending on local configuration in the DRNS, it may include the geographical co-ordinates of the cell and the UTRAN access point position for each of the established RLs in the RADIO LINK SETUP RESPONSE message.

After sending of the RADIO LINK SETUP RESPONSE message the DRNS shall continuously attempt to obtain UL synchronisation on the Uu interface and start reception on the new RL. The DRNS shall start DL transmission on the new RL after synchronisation is achieved in the DL user plane as specified in ref. [3].

[FDD – When *Diversity Mode* IE is "STTD", "Closed loop mode1", or "Closed loop mode2", the DRNC shall activate/deactivate the Transmit Diversity to each Radio Link in accordance with *Transmit Diversity* Indication Indicator IE].

[FDD- If the *Downlink compressed mode method* in one or more Transmission Gap Pattern Sequence is set to 'SF/2' in the RADIO LINK SETUP REQUEST message, the DRNS shall include the *Transmission Gap Pattern Sequence Scrambling Code Information* IE in the RADIO LINK SETUP RESPONSE message indicating for each DL Channelisation Code whether the alternative scrambling code shall be used or not.]

[FDD –The UL ~~out-of-synch~~ Uu synchronisation detection algorithm defined in ref. [10] subclause 4.3 shall for each of the established RL Set(s) use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE, and the minimum value of the parameters N_INSYNC_IND, that are configured in the cells supporting the radio links of the RL Set].

For each Radio Link the DRNC shall include the *URA ID* IE of the cell, the *Multiple URAs Indicator* IE indicating whether or not the cell belongs to multiple URAs, and the RNC Identity of all other RNCs that are having at least one cell within the URA in the cell in the *URA Information* IE in the RADIO LINK SETUP RESPONSE message.

8.3.1.3 Unsuccessful Operation

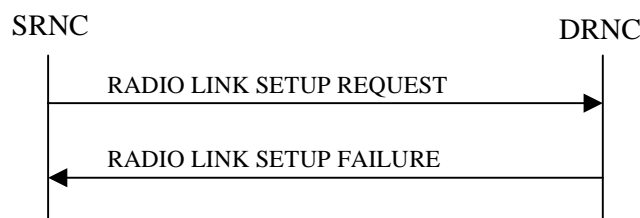


Figure 6: Radio Link Setup procedure: Unsuccessful Operation

In unsuccessful case (i.e. one or more RLs can not be set up established) the RADIO LINK SETUP FAILURE message shall be sent to the SRNC, indicating the reason for failure. If some radio links were established successfully, the DRNC shall indicate this in the RADIO LINK SETUP FAILURE message in the same way as in the RADIO LINK SETUP RESPONSE message.

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"] the DRNS shall regard the Radio Link Setup procedure as failed and shall respond with a RADIO LINK SETUP FAILURE message.

Typical cause values are:

Radio Network Layer Causes:

- RL Already Activated/Allocated
- [FDD - UL Scrambling Code Already in Use];
- DL Radio Resources not Available;
- UL Radio Resources not Available;
- Unknown C-ID;
- [FDD - Combining Resources not available];
- Combining not Supported
- Requested Configuration not Supported;
- Cell not Available;
- [FDD - Requested Tx Diversity Mode not Supported];
- Power Level not Supported;
- Invalid CM Settings;
- Number of DL codes not supported;
- Dedicated Transport Channel Type not Supported;
- DL Shared Channel Type not Supported;
- [TDD - UL Shared Channel Type not Supported];
- [FDD - UL Spreading Factor not Supported];
- [FDD - DL Spreading Factor not Supported];
- CM not Supported.

Transport Layer Causes:

- Transport Resource Unavailable

Miscellaneous Causes:

- Control Processing Overload;
- HW Failure;
- Not enough User Plane Processing Resources.

8.3.1.4 Abnormal Conditions

If the DRNC receives either an S-RNTI or a D-RNTI which already has RL(s) established the DRNC shall send the RADIO LINK SETUP FAILURE message to the SRNC, indicating the reason for failure.

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 concerning 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

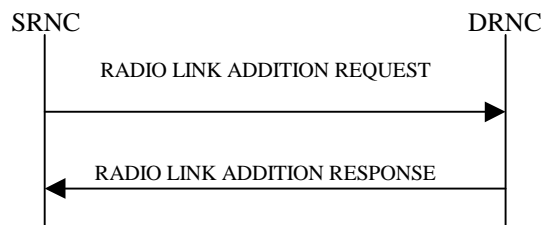


Figure 7: Radio Link Addition procedure: Successful Operation

The procedure is initiated with a RADIO LINK ADDITION REQUEST message sent from the SRNC to the DRNC.

Upon reception, 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.

The *Diversity Control Field* IE indicates for each RL whether the DRNS shall combine the new RL with existing RL(s) or not on the Iur. If the *Diversity Control Field* IE is set to "May" (be combined with another RL), then the DRNS shall decide for any of the alternatives. If the *Diversity Control Field* IE is set to "Must", the DRNS shall combine the RL with one of the other RL. When a new RL is to be combined the DRNS shall choose which RL(s) to combine it with.

[FDD - If the *Primary CPICH Ec/No* IE measured by the UE is included in the RADIO LINK ADDITION REQUEST message, the DRNS shall use this in the calculation of the Initial DL TX Power. If the *Primary CPICH Ec/No* IE is not present, the DRNS sets the Initial DL TX Power accordingly to the power used by the existing RLs.]

[TDD - If the *Primary CCPCH RSCP* IE and/or the *DL Time Slot ISCP Info* IE are included in the RADIO LINK ADDITION REQUEST message, the DRNS shall use them in the calculation of the Initial DL TX Power. If the *Primary CCPCH RSCP* IE and *DL Time Slot ISCP Info* IE are not present, the DRNS sets the Initial DL TX Power accordingly to the power used by the existing RLs.]

[FDD - The Initial DL TX Power shall be applied until UL synchronisation is achieved [on the Uu interface](#) for that RLS or a DL POWER CONTROL REQUEST message is received. No innerloop power control or power balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10] subclause 5.2.1.2) with DPC_MODE=0 and the power control procedure (see 8.3.7)].

[TDD – The Initial DL TX Power shall be applied until UL synchronisation is achieved [on the Uu interface](#) for that RL. No innerloop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22] subclause 4.2.3.3)].

[FDD - The DRNS shall use the provided Uplink SIR Target value as the current target for the inner-loop power control.]

[FDD - If the RADIO LINK ADDITION REQUEST message contains an *SSDT Cell Identity* IE, SSDT shall, if supported, be activated for the concerned new RL, with the indicated SSDT Cell Identity used for that RL.]

The DRNS shall activate any feedback mode diversity according to the received settings.

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Active Pattern Sequence Information* IE, the DRNS shall use the information to immediately activate all ongoing Transmission Gap Pattern Sequence(s) also in the new RL. For each sequence the *TGCFN* refers to latest passed CFN with that value. If *Active Pattern Sequence Information* IE is not included, the DRNS shall not activate the on going CM pattern in the new RLs, but the on going pattern in the existing RL are maintained.]

If all requested RLs are successfully added, the DRNC shall respond with a RADIO LINK ADDITION RESPONSE message.

[FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When p number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to “*PhCH number 1*”, the second to “*PhCH number 2*”, and so on until the p th to “*PhCH number p*”.]

[FDD – For each RL not having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign the *RL Set ID* IE included in the RADIO LINK ADDITION RESPONSE message a value that uniquely identifies the 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 the *RL Set ID* IE included in the RADIO LINK ADDITION RESPONSE message the same value. This value shall uniquely identify the RL Set within the UE context.]

In the case of combining an RL with existing RL(s) the DRNC shall indicate in the RADIO LINK ADDITION RESPONSE message with the *Diversity Indication* IE that the RL is combined. In this case the Reference RL ID shall be included to indicate one of the existing RLs that the new RL is combined with.

In the case of not combining an RL with existing RL(s), the DRNC shall indicate in the RADIO LINK ADDITION RESPONSE message with the *Diversity Indication* IE that no combining is done. In this case the DRNC shall include both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH, [TDD – and DSCH, USCH] of the RL in the RADIO LINK ADDITION RESPONSE message.

In case of a set of co-ordinated DCHs, the *Binding ID* IE and the *Transport Layer Address* IE shall be included for only one of the DCHs in the set of co-ordinated DCHs.

[TDD - If the radio link to be added includes a DSCH, the DRNC shall send a set of valid *DSCH Scheduling Priority* IE and *MAC-c/sh SDU Length* IE parameters to the SRNC in the message RADIO LINK ADDITION RESPONSE message.]

[FDD – If the cell in which the RL is being added is capable to provide Close loop Tx diversity, the DRNC shall include the *Closed Loop Timing Adjustment Mode* IE in the RADIO LINK ADDITION RESPONSE message indicating the Closed loop timing adjustment mode of the cell.]

For any cell UMTS neighbouring a cell in which a RL was added, the DRNC shall provide in the RADIO LINK ADDITION RESPONSE message the UTRAN Cell Identifier (UC-Id), the Frequency Number, the [FDD - Primary Scrambling Code], the [TDD – Cell Parameter Id, the Sync Case, the SCH Time slot information, the Block STTD Indicator] and the node identification of CN nodes connected to the RNC controlling the UMTS neighbouring cell if the UMTS neighbouring cell is not controlled by the DRNC. In addition, if the information is available, the DRNC shall also provide the [FDD- *Primary CPICH Power* IE, *Cell Individual Offset* IE]/[TDD - *PCCPCH Power* IE, *DPCH Constant Value* IE], *Frame Offset* IE, [FDD – *Tx Diversity Indicator* IE, and Tx diversity capability, i.e. *STTD Support Indicator* IE, *Closed Loop Mode1 Support Indicator* IE, and *Closed Loop Mode2 Support Indicator* IE] of the UMTS neighbouring cell.

If there are GSM neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include the *Neighbouring GSM Cell Information* IE in the RADIO LINK ADDITION RESPONSE message for each of the GSM neighbouring cells. If available the DRNC shall include the *GSM Output Power* IE in the *Neighbouring GSM Cell Information* IE.

The DRNC shall also provide the configured uplink Maximum SIR and UL Minimum SIR for every new RL to the SRNC in the RADIO LINK ADDITION RESPONSE message. These values are taken into consideration by DRNS admission control and shall be used by the SRNC as limits for the UL inner-loop power control target.

The DRNC shall provide the configured *Maximum DL TX Power IE* and *Minimum DL TX Power IE* for every new RL to the SRNC in the RADIO LINK ADDITION RESPONSE message.

The DRNC shall also provide the selected scrambling and channelisation codes of the new RLs in order to enable the SRNC to inform the UE about the selected codes.

[FDD - If some Transmission Gap Pattern sequences using SF/2 method are initialised in the DRNS, DRNS shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK ADDITION RESPONSE message to indicate the Scrambling code change method that it selects for each channelisation code]

Depending on local configuration in the DRNS, it may include the geographical co-ordinates of the cell and the UTRAN access point position for each of the added RLs in the RADIO LINK ADDITION RESPONSE message.

After sending of the RADIO LINK ADDITION RESPONSE message the DRNS shall continuously attempt to obtain UL synchronisation on the Uu interface and start reception on the new RL. The DRNS shall start DL transmission on the new RL after synchronisation is achieved in the DL user plane as specified in ref. [4].

[FDD - If the UE has been allocated one or several DCH controlled by DRAC (*DRAC Control IE* was set to "requested" in the RADIO LINK ADDITION REQUEST message for at least one DCH) and if the DRNC supports the DRAC, the DRNC shall indicate in the RADIO LINK ADDITION RESPONSE message the *Secondary CCPCH Info IE* ~~to be received on for the FACH where the DRAC information is sent~~, for each ~~added~~ Radio Link ~~established in a cell where DRAC is active~~. If the DRNC does not support DRAC, ~~it the DRNC~~ shall not provide these IEs in the RADIO LINK ADDITION RESPONSE message.]

~~[FDD - When *Diversity Mode IE* is "STTD", "Closed loop mode1", or "Closed loop mode2", the DRNC shall activate/deactivate the Transmit Diversity to each Radio Link in accordance with *Transmit Diversity Indication IE*.]~~

[FDD - When *Transmit Diversity Indicator IE* is present the DRNS shall activate/deactivate the Transmit Diversity to each new Radio Link in accordance with the *Transmit Diversity Indicator IE* and using the already known diversity mode of the existing Radio Link(s).]

[FDD - After addition of the new RL(s), the UL Uu synchronisation detection out-of-synch algorithm defined in ref. [10] subsection 4.3 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, and the minimum value of the parameters N_INSYNC_IND, that are configured in the cells supporting the radio links of the RL Set].

For each Radio Link the DRNC shall include the *URA ID IE* of the cell, the *Multiple URAs Indicator IE* indicating whether or not the cell belongs to multiple URAs, and the RNC Identity of all other RNCs that are having at least one cell within the URA in the cell in the *URA Information IE* in the RADIO LINK ADDITION RESPONSE message.

8.3.2.3 Unsuccessful Operation

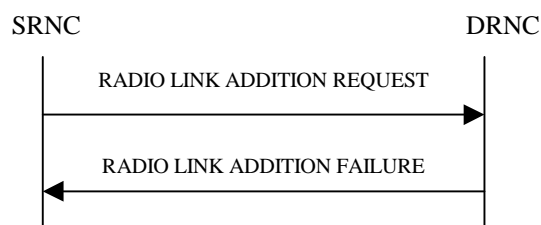


Figure 8: Radio Link Addition procedure: Unsuccessful Operation

If the establishment of at least one RL is unsuccessful, the DRNC shall send a RADIO LINK ADDITION FAILURE as response.

If some RL(s) were established successfully, the DRNC shall indicate this in the RADIO LINK ADDITION FAILURE message in the same way as in the RADIO LINK ADDITION RESPONSE message.

[FDD – If the RADIO LINK ADDITION REQUEST message includes the *Active Pattern Sequence Information* IE and the DRNS cannot provide the requested CM measurements, or if the *Transmission Gap Pattern Sequence Status* IE repetitions in the *Active Pattern Sequence Information* IE do not address exactly all ongoing compressed mode patterns the DRNS shall regard the Radio Link Addition procedure as failed and shall respond with a RADIO LINK ADDITION FAILURE message with the cause value "Invalid CM settings".]

[FDD - If the RADIO LINK ADDITION REQUEST is used to terminate the on going compressed mode measurement in the new RLs (as specified above), but at least one new RL is to be established in one cell that has the same UAREFCN as at least one cell with an already existing RL, the DRNS shall regard the Radio Link Addition procedure as failed and shall respond with a RADIO LINK ADDITION FAILURE message with the cause value "Invalid CM settings".]

Typical cause values are:

Radio Network Layer Causes:

- RL Already Activated/Allocated
- DL Radio Resources not Available;
- UL Radio Resources not Available;
- Unknown C-ID;
- Combining Resources not Available;
- Combining not Supported
- Cell not Available;
- [FDD - Requested Tx Diversity Mode not Supported];
- Power Level not Supported;
- Invalid CM Settings;
- CM not Supported;
- Reconfiguration CFN not Elapsed;
- Number of DL Codes not Supported.

Transport Layer Causes:

- Transport Resource Unavailable.

Miscellaneous Causes:

- Control Processing Overload;
- HW Failure;
- Not enough User Plane Processing Resources.

8.3.2.4 Abnormal Conditions

-

8.3.3.2 Successful Operation

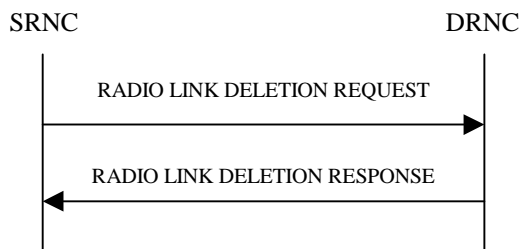


Figure 9: Radio Link Deletion procedure, Successful Operation

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 in the message and release all associated resources and 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 then the DRNC shall also release the UE context, unless the UE is using common resources in the DRNS.

[FDD – After deletion of the RL(s), the UL ~~Uu synchronisation detection out-of-syne~~ algorithm defined in [ref. \[10\] subclause 4.3](#) shall for each of the remaining RL Set(s) use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE, and the minimum value of the parameters N_INSYNC_IND, that are configured in the cells supporting the radio links of the RL Set].

8.3.4.2 Successful Operation

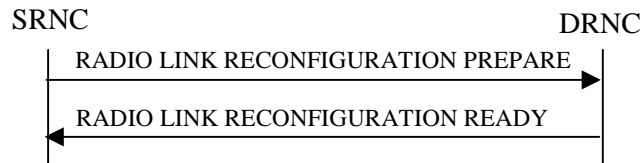


Figure 10: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the SRNC by sending the RADIO LINK RECONFIGURATION PREPARE message to the DRNC.

Upon reception, the DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

The DRNS shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

DCH Modification:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Modify* IEs then the DRNS shall treat them each as follows:

~~If the *DCHs to Modify* IE includes multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Modify* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.~~

- If the *DCHs to Modify* IE includes the *UL FP Mode* IE for a DCH or a ~~DCH which belongs to a~~ set of co-ordinated DCHs to be modified, the DRNS shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs to Modify* IE includes the *ToAWS* IE for a DCH or a ~~DCH which belongs to a~~ set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs to Modify* IE includes the *ToAWE* IE for a DCH or a ~~DCH which belongs to a~~ set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

~~If the *DCHs to Modify* IE includes multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Modify* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.~~

- If the *DCH Specific Info* IE includes the *Frame Handling Priority* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- If the *DCH Specific Info* IE includes the *Transport Format Set* IE for the UL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.
- If the *DCH Specific Info* IE includes the *Transport Format Set* IE for the DL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.
- [FDD - If, in the *DCH Specific Info* IE, the *DRAC Control* IE is present and set to "requested" for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCCH Info* IE ~~to be received on for the FACH where~~ the DRAC information is sent, for each Radio Link established in a cell where DRAC is active. If the DRNS

does not support DRAC, ~~it~~the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]

- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the UL, the DRNS shall map the DCH onto the referenced UL CCTrCH.]
- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the DL, the DRNS shall map the DCH onto the referenced DL CCTrCH.]

DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Add* IEs then the DRNS shall treat them each as follows:

- The DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCH in the new configuration.
- If the *DCHs to Add* IE includes a *DCHs to Add* IE with multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Add* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- [FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected ", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the *QE-Selector* is set to "non-selected ", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]
- [FDD - For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected " shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected " the Physical channel BER shall be used for the QE, ref. [4].]
- The DRNS should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- The DRNS shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [FDD - If the *DRAC Control* IE is set to "requested" in the *DCH Specific Info* IE for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE ~~to be received on~~for the FACH ~~where the DRAC information is sent~~, for each Radio Link ~~supported by a cell where DRAC is active~~. If the DRNS does not support DRAC, ~~it~~the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]

DCH Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCH to Delete*, the DRNS shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the DRNS shall not include this set of co-ordinated DCHs in the new configuration.

Physical Channel Modification:

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information IE* then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information IE* includes the *Uplink Scrambling Code IE*, the DRNS shall apply this Uplink Scrambling Code to the new configuration.]
- [FDD - If the *UL DPCH Information IE* includes the *Min UL Channelisation Code Length IE*, the DRNS shall apply the new Min UL Channelisation Code Length in the new configuration.]
- [FDD - If the *UL DPCH Information IE* includes the *TFCS IE*, the DRNS shall use the *TFCS IE* for the UL when reserving resources for the uplink of the new configuration. The DRNS shall apply the new TFCS in the Uplink of the new configuration.]
- [FDD - If the *UL DPCH Information IE* includes the *UL DPCH Slot Format IE*, the DRNS shall apply the new Uplink DPCH Slot Format to the new configuration.]
- [FDD – If the *UL DPCH Information IE* includes the *UL SIR Target IE*, the DRNS shall set the UL inner loop power control to the UL SIR target when the new configuration is being used.]
- [FDD – If the *UL DPCH Information IE* includes the *Puncture Limit IE*, the DRNS shall apply the value in the uplink of the new configuration .]
- [FDD - If the *UL DPCH Information IE* includes the *Diversity Mode IE*, the DRNS shall apply diversity according to the given value.]
- [FDD – If the *UL DPCH Information IE* includes an *SSDT Cell Identity Length IE* and/or an *S-Field Length IE*, the DRNS shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information IE* then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *DL DPCH Information IE* includes *Number of DL Channelisation Codes IE*, the DRNS shall allocate given number of Downlink Channelisation Codes per Radio Link and apply the new Downlink Channelisation Code(s) to the new configuration. Each Downlink Channelisation Code allocated for the new configuration shall be included as a FDD DL Channelisation Code Number IE in the RADIO LINK RECONFIGURATION READY message when sent to the SRNC. If some Transmission Gap Pattern sequences using 'SF/2' method are already initialised in the DRNS, DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK RECONFIGURATION READY message in case the DRNS selects to change the Scrambling code change method for one or more DL Channelisation Code.]
- [FDD – When more than one DL DPCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPCHs according to [8]. When p number of DL DPCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to “*PhCH number 1*”, the second to “*PhCH number 2*”, and so on until the p th to “*PhCH number p*”.]
- [FDD - If the *DL DPCH Information IE* includes the *TFCS IE*, the DRNS shall use the *TFCS IE* for the DL when reserving resources for the downlink of the new configuration. The DRNS shall apply the new TFCS in the Downlink of the new configuration.]
- [FDD – If the *DL DPCH Information IE* includes the *DL DPCH Slot Format IE*, the DRNS shall apply the new slot format used in DPCH in DL.]
- [FDD – If the *DL DPCH Information IE* includes the *TFCI Signalling Mode IE*, the DRNS shall apply the new signalling mode of the TFCI.]
- [FDD – If the *DL DPCH Information IE* includes the *Multiplexing Position IE*, the DRNS shall apply the new parameter to define whether fixed or flexible positions of transport channels shall be used in the physical channel.]
- [FDD – If the *DL DPCH Information IE* includes the *Limited Power Increase IE* and the IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]
- [FDD – If the *DL DPCH Information IE* includes the *Limited Power Increase IE* and the IE is set to 'Not Used', the DRNS shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

[FDD: If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE*, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration.]

[FDD: If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE* and the *Downlink compressed mode method* in one or more *Transmission Gap Pattern Sequence* within the *Transmission Gap Pattern Sequence Information IE* is set to 'SF/2', the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* to the RADIO LINK RECONFIGURATION READY message indicating for each Channelisation Code whether the alternative scrambling code shall be used or not].

~~— [FDD: If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE*, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration.]~~

~~— [FDD: If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE* and the *Downlink compressed mode method* in one or more *Transmission Gap Pattern Sequence* within the *Transmission Gap Pattern Sequence Information IE* is set to 'SF/2', the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* to the RADIO LINK RECONFIGURATION READY message indicating for each Channelisation Code whether the alternative scrambling code shall be used or not].~~

[TDD - UL/DL CCTrCH Modification]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs, then the DRNS shall treat them each as follows:]

[TDD - If any of the *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs includes any of *TFCS IE*, *TFCI coding IE*, *Puncture limit IE*, or *TPC CCTrCH ID* IEs the DRNS shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]

- [TDD – The DRNC shall include in the RADIO LINK RECONFIGURATION READY message DPCH information to be modified and the IEs modified if any of *Repetition Period IE*, *Repetition Length IE*, *TDD DPCH Offset IE* or timeslot information was modified. The DRNC shall include timeslot information and the IEs modified if any of *Midamble Shift and Burst Type IE*, *Time Slot IE*, *TFCI Presence IE* or Code information was modified. The DRNC shall include code information if *TDD Channelisation Code IE* was modified.]

[TDD – UL/DL CCTrCH Addition]

[TDD -If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Add* IEs or *DL CCTrCH to Add* IEs, the DRNS shall include this CCTrCH in the new configuration.]

[TDD – If the DRNS has reserved the required resources for any requested DPCHs, the DRNC shall include the DPCH information within DPCH to be added in the RADIO LINK RECONFIGURATION READY message. If no DPCH was active before the reconfiguration, and if a valid Rx Timing Deviation measurement is known in DRNC, then the DRNC shall include the *Rx Timing Deviation IE* in the RADIO LINK RECONFIGURATION READY message.]

[TDD – UL/DL CCTrCH Deletion]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Delete* IEs or *DL CCTrCH to Delete* IEs, the DRNS shall remove this CCTrCH in the new configuration.]

SSDT Activation/Deactivation:

- [FDD - If the *RL Information IE* includes the *SSDT Indication IE* set to "SSDT Active in the UE", the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity IE* in *RL Information IE*, and the *SSDT Cell Identity Length IE* in *UL DPCH Information IE*, in the new configuration.]
- [FDD - If the *RL Information IE* includes the *SSDT Indication IE* set to "SSDT not Active in the UE", the DRNS shall deactivate SSDT in the new configuration.]

DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to modify*, *DSCH to add* or *DSCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Add* IE, then the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Modify* IE, then the DRNS shall treat them each as follows:

- [FDD: If the *DSCH to Modify* IE includes any *DSCH Info* IEs, then the DRNS shall treat them each as follows:]
- [FDD: If the *DSCH Info* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DRNS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]
- [FDD: If the *DSCH Info* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]
- [FDD: If the *DSCH to Modify* IE includes the *PDSCH RL ID* IE, then the DRNS shall use it as the new DSCH RL identifier.]
- [FDD: If the *DSCH to Modify* IE includes the *Transport Format Combination Set* IE, then the DRNS shall use it as the new Transport Format Combination Set associated with the DSCH.]
- [TDD: If the *DSCHs to Modify* IE includes the *CCTrCH Id* IE, then the DRNS shall map the DSCH onto the referenced DL CCTrCH.]
- [TDD: If the *DSCHs to Modify* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DRNS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]
- [TDD: If the *DSCHs to Modify* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]

If the requested modifications are allowed by the DRNS and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

[TDD] USCH Addition/Modification/Deletion

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to modify*, *USCH to add* or *USCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Add* IE, then, the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of USCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Modify* IE, then the DRNS shall treat them each as follows:

- If the *USCH to Modify* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DRNS shall use them to update the set of USCH Priority classes.
- If the *USCH to Modify* IE includes any of the *CCTrCH Id* IE, *Transport Format Set* IE, *BLER* IE or *RB Info* IE, the DRNS shall apply the parameters to the new configuration.

If the requested modifications are allowed by the DRNC and the DRNC has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

General

The DRNS shall include in the RADIO LINK RECONFIGURATION READY message the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE for any Transport Channel being added, or any Transport Channel being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE. In case of a set of co-ordinated DCHs requiring a new transport bearer on Iur, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.


In case of a Radio Link being combined with another Radio Link within the DRNS, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the combined Radio Links.

If the requested modifications are allowed by the DRNS, and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s) it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exist a Prepared Reconfiguration, as defined in subclause 3.1.

The DRNS decides the maximum and minimum SIR for the uplink of the Radio Link(s) and shall return this in the *Maximum Uplink SIR* IE and *Minimum Uplink SIR* IE for each Radio Link in the RADIO LINK RECONFIGURATION READY message.

If the DL TX power upper or lower limit has been re-configured the DRNC shall return this in the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE respectively in the RADIO LINK RECONFIGURATION RESPONSE message.

8.3.5.3 Abnormal Conditions

If a new transport bearer is required for the new  configuration and it is not available at the requested CFN, the DRNS shall initiate the Radio Link Failure procedure.

8.3.7.2 Successful Operation

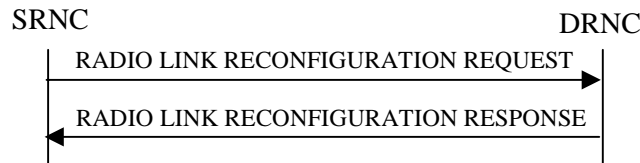


Figure 14: Unsynchronised Radio Link Reconfiguration procedure, Successful Operation

The Unsynchronised Radio Link Reconfiguration procedure is initiated by the SRNC by sending the RADIO LINK RECONFIGURATION REQUEST message to the DRNC.

Upon reception, the DRNS shall modify the configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

The DRNS shall prioritise resource allocation for the RL to be modified according to Annex A.

DCH Modification:

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCHs to Modify* IEs, then the DRNS shall treat them as follows:

- If the *DCHs to Modify* IE includes multiple *DCH Specific Info* IEs, then the DRNS shall treat the DCHs as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCHs to Modify* IE includes the *UL FP Mode* IE for a DCH or a **DCH which belongs to a** set of co-ordinated DCHs to be modified, the DRNS shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs to Modify* IE includes the *ToAWS* IE for a DCH or a **DCH which belongs to a** set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs to Modify* IE includes the *ToAWE* IE for a DCH or a **DCH which belongs to a** set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCH Specific Info* IE includes on the *Transport Format Set* IE for the UL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.
- If the *DCH Specific Info* IE includes on the *Transport Format Set* IE for the DL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.
- If the *DCH Specific Info* IE includes the *Frame Handling Priority* IE, the DRNS should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- [FDD - If the *DRAC Control* IE is present and set to "requested" in *DCH Specific Info* IE for at least one DCH, and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION RESPONSE message the *Secondary CCPCH Info* IE ~~to be received on~~for the FACH where the DRAC information is sent, for each Radio Link supported by a cell where DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the UL, the DRNS shall map the DCH onto the referenced UL CCTrCH.]

- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the DL, the DRNS shall map the DCH onto the referenced DL CCTrCH.]

DCH Addition:

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCHs to Add* IEs, then the DRNS shall treat them each as follows:

- The DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCH in the new configuration.
- If the *DCHs to Add* IE includes multiple DCH Specific Info IEs then the DRNS shall treat the DCHs in the *DCHs to Add* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can all of them in the new configuration.
- [FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected ", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the *QE-Selector* is set to "non-selected ", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]
- For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected " shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected " the Physical channel BER shall be used for the QE, ref. [4].]
- The DRNS should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- The DRNS shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [FDD - If the *DRAC Control* IE is set to "requested" in *DCH Specific Info* IE for at least one DCH, and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION RESPONSE message the *Secondary CCPCH Info* IE ~~and the Reference to System Information blocks IE to be received on for the FACH where the DRAC information is sent~~, for each Radio Link ~~supported by a cell where DRAC is active~~. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION RESPONSE message.

DCH Deletion:

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCH to delete* IE, the DRNS shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the DRNS shall not include this set of co-ordinated DCHs in the new configuration.

Physical Channel Modification:

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE, then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information* IE includes the *TFCS* IE for the UL, the DRNS shall apply the new TFCS in the Uplink of the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information* IE, then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *DL DPCH Information* IE includes the *TFCS* IE for the DL, the DRNS shall apply the new TFCS in the Downlink of the new configuration.]
- [FDD - If the *DL DPCH Information* IE includes the *TFCI Signalling Mode* IE for the DL, the DRNS shall apply the new TFCI Signalling Mode in the Downlink of the new configuration.]
- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]
- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Not Used', the DRNS shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

Compressed Mode Preparation:

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode configuration. This new Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, and if the *Downlink compressed mode method* in one or more Transmission Gap Pattern Sequence within the *Transmission Gap Pattern Sequence Information* IE is set to 'SF/2', the DRNC shall include the *DL Code Information* IE in the RADIO LINK RECONFIGURATION RESPONSE message, without changing any of the DL Channelisation Codes or LD Scrambling Codes, indicating for each DL Channelisation Code whether the alternative scrambling code shall be used or not.]

[TDD - UL/DL CCTrCH Modification]

[TDD - If the RADIO LINK RECONFIGURATION REQUEST message includes any *UL CCTrCH Information to modify* IEs or *DL CCTrCH Information to modify* IEs and it includes *TFCS* IE, the DRNS shall apply the included *TFCS* IE as the new value to the referenced CCTrCH.]

[TDD – UL/DL CCTrCH Deletion]

[TDD - If the RADIO LINK RECONFIGURATION REQUEST message includes any *UL CCTrCH Information to delete* IEs or *DL CCTrCH Information to delete* IEs, the DRNS shall remove the referenced CCTrCH in the new configuration.]

General:

The DRNS shall include in the RADIO LINK RECONFIGURATION RESPONSE message the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE for any Transport Channel being added, or any Transport Channel being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE. In case of a set of co-ordinated DCHs requiring a new transport bearer on Iur, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

In case of a Radio Link being combined with another Radio Link within the DRNS, the DRNC shall return the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message only for one of the combined Radio Links.

If the requested modifications are allowed by the DRNS, and if the DRNS has successfully allocated the required resources and changed to the new configuration, the DRNC shall respond to the SRNC with the RADIO LINK RECONFIGURATION RESPONSE message.

The DRNS decides the maximum and minimum SIR for the uplink of the Radio Link(s), and the DRNC shall return this in the IEs *Maximum Uplink SIR* and *Minimum Uplink SIR* for each Radio Link in the RADIO LINK RECONFIGURATION RESPONSE message.

If the DL TX power upper or lower limit has been re-configured, the DRNC shall return this in the *Maximum DL TX Power IE* and *Minimum DL TX Power IE* respectively in the RADIO LINK RECONFIGURATION RESPONSE message.

8.3.9.2 Successful Operation

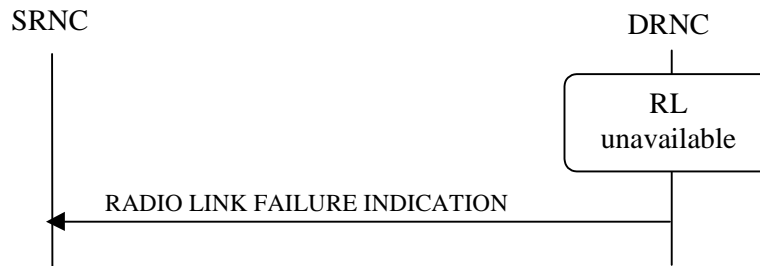


Figure 18: RL Failure procedure, Successful Operation

When DRNC detects that a one or more Radio Links or Radio Link Sets are no longer available, it shall send the RL FAILURE INDICATION message to the SRNC. The message indicates the failed Radio Links or Radio Link Sets with the most appropriate cause values defined in the *Cause* IE. If the failure concerns one or more individual Radio Links the DRNS shall indicate the affected Radio Link(s) using the *RL Information* IE. [FDD - If the failure concerns one or more Radio Link Sets the DRNS shall indicate the affected Radio Link Set(s) using the *RL Set Information* IE.]

When the RL Failure procedure is used to notify loss of UL synchronisation on the Uu interface, the message shall be sent when indicated by the UL synchronisation detection algorithm defined in ref. [10] [subclause 4.3](#) and [22] [subclause 4.4.2](#), and with the cause value 'Synchronisation Failure'.

[FDD – When Radio Link Failure procedure is used to indicate permanent failure in one or more Radio Links/Radio Link Sets due the overlapping of two or more pattern sequences during the compressed mode measurement, DL transmission shall be stopped and the RADIO LINK FAILURE INDICATION message shall be sent with the cause value 'Invalid CM Settings'. After sending the RADIO LINK FAILURE INDICATION message to notify the permanent failure, the DRNS shall not remove the Radio Link/Radio Link Set from the UE context, or the UE context itself.]

In the other cases Radio Link Failure procedure is used to indicate that one or more Radio Links or Radio Link Sets are permanently unavailable and cannot be restored. After sending the RADIO LINK FAILURE INDICATION message to notify the permanent failure, the DRNS shall not remove the Radio Link from the UE context, or the UE context itself. When applicable, the allocation retention priorities associated to the transport channels shall be used by the DRNS to prioritise which Radio Links to indicate as unavailable to the SRNC.

Typical cause values are:

Radio Network Layer Causes:

- Synchronisation Failure;
- Invalid CM Settings.

Transport Layer Causes:

- Transport Resources Unavailable.

Miscellaneous Causes:

- Control Processing Overload;
- HW Failure;
- O&M Intervention.

8.3.10 Radio Link Restoration

8.3.10.1 General

This procedure is used to notify establishment and re-establishment of UL synchronisation on the Uu interface.

This procedure shall use the signalling bearer connection for the relevant UE context.

The DRNC may initiate the Radio Link Restoration procedure after establishing a Radio Link.

8.3.10.2 Successful Operation



Figure 19: RL Restoration procedure, Successful Operation

The DRNC shall send the RADIO LINK RESTORE INDICATION message to the SRNC when indicated by the UL Uu synchronisation detection algorithm defined in ref. [10] subclause 4.3 and [22] subclause 4.4.2. [FDD – The algorithm in ref. [10] subclause 4.3 shall use the minimum value of the parameters N_INSYNC_IND that are configured in the cells supporting the radio links of the RL Set].

[TDD - If the re-established UL Uu synchronisation concerns one or more individual Radio Links the DRNC shall indicate the affected Radio Link(s) using the *RL Information* IE.] [FDD - If the re-established UL Uu synchronisation concerns one or more Radio Link Sets the DRNC shall indicate the affected Radio Link Set(s) using the *RL Set Information* IE.]

8.3.10.3 Abnormal Conditions

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8.3.12.2 Successful Operation

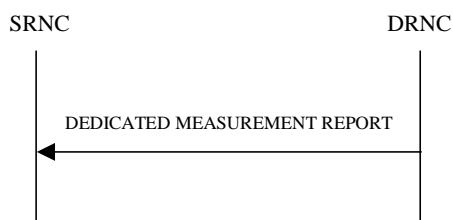


Figure 22: Measurement Reporting procedure, Successful Operation

If the requested measurement reporting criteria are met, the DRNS shall initiate a Measurement Reporting procedure. If the measurement was initiated (by the Measurement Initiation procedure) for multiple dedicated measurement objects, the DRNC may include measurement values for multiple objects in the DEDICATED MEASUREMENT REPORT message. ~~Unless specified below, the meaning of the parameters are given in other specifications.~~

The *Dedicated Measurement Id* IE shall be set to the Dedicated Measurement Id provided by the SRNC when initiating the measurement with the Measurement Initiation procedure.

If the achieved measurement accuracy does not fulfil the given accuracy requirement, the Measurement not available shall be reported.

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

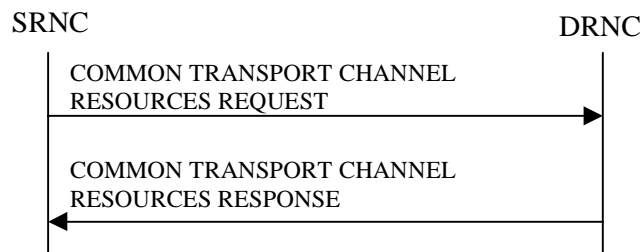


Figure 27: Common Transport Channel Resources Initialisation procedure, Successful Operation

The SRNC initiates the procedure by sending the message COMMON TRANSPORT CHANNEL RESOURCES REQUEST to the DRNC.

~~Upon reception of the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall respond by sending a COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message to the SRNC.~~

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 and include the *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 for the 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.

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 successfully reserved the required resources, the DRNC shall respond to the SRNC with the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message.~~

8.4.1.3 Unsuccessful Operation

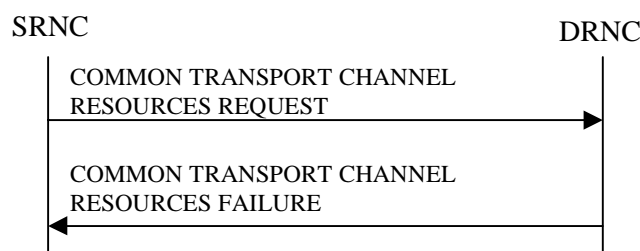


Figure 28: Common Transport Channel Resources Initialisation procedure, Unsuccessful Operation

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 respond to the SRNC with the COMMON TRANSPORT CHANNEL RESOURCES FAILURE message, indicating the cause of the failure.

Typical cause values are:

Radio Network Layer Causes:

- Common Transport Channel Type not Supported.

Transport Layer Causes:

- Transport Resource Unavailable.

8.4.1.4 Abnormal Conditions

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8.5.1.1 General

The Error Indication procedure is initiated by a node to report detected errors in one incoming a received message, provided they cannot be reported by an appropriate failure response message.

This procedure shall use the signalling bearer mode specified below.

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		TFCS for the UL 9.2.1.63		–	
>UL DPCH 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		–	
DL DPCH Information		1			YES	reject
>TFCS	M		TFCS for the DL. 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		9.2.1.339.2 2.21A		–	
>Inner Loop DL PC Status	M		9.2.2.21a		–	
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...<maxn oofRLs>			EACH	notify
>RL ID	M		9.2.1.49		–	
>C-Id	M		9.2.1.6		–	
>First RLS Indicator	M		9.2.2.16A		–	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>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		9.2.2.69.2 1.20		–	
>Initial DL TX Power	C_ifAlone		DL Power 9.2.2.10		–	
>Primary CPICH Ec/No	C_ifAlone		9.2.2.32		–	
>SSDT Cell Identity	O		9.2.2.40		–	
>Transmit Diversity Indicator	C – Diversity mode		9.2.2.5048		–	
Transmission Gap Pattern Sequence Information	O		9.2.2.47A		YES	reject
Active Pattern Sequence Information	O		9.2.2.A		YES	reject

Condition	Explanation
CodeLen	This IE is shall be present only if <i>Min UL Channelisation Code length</i> IE equals to 4
SlotFormat	This IE shall is only be present if the <i>DL DPCH Slot Format</i> IE is equal to any of the values 12 to 16.
NotFirstRL	This IE shall be is present only if the RL is not the first one in the <i>RL Information</i> IE.
Diversity mode	This IE shall be is present unless <i>Diversity Mode</i> IE in <i>UL DPCH Information</i> IE is "none"
C_ifalone	Either <i>Initial DL TX Power</i> IE or <i>Primary CPICH Ec/No</i> IE shall be present.

Range bound	Explanation
MaxnoofRLs	Maximum number of RLs for one UE.

9.1.4.1 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		–	
D-RNTI	O		9.2.1.24		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
RL Information Response		1..<maxno ofRLs>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>RL Set ID	M		9.2.2.35		–	
>URA Information	M		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>Received total wide band power	M		9.2.2.35A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		–	
>Diversity Indication	C-NotFirstRL		9.2.2.79.2.1.21		–	
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>>RL ID	M		9.2.1.49	Reference RL ID for the combining	–	
>> <i>Non Combining or First RL</i>					–	
>>>DCH Information Response	M		9.2.1.16A		–	
>SSDT Support Indicator	M		9.2.2.43		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.2.10		–	
>Minimum DL TX Power	M		DL Power 9.2.2.10		–	
>Primary Scrambling Code	O		9.2.1.45		–	
>UL UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nu in ref. [6]	–	
>DL UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nd in ref. [6]	–	
>Primary CPICH Power	O		9.2.1.44		–	
>DSCH Information Response	O		DSCH FDD Information Response 9.2.2.13B		YES	ignore
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>Neighbouring GSM Cell Information	O		9.2.1.41C		YES	ignore
Uplink SIR Target	O		Uplink SIR 9.2.1.69		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Condition	Explanation
NotFirstRL	The IE shall be is present only if the RL is not the first RL in the RL Information

Range bound	Explanation
MaxnoofRLs	Maximum number of RLs for one UE.

9.1.5 RADIO LINK SETUP FAILURE

9.1.5.1 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		–	
D-RNTI	O		9.2.1.24		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
CHOICE Cause Level	M				YES	ignore
>General					–	
>>Cause	M		9.2.1.5		–	
>RL Specific					–	
>>Unsuccessful RL Information Response		1...<max number of RLS>			EACH	Ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
>>Successful RL Information Response		0..<max number of RLS-1>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>RL Set ID	M		9.2.2.35		–	
>>>URA Information	M		9.2.1.70B		–	
>>>SAI	M		9.2.1.52		–	
>>>Cell GAI	O		9.2.1.5A		–	
>>>UTRAN Access Point Position	O		9.2.1.70A		–	
>>>Received total wide band power	M		9.2.2.35A		–	
>>>Secondary CCPCH Info	O		9.2.2.37B		–	
>>>DL Code Information	M		FDD DL Code Information 9.2.2.14A		YES	ignore
>>>Diversity Indication	M		9.2.2.79.2.1.21		–	
>>>CHOICE Diversity Indication	M				–	
>>>>Combining					–	
>>>>>RL ID	M		9.2.1.49	Reference RL ID for the combining	–	
>>>>>Non Combining or First RL					–	
>>>>>DCH Information Response	M		9.2.1.16A		–	
>>>SSDT Support Indicator	M		9.2.2.43		–	
>>>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>>>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>>>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>>>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>>>Maximum DL TX Power	M		DL Power 9.2.2.10		–	
>>>Minimum DL TX Power	M		DL Power 9.2.2.10		–	
>>>DSCH Information Response	O		DSCH FDD		YES	ignore

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
			Information Response 9.2.2.13B			
>>>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>>>Neighbouring GSM Cell Information	O		9.2.1.41C		YES	ignore
Uplink SIR Target	O		Uplink SIR 9.2.1.69		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
MaxnoofRLs	Maximum number of RLs for one UE.

9.1.6 RADIO LINK ADDITION REQUEST

9.1.6.1 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		–	
Uplink SIR Target	M		Uplink SIR 9.2.1.69		YES	reject
RL Information		<i>1..<maxn oofRLs- 1></i>			EACH	notify
>RL ID	M		9.2.1.49		–	
>C-Id	M		9.2.1.6		–	
>Frame Offset	M		9.2.1.30		–	
>Chip Offset	M		9.2.2.1		–	
>Diversity Control Field	M		9.2.2.69.2 1.20		–	
>Primary CPICH Ec/No	O		9.2.2.32		–	
>SSDT Cell Identity	O		9.2.2.40		–	
>Transmit Diversity Indicator	O		9.2.2.5048		–	
Active Pattern Sequence Information	O		9.2.2A	Either all the already active Transmission Gap Sequence(s) are addressed (Transmission Gap Pattern sequence shall overlap with the existing one) or none of the transmission gap sequences is activated.	YES	reject

Range bound	Explanation
MaxnoofRLs	Maximum number of radio links for one UE.

9.1.6.2 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		–	
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		–	
>Diversity Control Field	M		9.2.2.69.2.1.20		–	
>Primary CCPCH RSCP	O		9.2.3.5		–	
>DL Time Slot ISCP Info	O		9.2.3.2D		–	

9.1.7 RADIO LINK ADDITION RESPONSE

9.1.7.1 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		–	
RL Information Response		<i>1..<maxnoof RLS-1></i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>RL Set ID	M		9.2.2.35		–	
>URA Information	M		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>Received total wide band power	M		9.2.2.35A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		YES	ignore
>Diversity Indication	M		9.2.2.79.2.1.21		–	
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>>RL ID	M		9.2.1.49	Reference RL ID	–	
>> <i>Non Combining</i>					–	
>>>DCH Information Response	M		9.2.1.16A		–	
>SSDT Support Indicator	M		9.2.2.43		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.2.10		–	
>Minimum DL TX Power	M		DL Power 9.2.2.10		–	
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
MaxnoofRLs	Maximum number of radio links for one UE.

9.1.7.2 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		–	
RL Information Response		1			YES	ignore
>RL ID	M		9.2.1.49		–	
>URA Information	M		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>UL Time Slot ISCP Info	M		9.2.3.13D		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.2.10		–	
>Minimum DL TX Power	M		DL Power 9.2.2.10		–	
>Timing Advance Applied	M		9.2.3.12A		–	
>Alpha Value	M		9.2.3.a		–	
>UL PhysCH SF Variation	M		9.2.3.13B		–	
>UL CCTrCH Information		0..<maxnoof CCTrCHs>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
>>UL DPCH Information		0..1			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>UL Timeslot Information	M		9.2.3.13C		–	
>DL CCTrCH Information		0..<maxnoof CCTrCHs>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
>>DL DPCH Information		0..1			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>DL Timeslot Information	M		9.2.3.2C		–	
>DCH Information		0..1			–	
>>Diversity Indication	M		9.2.2.79.2.1.21		–	
>>CHOICE Diversity Indication	M				–	
>>>Combining					–	
>>>>RL ID	M		9.2.1.49	Reference RL	–	
>>>Non Combining					–	
>>>>DCH Information Response	M		9.2.1.16A		–	
>DSCH Information Response		0 .. <Maxnoof DSCHs>			GLOBAL	ignore
>>DSCH ID	M		9.2.1.26A		–	
>>Transport Format Management	M		9.2.3.13		–	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
>>DSCH Flow Control Information	M		9.2.1.26B		–	
>>CHOICE <i>Diversity Indication</i>	O				–	
>>> <i>Non Combining</i>					–	
>>>>Binding ID	O		9.2.1.3		–	
>>>>Transport Layer Address	O		9.2.1.62		–	
>USCH Information Response		0 .. <Maxnoof USCHs>			GLOBAL	ignore
>>USCH ID	M		9.2.3.14		–	
>>Transport Format Management	M		9.2.3.13		–	
>>CHOICE <i>Diversity Indication</i>	O				–	
>>> <i>Non Combining</i>					–	
>>>>BindingID	O		9.2.1.3		–	
>>>>Transport Layer Address	O		9.2.1.62		–	
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range Bound	Explanation
MaxnoofDSCHs	Maximum number of DSCHs for one UE.
MaxnoofUSCHs	Maximum number of USCHs for one UE.
MaxnoofCCTrCHs	Maximum number of CCTrCHs for one UE.

9.1.8 RADIO LINK ADDITION FAILURE

9.1.8.1 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		–	
CHOICE <i>Cause Level</i>	M				YES	ignore
> <i>General</i>					–	
>> <i>Cause</i>	M		9.2.1.5		–	
> <i>RL Specific</i>					–	
>> Unsuccessful RL Information Response		1..<maxnoof RLS-1>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
>> Successful RL Information Response		0..<maxnoof RLS-2>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>RL Set ID	M		9.2.2.35		–	
>>>URA Information	M		9.2.1.70B		–	
>>>SAI	M		9.2.1.52		–	
>>>Cell GAI	O		9.2.1.5A		–	
>>>UTRAN Access Point Position	O		9.2.1.70A		–	
>>>Received total wide band power	M		9.2.2.35A		–	
>>>Secondary CCPCCH Info	O		9.2.2.37B		–	
>>>DL Code Information	M		FDD DL Code Information 9.2.2.14A		YES	ignore
>>>Diversity Indication	M		9.2.2.79.2.1.21		–	
>>>CHOICE <i>Diversity Indication</i>	M				–	
>>>> <i>Combining</i>					–	
>>>>>RL ID	M		9.2.1.49	Reference RL ID	–	
>>>> <i>Non Combining</i>					–	
>>>>>DCH Information Response	M		9.2.1.16A		–	
>>>SSDT Support Indicator	M		9.2.2.43		–	
>>>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>>>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>>>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>>>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>>>Maximum DL TX Power	M		DL Power 9.2.2.10		–	
>>>Minimum DL TX Power	M		DL Power 9.2.2.10		–	
>>>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>>>Neighbouring GSM Cell Information	O		9.2.1.41C		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
MaxnoofRLs	Maximum number of radio links for one UE.

9.1.11 RADIO LINK RECONFIGURATION PREPARE

9.1.11.1 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		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
UL DPCH Information		0..1			YES	reject
>UL Scrambling Code	O		9.2.2.53		–	
>UL SIR Target	O		Uplink SIR 9.2.1.69		–	
>Min UL Channelisation Code Length	O		9.2.2.25		–	
>Max Number of UL DPDCHs	C – CodeLen		9.2.2.24		–	
>Puncture Limit	O		9.2.1.46	For the UL.	–	
>TFCS	O		9.2.1.63	TFCS for the UL.	–	
>UL DPCCH Slot Format	O		9.2.2.52		–	
>Diversity mode	O		9.2.2.8		–	
>SSDT Cell Identity Length	O		9.2.2.41		–	
>S-Field Length	O		9.2.2.36		–	
DL DPCH Information		0..1			YES	reject
>TFCS	O		9.2.1.63	TFCS for the DL.	–	
>DL DPCH Slot Format	O		9.2.2.9		–	
>Number of DL Channelisation Codes	O		9.2.2.26A		–	
>TFCI Signalling Mode	O		9.2.2.46		–	
>TFCI Presence	C- SlotFormat		9.2.1.55		–	
>Multiplexing Position	O		9.2.2.26		–	
>Limited Power Increase	O		9.2.1.339.2 2.21A		–	
DCHs to Modify	O		FDD DCHs to Modify 9.2.2.44C1 3C		YES	reject
DCHs to Add	O		DCH FDD Information 9.2.2.4A		YES	reject
DCHs to Delete		0..<maxnoof DCHs>			GLOBAL	reject
>DCH ID	M		9.2.1.16		–	
DSCHs to Modify		0..1			YES	reject
>DSCH Info		0..<maxnoof DSCHs>			–	
>>DSCH ID	M		9.2.1.26A		–	
>>TrCh Source Statistics Descriptor	O		9.2.1.65		–	
>>Transport Format Set	O		9.2.1.64	For DSCH	–	
>>Allocation/ Retention Priority	O		9.2.1.1		–	
>>Scheduling Priority Indicator	O		9.2.1.51A		–	
>>BLER	O		9.2.1.4		–	
>>Transport Bearer Request Indicator	M		9.2.1.61		–	
>PDSCH RL ID	O		RL ID		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>TFCS	O		9.2.1.49			
DSCHs to Add	O		9.2.1.63	For DSCH	–	
DSCHs to Delete		0..1			YES	reject
>DSCH Info		1..<maxnoof DSCHs>			–	
>>DSCH ID	M		9.2.1.26A		–	
RL Information		0..<maxnoof RLs>			EACH	reject
>RL ID	M		9.2.1.49		–	
>SSDT Indication	O		9.2.2.4142		–	
>SSDT Cell Identity	C - SSDTIndON		9.2.2.40		–	
>Transmit Diversity Indicator	C – Diversity mode		9.2.2.5048		–	
Transmission Gap Pattern Sequence Information	O		9.2.2.47A		YES	reject

Condition	Explanation
SSDTIndON	The IE may be present if the <i>SSDT Indication</i> IE is set to 'SSDT Active in the UE'.
CodeLen	This IE shall be is- present only if the <i>Min UL Channelisation Code length</i> IE equals to 4.
SlotFormat	This IE shall is-only be present if the <i>DL DPCH Slot Format</i> IE is equal to any of the values 12 to 16.
Diversity mode	This IE shall be is- present if <i>Diversity Mode</i> IE is present in the <i>UL DPCH Information</i> IE and is not equal to "none".

Range bound	Explanation
MaxnoofDCHs	Maximum number of DCHs for a UE.
MaxnoofDSCHs	Maximum number of DSCHs for one UE.
MaxnoofRLs	Maximum number of RLs for a UE.

9.1.11.2 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		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
UL CCH to Add		<i>0..<maxno ofCCHs></i>		For DCH and USCH	EACH	notify
>CCH 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		9.2.1.40		–	
UL CCH to Modify		<i>0..<maxno ofCCHs></i>			EACH	notify
>CCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63	For the UL.	–	
>TFCI Coding	O		9.2.3.11		–	
>Puncture Limit	O		9.2.1.46		–	
UL CCH to Delete		<i>0..<maxno ofCCHs></i>			EACH	notify
>CCH ID	M		9.2.3.2		–	
DL CCH to Add		<i>0..<maxno ofCCHs></i>		For DCH and DSCH	EACH	notify
>CCH 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		–	
>TPC CCH List		0 to <maxnoCCH>		List of uplink CCH which provide TPC	–	
>>TPC CCH ID	M		CCH ID 9.2.3.2		–	
DL CCH to Modify		<i>0..<maxno ofCCHs></i>			EACH	notify
>CCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63	For the DL.	–	
>TFCI Coding	O		9.2.3.11		–	
>Puncture Limit	O		9.2.1.46		–	
>TPC CCH List		0 to <maxnoCCH>		List of uplink CCH which provide TPC	–	
>>TPC CCH ID	M		CCH ID 9.2.3.3		–	
DL CCH to Delete		<i>0..<maxno ofCCHs></i>			EACH	notify
>CCH ID	M		9.2.3.2		–	
DCHs to Modify	O		TDD DCHs to Modify 9.2.3.8B		YES	reject
DCHs to Add	O		DCH TDD Information 9.2.3.2A		YES	reject
DCHs to Delete		<i>0..<maxno ofDCHs></i>			GLOBAL	reject

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>DCH ID	M		9.2.1.16		–	
DSCHs to Modify		0..<maxno ofDSCHs>			GLOBAL	reject
>DSCH ID	M		9.2.1.26A		–	
>CCTrCH Id	O		9.2.3.2	DL CCTrCH in which the DSCH is mapped.	–	
>TrCh Source Statistics Descriptor	O		9.2.1.65		–	
>Transport Format Set	O		9.2.1.64		–	
>Allocation/Retention Priority	O		9.2.1.1		–	
>Scheduling Priority Indicator	O		9.2.1.51A		–	
>BLER	O		9.2.1.4		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
DSCHs to Add	O		DSCH TDD Information 9.2.3.3a		YES	reject
DSCHs to Delete		0..<maxno ofDSCHs>			GLOBAL	reject
>DSCH ID	M		9.2.1.26A		–	
USCHs to Modify		0..<maxno ofUSCHs>			GLOBAL	reject
>USCH ID	M		9.2.3.14		–	
>CCTrCH Id	O		9.2.3.2	UL CCTrCH in which the USCH is mapped.	–	
>TrCh Source Statistics Descriptor	O		9.2.1.65		–	
>Transport Format Set	O		9.2.1.64		–	
>Allocation/Retention Priority	O		9.2.1.1		–	
>Scheduling Priority Indicator	O		9.2.1.51A		–	
>BLER	O		9.2.1.4		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
>RB Info		0 to <maxno of RB>		All Radio Bearers using this USCH	–	
>>RB Identity	M		9.2.3.5B		–	
USCHs to Add	O		USCH Information 9.2.3.14A		YES	reject
USCHs to Delete		0..<maxno ofUSCHs>			GLOBAL	reject
>USCH ID	M		9.2.3.14		–	

Condition	Explanation
CoordCH	This IE shall be present only this DCH is part of a set of coordinated DCHs (number of instances of DCH Specific Info is greater than 1)

Range bound	Explanation
MaxnoofDCHs	Maximum number of DCHs for a UE.
MaxnoofCCTrCHs	Maximum number of CCTrCHs for a UE.
MaxnoofDSCHs	Maximum number of DSCHs for one UE.
MaxnoofUSCHs	Maximum number of USCHs for one UE.

9.1.16.1 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		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
UL DPCH Information		0..1			YES	reject
>TFCS	O		9.2.1.63	TFCS for the UL.	–	
DL DPCH Information		0..1			YES	reject
>TFCS	O		9.2.1.63	TFCS for the DL.	–	
>TFCI Signalling Mode	O		9.2.2.46		–	
>Limited Power Increase	O		9.2.1.339.2 2.21A		–	
DCHs to Modify	O		FDD DCHs to Modify 9.2.2.14C1 3C		YES	reject
DCHs to Add	O		DCH FDD Information 9.2.2.4A		YES	reject
DCHs to Delete		0..<maxno ofDCHs>			GLOBAL	reject
>DCH ID	M		9.2.1.16		–	
Transmission Gap Pattern Sequence Information	O		9.2.2.47A		YES	reject

9.1.18 RADIO LINK FAILURE 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		–	
CHOICE <i>Reporting Object</i>	M			Object for which the Failure shall be reported.	YES	ignore
>RL					–	
>>RL Information	M	1 .. <MaxnoofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
>RLS					–	
>>RL Set Information		1 .. <MaxnoofRLSets>			EACH	Ignore
>>>RL Set ID	M		9.2.2.35		–	
>>>Cause	M		9.2.1.5		–	

Range bound	Explanation
MaxnoofRLs	Maximum number of RLs for one UE.
MaxnoofRLSets	Maximum number of RL Sets for one UE.

9.1.20 DL POWER CONTROL REQUEST [FDD]

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		–	
Power Adjustment Type	M		9.2.2.28		YES	ignore
DL Reference Power	C-Common		DL Power 9.2.2.10		YES	ignore
Inner Loop DL PC Status	O		9.2.2.21a		YES	ignore
DL Reference Power Information	C-Individual	1..<maxnoofRLs>			GLOBAL	ignore
>RL ID	M		9.2.1.49		–	
>DL Reference Power	M		DL Power 9.2.2.10		–	
Max Adjustment Step	C-CommonOrIndividual		9.2.2.23		YES	ignore
Adjustment Period	C-CommonOrIndividual		9.2.2.29, 2.2.B		YES	ignore
Adjustment Ratio	C-CommonOrIndividual		9.2.2.C		YES	ignore

Condition	Explanation
Common	This IE shall be is present only if the <i>Power Adjustment Type</i> IE is set to 'Common'.
Individual	This IE shall be is present only if the <i>Power Adjustment Type</i> IE is set to 'Individual'.
CommonOrIndividual	This IE shall be is present only if the <i>Power Adjustment Type</i> IE is set to 'Common' or 'Individual'.

Range Bound	Explanation
MaxnoofRLs	Maximum number of RLs for one UE.

9.1.36 COMMON TRANSPORT CHANNEL RESOURCES RESPONSE

9.1.36.1 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		–	
S-RNTI	M		9.2.1.53		YES	ignore
C-RNTI	O		9.2.1.14		YES	ignore
FACH Info for UE Selected S-CCPCH		1			YES	ignore
>FACH Flow Control Information	M		9.2.1.26C		YES	ignore
Transport Layer Address	O		9.2.1.62		YES	ignore
Binding Identity	O		9.2.1.3		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range Bound	Explanation
MaxnoofMACcshSDUlengthsperPriority	Maximum number of different MAC-c/sh-SDU Lengths.

9.1.36.2 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		–	
S-RNTI	M		9.2.1.53		YES	ignore
C-RNTI	O		9.2.1.14		YES	ignore
FACH Info for UE Selected S-CCPCHs		1			YES	ignore
>FACH Flow Control Information	M		9.2.1.26C		YES	ignore
Transport Layer Address	O		9.2.1.62		YES	ignore
Binding Identity	O		9.2.1.3		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range Bound	Explanation
MaxnoofMSCcshSDUlengthsperPriority	Maximum number of different MAC-c/sh-SDU Lengths.

9.2.1.3 Binding ID

The Binding ID is the identifier of a user data stream. It is allocated at the DRNS and it is unique for each transport bearer under establishment to/from the DRNS. ~~The length of this parameter is variable.~~

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Binding ID			OCTET STRING (1..4,...)	

9.2.1.7 Cell Individual Offset

Cell individual offset is an offset that will be applied by UE to the measurement results for a **Primary**-CPICH[FDD]/**Primary**-CCPCH[TDD], before the measurement takes place. This allows operators to easily monitor specific cell, as well as other uses. The offset can be positive or negative, so the measured results can be reported as better than, or worse than what it really is.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Individual Offset			INTEGER (-20,...,+20)	-20 -> -10dB -19 -> -9.5dB ... +20 -> +10dB

9.2.1.35A Measurement Availability Indicator

Indicates if measurement is available or not.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Measurement Availability Indicator	■	■	ENUMERATED (measurement available, measurement not available)	■

Void.

9.2.1.36 Measurement Filter Coefficient

The Measurement Filter Coefficient determines the amount of filtering to be applied for measurements.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Measurement Filter Coefficient	M		ENUMERATED(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 15, 17, 19,...)	

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
Message Type				
>Procedure ID		1		
>>Procedure Code	M		ENUMERATED (RL Setup, RL Addition, RL Deletion, Synchronised RL Reconfiguration Preparation, Synchronised RL Reconfiguration Commit, Synchronised RL Reconfiguration Cancel, Unsynchronised RL Reconfiguration Request, RL Failure, RL Pre-emption , RL Restoration, DL Power Control, DL Power Timeslot Control, Physical Channel Reconfiguration, UL Signalling Transfer, DL Signalling Transfer, Relocation Commit, Paging, Measurement Initiation, Measurement Reporting, Measurement Termination, Measurement Failure, Common Transport Channel Resources Initiation, Common Transport Channel Resources Release, Compressed Mode Command, Error Indication, ...)	
>>Ddmode	M		ENUMERATED (FDD, TDD, Common, ...)	Common = common to FDD and TDD.
>Type of Message	M		ENUMERATED (Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome)	

9.2.1.41D Neighbouring TDD Cell Information

The *Neighbouring TDD Cell Information* IE provides information for TDD cells that are a neighbouring cells to a cell in the DRNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Neighbouring TDD Cell Information		<i>1..<maxno ofTDDneighbours></i>			–	
>C-Id	M		9.2.1.6		–	
>UARFCN	M		9.2.1.66	Corresponds to Nt in ref. [7]	–	
>Frame Offset	O		9.2.1.30		–	
>Cell Parameter ID	M		9.2.1.8		–	
>Sync Case	M		9.2.1.54		–	
>Time Slot	C-Case1		9.2.1.56		–	
>SCH Time Slot	C-Case2		9.2.1.51		–	
>Block STTD Indicator	M		9.2.1.4A		–	
>Cell Individual Offset	O		9.2.1.7		–	
>DPCH Constant Value	O		9.2.1.23		–	
>PCCPCH Power	O		9.2.1.43		–	

Condition	Explanation
Case1	This IE shall be is present only if Sync Case = Case1.
Case2	This IE shall be is present only if Sync Case = Case2.

Range bound	Explanation
MaxnoofTDDneighbours	Maximum number of neighbouring TDD cell for one cell.

9.2.1.43 PCCPCH Power

Primary CCPCH power is the power that shall be used for reference power value in a TDD cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PCCPCH Power			ENUMERATED INTEGER (-15..40,...)	Unit dBm Granularity 0.1 dB.

9.2.1.44 Primary CPICH Power

Primary CPICH power is the power that is used for transmitting the Primary-CPICH in a cell. The reference point is the antenna connector.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Primary CPICH Power			ENUMERATED (-10..50)	Unit dBm Granularity 0.1 dB.

9.2.1.46 Puncture Limit

The maximum amount of puncturing for a transport channel in rate matching.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Puncture Limit			INTEGER (0..15)	0: 40% 1: 44 % ... 14: 96% 15: 100% (no puncturing)

9.2.1.51A Scheduling Priority Indicator

Indicates the relative priority of the **FACH**, **DSCH**, or USCH data frame. Used by the DRNC when scheduling **FACH**, **DSCH**, or USCH traffic.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Scheduling Priority Indicator			INTEGER (0..15)	Relative priority of the FACH , DSCH , or USCH data frame: 0=Lowest Priority ... 15=Highest Priority

9.2.2.14 FDD DL Channelisation Code Number

The DL Channelisation Code Number indicates the DL Channelisation Code number for a specific DL physical channel.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
FDD DL Channelisation Code Number	M		INTEGER(0..511)	According to the mapping in [27]. The maximum value is equal to the DL spreading factor –1

9.2.2.37B Secondary CCPCH Info

The *Secondary CCPCH Info* IE provides information on scheduling of broadcast information for DRAC on a Secondary CCPCH in one cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Secondary CCPCH Info		1			–	
>FDD S-CCPCH Offset	M		9.2.2.15	Corresponds to: $T_{S-CCPCH,k}$, see ref. [8]	–	
>DL Scrambling Code	M		9.2.2.8		–	
>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>TFCS	M		9.2.1.63	For the DL.	–	
>Secondary CCPCH Slot Format	M		9.2.2.38		–	
>TFCI Presence	C - SlotFormat		9.2.1.55		–	
>Multiplexing Position	M		9.2.2.26		–	
>STTD Indicator	M		9.2.2.44		–	
>FACH/PCH Information		1 .. <maxFACHcount+1>			–	
>>TFS			9.2.1.64	For each FACH, and the PCH when multiplexed on the same Secondary CCPCH	–	
>IB Scheduling Information		1			–	
>>IB_SG_REP	M		9.2.2.4		–	
>>IB Segment Information		1.. <maxIBSEG>			–	
>>>IB_SG_POS	M		9.2.2.20		–	

Condition	Explanation
SlotFormat	This IE shall be is present only if the <i>Secondary CCPCH Slot Format</i> IE is equal to any of the value 8 to 17.

Range bound	Explanation
MaxFACHCount	Maximum number of FACHs mapped onto a Secondary CCPCH.
MaxIBSEG	Maximum number of segments for one Information Block.

9.2.2.50 Tx Diversity Indicator

The Tx Diversity Indicator indicates if the following conditions are satisfied:

- Primary-CPICH is broadcast from two antennas
- STTD is applied to Primary-CCPCH
- TSTD is applied to Primary-SCH and Secondary-SCH

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Tx Diversity Indicator			ENUMERATED (true, false).	

9.2.3.2A DCH TDD Information

The *DCH TDD Information* IE provides information for DCHs to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
DCH Information		1..<maxno ofDCHs>			–	
>Payload CRC Presence Indicator	M		9.2.1.42		–	
>UL FP Mode	M		9.2.1.67		–	
>ToAWS	M		9.2.1.58		–	
>ToAWE	M		9.2.1.57		–	
>DCH Specific Info		1..<maxno ofDCHs>			–	
>>DCH ID	M		9.2.1.16		–	
>>CCTrCH ID	M		9.2.3.2	UL CCTrCH in which the DCH is mapped	–	
>>CCTrCH ID	M		9.2.3.2	DL CCTrCH in which the DCH is mapped	–	
>>TrCh Source Statistics Descriptor	M		9.2.1.65		–	
>>Transport Format Set	M		9.2.1.64	For the UL.	–	
>>Transport Format Set	M		9.2.1.64	For the DL.	–	
>>BLER	M		9.2.1.4	For the UL.	–	
>>BLER	M		9.2.1.4	For the DL.	–	
>>Allocation/Retention Priority	M		9.2.1.1		–	
>>Frame Handling Priority	M		9.2.1.29		–	
>>QE-Selector	C-CoordDCH		9.2.1.46A		–	

Condition	Explanation
CoordDCH	This IE shall be is present only this DCH is part of a set of coordinated DCHs (number of instances of the <i>DCH Specific Info</i> IE is greater than 1).

Range bound	Explanation
MaxnoofDCHs	Maximum number of DCHs for one UE.

9.2.3.2B DCH TDD Information Response

Void.

The *DCH TDD Information* IE provides information for DCHs that have been established or modified.

IE/Group-Name	Presence	Range	IE-type and reference	Semantics description	Criticality	Assigned Criticality
DCH TDD Information Response	M	1..<maxno of DCHs>			-	M
>DCH ID	M		9.2.1.16		-	M
>Binding ID	O		9.2.1.3		-	M
>Transport Layer Address	O		9.2.1.62		-	M

Range bound	Explanation
Maxno of DCHs	Maximum number of DCHs for one UE.

9.2.3.11 TFCI Coding

The TFCI Coding describes how the TFCI bits are coded. By default 1 TFCI bit is coded with 4 bits, 2 TFCI bits are coded with 8 bits, 3-5 TFCI bits are coded with 16 bits and 6-10 TFCI bits are coded with 32 bits.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TFCI Coding	M		ENUMERATE D (4, 8, 16, 32,...)	

9.3 Message and Information element abstract syntax (with ASN.1)

9.3.0 General

Section 9.3 presents the Abstract Syntax of RNSAP protocol with ASN.1. In case there is contradiction between the ASN.1 definition in this section and the tabular format in sections 9.1 and 9.2, 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.

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 where 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 section [10.3.76](#).

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

<Editor's note: Parts of the module is skipped.>

-- *****
--
-- 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})
}
```

<Editor's note: The rest of the module is skipped.>

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,
  AllocationRetentionPriority,
  AllowedQueuingTime,
  AlphaValue,
  BLER,
  Block-STTD-Indicator,
  BindingID,
  C-ID,
  C-RNTI,
  CCTrCH-ID,
  CFN,
  ClosedLoopModel-SupportIndicator,
  ClosedLoopMode2-SupportIndicator,
  Closedlooptimingadjustmentmode,
  CN-CS-DomainIdentifier,
  CN-PS-DomainIdentifier,
  CNDomainType,
  Cause,
  CellParameterID,
  ChipOffset,
  CriticalityDiagnostics,
  D-RNTI,
  D-RNTI-ReleaseIndication,
  DCH-FDD-Information,
  DCH-ID,
  DCH-InformationResponse,
  DCH-TDD-Information,
```

DL-DPCH-SlotFormat,
DL-TimeslotISCP,
DL-Power,
DL-ScramblingCode,
DL-Timeslot-Information,
DL-TimeSlot-ISCP-Info,
DPCH-ID,
DRACControl,
DRXCycleLengthCoefficient,
DedicatedMeasurementType,
DedicatedMeasurementValue,
DedicatedMeasurementValueInformation,
DiversityControlField,
DiversityMode,
DSCH-FDD-Information,
DSCH-FDD-InformationResponse,
DSCH-FlowControlInformation,
DSCH-FlowControlItem,
DSCH-TDD-Information,
DSCH-ID,
SchedulingPriorityIndicator,
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,
IMSI,
InnerLoopDLPCStatus,
L3-Information,
LimitedPowerIncrease,
MaximumAllowedULTxPower,
MaxNrDLPhysicalchannels,
MaxNrOfUL-DPCHs,
MaxNrTimeslots,
MaxNrULPhysicalchannels,
MeasurementFilterCoefficient,
MeasurementID,
MidambleShiftAndBurstType,
MinimumSpreadingFactor,
MinUL-ChannelisationCodeLength,
MultiplexingPosition,
Neighbouring-GSM-CellInformation,
Neighbouring-UMTS-CellInformation,
NrOfDLchannelisationcodes,

PagingCause,
PagingRecordType,
PDSCHCodeMapping,
PayloadCRC-PresenceIndicator,
PowerAdjustmentType,
PowerOffset,
PrimaryCCPCH-RSCP,
PrimaryCPICH-EcNo,
PrimaryCPICH-Power,
PrimaryScramblingCode,
PropagationDelay,
PunctureLimit,
QE-Selector,
RANAP-RelocationInformation,
RB-Info,
RL-ID,
RL-Set-ID,
RNC-ID,
RepetitionLength,
RepetitionPeriod,
ReportCharacteristics,
Received-total-wide-band-power,
RxTimingDeviationForTA,
S-FieldLength,
S-RNTI,
SCH-TimeSlot,
SAI,
SN,
Secondary-CCPCH-Info,
SSDT-CellID,
SSDT-CellID-Length,
SSDT-Indication,
SSDT-SupportIndicator,
STTD-Indicator,
STTD-SupportIndicator,
AdjustmentPeriod,
ScaledAdjustmentRatio,
MaxAdjustmentStep,
SecondaryCCPCH-SlotFormat,
SyncCase,
TDD-ChannelisationCode,
TDD-DCHs-to-Modify,
TDD-DL-Code-Information,
TDD-DPCHOffset,
TDD-PhysicalChannelOffset,
TDD-TPC-DownlinkStepSize,
TDD-UL-Code-Information,
TFCI-Coding,
TFCI-Presence,
TFCI-SignallingMode,
TimeSlot,

```

TimingAdvanceApplied,
ToAWE,
ToAWS,
TransmitDiversityIndicator,
TransportBearerID,
TransportBearerRequestIndicator,
TFCS,
Transmission-Gap-Pattern-Sequence-Information,
Transmission-Gap-Pattern-Sequence-ScramblingCode-Information,
TransportFormatManagement,
TransportFormatSet,
TransportLayerAddress,
TrCH-SrcStatisticsDescr,
UARFCN,
UC-ID,
UL-DPCCH-SlotFormat,
UL-SIR,
UL-FP-Mode,
UL-PhysCH-SF-Variation,
UL-ScramblingCode,
UL-Timeslot-Information,
UL-TimeSlot-ISCP-Info,
URA-ID,
URA-Information,
USCH-ID,
USCH-Information
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

```

<Editor's note: Parts of the module is skipped.>

```

-- *****
--
-- RADIO LINK SETUP REQUEST FDD
--
-- *****

```

```

RadioLinkSetupRequestFDD ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          {{RadioLinkSetupRequestFDD-IEs}},

```

```

    protocolExtensions          ProtocolExtensionContainer {{RadioLinkSetupRequestFDD-Extensions}}
    ...
}

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 is-present only 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-CellIdLength  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 ::= {
  ...
}

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 is-present if Slot Format is 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 ::= {
    ...
}

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 only 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,
    -- Either Initial DL TX Power IE or Primary CPICH Ec/No IE shall be present.
    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 ::= {
    ...
}

```

```
RadioLinkSetupRequestFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
  ...
}
```

<Editor's note: Parts of the module is skipped.>

```
-- *****
--
-- RADIO LINK RECONFIGURATION PREPARE FDD
--
-- *****
```

```
RadioLinkReconfigurationPrepareFDD ::= SEQUENCE {
  protocolIEs                ProtocolIE-Container    {{RadioLinkReconfigurationPrepareFDD-IEs}},
  protocolExtensions         ProtocolExtensionContainer {{RadioLinkReconfigurationPrepareFDD-Extensions}}
  ...
}
```

```
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-DPDCHs          OPTIONAL
  -- This IE shall be is-present only 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 Slot Format 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 ::= {
    ...
}

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 ::= {
    ...
}

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 ::= {
...
}

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 may be present if the sSDT-Indication is set to 'sSDT-active-in-the-UE' --,
  transmitDiversityIndicator           TransmitDiversityIndicator    OPTIONAL,
  -- This IE shall be is-present if Diversity Mode IE in UL DPCH Information group is present, unless it is equal to "none"
  iE-Extensions                        ProtocolExtensionContainer { {RL-Information-RL-ReconfPrepFDD-ExtIEs} } OPTIONAL,
  ...
}

RL-Information-RL-ReconfPrepFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {

```

```

}
...
RadioLinkReconfigurationPrepareFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
...
}

```

<Editor's note: Parts of the module is skipped.>

```

-- *****
--
-- 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 is present only 'Adjustment Type' 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 is present only 'Adjustment Type' equals to 'Individual'
    { ID id-MaxAdjustmentStep             CRITICALITY ignore TYPE MaxAdjustmentStep          PRESENCE conditional} |
    -- This IE shall be is present only 'Adjustment Type " equals to 'Common' or 'Individual'
    { ID id-AdjustmentPeriod              CRITICALITY ignore TYPE AdjustmentPeriod          PRESENCE conditional} |
    -- This IE shall be is present only 'Adjustment Type " equals to 'Common' or 'Individual'
    { ID id-AdjustmentRatio               CRITICALITY ignore TYPE ScaledAdjustmentRatio      PRESENCE conditional},
    -- This IE shall be is present only 'Adjustment Type " 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 ::= {  
    ...  
}
```

<Editor's note: The rest of the module is skipped.>

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
```

<Editor's note: Parts of the module is skipped.>

```
-- D
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 ::= {
    ...
}

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 ::= {
...
}
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 ::= {
...
}
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 ::= {
...
}
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 is present only if DCH is part of set of Coordinated DCHs
    iE-Extensions              ProtocolExtensionContainer { {DCH-Specific-TDD-Item-ExtIEs} } OPTIONAL,
    ...
}

DCH-Specific-TDD-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DedicatedMeasurementType ::= ENUMERATED {
    sir,
    sir-error,
    transmitted-code-power,
    rSCP,
    rx-timing-deviation,
    round-trip-time,
    ...
}

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, -- TDD only
    roundTripTime      Round-Trip-Time-Value, -- FDD only
    ...
}

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

DeltaSIR ::= INTEGER (0..30)
-- Step 0.1 dB, Range 0..3 dB.

```

```

DiversityControlField ::= ENUMERATED {
    may,
    must,
    must-not
}

DiversityMode ::= ENUMERATED {
    none,
    sTTD,
    closedLoopModel,
    closedLoopMode2,
    ...
}

DL-DPCH-SlotFormat ::= INTEGER (0..16,...)

DL-Power ::= INTEGER (-350..150)
-- Value = DL-Power / 10
-- Unit dB, Range -35dB .. +15dB, Step +0.1dB

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-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-TimeslotISCP           ::= INTEGER (0..91)
-- According to mapping in [24]

Downlink-Compressed-Mode-Method ::= ENUMERATED {
    puncturing,
    sFdiv2,
    higher-layer-scheduling,
    ...
}

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,
    pdSCH-RL-ID              RL-ID,
    tFCS                      TFCS,
    iE-Extensions           ProtocolExtensionContainer { { DSCH-FDD-Information-ExtIEs } } OPTIONAL,
    ...
}

DSCH-FDD-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

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 ::= {
...
}

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 ::= {
...
}

```

```

DSCH-ID                ::= INTEGER (0..255)

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 ::= {
    ...
}

-- E

```

<Editor's note: Parts of the module is skipped.>

```

-- 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

MaximumAllowedULTxPower ::= INTEGER (-50..33)

MaxNrDLPhysicalchannels ::= INTEGER (1..224)

MaxNrTimeslots         ::= INTEGER (1..14)

MaxNrULPhysicalchannels ::= INTEGER (1..2)

MaxTFCIvalue           ::= INTEGER (1..1023)

MeasurementAvailabilityIndicator ::= ENUMERATED {
    measurementAvailable,
    measurementnotAvailable
}

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)

```



```

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,
    ...
}

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,
    ...
}

MidambleShiftAndBurstType ::= CHOICE {
    type1 CHOICE {
        defaultMidamble NULL,
        commonMidamble NULL,
        ueSpecificMidamble MidambleShiftLong,
        ...
    },

```

```

type2 CHOICE {
  defaultMidamble
  commonMidamble
  ueSpecificMidamble
  ...
},
type3 CHOICE {
  defaultMidamble
  ueSpecificMidamble
  ...
},
...
}

MidambleShiftLong ::= INTEGER (0..15)

MidambleShiftShort ::= INTEGER (0..5)

MinUL-ChannelisationCodeLength ::= ENUMERATED {
  v4,
  v8,
  v16,
  v32,
  v64,
  v128,
  v256
}

MultiplexingPosition ::= ENUMERATED {
  fixed,
  flexible
}

-- N

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 ::= {
...
}
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,
closedLoopModel-SupportIndicator ClosedLoopModel-SupportIndicator OPTIONAL,
closedLoopMode2-SupportIndicator ClosedLoopMode2-SupportIndicator OPTIONAL,
iE-Extensions ProtocolExtensionContainer { { Neighbouring-FDD-CellInformationItem-ExtIEs} } OPTIONAL,
...
}
Neighbouring-FDD-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
...
}
Neighbouring-GSM-CellInformation ::= SEQUENCE ( SIZE (1..maxNrOfGSMNeighboursPerRNC,...)) OF Neighbouring-GSM-CellInformationItem
Neighbouring-GSM-CellInformationItem ::= SEQUENCE {
cGI CGI,
q-Offset-Serving-to-Neighbour Q-Offset-Serving-to-Neighbour,
q-RxlevMin Q-RxlevMin,
maximumAllowedULTxPower MaximumAllowedULTxPower,
bSIC BSIC,
bCCH-ARFCN BCCH-ARFCN,
gSM-Output-Power GSM-Output-Power OPTIONAL,
iE-Extensions ProtocolExtensionContainer { { Neighbouring-GSM-CellInformationItem-ExtIEs} } OPTIONAL,
...
}
Neighbouring-GSM-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
...
}
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 is present only if Sync Case = Case1 -- ,
sCH-TimeSlot          SCH-TimeSlot      OPTIONAL
|  -- This IE shall be is present only if Sync Case = Case2 -- ,
block-STTD-Indicator  Block-STTD-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 ::= {
    ...
}

NrOfDLchannelisationcodes ::= INTEGER (1..8)

NrOfTransportBlocks ::= INTEGER (0..512)

-- O

-- P

PagingCause ::= ENUMERATED {
    terminating-conversational-call,
    terminating-streaming-call,
    terminating-interactive-call,
    terminating-background-call,
    sms,
    ...
}
-- See in [16]

PagingRecordType ::= ENUMERATED {
    imsi-gsm-map,
    tmsi-gsm-map,
    p-tmsi-gsm-map,
    imsi-ds-41,
    tmsi-ds-41,
    ...
}
-- See in [16]

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

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-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 ::= {
    ...
}

Periodic ::= SEQUENCE {
    reportPeriodicity        ReportPeriodicity,
    iE-Extensions            ProtocolExtensionContainer { {Periodic-ExtIEs} } OPTIONAL,
    ...
}

Periodic-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PLMN-ID ::= OCTET STRING (SIZE(3))

PowerAdjustmentType ::= ENUMERATED {
    none,
    common,
    individual
}

PowerOffset ::= INTEGER (0..24)

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PrimaryCPICH-Power ::= INTEGER (-100..500)
-- step 0.1 (Range -10.0..50.0) Unit is dBm

PrimaryCPICH-EcNo ::= INTEGER (-30..30)
```

```

PrimaryCCPCH-RSCP          ::= INTEGER (0..91)
-- According to mapping in [14]

PrimaryScramblingCode     ::= INTEGER (0..511)

PriorityLevel              ::= INTEGER (0..15)
-- 0 = spare, 1 = highest priority, ...14 = lowest priority and 15 = no priority

PropagationDelay          ::= INTEGER (0..255)

PunctureLimit             ::= INTEGER (0..15)
-- 0: 40%; 1: 44%; ... 14: 96%; 15: 100

-- Q

```

<Editor's note: Parts of the module is skipped.>

```

-- S

SAC                       ::= OCTET STRING (SIZE (2))

SAI ::= SEQUENCE {
    pLMN-ID                PLMN-ID,
    lAC                    LAC,
    sAC                    SAC,
    iE-Extensions          ProtocolExtensionContainer { {SAI-ExtIEs} } OPTIONAL
}

SAI-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

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 is equal to any of the value 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 ::= {  
  ...  
}  
  
SecondInterleavingMode ::= ENUMERATED {  
  frame-related,  
  timeslot-related,  
  ...  
}  
  
SIR-Error-Value ::= INTEGER (0..125)  
  
SIR-Error-Value-IncrDecrThres ::= INTEGER (0..124)  
  
SIR-Value ::= INTEGER (0..63)  
-- According to mapping in 25.215/25.225  
  
SIR-Value-IncrDecrThres ::= INTEGER (0..62)  
  
SecondaryCCPCH-SlotFormat ::= INTEGER (0..17,...)  
-- refer to 25.211  
  
SN ::= TimeSlot  
  
S-FieldLength ::= ENUMERATED {  
  v1,  
  v2,  
  ...  
}  
  
SpreadingFactor ::= INTEGER (4| 8| 16| 32| 64| 128| 256)  
  
S-RNTI ::= INTEGER (0..1048575)  
-- From 0 to 2^20-1  
  
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
  }

  SyncCase ::= INTEGER (1..2,...)

-- T
```

<Editor's note: The rest of the module is skipped.>

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, ... }
}

ProtocolExtensionID ::= INTEGER (0..maxProtocolExtensions)

```

```
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
```

CHANGE REQUEST

⌘ **25.423 CR 317** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Removal of IE Group Name for Groups with only one Repetition		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February, 2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ In the current RNSAP specification some IEs have an "internal" structure. For some such IEs the structure does not have any repetition, i.e. the range is 1, e.g. the <i>Secondary CCPCH Info</i> IE. When moving the definition of some IEs with an "internal" structure from the messages to the tabular format (CR253) the first IE in chapter 9.2 with criticality assignment appeared, i.e. the <i>Neighbouring UMTS Cell Information</i> IE. This made it clear that group names seem to indicate a place for assignment of criticality, not only in chapter 9.1 (messages) but also in chapter 9.2 (IEs).
Summary of change:	⌘ This CR removes the virtual place for criticality assignment from chapter 9.2 by removing the group name from IEs in chapter 9.2 that have the range 1. Consequently the indentation of all the IEs below the group name have been reduced by one level (">"). Further more, the <i>Criticality Diagnostics</i> IE have also been aligned with the ASN.1 by placing the <i>Information Element Criticality Diagnostics</i> IE on the same hierarchical level as the <i>Procedure ID</i> IE, <i>Triggering Message</i> IE, <i>Procedure Criticality</i> IE, and <i>Transaction ID</i> IE. The alignment is done by not changing the indentation of the <i>Information Element Criticality Diagnostics</i> IE.
Consequences if not approved:	⌘ If this CR is not approved the above described ambiguity will remain in the specification. Backward compatibility: This CR is backward compatible with the previous version of RNSAP.

Clauses affected:	⌘ 9.2.1.1, 9.2.1.5A, 9.2.1.11, 9.2.1.12, 9.2.1.13, 9.2.1.19, 9.2.1.19A, 9.2.1.40, 9.2.1.48, 9.2.1.52, 9.2.1.64, 9.2.1.70, 9.2.1.71, 9.2.2.13A, 9.2.2.13B, 9.2.2.37B, and 9.2.2.53.
Other specs	⌘ <input type="checkbox"/> Other core specifications ⌘

affected:	<input type="checkbox"/>	Test specifications	
	<input type="checkbox"/>	O&M Specifications	
Other comments:	⌘	Please note that at CR implementation, each removed indentation ">" shall also be accompanied by a reduction of the number of indentation steps on the ruler. In the end there shall be one step on the ruler per indentation ">".	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

9.2.1.1 Allocation/Retention Priority

This parameter indicates the priority level in the allocation and retention of transport channel resources in DRNS. DRNS may use the Allocation/Retention priority information of the transport channels composing the RL to prioritise requests for RL Setup/addition and reconfiguration. In similar way, DRNS may use the allocation/Retention priority information of the transport channels composing the RL to prioritise which RL shall be set to failure, in case prioritisation is possible. See Annex A.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Allocation/Retention Priority				
>Priority Level	M		INTEGER (0..15)	This IE indicates the priority of the request. 0 = spare. 1 = highest priority. . . . 14 = Lowest priority. 15 = not used.
>Pre-emption Capability	M		ENUMERATED (shall not trigger pre-emption, may trigger pre-emption)	
>Pre-emption Vulnerability	M		ENUMERATED (not pre-emptable, pre-emptable)	

9.2.1.5A Cell Geographical Area Identity (Cell GAI)

The Cell Geographical Area is used to identify the geographical area of a cell. The area is represented as a polygon. See ref. [25].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell GAI				
>>Geographical Coordinates		1 .. <maxnoofPoints>		
>>Latitude Sign	M		ENUMERATED (North, South)	
>>Degrees of Latitude	M		INTEGER (0...2 ²³ -1)	The IE value (N) is derived by this formula: $N \leq 2^{23} \times X / 90 < N+1$ X being the latitude in degree (0°.. 90°)
>>Degrees of Longitude	M		INTEGER (-2 ²³ ...2 ²³ -1)	The IE value (N) is derived by this formula: $N \leq 2^{24} \times X / 360 < N+1$ X being the longitude in degree (-180°..+180°)

Range bound	Explanation
maxnoofPoints	Maximum no. of points in polygon.

9.2.1.11 CN CS Domain Identifier

Identification of the CN node in the CS Domain.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CN CS Domain Identifier				
➤PLMN Id	M		OCTET STRING (3)	<ul style="list-style-type: none"> - 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 <p>-The PLMN-ID consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> -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).
➤LAC	M		OCTET STRING (2)	0000 and FFFE not allowed

9.2.1.12 CN PS Domain Identifier

Identification of the CN Node in the PS Domain.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CN-PS-Domain-Identifier				
➤PLMN Id	M		OCTET STRING (3)	<ul style="list-style-type: none"> - 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 <p>-The PLMN-ID consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> -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).
➤LAC	M		OCTET STRING (2)	0000 and FFFE not allowed
➤RAC	M		OCTET STRING (1)	

9.2.1.13 Criticality Diagnostics

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Criticality Diagnostics				
>Procedure ID		0..1		Procedure ID is to be used if Criticality Diagnostics is part of Error Indication procedure, and not within the response message of the same procedure that caused the error
>>Procedure Code	M		INTEGER (0..255)	
>>Ddmode	M		ENUMERATED (FDD, TDD, Common)	Common = common to FDD and TDD.
>Triggering Message	O		ENUMERATED (initiating message, successful outcome, unsuccessful outcome)	The Triggering Message is used only if the Criticality Diagnostics is part of Error Indication.
>Procedure Criticality	O		ENUMERATED (reject, ignore, notify)	This Procedure Criticality is used for reporting the Criticality of the Triggering message (Procedure). The value 'ignore' shall never be used.
>Transaction ID	O		Transaction ID	
Information Element Criticality Diagnostics		<i>0..<maxnoof errors></i>		
>IE Criticality	M		ENUMERATED (reject, ignore, notify)	The IE Criticality is used for reporting the criticality of the triggering IE. The value 'Ignore' shall never be used.
>IE Id	M		INTEGER (0..65535)	The IE Id of the not understood or missing IE as defined in the ASN.1 part of the specification.
>Repetition Number	O		INTEGER (1..256)	The repetition number of the not understood IE if applicable

Range bound	Explanation
Maxnooferrors	Maximum number of IE errors allowed to be reported with a single message.

9.2.1.19 Dedicated Measurement Value

The Dedicated Measurement Value shall be the most recent value for this measurement, for which the reporting criteria were met.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Dedicated-measurement Value				
>SIR Value	C <i>MeasValue</i>		INTEGER(0. .63)	According to mapping in ref. [23] and [24]
>SIR Error Value	C <i>MeasValue</i>		INTEGER(0. .125)	According to mapping in [23], (FDD only)
>Transmitted Code Power Value	C <i>MeasValue</i>		INTEGER(0. .127)	According to mapping in ref. [23] and [24]
>RSCP	C <i>MeasValue</i>		INTEGER(0. .81)	According to mapping in ref. [24] (TDD only)
>Rx Timing Deviation	C <i>MeasValue</i>		INTEGER(0. .2047)	According to mapping in [24] [TDD only]
>Round Trip Time	C <i>MeasValue</i>		INTEGER(0. .32767)	According to mapping in [23] [FDD only]

Condition	Explanation
<i>MeasValue</i>	Only one measurement value can be present at the same time.

9.2.1.19A Dedicated Measurement Value Information

The *Dedicated Measurement Value Information* IE provides information both on whether or not the Dedicated Measurement Value is provided in the message and if provided also the Dedicated Measurement Value itself.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Dedicated Measurement Value Information		<i>+</i>			-	
>CHOICE <i>Measurement Availability Indicator</i>	M				-	
>> <i>Measurement Available</i>					-	
>>>Dedicated Measurement Value	M		9.2.1.19		-	
>>>CFN	O		9.2.1.9	Dedicated Measurement Time Reference	-	
>> <i>Measurement not Available</i>			NULL		-	

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
Message Type				
>>Procedure ID		1		
>>Procedure Code	M		ENUMERATED (RL Setup, RL Addition, RL Deletion, Synchronised RL Reconfiguration Preparation, Synchronised RL Reconfiguration Commit, Synchronised RL Reconfiguration Cancel, Unsynchronised RL Reconfiguration Request, RL Failure, RL Restoration, DL Power Control, DL Power Timeslot Control, Physical Channel Reconfiguration, UL Signalling Transfer, DL Signalling Transfer, Relocation Commit, Paging, Measurement Initiation, Measurement Reporting, Measurement Termination, Measurement Failure, Common Transport Channel Resources Initiation, Common Transport Channel Resources Release, Compressed Mode Command, Error Indication, ...)	
>>Ddmode	M		ENUMERATED (FDD, TDD, Common, ...)	Common = common to FDD and TDD.
>>Type of Message	M		ENUMERATED (Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome)	

9.2.1.48 Report Characteristics

The Report Characteristics, defines how the reporting shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Report Characteristics				
➤Report Characteristics Type			ENUMERATED(On Demand, Periodic, Event A, Event B, Event C, Event D, Event E, Event F, ...)	
➤Periodic Report Information	C – Periodic			
➤➤Report Periodicity	M		ENUMERATED (10ms...1min, ...) step 10ms, (1min...1hr, ...) step 1min,...	The periodicity with which the DRNS shall send measurement reports.
➤Event A	C – Event A			
➤➤Measurement Threshold	M		Measurement Threshold	The threshold for which the DRNS shall trigger a measurement report.
➤➤Measurement Hysteresis Time	O		ENUMERATED (10ms...1min, ...) step 10ms,...	
➤Event B	C – Event B			
➤➤Measurement Threshold	M		Measurement Threshold	The threshold for which the DRNS shall trigger a measurement report.
➤➤Measurement Hysteresis Time	O		ENUMERATED (10ms...1min, ...) step 10ms,...	
➤Event C	C – Event C			
➤➤Measurement Increase/Decrease Threshold	M		Measurement Increase/Decrease Threshold	
➤➤Measurement Change Time	M		ENUMERATED (10ms...1min, ...) step 10ms,...	The time within which the measurement entity shall rise, in order to trigger a measurement report.
➤Event D	C – Event D			
➤➤Measurement Increase/Decrease Threshold	M		Measurement Increase/Decrease Threshold	
➤➤Measurement Change Time	M		ENUMERATED (10ms...1min, ...) step 10ms,...	The time within which the measurement entity shall fall, in order to trigger a measurement report.
➤Event E	C – Event E			
➤➤Measurement	M		Measurement	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Threshold 1			Threshold	
>>Measurement Threshold 2	O		Measurement Threshold	
>>Measurement Hysteresis Time	O		ENUMERATED (10ms...1min, ...) step 10ms,...	The hysteresis time in ms
>>Report Periodicity	O		ENUMERATED (10ms...1min, ...) step 10ms, (1min...1hr, ...) step 1min,...	The periodicity with which the DRNS shall send measurement reports.
>>Event F	C – Event F			
>>Measurement Threshold 1	M		Measurement Threshold	
>>Measurement Threshold 2	O		Measurement Threshold	
>>Measurement Hysteresis Time	O		ENUMERATED (10ms...1min, ...) step 10ms,...	The hysteresis time in ms
>>Report Periodicity	O		ENUMERATED (10ms...1min, ...) step 10ms, (1min...1hr, ...) step 1min,...	The periodicity with which the DRNS shall send measurement reports.

Condition	Explanation
C-Periodic	Valid if <i>Report Characteristics Type</i> IE indicates "periodic"
C-Event A	Valid if <i>Report Characteristics Type</i> IE indicates "Event A"
C-Event B	Valid if <i>Report Characteristics Type</i> IE indicates "Event B"
C-Event C	Valid if <i>Report Characteristics Type</i> IE indicates "Event C"
C-Event D	Valid if <i>Report Characteristics Type</i> IE indicates "Event D"
C-Event E	Valid if <i>Report Characteristics Type</i> IE indicates "Event E"
C-Event F	Valid if <i>Report Characteristics Type</i> IE indicates "Event F"

9.2.1.52 Service Area Identifier (SAI)

This information element is used to identify an area consisting of one or more cells belonging to the same Location Area. Such an area is called a Service Area and can be used for indicating the location of a UE to the CN. For this protocol, only a Service Area that is defined to be applicable to the PS and CS domains shall be used.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
SAI				
>PLMN Id	M		OCTET STRING (3)	<ul style="list-style-type: none"> - 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 <p>-The PLMN-ID consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> -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).
>LAC	M		OCTET STRING (2)	0000 and FFFE not allowed
>SAC	M		OCTET STRING (2)	

9.2.1.64 Transport Format Set

The Transport Format Set is defined as the set of Transport Formats associated to a Transport Channel, e.g. DCH.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transport Format Set				
>Dynamic Transport Format Information		1..<maxTFcount>		
>>Number of Transport blocks	M		INTEGER (0..512)	
>>>Transport Block Size	C – Blocks		INTEGER (0..5000)	Bits
>>>CHOICE Mode	M			
>>>>TDD				
>>>>>Transmission Time Interval Information	C-TTIdynamic	1..<maxTTIcount>		
>>>>>>Transmission Time Interval	M		ENUMERATED(10, 20, 40, 80,...)	msec
>Semi-static Transport Format Information		1		
>>Transmission Time Interval	M		ENUMERATED(10, 20, 40, 80, dynamic, ...)	msec Value "dynamic" for TDD only
>>>Type of Channel Coding	M		ENUMERATED(No coding, Convolutional, Turbo,...)	
>>>>Coding Rate	C – Coding		ENUMERATED(1/2, 1/3,...)	
>>>>>Rate Matching Attribute	M		INTEGER (1..maxRM)	
>>>>>>CRC size	M		ENUMERATED(0, 8, 12, 16, 24,...)	
>>>>>>CHOICE Mode	M			
>>>>>>>TDD				
>>>>>>>>2 nd Interleaving Mode	M		ENUMERATED(Frame related, Timeslot related,...)	

Condition	Explanation
Blocks	This IE is only present if "Number of Transport Blocks" is greater than 0.
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional" or "Turbo"
TTIdynamic	This IE is mandatory if the "Transmission Time Interval" of the "Semi-static Transport Format Information" is "dynamic" Otherwise it is absent.

Range bound	Explanation
<i>MaxTFcount</i>	The maximum number of different transport formats that can be included in the Transport format set for one transport channel.
<i>MaxRM</i>	The maximum number that could be set as rate matching attribute for a transport channel.
<i>MaxTTIcount</i>	The amount of different TTI that are possible for that transport format is.

9.2.1.70A UTRAN Access Point Position

The UTRAN Access Point Position indicates the exact geographical position of the base station antenna.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UTRAN Access Point Position				
➤Latitude Sign	M		ENUMERATED (North, South)	
➤Degrees of Latitude	M		INTEGER (0...2 ²³ -1)	The IE value (N) is derived by this formula: $N \leq 2^{23} X / 90 < N+1$ X being the latitude in degree (0°.. 90°)
➤Degrees of Longitude	M		INTEGER (-2 ²³ ...2 ²³ -1)	The IE value (N) is derived by this formula: $N \leq 2^{24} X / 360 < N+1$ X being the longitude in degree (-180°..+180°)

9.2.1.71 UTRAN Cell Identifier (UC-Id)

The UC-Id (UTRAN Cell identifier) is the identifier of a cell in one UTRAN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UC-ID		+		
>RNC-Id	M		9.2.1.50	
>C-Id	M		9.2.1.6	

9.2.2.13A DSCH FDD Information

The *DSCH FDD Information* IE provides information for DSCHs to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
DSCH FDD Information		1			-	
>DSCH Specific FDD Information		1..<maxno ofDSCHs>			-	
>>DSCH ID	M		9.2.1.26A		-	
>>TrCh Source Statistics Descriptor	M		9.2.1.65		-	
>>Transport Format Set	M		9.2.1.64	For DSCH	-	
>>Allocation/Retention Priority	M		9.2.1.1		-	
>>Scheduling Priority Indicator	M		9.2.1.51A		-	
>>BLER	M		9.2.1.4		-	
>PDSCH RL ID	M		RL ID 9.2.1.49		-	
>TFCS	M		9.2.1.63	For DSCH	-	

Range bound	Explanation
MaxnoofDSCHs	Maximum number of DSCHs for one UE.

9.2.2.13B DSCH FDD Information Response

The *DSCH FDD Information Response* IE provides information for DSCHs that have been established or modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
DSCH FDD Information Response		4			-	
>DSCH Specific FDD Information Response		1..<Maxno of DSCHs>			-	
>>DSCH ID	M		9.2.1.26A		-	
>>DSCH Flow Control Information	M		9.2.1.26B		-	
>>Binding ID	O		9.2.1.3		-	
>>Transport Layer Address	O		9.2.1.62		-	
>PDSCH Code Mapping	M		9.2.2.27A	PDSCH code mapping to be used	-	

Range bound	Explanation
MaxnoofDSCHs	Maximum number of DSCHs for one UE.

9.2.2.37B Secondary CCPCH Info

The *Secondary CCPCH Info* IE provides information on scheduling of broadcast information for DRAC on a Secondary CCPCH in one cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Secondary CCPCH Info		4			-	
➤FDD S-CCPCH Offset	M		9.2.2.15	Corresponds to: $T_{S-CCPCH,k}$, see ref. [8]	-	
➤DL Scrambling Code	M		9.2.2.8		-	
➤FDD DL Channelisation Code Number	M		9.2.2.14		-	
➤TFCS	M		9.2.1.63	For the DL.	-	
➤Secondary CCPCH Slot Format	M		9.2.2.38		-	
➤TFCI Presence	C - SlotFormat		9.2.1.55		-	
➤Multiplexing Position	M		9.2.2.26		-	
➤STTD Indicator	M		9.2.2.44		-	
➤FACH/PCH Information		1 .. <maxFACHcount+1>			-	
➤➤TFS			9.2.1.64	For each FACH, and the PCH when multiplexed on the same Secondary CCPCH	-	
➤IB Scheduling Information		1			-	
➤➤IB_SG_REP	M		9.2.2.4		-	
➤➤IB Segment Information		1.. <maxIBSEG>			-	
➤➤➤IB_SG_POS	M		9.2.2.20		-	

Condition	Explanation
SlotFormat	This IE is present only if the <i>Secondary CCPCH Slot Format</i> IE is equal to any of the value 8 to 17.

Range bound	Explanation
MaxFACHCount	Maximum number of FACHs mapped onto a Secondary CCPCH.
MaxIBSEG	Maximum number of segments for one Information Block.

9.2.2.53 UL Scrambling Code

The UL Scrambling Code is the scrambling code used by UE. Every UE has its specific UL Scrambling Code.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UL Scrambling Code				
➤UL Scrambling Code Number	M		INTEGER (0.. $2^{24}-1$)	
➤UL Scrambling Code Length	M		ENUMERATED(Short, Long)	

CHANGE REQUEST

⌘ **25.423 CR 318** ⌘ rev **2** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Forward Compatibility of RNSAP with regards to Dedicated Measurements

Source: ⌘ R-WG3

Work item code: ⌘ **Date:** ⌘ February, 2001

Category: ⌘ **F** **Release:** ⌘ R99

Use one of the following categories:

- F** (essential 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)

Reason for change: ⌘ In the current RNSAP specification when referring to measurements on dedicate resources the specification is not always clear that it actually is dedicated measurements (in contrast to common measurements as exist in NBAP). This is the status in RNSAP since the dedicated measurements are the only measurements that exist in the Release '99 RNSAP specification. However, anticipating the evolution of RNSAP by inclusion of other types of measurements, e.g. common measurements, this may be ambiguous in future releases.

Summary of change: ⌘ The CR clarifies that when referring to measurements on dedicate resources it actually is dedicated measurements by:

- a) clarify references to measurement values to mean dedicated measurements values,
- b) clarify references to “measurement procedures” to mean dedicated “measurement procedures”, and
- c) in cases where referring to “measurement”-only could be ambiguous it is clarified to be dedicated measurement.

As a consequence to the clarification “b)” above the *Message Type* IE and the ASN.1 have been updated accordingly.

Further more, In addition to the above clarification the following have been clarified:

- For event type C “rises more than ” is replaced by “rises by an amount greater than”.
- For event type D “falls more than ” is replaced by “falls by an amount greater than”.
- “Measurement request” is clarified to be “DEDICATED MEASUREMENT INITIATION REQUEST message” in two places.
- The reference to “Measurement not available shall be reported ” is clarified to be “Measurement not available shall be reported in the Measurement Value Information IE”.

- The Measurement Id is clarified to be unique for a dedicated measurement within a UE Context.
- The reference to “accuracy requirement” in the Measurement Reporting procedure is clarified to be the accuracy requirement specified in 25.123 and 25.133.

Backward compatibility:

This CR is backward compatible with the previous version of RNSAP.

Consequences if not approved: ⌘ If this CR is not approved the above described unclear description will remain in the specification.

Clauses affected: ⌘ 7, 8.1, 8.3.11, 8.3.12, 8.3.13, 8.3.14, 9.2.1.37, 9.2.1.40, 9.3.2, and 9.3.6.

Other specs affected: ⌘ Other core specifications ⌘ Test specifications
 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

7 Functions of RNSAP

The RNSAP protocol has 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;
- 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;
- Paging. This function allows the SRNC to page a UE in a URA 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 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.

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-emption
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) <u>Dedicated</u> Measurement Initiation b) <u>Dedicated</u> Measurement Reporting c) <u>Dedicated</u> Measurement Termination d) <u>Dedicated</u> Measurement Failure
DL Power Drifting Correction [FDD]	Downlink Power Control
CCCH Signalling Transfer	a) 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
DL Power Timeslot Correction [TDD]	Downlink Power Timeslot Control

8.1 Elementary Procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

Table 2: Class 1

Elementary Procedure	Initiating Message	Successful Outcome	Unsuccessful Outcome	
		Response message	Response message	Timer
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	
<u>Dedicated</u> 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	

The need for Timers will be defined on a per procedure basis. The content of this column is thus FFS.

Table 3: Class 2

Elementary Procedure	Initiating Message
Uplink Signalling Transfer	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
<u>Dedicated</u> Measurement Reporting	DEDICATED MEASUREMENT REPORT
<u>Dedicated</u> Measurement Termination	DEDICATED MEASUREMENT TERMINATION REQUEST
<u>Dedicated</u> 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

8.3.11 Dedicated Measurement Initiation

8.3.11.1 General

This procedure is used by an SRNS to request the initiation of dedicated measurements in a DRNS.

This procedure shall use the signalling bearer connection for the relevant UE context.

The Dedicated Measurement Initiation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.11.2 Successful Operation

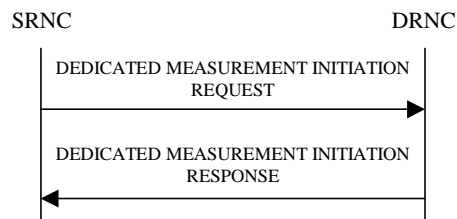


Figure 20: Dedicated Measurement Initiation procedure, Successful Operation

The procedure is initiated with a DEDICATED MEASUREMENT INITIATION REQUEST message sent from the SRNC to the DRNC.

Upon reception, the DRNC shall initiate the requested dedicated measurement according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.

If the *Dedicated Measurement Object Type* IE is set to "RL", measurement results shall be reported for all the indicated Radio Links.

[FDD - If the *Dedicated Measurement Object Type* IE is set to "RLS", measurement results shall be reported for all the indicated Radio Link Sets.]

If the *Dedicated Measurement Object Type* IE is set to "ALL RL", measurement results shall be reported for all current and future Radio Links within the UE Context.

[FDD - If the *Dedicated Measurement Object Type* IE is set to "ALL RLS", measurement results shall be reported for all the existing and future Radio Link Sets within the UE Context.]

If the *CFN Reporting Indicator* IE is set to "FN Reporting Required", the *CFN* IE shall be included in the measurement report or in the measurement response, the latter only in the case the *Report Characteristics* IE is set to 'On-Demand'.

The reported CFN shall be the CFN at the time when the dedicated measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [26].

If the *CFN* IE is provided, it indicates the frame for which the first measurement shall be provided. The provided measurement value shall be the one reported by the layer 3 filter referred to as point C in the measurement model [26].

Report characteristics

The *Report Characteristics* IE indicates how the reporting of the dedicated measurement shall be performed.

If the *Report Characteristics* IE is set to 'On-Demand', the DRNS shall report the measurement result immediately.

If the *Report Characteristics* IE is set to 'Periodic', the DRNS shall periodically initiate ~~a~~the Dedicated Measurement Report procedure for this measurement, with the requested report periodicity.

If the *Report Characteristics* IE is set to 'Event A', the DRNS shall initiate ~~a~~the Dedicated Measurement Reporting procedure when the measured entity rises above the requested threshold and stays there for the requested hysteresis time. If no hysteresis time is given, the DRNC shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to 'Event B', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity falls below the requested threshold and stays there for the requested hysteresis time. If no hysteresis time is given, the DRNC shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to 'Event C', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity rises ~~by an amount greater more~~ than the requested threshold within the requested time.

If the *Report Characteristics* IE is set to 'Event D', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity falls ~~by an amount greater more~~ than the requested threshold within the requested time.

If the *Report Characteristics* IE is set to 'Event E', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity rises above the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). The DRNS shall also initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity falls below the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time' (Report B). If the *Report Periodicity* IE is provided, the DRNS shall initiate ~~the Dedicated~~ Measurement Reporting procedures periodically, with the requested frequency, between Report A and Report B. If 'Measurement Threshold 2' is not present, the DRNS shall use 'Measurement Threshold 1' instead. If no 'Measurement Hysteresis Time' is provided, the DRNC shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is set to 'Event F', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity falls below the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). The DRNS shall also initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity rises above the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time' (Report B). If the *Report Periodicity* IE is provided, the DRNS shall initiate ~~the Dedicated~~ Measurement Reporting procedures periodically, with the requested frequency, between Report A and Report B. If 'Measurement Threshold 2' is not present, the DRNS shall use 'Measurement Threshold 1' instead. If no 'Measurement Hysteresis Time' is provided, the DRNC shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is not set to 'On-Demand', the DRNS is required to perform reporting for a dedicated measurement object, in accordance with the conditions provided in the DEDICATED MEASUREMENT INITIATION REQUEST message, as long as the object exists. If no dedicated measurement object(s) for which a measurement is defined exists any more the DRNS shall terminate the measurement locally without reporting this to the SRNC.

If at the start of the measurement, the reporting criteria are fulfilled for any of Event A, Event B, Event E or Event F, the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure immediately, and then continue with the measurements as specified in the DEDICATED MEASUREMENT INITIATION REQUEST message.

Higher layer filtering

The *Measurement Filter Coefficient* IE indicates how filtering of the ~~dedicated~~ measurement values shall be performed before measurement event evaluation and reporting.

The averaging shall be performed according to the following formula.

$$F_n = (1 - a) \cdot F_{n-1} + a \cdot M_n$$

The variables in the formula are defined as follows:

F_n is the updated filtered measurement result

F_{n-1} is the old filtered measurement result

M_n is the latest received measurement result from physical layer measurements

$a = 1/2^{(k/2)}$, where k is the parameter received in the *Measurement Filter Coefficient* IE. If the *Measurement Filter Coefficient* IE is not present, a shall be set to 1 (no filtering)

In order to initialise the averaging filter, F_0 is set to M_1 when the first measurement result from the physical layer measurement is received.

Response message

If the DRNS was able to initiate the measurement requested by the SRNS it shall respond with the DEDICATED MEASUREMENT INITIATION RESPONSE message. The message shall include the same Measurement Id that was used in the ~~DEDICATED MEASUREMENT INITIATION REQUEST message~~ measurement request.

Only in the case when the *Report Characteristics* IE is set to "On-Demand", the DEDICATED MEASUREMENT INITIATION RESPONSE message shall contain the measurement result. In this case also the *Dedicated Measurement Object* IE shall be included if it was included in the DEDICATED MEASUREMENT INITIATION REQUEST message.

8.3.11.3 Unsuccessful Operation

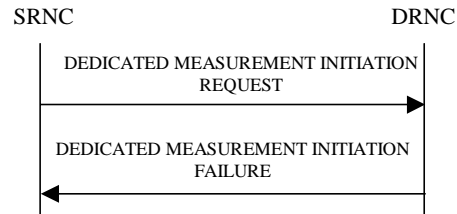


Figure 21: Dedicated Measurement Initiation procedure, Unsuccessful Operation

If the Dedicated Measurement Type received in the *Dedicated Measurement Type* IE is not defined in ref. [11] or [14] to be measured on the Dedicated Measurement Object Type received in the *Dedicated Measurement Object Type* IE in the DEDICATED MEASUREMENT INITIATION REQUEST message the DRNS shall regard the Dedicated Measurement Initiation procedure as failed.

If the requested measurement can not be initiated, the DRNC shall send a DEDICATED MEASUREMENT INITIATION FAILURE message. The message shall include the same Measurement Id that was used in the DEDICATED MEASUREMENT INITIATION REQUEST message and the *Cause* IE set to an appropriate value.

Typical cause values are:

Radio Network Layer Causes:

- Measurement not Supported For The Object
- Measurement Temporarily not Available

Miscellaneous Causes:

- Control Processing Overload
- HW Failure

8.3.11.4 Abnormal Conditions

-

8.3.12 Dedicated Measurements Reporting

8.3.12.1 General

This procedure is used by the DRNS to report results of measurements requested by the SRNS with the Dedicated Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE context.

The DRNC may initiate the Dedicated Measurement Reporting procedure at any time after establishing a Radio Link.

8.3.12.2 Successful Operation

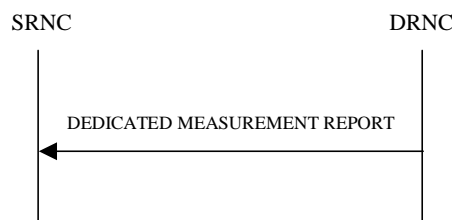


Figure 22: Dedicated Measurement Reporting procedure, Successful Operation

If the requested measurement reporting criteria are met, the DRNS shall initiate ~~a~~-the Dedicated Measurement Reporting procedure. If the measurement was initiated (by the Dedicated Measurement Initiation procedure) for multiple dedicated measurement objects, the DRNC may include dedicated measurement values in the *Dedicated Measurement Value Information IE* for multiple objects in the DEDICATED MEASUREMENT REPORT message. Unless specified below, the meaning of the parameters are given in other specifications.

The *Dedicated Measurement Id* IE shall be set to the Dedicated Measurement Id provided by the SRNC when initiating the measurement with the Dedicated Measurement Initiation procedure.

If the achieved measurement accuracy does not fulfil the given accuracy requirement specified in ref. [23] and [24], the Measurement not available shall be reported in the *Dedicated Measurement Value Information IE*.

8.3.12.3 Abnormal Conditions

-

8.3.13 Dedicated Measurement Termination

8.3.13.1 General

This procedure is used by the SRNS to terminate a measurement previously requested by the Dedicated Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE context.

The Dedicated Measurement Termination procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.13.2 Successful Operation

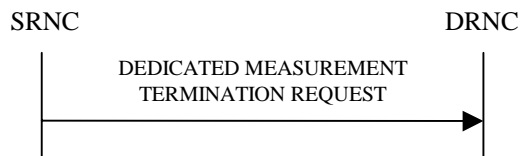


Figure 23: Dedicated Measurement Termination procedure, Successful Operation

This procedure is initiated with a DEDICATED MEASUREMENT TERMINATION REQUEST message, sent from the SRNC to the DRNC.

Upon reception, the DRNS shall terminate reporting of measurements corresponding to the received Dedicated Measurement Id.

8.3.13.3 Abnormal Conditions

-

8.3.14 Dedicated Measurement Failure

8.3.14.1 General

This procedure is used by the DRNS to notify the SRNS that a measurement previously requested by the Dedicated Measurement Initiation procedure can no longer be reported.

This procedure shall use the signalling bearer connection for the relevant UE context.

The DRNC may initiate the Dedicated Measurement Failure procedure at any time after establishing a Radio Link.

8.3.14.2 Successful Operation

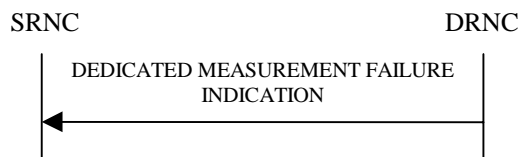


Figure 24: Dedicated Measurement Failure procedure, Successful Operation

This procedure is initiated with a DEDICATED MEASUREMENT FAILURE INDICATION message, sent from the DRNC to the SRNC, to inform the SRNC that a previously requested dedicated measurement can no longer be reported. The DRNC has locally terminated the indicated measurement.

Typical cause values are:

Miscellaneous Causes:

- Control Processing Overload
- HW Failure
- O&M Intervention

8.3.14.3 Abnormal Conditions

-

9.2.1.37 Measurement ID

The Measurement Id uniquely identifies ~~any a dedicated~~ measurement ~~on dedicated resources requested over RNSAP~~ within a UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement ID			INTEGER(0 .. 2 ²⁰ -1)	

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
Message Type				
>Procedure ID		1		
>>Procedure Code	M		ENUMERATED (RL Setup, RL Addition, RL Deletion, Synchronised RL Reconfiguration Preparation, Synchronised RL Reconfiguration Commit, Synchronised RL Reconfiguration Cancel, Unsynchronised RL Reconfiguration Request, RL Failure, RL Restoration, DL Power Control, DL Power Timeslot Control, Physical Channel Reconfiguration, UL Signalling Transfer, DL Signalling Transfer, Relocation Commit, Paging, <u>Dedicated</u> Measurement Initiation, <u>Dedicated</u> Measurement Reporting, <u>Dedicated</u> Measurement Termination, <u>Dedicated</u> Measurement Failure, Common Transport Channel Resources Initiation, Common Transport Channel Resources Release, Compressed Mode Command, Error Indication, ...)	
>>Ddmode	M		ENUMERATED (FDD, TDD, Common, ...)	Common = common to FDD and TDD.
>Type of Message	M		ENUMERATED (Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome)	

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

    CommonTransportChannelResourcesFailure,
    CommonTransportChannelResourcesRequest,
    CommonTransportChannelResourcesReleaseRequest,
    CommonTransportChannelResourcesResponseFDD,
    CommonTransportChannelResourcesResponseTDD,
    CompressedModeCommand,
    DedicatedMeasurementFailureIndication,
    DedicatedMeasurementInitiationFailure,
    DedicatedMeasurementInitiationRequest,
    DedicatedMeasurementInitiationResponse,
    DedicatedMeasurementReport,
    DedicatedMeasurementTerminationRequest,
    DL-PowerControlRequest,
    DL-PowerTimeslotControlRequest,
    DownlinkSignallingTransferRequest,
    ErrorIndication,
    PagingRequest,
    PhysicalChannelReconfigurationCommand,
    PhysicalChannelReconfigurationFailure,
    PhysicalChannelReconfigurationRequestFDD,
    PhysicalChannelReconfigurationRequestTDD,
    PrivateMessage,
```


RadioLinkAdditionFailureFDD,
RadioLinkAdditionFailureTDD,
RadioLinkAdditionRequestFDD,
RadioLinkAdditionRequestTDD,
RadioLinkAdditionResponseFDD,
RadioLinkAdditionResponseTDD,
RadioLinkDeletionRequest,
RadioLinkDeletionResponse,
RadioLinkFailureIndication,
RadioLinkPreemptionRequiredIndication,
RadioLinkReconfigurationCancel,
RadioLinkReconfigurationCommit,
RadioLinkReconfigurationFailure,
RadioLinkReconfigurationPrepareFDD,
RadioLinkReconfigurationPrepareTDD,
RadioLinkReconfigurationReadyFDD,
RadioLinkReconfigurationReadyTDD,
RadioLinkReconfigurationRequestFDD,
RadioLinkReconfigurationRequestTDD,
RadioLinkReconfigurationResponseFDD,
RadioLinkReconfigurationResponseTDD,
RadioLinkRestoreIndication,
RadioLinkSetupFailureFDD,
RadioLinkSetupFailureTDD,
RadioLinkSetupRequestFDD,
RadioLinkSetupRequestTDD,
RadioLinkSetupResponseFDD,
RadioLinkSetupResponseTDD,
RelocationCommit,
UplinkSignallingTransferIndicationFDD,
UplinkSignallingTransferIndicationTDD

FROM RNSAP-PDU-Contents

id-commonTransportChannelResourcesInitialisation,
id-commonTransportChannelResourcesRelease,
id-compressedModeCommand,
id-downlinkPowerControl,
id-downlinkSignallingTransfer,
id-downlinkPowerTimeslotControl,
id-errorIndication,
id-dedicatedmMeasurementFailure,
id-dedicatedmMeasurementInitiation,
id-dedicatedmMeasurementReporting,
id-dedicatedmMeasurementTermination,
id-paging,
id-physicalChannelReconfiguration,
id-privateMessage,
id-radioLinkAddition,
id-radioLinkDeletion,
id-radioLinkFailure,
id-radioLinkPreemption,

```

id-radioLinkRestoration,
id-radioLinkSetup,
id-relocationCommit,
id-synchronisedRadioLinkReconfigurationCancellation,
id-synchronisedRadioLinkReconfigurationCommit,
id-synchronisedRadioLinkReconfigurationPreparation,
id-unsynchronisedRadioLinkReconfiguration,
id-uplinkSignallingTransfer
FROM RNSAP-Constants;

```

<Editor's note: Parts of the module is skipped.>

```

-- *****
--
-- 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
    ...
}

RNSAP-ELEMENTARY-PROCEDURES-CLASS-2 RNSAP-ELEMENTARY-PROCEDURE ::= {
    uplinkSignallingTransferFDD             |
    uplinkSignallingTransferTDD             |
    downlinkSignallingTransfer              |
    relocationCommit                        |
    paging                                  |
    synchronisedRadioLinkReconfigurationCommit
    synchronisedRadioLinkReconfigurationCancellation
}

```

```

radioLinkFailure
radioLinkPreemption
radioLinkRestoration
dedicated#MeasurementReporting
dedicated#MeasurementTermination
dedicated#MeasurementFailure
downlinkPowerControlFDD
downlinkPowerTimeslotControl
compressedModeCommandFDD
commonTransportChannelResourcesRelease
errorIndication
privateMessage
...
}

```

<Editor's note: Parts of the module is skipped.>

```

dedicated#MeasurementInitiation RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementInitiationRequest
  SUCCESSFUL OUTCOME   DedicatedMeasurementInitiationResponse
  UNSUCCESSFUL OUTCOME DedicatedMeasurementInitiationFailure
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementInitiation, ddMode common }
  CRITICALITY         reject
}

```

<Editor's note: Parts of the module is skipped.>

```

dedicated#MeasurementReporting RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementReport
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementReporting, ddMode common }
  CRITICALITY         ignore
}

```

```

dedicated#MeasurementTermination RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementTerminationRequest
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementTermination, ddMode common }
  CRITICALITY         ignore
}

```

```

dedicated#MeasurementFailure RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementFailureIndication
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementFailure, ddMode common }
  CRITICALITY         ignore
}

```

<Editor's note: The rest of the module is skipped.>

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-dedicatedMMMeasurementFailure                    ProcedureCode ::= 7
id-dedicatedMMMeasurementInitiation                 ProcedureCode ::= 8
id-dedicatedMMMeasurementReporting                  ProcedureCode ::= 9
id-dedicatedMMMeasurementTermination                ProcedureCode ::= 10
id-paging                                             ProcedureCode ::= 11
id-physicalChannelReconfiguration                   ProcedureCode ::= 12
id-privateMessage                                    ProcedureCode ::= 13
id-radioLinkAddition                                ProcedureCode ::= 14
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

<Editor's note: The rest of the module is skipped.>

CHANGE REQUEST

⌘ **25.423 CR 319** ⌘ rev **1** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Remaining Errors after CR Implementation		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February, 2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ In the current RNSAP there are a few errors remaining from the CR implementation on v3.3.0.
Summary of change:	⌘ The CR clarifies corrects the following errors remaining since the CR implementation on v3.3.0: a) CR216r2 adds one sentence to the second last paragraph under the sub-heading "Physical Channel Modification" in chapter 8.3.4.2. This additional sentence is missing in v3.4.0 (interaction with CR232r2). This CR adds the missing sentence (and a closing bracket for the FDD tagging). b) CR232r2 adds two bullets under the sub-heading "DSCH Addition/Modification/Deletion:" in chapter 8.3.4.2 starting with "[FDD: If the <i>DSCH Info</i> IE includes any of the <i>Allocation/Retention Priority</i> IE" and "[FDD: If the <i>DSCH Info</i> IE includes any of the <i>Transport Format Set</i> IE". The intention was to have these bullets indented "twice". This CR changes the paragraph style to "B2" (from "B1", i.e. one indentation). c) When assigning chapter numbers to all new chapters the "USCH Information" was assigned the number 9.2.3.14A. This is incorrect since there was no 9.2.3.15 and thus no need to use the rule on "insertion of chapters in-between existing chapters". The "USCH Information" is consequently assigned the number 9.2.3.15 in this CR. d) <u>(r1 addition)</u> : As a consequence of CR253r2 the ASN.1 type carrying the IE Id for the <i>Neighbouring GSM Cell Information</i> IE introduced by CR252 should have been moved to the IE Definitions Module (9.3.4) as part of sorting out conflicts between CRs. Unfortunately this was not done. This CR moves that ASN.1 type to chapter 9.3.4.
Consequences if not approved:	⌘ If this CR is not approved the above-described incorrect CR implementations will remain and the RNSAP specification will not be in accordance with the CRs agreed by the TSG RAN meeting #10. Backward compatibility:

This CR is not backward compatible with the previous version of RNSAP.

Clauses affected:	⌘	8.3.4.2, 9.1.3.2, 9.1.11.2, and 9.2.3.14A.		
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘	
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

8.3.4.2 Successful Operation

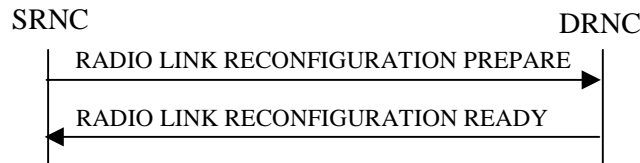


Figure 10: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the SRNC by sending the RADIO LINK RECONFIGURATION PREPARE message to the DRNC.

Upon reception, the DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

The DRNS shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

DCH Modification:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Modify* IEs then the DRNS shall treat them each as follows:

- If the *DCHs to Modify IE* includes the *UL FP Mode* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs to be modified, the DRNS shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs to Modify IE* includes the *ToAWS* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs to Modify IE* includes the *ToAWE* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs to Modify IE* includes multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Modify IE* as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCH Specific Info IE* includes the *Frame Handling Priority* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- If the *DCH Specific Info IE* includes the *Transport Format Set* IE for the UL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.
- If the *DCH Specific Info IE* includes the *Transport Format Set* IE for the DL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.
- [FDD - If, in the *DCH Specific Info IE*, the *DRAC Control* IE is present and set to "requested" for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info IE* to be received on FACH, for each Radio Link. If the DRNS does not support DRAC, it shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - If the *DCH Specific Info IE* includes the *CCTrCH ID* IE for the UL, the DRNS shall map the DCH onto the referenced UL CCTrCH.]

- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the DL, the DRNS shall map the DCH onto the referenced DL CCTrCH.]

DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Add* IEs then the DRNS shall treat them each as follows:

- The DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCH in the new configuration.
- If the *DCHs to Add* IE includes a *DCHs to Add* IE with multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Add* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- [FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected ", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the *QE-Selector* is set to "non-selected ", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]
- [FDD - For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected " shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected " the Physical channel BER shall be used for the QE, ref. [4].]
- The DRNS should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- The DRNS shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [FDD - If the *DRAC Control* IE is set to "requested" in the *DCH Specific Info* IE for at least one DCH and if the DRNS supports the DRAC, the DRNS shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE to be received on FACH, for each Radio Link. If the DRNS does not support DRAC, it shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]

DCH Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCH to Delete*, the DRNS shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the DRNS shall not include this set of co-ordinated DCHs in the new configuration.

Physical Channel Modification:

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information* IE includes the *Uplink Scrambling Code* IE, the DRNS shall apply this Uplink Scrambling Code to the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *Min UL Channelisation Code Length* IE, the DRNS shall apply the new Min UL Channelisation Code Length in the new configuration.]

- [FDD - If the *UL DPCH Information IE* includes the *TFCS IE*, the DRNS shall use the *TFCS IE* for the UL when reserving resources for the uplink of the new configuration. The DRNS shall apply the new TFCS in the Uplink of the new configuration.]
- [FDD - If the *UL DPCH Information IE* includes the *UL DPCCH Slot Format IE*, the DRNS shall apply the new Uplink *DPCCH Slot Format* to the new configuration.]
- [FDD – If the *UL DPCH Information IE* includes the *UL SIR Target IE*, the DRNS shall set the UL inner loop power control to the UL SIR target when the new configuration is being used.]
- [FDD – If the *UL DPCH Information IE* includes the *Puncture Limit IE*, the DRNS shall apply the value in the uplink of the new configuration .]
- [FDD - If the *UL DPCH Information IE* includes the *Diversity Mode IE*, the DRNS shall apply diversity according to the given value.]
- [FDD – If the *UL DPCH Information IE* includes an *SSDT Cell Identity Length IE* and/or an *S-Field Length IE*, the DRNS shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information IE* then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *DL DPCH Information IE* includes *Number of DL Channelisation Codes IE*, the DRNS shall allocate given number of Downlink Channelisation Codes per Radio Link and apply the new Downlink Channelisation Code(s) to the new configuration. Each Downlink Channelisation Code allocated for the new configuration shall be included as a FDD DL Channelisation Code Number IE in the RADIO LINK RECONFIGURATION READY message when sent to the SRNC. If some Transmission Gap Pattern sequences using 'SF/2' method are already initialised in the DRNS, DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK RECONFIGURATION READY message in case the DRNS selects to change the Scrambling code change method for one or more DL Channelisation Code.]
- [FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When p number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to “*PhCH number 1*”, the second to “*PhCH number 2*”, and so on until the p th to “*PhCH number p*”.]
- [FDD - If the *DL DPCH Information IE* includes the *TFCS IE*, the DRNS shall use the *TFCS IE* for the DL when reserving resources for the downlink of the new configuration. The DRNS shall apply the new TFCS in the Downlink of the new configuration.]
- [FDD – If the *DL DPCH Information IE* includes the *DL DPCH Slot Format IE*, the DRNS shall apply the new slot format used in DPCH in DL.]
- [FDD – If the *DL DPCH Information IE* includes the *TFCI Signalling Mode IE*, the DRNS shall apply the new signalling mode of the TFCI.]
- [FDD – If the *DL DPCH Information IE* includes the *Multiplexing Position IE*, the DRNS shall apply the new parameter to define whether fixed or flexible positions of transport channels shall be used in the physical channel.]
- [FDD – If the *DL DPCH Information IE* includes the *Limited Power Increase IE* and the IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]
- [FDD – If the *DL DPCH Information IE* includes the *Limited Power Increase IE* and the IE is set to 'Not Used', the DRNS shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]
- [FDD: If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE*, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration. This new Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]
- [FDD: If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE* and the *Downlink compressed mode method* in one or more Transmission Gap Pattern

Sequence within the *Transmission Gap Pattern Sequence Information IE* is set to 'SF/2', the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* to the RADIO LINK RECONFIGURATION READY message indicating for each Channelisation Code whether the alternative scrambling code shall be used or not].

[TDD - UL/DL CCTrCH Modification]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs, then the DRNS shall treat them each as follows:]

[TDD - If any of the *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs includes any of *TFCS IE*, *TFCI coding IE*, *Puncture limit IE*, or *TPC CCTrCH ID* IEs the DRNS shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]

- [TDD – The DRNC shall include in the RADIO LINK RECONFIGURATION READY message DPCH information to be modified and the IEs modified if any of *Repetition Period IE*, *Repetition Length IE*, *TDD DPCH Offset IE* or timeslot information was modified. The DRNC shall include timeslot information and the IEs modified if any of *Midamble Shift and Burst Type IE*, *Time Slot IE*, *TFCI Presence IE* or Code information was modified. The DRNC shall include code information if *TDD Channelisation Code IE* was modified.]

[TDD – UL/DL CCTrCH Addition]

[TDD -If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Add* IEs or *DL CCTrCH to Add* IEs, the DRNS shall include this CCTrCH in the new configuration.]

[TDD – If the DRNS has reserved the required resources for any requested DPCHs, the DRNC shall include the DPCH information within DPCH to be added in the RADIO LINK RECONFIGURATION READY message. If no DPCH was active before the reconfiguration, and if a valid Rx Timing Deviation measurement is known in DRNC, then the DRNC shall include the *Rx Timing Deviation IE* in the RADIO LINK RECONFIGURATION READY message.]

[TDD – UL/DL CCTrCH Deletion]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Delete* IEs or *DL CCTrCH to Delete* IEs, the DRNS shall remove this CCTrCH in the new configuration.]

SSDT Activation/Deactivation:

- [FDD - If the *RL Information IE* includes the *SSDT Indication IE* set to "SSDT Active in the UE", the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity IE* in *RL Information IE*, and the *SSDT Cell Identity Length IE* in *UL DPCH Information IE*, in the new configuration.]
- [FDD - If the *RL Information IE* includes the *SSDT Indication IE* set to "SSDT not Active in the UE", the DRNS shall deactivate SSDT in the new configuration.]

DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to modify*, *DSCH to add* or *DSCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Add* IE, then the DRNS shall use the *Allocation/Retention Priority IE*, *Scheduling Priority Indicator IE* and *TrCH Source Statistics Descriptor IE* to define a set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Modify* IE, then the DRNS shall treat them each as follows:

- [FDD: If the *DSCH to Modify* IE includes any *DSCH Info* IEs, then the DRNS shall treat them each as follows:]
 - [FDD: If the *DSCH Info IE* includes any of the *Allocation/Retention Priority IE*, *Scheduling Priority Indicator IE* or *TrCH Source Statistics Descriptor IE*, the DRNS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]
 - [FDD: If the *DSCH Info IE* includes any of the *Transport Format Set IE* or *BLER IE*, the DRNS shall apply the parameters to the new configuration.]

- ~~— [FDD: If the *DSCH Info IE* includes any of the *Allocation/Retention Priority IE*, *Scheduling Priority Indicator IE* or *TrCH Source Statistics Descriptor IE*, the DNRS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]~~
- ~~— [FDD: If the *DSCH Info IE* includes any of the *Transport Format Set IE* or *BLER IE*, the DRNS shall apply the parameters to the new configuration.]~~
- [FDD: If the *DSCH to Modify IE* includes the *PDSCH RL ID IE*, then the DRNS shall use it as the new DSCH RL identifier.]
- [FDD: If the *DSCH to Modify IE* includes the *Transport Format Combination Set IE*, then the DRNS shall use it as the new Transport Format Combination Set associated with the DSCH.]
- [TDD: If the *DSCHs to Modify IE* includes the *CCTrCH Id IE*, then the DRNS shall map the DSCH onto the referenced DL CCTrCH.]
- [TDD: If the *DSCHs to Modify IE* includes any of the *Allocation/Retention Priority IE*, *Scheduling Priority Indicator IE* or *TrCH Source Statistics Descriptor IE*, the DNRS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]
- [TDD: If the *DSCHs to Modify IE* includes any of the *Transport Format Set IE* or *BLER IE*, the DRNS shall apply the parameters to the new configuration.]

If the requested modifications are allowed by the DRNS and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

[TDD] USCH Addition/Modification/Deletion

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to modify*, *USCH to add* or *USCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Add IE*, then, the DRNS shall use the *Allocation/Retention Priority IE*, *Scheduling Priority Indicator IE* and *TrCH Source Statistics Descriptor IE* to define a set of USCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Modify IE*, then the DRNS shall treat them each as follows:

- If the *USCH to Modify IE* includes any of the *Allocation/Retention Priority IE*, *Scheduling Priority Indicator IE* or *TrCH Source Statistics Descriptor IE*, the DNRS shall use them to update the set of USCH Priority classes.
- If the *USCH to Modify IE* includes any of the *CCTrCH Id IE*, *Transport Format Set IE*, *BLER IE* or *RB Info IE*, the DRNS shall apply the parameters to the new configuration.

If the requested modifications are allowed by the DRNC and the DRNC has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

General

The DRNS shall include in the RADIO LINK RECONFIGURATION READY message the *Transport Layer Address IE* and the *Binding ID IE* in the *DCH Information Response IE* for any Transport Channel being added, or any Transport Channel being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator IE*. In case of a set of coordinated DCHs requiring a new transport bearer on Iur, the *Transport Layer Address IE* and the *Binding ID IE* in the *DCH Information Response IE* shall be included only for one of the DCH in the set of coordinated DCHs.

In case of a Radio Link being combined with another Radio Link within the DRNS, the *Transport Layer Address IE* and the *Binding ID IE* in the *DCH Information Response IE* shall be included only for one of the combined Radio Links.

If the requested modifications are allowed by the DRNS, and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s) it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exist a Prepared Reconfiguration, as defined in subclause 3.1.

The DRNS decides the maximum and minimum SIR for the uplink of the Radio Link(s) and shall return this in the *Maximum Uplink SIR IE* and *Minimum Uplink SIR IE* for each Radio Link in the RADIO LINK RECONFIGURATION READY message.

If the DL TX power upper or lower limit has been re-configured the DRNC shall return this in the *Maximum DL TX Power IE* and *Minimum DL TX Power IE* respectively in the RADIO LINK RECONFIGURATION RESPONSE message.

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
Allowed Queuing Time	O		9.2.1.2		YES	reject
UL Physical Channel Information		1			YES	reject
>Maximum Number of Timeslots per Frame	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		–	
DL Physical Channel Information		1			YES	reject
>Maximum Number of Timeslots per Frame	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 per Frame	M		9.2.3.3C		–	
UL CCH Information		0..<maxno of CCHs>		For DCH and USCH	EACH	notify
>CCH 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		–	
DL CCH Information		0..<maxno of CCHs>		For DCH and DSCH	EACH	notify
>CCH 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 CCH List		0 to <maxno CCH>		List of uplink CCH which provide TPC	–	
>>TPC CCH ID	M		CCH 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		9.2.3.44A1 5		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		–	

>Primary CCPCH RSCP	O		9.2.3.5		-	
>DL Time Slot ISCP Info	O		9.2.3.2D		-	

Range bound	Explanation
MaxnoofCCTrCHs	Maximum number of CCTrCH for one UE.

9.1.11.2 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		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
UL CCTrCH to Add		0..<maxno of CCTrCHs>		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		9.2.1.40		–	
UL CCTrCH to Modify		0..<maxno of CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63	For the UL.	–	
>TFCI Coding	O		9.2.3.11		–	
>Puncture Limit	O		9.2.1.46		–	
UL CCTrCH to Delete		0..<maxno of CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
DL CCTrCH to Add		0..<maxno of CCTrCHs>		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		–	
>TPC CCTrCH List		0 to <maxno CCTrCH>		List of uplink CCTrCH which provide TPC	–	
>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.2		–	
DL CCTrCH to Modify		0..<maxno of CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63	For the DL.	–	
>TFCI Coding	O		9.2.3.11		–	
>Puncture Limit	O		9.2.1.46		–	
>TPC CCTrCH List		0 to <maxno CCTrCH>		List of uplink CCTrCH which provide TPC	–	
>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
DL CCTrCH to Delete		0..<maxno of CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
DCHs to Modify	O		TDD DCHs to Modify 9.2.3.8B		YES	reject
DCHs to Add	O		DCH TDD Information 9.2.3.2A		YES	reject
DCHs to Delete		0..<maxno			GLOBAL	reject

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
		<i>ofDCHs</i> >				
>DCH ID	M		9.2.1.16		–	
DSCHs to Modify		<i>0..<maxno ofDSCHs></i>			GLOBAL	reject
>DSCH ID	M		9.2.1.26A		–	
>CCTrCH Id	O		9.2.3.2	DL CCTrCH in which the DSCH is mapped.	–	
>TrCh Source Statistics Descriptor	O		9.2.1.65		–	
>Transport Format Set	O		9.2.1.64		–	
>Allocation/Retention Priority	O		9.2.1.1		–	
>Scheduling Priority Indicator	O		9.2.1.51A		–	
>BLER	O		9.2.1.4		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
DSCHs to Add	O		DSCH TDD Information 9.2.3.3a		YES	reject
DSCHs to Delete		<i>0..<maxno ofDSCHs></i>			GLOBAL	reject
>DSCH ID	M		9.2.1.26A		–	
USCHs to Modify		<i>0..<maxno ofUSCHs></i>			GLOBAL	reject
>USCH ID	M		9.2.3.14		–	
>CCTrCH Id	O		9.2.3.2	UL CCTrCH in which the USCH is mapped.	–	
>TrCh Source Statistics Descriptor	O		9.2.1.65		–	
>Transport Format Set	O		9.2.1.64		–	
>Allocation/Retention Priority	O		9.2.1.1		–	
>Scheduling Priority Indicator	O		9.2.1.51A		–	
>BLER	O		9.2.1.4		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
>RB Info		0 to <maxno of RB>		All Radio Bearers using this USCH	–	
>>RB Identity	M		9.2.3.5B		–	
USCHs to Add	O		USCH Information 9.2.3.4A1 5		YES	reject
USCHs to Delete		<i>0..<maxno ofUSCHs></i>			GLOBAL	reject
>USCH ID	M		9.2.3.14		–	

Condition	Explanation
CoordDCH	This IE is present only this DCH is part of a set of coordinated DCHs (number of instances of DCH Specific Info is greater than 1)

Range bound	Explanation
MaxnoofDCHs	Maximum number of DCHs for a UE.
MaxnoofCCTrCHs	Maximum number of CCTrCHs for a UE.
MaxnoofDSCHs	Maximum number of DSCHs for one UE.
MaxnoofUSCHs	Maximum number of USCHs for one UE.

9.2.3.14A15 USCH Information

The *USCH Information* IE provides information for USCHs to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
USCH Information		1 to <maxnoof USCHs>			–	
>USCH ID	M		9.2.3.14		–	
>CCTrCH ID	M		9.2.3.2	UL CCTrCH in which the USCH is mapped	–	
>TrCh Source Statistics Descriptor	M		9.2.1.65		–	
>Transport Format Set	M		9.2.1.64	For USCH	–	
>Allocation/Retention Priority	M		9.2.1.1		–	
>Scheduling Priority Indicator	M		9.2.1.51A		–	
>BLER	M		9.2.1.4			
>RB Info		1 to <maxnoof RB>		All Radio Bearers using this USCH	–	
>>RB Identity	M		9.2.3.5B		–	

Range bound	Explanation
MaxnoofUSCHs	Maximum number of USCHs for one UE.
MaxnoofRBs	Maximum number of Radio Bearers for one UE.

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,
  AllocationRetentionPriority,
  AllowedQueuingTime,
  AlphaValue,
  BLER,
  Block-STTD-Indicator,
  BindingID,
  C-ID,
  C-RNTI,
  CCTrCH-ID,
  CFN,
  ClosedLoopModel-SupportIndicator,
  ClosedLoopMode2-SupportIndicator,
  Closedlooptimingadjustmentmode,
  CN-CS-DomainIdentifier,
  CN-PS-DomainIdentifier,
  CNDomainType,
  Cause,
  CellParameterID,
  ChipOffset,
  CriticalityDiagnostics,
  D-RNTI,
  D-RNTI-ReleaseIndication,
  DCH-FDD-Information,
  DCH-ID,
  DCH-InformationResponse,
  DCH-TDD-Information,
  DL-DPCH-SlotFormat,
```

DL-TimeslotISCP,
DL-Power,
DL-ScramblingCode,
DL-Timeslot-Information,
DL-TimeSlot-ISCP-Info,
DPCH-ID,
DRACControl,
DRXCycleLengthCoefficient,
DedicatedMeasurementType,
DedicatedMeasurementValue,
DedicatedMeasurementValueInformation,
DiversityControlField,
DiversityMode,
DSCH-FDD-Information,
DSCH-FDD-InformationResponse,
DSCH-FlowControlInformation,
DSCH-FlowControlItem,
DSCH-TDD-Information,
DSCH-ID,
SchedulingPriorityIndicator,
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,
IMSI,
InnerLoopDLPCStatus,
L3-Information,
LimitedPowerIncrease,
MaximumAllowedULTxPower,
MaxNrDLPhysicalchannels,
MaxNrOfUL-DPCHs,
MaxNrTimeslots,
MaxNrULPhysicalchannels,
MeasurementFilterCoefficient,
MeasurementID,
MidambleShiftAndBurstType,
MinimumSpreadingFactor,
MinUL-ChannelisationCodeLength,
MultiplexingPosition,
Neighbouring-GSM-CellInformation,
Neighbouring-UMTS-CellInformation,
NrOfDLchannelisationcodes,
PagingCause,
PagingRecordType,
PDSCHCodeMapping,

PayloadCRC-PresenceIndicator,
PowerAdjustmentType,
PowerOffset,
PrimaryCCPCH-RSCP,
PrimaryCPICH-EcNo,
PrimaryCPICH-Power,
PrimaryScramblingCode,
PropagationDelay,
PunctureLimit,
QE-Selector,
RANAP-RelocationInformation,
RB-Info,
RL-ID,
RL-Set-ID,
RNC-ID,
RepetitionLength,
RepetitionPeriod,
ReportCharacteristics,
Received-total-wide-band-power,
RxTimingDeviationForTA,
S-FieldLength,
S-RNTI,
SCH-TimeSlot,
SAI,
SN,
Secondary-CCPCH-Info,
SSDT-CellID,
SSDT-CellID-Length,
SSDT-Indication,
SSDT-SupportIndicator,
STTD-Indicator,
STTD-SupportIndicator,
AdjustmentPeriod,
ScaledAdjustmentRatio,
MaxAdjustmentStep,
SecondaryCCPCH-SlotFormat,
SyncCase,
TDD-ChannelisationCode,
TDD-DCHs-to-Modify,
TDD-DL-Code-Information,
TDD-DPCHOffset,
TDD-PhysicalChannelOffset,
TDD-TPC-DownlinkStepSize,
TDD-UL-Code-Information,
TFCI-Coding,
TFCI-Presence,
TFCI-SignallingMode,
TimeSlot,
TimingAdvanceApplied,
ToAWE,
ToAWS,
TransmitDiversityIndicator,
TransportBearerID,

```

TransportBearerRequestIndicator,
TFCS,
Transmission-Gap-Pattern-Sequence-Information,
Transmission-Gap-Pattern-Sequence-ScramblingCode-Information,
TransportFormatManagement,
TransportFormatSet,
TransportLayerAddress,
TrCH-SrcStatisticsDescr,
UARFCN,
UC-ID,
UL-DPCCCH-SlotFormat,
UL-SIR,
UL-FP-Mode,
UL-PhysCH-SF-Variation,
UL-ScramblingCode,
UL-Timeslot-Information,
UL-TimeSlot-ISCP-Info,
URA-ID,
URA-Information,
USCH-ID,
USCH-Information

```

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,
maxNrOfRLs,
maxNrOfRLSets,
maxNrOfRLs-1,
maxNrOfRLs-2,
maxNrOfULTs,
maxNrOfDLTs,

```

```

id-Active-Pattern-Sequence-Information,
id-AdjustmentRatio,
id-AllowedQueuingTime,
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-ClosedLoopModel-SupportIndicator,
id-ClosedLoopMode2-SupportIndicator,
id-CNOriginatedPage-PagingRqst,
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-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-Physical-Channel-Information-RL-SetupRqstTDD,
 id-DLReferencePower,
 id-DLReferencePowerList-DL-PC-Rqst,
 id-DL-ReferencePowerInformation-DL-PC-Rqst,
 id-DRXCycleLengthCoefficient,
 id-DedicatedMeasurementObjectType-DM-Rprt,
 id-DedicatedMeasurementObjectType-DM-Rqst,
 id-DedicatedMeasurementObjectType-DM-Rsp,
 id-DedicatedMeasurementType,
 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-DSCHsToBeAddedOrModified-FDD,
 id-DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD,
 id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspFDD,
 id-FACH-InfoForUESelectedS-CCPCH-CTCH-ResourceRspTDD,
 id-GA-AccessPointPosition,
 id-GA-Cell,
 id-IMSI,
 id-InnerLoopDLPCStatus,
 id-L3-Information,
 id-AdjustmentPeriod,
 id-MaxAdjustmentStep,
 id-MeasurementFilterCoefficient,
 id-MeasurementID,
~~id-Neighbouring-GSM-CellInformation,~~
 id-PagingArea-PagingRqst,
 id-FACH-FlowControlInformation,
 id-PowerAdjustmentType,
 id-ProcedureScope-DL-PC-Rqst,
 id-PropagationDelay,
 id-RANAP-RelocationInformation,
 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-RestoreInd,
 id-RL-Information-RL-SetupRqstFDD,
 id-RL-Information-RL-SetupRqstTDD,
 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-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-ReconfigurationFailure-RL-ReconfFail,
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-ReportCharacteristics,
id-Reporting-Object-RL-FailureInd,
id-Reporting-Object-RL-RestoreInd,
id-RxTimingDeviationForTA,
id-S-RNTI,
id-SAI,
id-SRNC-ID,
id-STD-SupportIndicator,
id-SuccessfulRL-InformationResponse-RL-AdditionFailureFDD,
id-SuccessfulRL-InformationResponse-RL-SetupFailureFDD,
id-SuccessfulRL-InformationResponseList-RL-AdditionFailureFDD,
id-SuccessfulRL-InformationResponseList-RL-SetupFailureFDD,
id-timeSlot-ISCPList-DL-PC-Rqst-TDD,
id-TransportBearerID,
id-TransportBearerRequestIndicator,
id-TransportLayerAddress,
id-UC-ID,
id-Transmission-Gap-Pattern-Sequence-Information,
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-Information,
id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureFDD,
id-UnsuccessfulRL-InformationResponse-RL-AdditionFailureTDD,
id-UnsuccessfulRL-InformationResponse-RL-SetupFailureFDD,
id-UnsuccessfulRL-InformationResponse-RL-SetupFailureTDD,
id-UnsuccessfulRL-InformationResponseList-RL-AdditionFailureFDD,
id-UnsuccessfulRL-InformationResponseList-RL-SetupFailureFDD,
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
FROM RNSAP-Constants;

```

<Editor's note: Parts of the module is skipped.>

```

-- *****
--
-- 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,
    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,
    -- 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,
    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    OPTIONAL,
    dSCHInformationResponse  DSCH-InformationResponse-RL-SetupRspFDD    OPTIONAL,
    neighbouring-UMTS-CellInformation  Neighbouring-UMTS-CellInformation    OPTIONAL,
    neighbouring-GSM-CellInformation  Neighbouring-GSM-CellInformation-RL-SetupRspFDD    OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { {RL-InformationResponseItem-RL-SetupRspFDD-ExtIEs} }    OPTIONAL,
    ...
}

```

```

RL-InformationResponseItem-RL-SetupRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

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 ::= {
    ...
}

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 }
}

Neighbouring-GSM-CellInformation-RL-SetupRspFDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-SetupRspFDD }}
Neighbouring-GSM-CellInformationItem-RL-SetupRspFDD RNSAP-PROTOCOL-IES ::= {
  { ID id-Neighbouring-GSM-CellInformation CRITICALITY ignore TYPE Neighbouring-GSM-CellInformation PRESENCE mandatory }
}

RadioLinkSetupResponseFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- 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 mandatory } |
    { 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,
    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,
    timingAdvanceApplied TimingAdvanceApplied,
    alphaValue AlphaValue,
    ul-PhysCH-SF-Variation UL-PhysCH-SF-Variation,
    ul-CCTrCHInformationList-RL-SetupRspTDD UL-CCTrCHInformationList-RL-SetupRspTDD OPTIONAL,
    dl-CCTrCHInformationList-RL-SetupRspTDD DL-CCTrCHInformationList-RL-SetupRspTDD OPTIONAL,
    dCH-InformationResponseList-RL-SetupRspTDD DCH-InformationResponseList-RL-SetupRspTDD OPTIONAL,
    dsch-InformationResponseList-RL-SetupRspTDD DSCH-InformationResponse-RL-SetupRspTDD OPTIONAL,
    usch-InformationResponseList-RL-SetupRspTDD USCH-InformationResponse-RL-SetupRspTDD OPTIONAL,
    neighbouring-UMTS-CellInformationList-RL-SetupRspTDD Neighbouring-UMTS-CellInformation OPTIONAL,
    neighbouring-GSM-CellInformationList-RL-SetupRspTDD Neighbouring-GSM-CellInformation-RL-SetupRspTDD OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { {RL-InformationResponse-RL-SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponse-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

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-InformationList-RL-SetupRspTDD UL-DPCH-InformationList-RL-SetupRspTDD OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { {UL-CCTrCHInformationItem-RL-SetupRspTDD-ExtIEs} } OPTIONAL,
    ...
}

UL-CCTrCHInformationItem-RL-SetupRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}

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 ::= {
  ...
}

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 ::= {

```



```

}
...
}
Neighbouring-GSM-CellInformation-RL-SetupRspTDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-SetupRspTDD }}
Neighbouring-GSM-CellInformationItem-RL-SetupRspTDD RNSAP-PROTOCOL-IES ::= {
  { ID id-Neighbouring-GSM-CellInformation CRITICALITY ignore TYPE Neighbouring-GSM-CellInformation PRESENCE mandatory }
}
RadioLinkSetupResponseTDD-Extensions 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 ::= {
...
}

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,
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,
-- 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,
maxUL-SIR      UL-SIR,
minUL-SIR      UL-SIR,
closedlooptimingadjustmentmode      Closedlooptimingadjustmentmode  OPTIONAL,

```

```

    maximumAllowedULTxPower      MaximumAllowedULTxPower,
    maximumDLTxPower             DL-Power,
    minimumDLTxPower             DL-Power,
    dSCH-InformationResponse-RL-SetupFailureFDD  DSCH-InformationResponseList-RL-SetupFailureFDD  OPTIONAL,
    neighbouring-UMTS-CellInformation  Neighbouring-UMTS-CellInformation OPTIONAL,
    neighbouring-GSM-CellInformation  Neighbouring-GSM-CellInformation RL-SetupFailureFDD OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { {SuccessfulRL-InformationResponse-RL-SetupFailureFDD-ExtIEs} } OPTIONAL,
    ...
}

SuccessfulRL-InformationResponse-RL-SetupFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

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 ::= {
    ...
}

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 }
}

Neighbouring-GSM-CellInformation-RL-SetupFailureFDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-SetupFailureFDD }}

Neighbouring-GSM-CellInformationItem-RL-SetupFailureFDD RNSAP-PROTOCOL-IES ::= {
  { ID id-Neighbouring-GSM-CellInformation  CRITICALITY ignore  TYPE Neighbouring-GSM-CellInformation  PRESENCE mandatory }
}

RadioLinkSetupFailureFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

}

<Editor's note: Parts of the module is skipped.>

```
-- *****
--
-- 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,
    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,
    -- 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-RL-AdditionRspFDD  OPTIONAL,
    iE-Extensions                      ProtocolExtensionContainer { {RL-InformationResponseItem-RL-AdditionRspFDD-ExtIEs} } OPTIONAL,
    ...
}

RL-InformationResponseItem-RL-AdditionRspFDD-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

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 ::= {
    ...
}

NonCombining-RL-AdditionRspFDD ::= SEQUENCE {
    dCH-InformationResponse        DCH-InformationResponse,
    iE-Extensions                  ProtocolExtensionContainer { { NonCombiningItem-RL-AdditionRspFDD-ExtIEs} } OPTIONAL,
    ...
}

NonCombiningItem-RL-AdditionRspFDD-ExtIEs  RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Neighbouring-GSM-CellInformation-RL-AdditionRspFDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-AdditionRspFDD }}

Neighbouring-GSM-CellInformationItem-RL-AdditionRspFDD  RNSAP-PROTOCOL-IES ::= {
  { ID id-Neighbouring-GSM-CellInformation  CRITICALITY ignore TYPE Neighbouring-GSM-CellInformation  PRESENCE mandatory }
}

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 mandatory } |
    { ID id-CriticalityDiagnostics
      CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

RL-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-Info
                        UL-TimeSlot-ISCP-Info,
    minUL-SIR            UL-SIR,
    maxUL-SIR            UL-SIR,
    maximumAllowedULTxPower
                        MaximumAllowedULTxPower,
    maximumDLTxPower     DL-Power,
    minimumDLTxPower     DL-Power,
    timingAdvanceApplied
                        TimingAdvanceApplied,
    alphaValue           AlphaValue,
    ul-PhysCH-SF-Variation
                        UL-PhysCH-SF-Variation,
    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-RL-AdditionRspTDD    OPTIONAL,
    IE-Extensions        ProtocolExtensionContainer { {RL-InformationResponse-RL-AdditionRspTDD-ExtIEs} }    OPTIONAL,
    ...
}

RL-InformationResponse-RL-AdditionRspTDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

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 {
    cTrCH-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 {
    cTrCH-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 ::= {
    ...
}

```

```

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,
  -- 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.
  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 ::= {
  ...
}

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 ::= {
    ...
}

Neighbouring-GSM-CellInformation-RL-AdditionRspTDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-AdditionRspTDD }}
Neighbouring-GSM-CellInformationItem-RL-AdditionRspTDD RNSAP-PROTOCOL-IES ::= {
  { ID id-Neighbouring-GSM-CellInformation CRITICALITY ignore TYPE Neighbouring-GSM-CellInformation PRESENCE mandatory }
}

RadioLinkAdditionResponseTDD-Extensions 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,
    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,
    closedloopoptimingadjustmentmode Closedloopoptimingadjustmentmode OPTIONAL,
    maximumAllowedULTxPower MaximumAllowedULTxPower,

```

```

maximumDLTxPower          DL-Power,
minimumDLTxPower          DL-Power,
neighbouring-UMTS-CellInformation  Neighbouring-UMTS-CellInformation OPTIONAL,
neighbouring-GSM-CellInformation  Neighbouring-GSM-CellInformation-RL-AdditionFailureFDD OPTIONAL,
iE-Extensions              ProtocolExtensionContainer { {SuccessfulRL-InformationResponse-RL-AdditionFailureFDD-ExtIEs} } OPTIONAL,
...
}

SuccessfulRL-InformationResponse-RL-AdditionFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
...
}

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 ::= {
...
}

NonCombining-RL-AdditionFailureFDD ::= SEQUENCE {
dCH-InformationResponse    DCH-InformationResponse,
iE-Extensions              ProtocolExtensionContainer { { NonCombiningItem-RL-AdditionFailureFDD-ExtIEs} } OPTIONAL,
...
}

NonCombiningItem-RL-AdditionFailureFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
...
}

Neighbouring-GSM-CellInformation-RL-AdditionFailureFDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-AdditionFailureFDD }}
Neighbouring-GSM-CellInformationItem-RL-AdditionFailureFDD RNSAP-PROTOCOL-IES ::= {
——{ ID id-Neighbouring-GSM-CellInformation  CRITICALITY ignore TYPE ——Neighbouring-GSM-CellInformation  PRESENCE mandatory }
}

RadioLinkAdditionFailureFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
...
}

```

<Editor's note: The rest of the module is skipped.>

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,
    maxFACHCountPlus1,
    maxIBSEG,
    maxNoOfDSCHs,
    maxNoOfUSCHs,
    maxNoTFCIGroups,
    maxNoCodeGroups,
    maxNrOfDCHs,
    maxNrOfDL-Codes,
    maxNrOfDLTs,
    maxNrOfDPCHs,
    maxNrOfErrors,
    maxNrOfFDDNeighboursPerRNC,
    maxNrOfMACcshSDU-Length,
    maxNrOfNeighbouringRNCs,
    maxNrOfTDDNeighboursPerRNC,
    maxNrOfTS,
    maxNrOfULTs,
    maxNrOfGSMNeighboursPerRNC,
    maxRateMatching,
    maxNrOfPoints,
    maxNoOfRB,
    maxNrOfTFCs,
    maxNrOfTFs,
    maxCTFC,
    maxRNCinURA-1,
    maxTFCI1Combs,
    maxTFCI2Combs,
    maxTFCI2Combs-1,
    maxTGPS,
    maxTTI-Count,

    id-Neighbouring-GSM-CellInformation,
    id-Neighbouring-UMTS-CellInformationItem
```

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

<Editor's note: Parts of the module is skipped.>

-- N

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 ::= {
 ...
 }

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,
closedLoopModel-SupportIndicator ClosedLoopModel-SupportIndicator OPTIONAL,
closedLoopMode2-SupportIndicator ClosedLoopMode2-SupportIndicator OPTIONAL,
iE-Extensions               ProtocolExtensionContainer { { Neighbouring-FDD-CellInformationItem-ExtIEs } } OPTIONAL,
...
}

Neighbouring-FDD-CellInformationItem-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,
  q-Offset-Serving-to-Neighbour Q-Offset-Serving-to-Neighbour,
  q-RxlevMin                Q-RxlevMin,
  maximumAllowedULTxPower  MaximumAllowedULTxPower,
  bSIC                      BSIC,
  bCCH-ARFCN                BCCH-ARFCN,
  gSM-Output-Power          GSM-Output-Power OPTIONAL,
  iE-Extensions             ProtocolExtensionContainer { { Neighbouring-GSM-CellInformationItem-ExtIEs } } OPTIONAL,
  ...
}

Neighbouring-GSM-CellInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
...
}

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 is present only if Sync Case = Case1 -- ,
  sCH-TimeSlot                SCH-TimeSlot          OPTIONAL
  -- This IE is present only if Sync Case = Case2 -- ,
  block-STTD-Indicator        Block-STTD-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 ::= {
...
}

NrOfDLchannelisationcodes ::= INTEGER (1..8)

NrOfTransportBlocks   ::= INTEGER (0..512)

-- 0
```

```
<Editor's note: The rest of the module is skipped.>
```

CR-Form-v3	
CHANGE REQUEST	
⌘ 25.423 CR 329 ⌘ rev 2 ⌘ Current version: 3.4.0 ⌘	

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Erroneous Criticality Diagnostics IE		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ 2001-03-02
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The IE Criticality Diagnostics can't distinguish between multiple occurrences of the same ASN.1 identity within one message. See also Tdoc R3-010834.
Summary of change:	⌘ The possibility to report the message structure down to the erroneous IE is introduced in the Criticality Diagnostics IE.
Consequences if not approved:	⌘ In case the same ASN.1 identity occurs in more than one place/structure within the same message, an error reported with Criticality Diagnostics for this IE will not be unambiguous. Additional information: The proposed change is backwards compatible.

Clauses affected:	⌘ 9.2.1.13, 9.2.1.x, 9.3.4, 9.3.6		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

9.2.1.13 Criticality Diagnostics

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Criticality Diagnostics				
>Procedure ID		0..1		Procedure ID is to be used if Criticality Diagnostics is part of Error Indication procedure, and not within the response message of the same procedure that caused the error
>>Procedure Code	M		INTEGER (0..255)	
>>Ddmode	M		ENUMERATED (FDD, TDD, Common)	Common = common to FDD and TDD.
>Triggering Message	O		ENUMERATED (initiating message, successful outcome, unsuccessful outcome, outcome)	The Triggering Message is used only if the Criticality Diagnostics is part of Error Indication.
> Procedure Criticality	O		ENUMERATED (reject, ignore, notify)	This Procedure Criticality is used for reporting the Criticality of the Triggering message (Procedure). The value 'ignore' shall never be used.
>Transaction ID	O		Transaction ID	
Information Element Criticality Diagnostics		<i>0..<maxnoof errors></i>		
>IE Criticality	M		ENUMERATED (reject, ignore, notify)	The IE Criticality is used for reporting the criticality of the triggering IE. The value 'Ignore' shall never be used.
>IE Id	M		INTEGER (0..65535)	The IE Id of the not understood or missing IE as defined in the ASN.1 part of the specification.
>Repetition Number	O		INTEGER (1..256)	The repetition number of the not understood IE <u>within the bottom most repetition level identified by the message structure IE</u> , if applicable
>Message Structure	<u>O</u>		<u>9.2.1.x</u>	

Range bound	Explanation
Maxnooferrors	Maximum number of IE errors allowed to be reported with a single message.

9.2.1.x Message Structure

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE type and reference</u>	<u>Semantics description</u>	<u>Criticality</u>	<u>Assigned Criticality</u>
<u>Message structure</u>		1 to <maxnooflevels>		Information given per level with assigned criticality in an hierachical message structure. Given from top level down to the level above the reported level for the occurred error (reported in the <i>Information Element Criticality Diagnostics</i> IE).	<u>GLOBAL</u>	<u>ignore</u>
>IE ID	<u>M</u>		<u>INTEGER (0..65535)</u>	The IE ID of this level's IE containing the not understood or missing IE.	:	
>Repetition Number	<u>O</u>		<u>INTEGER (1..256)</u>	The repetition number of this level's reported IE, if applicable	:	

<u>Range bound</u>	<u>Explanation</u>
<u>maxnooflevels</u>	<u>Maximum no. of message levels to report. The value for maxnooflevels is 256.</u>

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,
    maxFACHCountPlus1,
    maxIBSEG,
    maxNoOfDSCHs,
    maxNoOfUSCHs,
    maxNoTFCIGroups,
    maxNoCodeGroups,
    maxNrOfDCHs,
    maxNrOfDL-Codes,
    maxNrOfDLTs,
    maxNrOfDPCHs,
    maxNrOfErrors,
    maxNrOfFDDNeighboursPerRNC,
    maxNrOfMACcshSDU-Length,
    maxNrOfNeighbouringRNCs,
    maxNrOfTDDNeighboursPerRNC,
    maxNrOfTS,
    maxNrOfULTs,
    maxNrOfGSMNeighboursPerRNC,
    maxRateMatching,
    maxNrOfPoints,
    maxNoOfRB,
    maxNrOfTFCS,
    maxNrOfTFs,
    maxCTFC,
    maxRNCinURA-1,
    maxTFCI1Combs,
    maxTFCI2Combs,
    maxTFCI2Combs-1,
    maxTGPS,
    maxTTI-Count,

    id-Neighbouring-UMTS-CellInformationItem,
    maxNrOfLevels,
    id-MessageStructure

```

```

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

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 ::= {
    ...
}

AllowedQueuingTime          ::= INTEGER (1..60)
-- seconds

AlphaValue          ::= INTEGER (0..8)
-- Actual value = Alpha / 8

-- B

BCC ::= BIT STRING (SIZE (3))

BCCH-ARFCN ::= INTEGER (0..1023)

```

```
BetaCD ::= INTEGER (0..15)

BindingID ::= OCTET STRING (SIZE (1..4,...))

BLER ::= INTEGER (-63..0)
-- Step 0.1 (Range -6.3..0). It is the Log10 of the BLER

Block-STTD-Indicator ::= ENUMERATED {
    active,
    inactive
}

BSIC ::= SEQUENCE {
    nCC      NCC,
    bCC      BCC
}

-- 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-temporarily-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,
    r1-already-activated-or-allocated,
    ...
}

CauseTransport ::= ENUMERATED {
    transport-resource-unavailable,
    unspecified,
    ...
}

C-ID ::= INTEGER (0..65535)

CCTrCH-ID ::= INTEGER (0..15)

CellIndividualOffset ::= INTEGER (-20..20)

CellParameterID ::= INTEGER (0..127,...)

CFN ::= INTEGER (0..255)

CGI ::= SEQUENCE {
    LAI SEQUENCE {
        pLMN-ID PLMN-ID,
        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-coding,
    convolutional-coding,
    turbo-coding,
    ...
}
ChipOffset          ::= INTEGER (0..38399)
CI                  ::= OCTET STRING (SIZE (2))
ClosedLoopModel-SupportIndicator ::= ENUMERATED {
    closedLoop-Model-Supported,
    closedLoop-Model-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,
    ...
}
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      RepetitionNumber      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 },
...
}

MessageStructure ::= SEQUENCE (SIZE (1..maxNrOfLevels)) OF
SEQUENCE {
  iE-ID                 ProtocolIE-ID,
  repetitionNumber      RepetitionNumber      OPTIONAL,
  iE-Extensions         ProtocolExtensionContainer { {MessageStructure-ExtIEs} } OPTIONAL,
  ...
}

MessageStructure-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

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-measurementFailure                               ProcedureCode ::= 7
id-measurementInitiation                            ProcedureCode ::= 8
id-measurementReporting                              ProcedureCode ::= 9
id-measurementTermination                           ProcedureCode ::= 10
id-paging                                            ProcedureCode ::= 11
id-physicalChannelReconfiguration                   ProcedureCode ::= 12
id-privateMessage                                   ProcedureCode ::= 13
id-radioLinkAddition                                ProcedureCode ::= 14
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

```

```

-- *****
--
-- Lists
--
-- *****

maxCodeNumComp-1          INTEGER ::= 255
maxRateMatching           INTEGER ::= 256
maxNoCodeGroups           INTEGER ::= 256
maxNoOfDSCHs              INTEGER ::= 10
maxNoOfRB                 INTEGER ::= 32
maxNoOfUSCHs              INTEGER ::= 10
maxNoTFCIGroups           INTEGER ::= 256
maxNrOfTFCs               INTEGER ::= 1024
maxNrOfTFs                INTEGER ::= 32
maxNrOfCCTrCHs            INTEGER ::= 16
maxNrOfDCHs               INTEGER ::= 128
maxNrOfDL-Codes           INTEGER ::= 8
maxNrOfDPCHs              INTEGER ::= 240
maxNrOfErrors              INTEGER ::= 256
maxNrOfMACcshSDU-Length   INTEGER ::= 16
maxNrOfPoints              INTEGER ::= 15
maxNrOfRLs                 INTEGER ::= 16
maxNrOfRLSets             INTEGER ::= maxNrOfRLs
maxNrOfRLs-1              INTEGER ::= 15 -- maxNrOfRLs - 1
maxNrOfRLs-2              INTEGER ::= 14 -- maxNrOfRLs - 2
maxNrOfULTs                INTEGER ::= 15
maxNrOfDLTs                INTEGER ::= 15
maxRNCinURA-1            INTEGER ::= 15
maxTTI-Count              INTEGER ::= 4
maxCTFC                   INTEGER ::= 16777215
maxNrOfNeighbouringRNCs   INTEGER ::= 10
maxNrOfFDDNeighboursPerRNC INTEGER ::= 256
maxNrOfGSMNeighboursPerRNC INTEGER ::= 256
maxNrOfTDDNeighboursPerRNC INTEGER ::= 256
maxFACHCountPlus1         INTEGER ::= 10
maxIBSEG                   INTEGER ::= 16
maxTFCI1Combs              INTEGER ::= 512
maxTFCI2Combs              INTEGER ::= 1024
maxTFCI2Combs-1           INTEGER ::= 1023
maxTGPS                    INTEGER ::= 6
maxNrOfTS                  INTEGER ::= 15
maxNrOfLevels              INTEGER ::= 256

-- *****
--
-- IEs
--
-- *****

id-AllowedQueuingTime     ProtocolIE-ID ::= 4
id-BindingID               ProtocolIE-ID ::= 5
id-C-ID                    ProtocolIE-ID ::= 6

```

id-C-RNTI	ProtocolIE-ID ::= 7
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-CriticalityDiagnostics	ProtocolIE-ID ::= 20
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-DL-CCTrCH-InformationAddItem-RL-ReconfPrepTDD	ProtocolIE-ID ::= 44
id-DL-CCTrCH-InformationListItem-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-InformationListItem-PhyChReconfRqstTDD	ProtocolIE-ID ::= 48
id-DL-CCTrCH-InformationListItem-RL-AdditionRspTDD	ProtocolIE-ID ::= 49
id-DL-CCTrCH-InformationListItem-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-DLReferencePower	ProtocolIE-ID ::= 67
id-DLReferencePowerList-DL-PC-Rqst	ProtocolIE-ID ::= 68
id-DL-ReferencePowerInformation-DL-PC-Rqst	ProtocolIE-ID ::= 69
id-DRXCycleLengthCoefficient	ProtocolIE-ID ::= 70
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-IMSI	ProtocolIE-ID ::= 84
id-L3-Information	ProtocolIE-ID ::= 85
id-AdjustmentPeriod	ProtocolIE-ID ::= 90
id-MaxAdjustmentStep	ProtocolIE-ID ::= 91
id-MeasurementFilterCoefficient	ProtocolIE-ID ::= 92
id-MeasurementID	ProtocolIE-ID ::= 93
<u>id-MessageStructure</u>	<u>ProtocolIE-ID ::= 57</u>
id-Neighbouring-GSM-CellInformation	ProtocolIE-ID ::= 13

id-Neighbouring-UMTS-CellInformationItem	ProtocolIE-ID ::= 95
id-PagingArea-PagingRqst	ProtocolIE-ID ::= 102
id-FACH-FlowControlInformation	ProtocolIE-ID ::= 103
id-PowerAdjustmentType	ProtocolIE-ID ::= 107
id-ProcedureScope-DL-PC-Rqst	ProtocolIE-ID ::= 108
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-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-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-InformationResponseList-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
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id-Reporting-Object-RL-FailureInd	ProtocolIE-ID ::= 153
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id-SuccessfulRL-InformationResponseList-RL-AdditionFailureFDD	ProtocolIE-ID ::= 161
id-SuccessfulRL-InformationResponseList-RL-SetupFailureFDD	ProtocolIE-ID ::= 162
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id-TransportBearerRequestIndicator	ProtocolIE-ID ::= 164
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id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD	ProtocolIE-ID ::= 169
id-UL-CCTrCH-InformationAddList-RL-ReconfRqstTDD	ProtocolIE-ID ::= 170
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
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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-DSCHsToBeAddedOrModified-FDD	ProtocolIE-ID ::= 229
id-DSCHToBeAddedOrModifiedList-RL-ReconfReadyTDD	ProtocolIE-ID ::= 230
id-GA-AccessPointPosition	ProtocolIE-ID ::= 231
id-GA-Cell	ProtocolIE-ID ::= 232
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-ClosedLoopModel1-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-ISCPList-DL-PC-Rqst-TDD	ProtocolIE-ID ::= 37

END

CHANGE REQUEST

⌘ **25.423 CR 332** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Handling of Not Comprehended and Missing IEs Leading to Incapability to Compile a Response Message

Source: ⌘ R-WG3

Work item code: ⌘ **Date:** ⌘ February, 2001

Category: ⌘ **F** **Release:** ⌘ R99

Use one of the following categories:

- F** (essential 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)

Reason for change: ⌘ In the current RNSAP specification it is not 100% clear what happens to a procedure in the cases of not comprehending or missing certain IEs (marked with criticality reject or notify) if the information received is not sufficient to include all the mandatory contents of the response message. In this case it would consequently not be possible to use the procedure messages to report the non-comprehended or missing IE.

Summary of change: ⌘ The CR clarifies that if the information received is not sufficient to include all the mandatory contents of the response message in the cases of
 a) not comprehending or missing certain IEs (marked with criticality reject or notify) or
 b) a falsely constructed message, e.g. where duplication of IEs leads to confusion (e.g. due to duplicated IEs having different values)
 then the node shall terminate the procedure and initiate the Error Indication procedure.

Consequences if not approved: ⌘ If this CR is not approved the above described unclear description will remain in the specification.

 Backward compatibility:
 This CR is backward compatible with the only "reasonable" use of the previous version of RNSAP. However, different interpretation may exist causing inter-working problems.

Clauses affected: ⌘ 10.

Other specs affected: ⌘ Other core specifications ⌘
 Test specifications
 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

10 Handling of Unknown, Unforeseen and Erroneous Protocol Data

10.1 General

Protocol Error cases can be divided into three classes:

1. Transfer Syntax Error;
2. Abstract Syntax Error;
3. Logical Error.

Protocol errors can occur in the following functions within a receiving node.

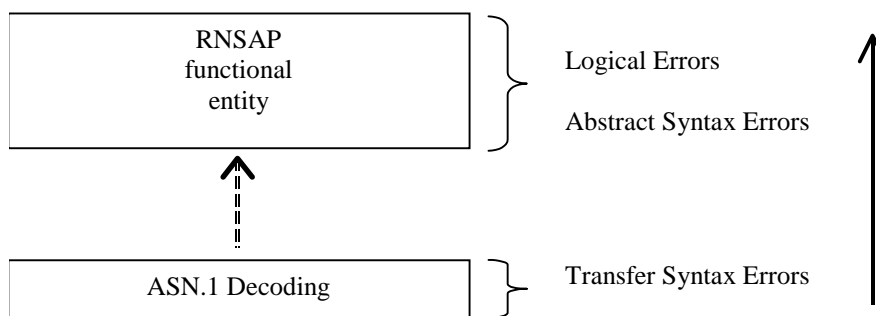


Figure 34: Protocol Errors in RNSAP

10.2 Transfer Syntax Error

A Transfer Syntax Error occurs when the receiver is not able to decode the received physical message. Transfer syntax errors are always detected in the process of ASN.1 decoding. If a Transfer Syntax Error occurs, the receiver should initiate Error Indication procedure with appropriate cause value for the Transfer Syntax protocol error.

Examples for Transfer Syntax Errors are:

- violation of value ranges in ASN.1 definition of messages. e.g.: If an IE has a defined value range of 0 to 10 (ASN.1: INTEGER (0..10)), and 12 will be received, then this will be treated as a transfer syntax error;
- violation in list element constraints. e.g.: If a list is defined as containing 1 to 10 elements, and 12 elements will be received, then this case will be handled as a transfer syntax error;
- missing mandatory elements in ASN.1 SEQUENCE definitions (as sent by the originator of the message);
- wrong order of elements in ASN.1 SEQUENCE definitions (as sent by the originator of the message).

10.3 Abstract Syntax Error

10.3.1 General

An Abstract Syntax Error occurs when the receiving functional RNSAP entity:

1. receives IEs or IE groups that cannot be understood (unknown IE id);
2. receives IEs for which the logical range is violated (e.g.: ASN.1 definition: 0 to 15, the logical range is 0 to 10 (values 11 to 15 are undefined), and 12 will be received; this case will be handled as an abstract syntax error using criticality information sent by the originator of the message);

- 3 does not receive IEs or IE groups but according to the specified presence of the concerning object, the IEs or IE groups should have been present in the received message
- 4 receives IEs or IE groups that are defined to be part of that message in wrong order or with too many occurrences of the same IE or IE group

Cases 1 and 2 (not comprehended IE/IE group) are handled based on received Criticality information. Case 3 (missing IE/IE group) is handled based on Criticality information and Presence information for the missing IE/IE group specified in the version of the specification used by the receiver. Case 4 (IEs or IE groups in wrong order or with too many occurrences) results in rejecting the procedure.

If an Abstract Syntax Error occurs, the receiver shall read the remaining message and shall then for each detected Abstract Syntax Error that belong to cases 1-3 act according to the Criticality Information and Presence Information for the IE/IE group due to which Abstract Syntax Error occurred in accordance with subclauses 10.3.4 and 10.3.5. The handling of case 4 is specified in subclause 10.3.7.

10.3.2 Criticality Information

In the RNSAP messages there is criticality information set for individual IEs and/or IE groups. This criticality information instructs the receiver how to act when receiving an IE or an IE group that is not comprehended, i.e. the entire item (IE or IE group) which is not (fully or partially) comprehended shall be treated in accordance with its own criticality information as specified in subclause 10.3.4.

In addition, the criticality information is used in case of the missing IE/IE group abstract syntax error (see subclause 10.3.5).

The receiving node shall take different actions depending on the value of the Criticality Information. The three possible values of the Criticality Information for an IE/IE group are:

1. Reject IE;
2. Ignore IE and Notify Sender;
3. Ignore IE.

The following rules restrict when a receiving entity may consider an IE, an IE group or an EP not comprehended (not implemented), and when action based on criticality information is applicable:

1. IE or IE group: When one new or modified IE or IE group is implemented for one EP from a standard version, then other new or modified IEs or IE groups specified for that EP in that standard version shall be considered comprehended by a receiving entity (some may still remain unsupported).

Note that this restriction is not applicable to a sending entity for constructing messages.

2. EP: The comprehension of different EPs within a standard version or between different standard versions is not mandated. Any EP that is not supported may be considered not comprehended, even if another EP from that standard version is comprehended, and action based on criticality shall be applied.

10.3.3 Presence Information

For many IEs/IE groups which are optional according to the ASN.1 transfer syntax, RNSAP specifies separately if the presence of these IEs/IE groups is optional or mandatory with respect to RNS application by means of the presence field of the concerning object of class RNSAP-PROTOCOL-IES, RNSAP-PROTOCOL-IES-PAIR, RNSAP-PROTOCOL-EXTENSION or RNSAP-PRIVATE-IES.

The presence field of the indicated classes supports three values:

1. Optional;
2. Conditional;
3. Mandatory.

If an IE/IE group is not included in a received message and the presence of the IE/IE group is mandatory or the presence is conditional and the condition is true according to the version of the specification used by the receiver, an abstract syntax error occurs due to a missing IE/IE group.

10.3.4 Not Comprehended IE/IE group

10.3.4.1 Procedure ID

The receiving node shall treat the different types of received criticality information of the *Procedure ID* according to the following:

Reject IE:

- if a message is received with a *Procedure ID* marked with "*Reject IE*" which the receiving node does not comprehend, the receiving node shall reject the procedure using the Error Indication procedure.

Ignore IE and Notify Sender:

- if a message is received with a *Procedure ID* marked with "*Ignore IE and Notify Sender*" which the receiving node does not comprehend, the receiving node shall ignore the procedure and initiate the Error Indication procedure.

Ignore IE:

- if a message is received with a *Procedure ID* marked with "*Ignore IE*" which the receiving node does not comprehend, the receiving node shall ignore the procedure.

When using the Error Indication procedure to reject a procedure or to report an ignored procedure it shall include the *Procedure ID IE*, the *Triggering Message IE*, and the *Procedure Criticality IE* in the *Criticality Diagnostics IE*.

10.3.4.2 IEs other than the Procedure ID

The receiving node shall treat the different types of received criticality information of an IE/IE group other than the *Procedure ID* according to the following:

Reject IE:

- if a message *initiating* a procedure is received containing one or more IEs/IE groups marked with "*Reject IE*" which the receiving node does not comprehend; none of the functional requests of the message shall be executed. The receiving node shall reject the procedure and report the rejection of one or more IEs/IE groups using the message normally used to report unsuccessful outcome of the procedure. In case the information received in the initiating message was insufficient to determine a value for all IEs that are required to be present in the message used to report the unsuccessful outcome of the procedure, the receiving node shall instead terminate the procedure and initiate the Error Indication procedure.
- if a message *initiating* a procedure that does not have a message to report unsuccessful outcome is received containing one or more IEs/IE groups marked with "*Reject IE*" which the receiving node does not comprehend, the receiving node shall initiate the Error Indication procedure.
- if a *response* message is received containing one or more IEs/IE groups marked with "*Reject IE*", that the receiving node does not comprehend, the receiving node shall initiate local error handling.

Ignore IE and Notify Sender:

- if a message *initiating* a procedure is received containing one or more IEs/IE groups marked with "*Ignore IE and Notify Sender*" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups, continue with the procedure as if the not comprehended IEs/IE groups were not received (except for the reporting) using the understood IEs/IE groups, and report in the response message of the procedure that one or more IEs/IE groups have been ignored. In case the information received in the initiating message was insufficient to determine a value for all IEs that are required to be present in the response message, the receiving node shall instead terminate the procedure and initiate the Error Indication procedure.
- if a message *initiating* a procedure that does not have a message to report the outcome of the procedure is received containing one or more IEs/IE groups marked with "*Ignore IE and Notify Sender*" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups, continue with the procedure as if the not comprehended IEs/IE groups were not received (except for the reporting) using the understood IEs/IE groups, and initiate the Error Indication procedure to report that one or more IEs/IE groups have been ignored.

- if a *response* message is received containing one or more IEs/IE groups marked with "Ignore IE and Notify Sender" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups and initiate the Error Indication procedure.

Ignore IE:

- if a message *initiating* a procedure is received containing one or more IEs/IE groups marked with "Ignore IE" which the receiving node does not comprehend, the receiving node shall ignore the content of the not comprehended IEs/IE groups and continue with the procedure as if the not comprehended IEs/IE groups were not received using the understood IEs/IE groups.

When reporting not comprehended IEs/IE groups marked with "Reject IE" or "Ignore IE and Notify Sender" using a response message defined for the procedure, the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group. The *Repetition Number* IE shall be included in the *Information Element Criticality Diagnostics* IE if the reported IE/IE group was part of a "SEQUENCE OF" definition.

When reporting not comprehended IEs/IE groups marked with "Reject IE" or "Ignore IE and Notify Sender" using the Error Indication procedure, the *Procedure ID* IE, the *Triggering Message* IE, *Procedure Criticality* IE, the *Transaction Id* IE, and the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group. The *Repetition Number* IE shall be included in the *Information Element Criticality Diagnostics* IE if the reported IE/IE group was part of a "SEQUENCE OF" definition.

10.3.5 Missing IE or IE group

The receiving node shall treat the missing IE/IE group according to the criticality information for the missing IE/IE group in the received message specified in the version of this specification used by the receiver:

Reject IE:

- if a received message *initiating* a procedure is missing one or more IEs/IE groups with specified criticality "Reject IE"; none of the functional requests of the message shall be executed. The receiving node shall reject the procedure and report the missing IEs/IE groups using the message normally used to report unsuccessful outcome of the procedure. In case the information received in the initiating message was insufficient to determine a value for all IEs that are required to be present in the message used to report the unsuccessful outcome of the procedure, the receiving node shall instead terminate the procedure and initiate the Error Indication procedure.
- if a received message *initiating* a procedure that does not have a message to report unsuccessful outcome is missing one or more IEs/IE groups with specified criticality "Reject IE", the receiving node shall initiate the Error Indication procedure.
- if a received *response* message is missing one or more IEs/IE groups with specified criticality "Reject IE", the receiving node shall initiate local error handling.

Ignore IE and Notify Sender:

- if a received message *initiating* a procedure is missing one or more IEs/IE groups with specified criticality "Ignore IE and Notify Sender", the receiving node shall continue with the procedure based on the other IEs/IE groups present in the message and report in the response message of the procedure that one or more IEs/IE groups were missing. In case the information received in the initiating message was insufficient to determine a value for all IEs that are required to be present in the response message, the receiving node shall instead terminate the procedure and initiate the Error Indication procedure.
- if a received message *initiating* a procedure that does not have a message to report the outcome of the procedure is missing one or more IEs/IE groups with specified criticality "Ignore IE and Notify Sender", the receiving node shall continue with the procedure based on the other IEs/IE groups present in the message and initiate the Error Indication procedure to report that one or more IEs/IE groups were missing.
- if a received *response* message is missing one or more IEs/IE groups with specified criticality "Ignore IE and Notify Sender", the receiving node shall initiate the Error Indication procedure.

Ignore IE:

- if a received message *initiating* a procedure is missing one or more IEs/IE groups with specified criticality "Ignore IE", the receiving node shall continue with the procedure based on the other IEs/IE groups present in the message.

When reporting missing IEs/IE groups with specified criticality "Reject IE" or "Ignore IE and Notify Sender" using a response message defined for the procedure, the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group.

When reporting missing IEs/IE groups with specified criticality "Reject IE" or "Ignore IE and Notify Sender" using the Error Indication procedure, the *Procedure ID* IE, the *Triggering Message* IE, *Procedure Criticality* IE, the *Transaction Id* IE, and the *Information Element Criticality Diagnostics* IE shall be included in the *Criticality Diagnostics* IE for each reported IE/IE group.

10.3.6 IEs or IE groups received in wrong order or with too many occurrences

If a message with IEs or IE groups in wrong order or with too many occurrences is received, the receiving node shall behave according to the following:

- If a message *initiating* a procedure is received containing IEs or IE groups in wrong order or with too many occurrences, none of the functional requests of the message shall be executed. The receiving node shall reject the procedure and report the cause value "Abstract Syntax Error (Falsely Constructed Message)" using the message normally used to report unsuccessful outcome of the procedure. In case the information received in the initiating message was insufficient to determine a value for all IEs that are required to be present in the message used to report the unsuccessful outcome of the procedure, the receiving node shall instead terminate the procedure and initiate the Error Indication procedure.
- If a message *initiating* a procedure that does not have a message to report unsuccessful outcome is received containing IEs or IE groups in wrong order or with too many occurrences, the receiving node shall initiate the Error Indication procedure, and use cause value "Abstract Syntax Error (Falsely Constructed Message)".
- If a *response* message is received containing IEs or IE groups in wrong order or with too many occurrences, the receiving node shall initiate local error handling.

10.4 Logical Error

Logical error situations occur when a message is comprehended correctly, but the information contained within the message is not valid (i.e. semantic error), or describes a procedure which is not compatible with the state of the receiver. In these conditions, the following behaviour shall be performed (unless otherwise specified) as defined by the class of the elementary procedure, irrespective of the criticality information of the IEs/IE groups containing the erroneous values.

Class 1:

Where the logical error occurs in a request message of a class 1 procedure, and the procedure has a failure message, the failure message shall be sent with an appropriate cause value. Typical cause values are:

Protocol Causes:

1. Semantic Error;
2. Message not Compatible with Receiver State.

Where the logical error is contained in a request message of a class 1 procedure, and the procedure does not have a failure message, the Error Indication procedure shall be initiated with an appropriate cause value.

Where the logical error exists in a response message of a class 1 procedure, local error handling shall be initiated.

Class 2:

Where the logical error occurs in a message of a class 2 procedure, the Error Indication procedure shall be initiated with an appropriate cause value.

CHANGE REQUEST

⌘ **25.423 CR 334** ⌘ rev **1** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Merged Clarifications to the Measurement Procedures		
Source:	⌘ R-WG3		
Work item code:	⌘	Date:	⌘ February, 2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> 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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change: ⌘ Both CR301r1 (Clarification of operation of Measurement Initiation) and CR318r1 (Forward Compatibility of RNSAP with regards to Dedicated Measurements) clarifies the measurement procedures. To avoid conflicts at CR implementation, this CR merges the two CRs.

Summary of change: ⌘

CR301r1:
 Correct the procedure text to clarify that a measurement report is sent periodically when first threshold conditions are met, till second conditions met for event types E and F.

CR318r2:
 The CR clarifies that when referring to measurements on dedicate resources it actually is dedicated measurements by:

- a) clarify references to measurement values to mean dedicated measurements values,
- b) clarify references to “measurement procedures” to mean dedicated “measurement procedures”, and
- c) in cases where referring to “measurement”-only could be ambiguous it is clarified to be dedicated measurement.

As a consequence to the clarification “b)” above the *Message Type* IE and the ASN.1 have been updated accordingly.

Further more, In addition to the above clarification the following have been clarified:

- For event type C “rises more than ” is replaced by “rises by an amount greater than”.
- For event type D “falls more than ” is replaced by “falls by an amount greater than”.
- “Measurement request” is clarified to be “DEDICATED MEASUREMENT INITIATION REQUEST message” in two places.
- The reference to “Measurement not available shall be reported ” is clarified to

		<p>be "Measurement not available shall be reported <u>in the <i>Measurement Value Information IE</i></u>".</p> <ul style="list-style-type: none"> • The Measurement Id is clarified to be unique for a <u>dedicated</u> measurement within a UE Context. • The reference to "accuracy requirement" in the Measurement Reporting procedure is clarified to be the accuracy requirement specified in 25.123 and 25.133.
Consequences if not approved:	⌘	<p>If this CR is not approved the above described unclear description will remain in the specification.</p> <p>Backward compatibility: This CR is backward compatible with the previous version of RNSAP.</p>

Clauses affected:	⌘	7, 8.1, 8.3.11, 8.3.12, 8.3.13, 8.3.14, 9.2.1.37, 9.2.1.40, 9.3.2, and 9.3.6.												
Other specs affected:	⌘	<table border="0"> <tr> <td><input type="checkbox"/></td> <td>Other core specifications</td> <td>⌘</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>Test specifications</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>O&M Specifications</td> <td></td> <td></td> </tr> </table>	<input type="checkbox"/>	Other core specifications	⌘		<input type="checkbox"/>	Test specifications			<input type="checkbox"/>	O&M Specifications		
<input type="checkbox"/>	Other core specifications	⌘												
<input type="checkbox"/>	Test specifications													
<input type="checkbox"/>	O&M Specifications													
Other comments:	⌘	If approved this CR replaces the CRs 301r1 and 318r2.												

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

7 Functions of RNSAP

The RNSAP protocol has 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;
- 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;
- Paging. This function allows the SRNC to page a UE in a URA 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 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.

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-emption
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) <u>Dedicated</u> Measurement Initiation b) <u>Dedicated</u> Measurement Reporting c) <u>Dedicated</u> Measurement Termination d) <u>Dedicated</u> Measurement Failure
DL Power Drifting Correction [FDD]	Downlink Power Control
CCCH Signalling Transfer	a) 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
DL Power Timeslot Correction [TDD]	Downlink Power Timeslot Control

8.1 Elementary Procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

Table 2: Class 1

Elementary Procedure	Initiating Message	Successful Outcome	Unsuccessful Outcome	
		Response message	Response message	Timer
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	
<u>Dedicated</u> 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	

The need for Timers will be defined on a per procedure basis. The content of this column is thus FFS.

Table 3: Class 2

Elementary Procedure	Initiating Message
Uplink Signalling Transfer	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
<u>Dedicated</u> Measurement Reporting	DEDICATED MEASUREMENT REPORT
<u>Dedicated</u> Measurement Termination	DEDICATED MEASUREMENT TERMINATION REQUEST
<u>Dedicated</u> 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

8.3.11 Dedicated Measurement Initiation

8.3.11.1 General

This procedure is used by an SRNS to request the initiation of dedicated measurements in a DRNS.

This procedure shall use the signalling bearer connection for the relevant UE context.

The Dedicated Measurement Initiation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.11.2 Successful Operation

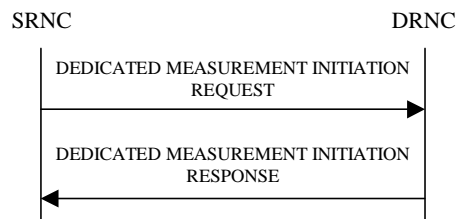


Figure 20: Dedicated Measurement Initiation procedure, Successful Operation

The procedure is initiated with a DEDICATED MEASUREMENT INITIATION REQUEST message sent from the SRNC to the DRNC.

Upon reception, the DRNC shall initiate the requested dedicated measurement according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.

If the *Dedicated Measurement Object Type* IE is set to "RL", measurement results shall be reported for all the indicated Radio Links.

[FDD - If the *Dedicated Measurement Object Type* IE is set to "RLS", measurement results shall be reported for all the indicated Radio Link Sets.]

If the *Dedicated Measurement Object Type* IE is set to "ALL RL", measurement results shall be reported for all current and future Radio Links within the UE Context.

[FDD - If the *Dedicated Measurement Object Type* IE is set to "ALL RLS", measurement results shall be reported for all the existing and future Radio Link Sets within the UE Context.]

If the *CFN Reporting Indicator* IE is set to "FN Reporting Required", the *CFN* IE shall be included in the measurement report or in the measurement response, the latter only in the case the *Report Characteristics* IE is set to 'On-Demand'.

The reported CFN shall be the CFN at the time when the dedicated measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [26].

If the *CFN* IE is provided, it indicates the frame for which the first measurement shall be provided. The provided measurement value shall be the one reported by the layer 3 filter referred to as point C in the measurement model [26].

Report characteristics

The *Report Characteristics* IE indicates how the reporting of the dedicated measurement shall be performed.

If the *Report Characteristics* IE is set to 'On-Demand', the DRNS shall report the measurement result immediately.

If the *Report Characteristics* IE is set to 'Periodic', the DRNS shall periodically initiate ~~a~~the Dedicated Measurement Report procedure for this measurement, with the requested report periodicity.

If the *Report Characteristics* IE is set to 'Event A', the DRNS shall initiate ~~a~~the Dedicated Measurement Reporting procedure when the measured entity rises above the requested threshold and stays there for the requested hysteresis time. If no hysteresis time is given, the DRNC shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to 'Event B', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity falls below the requested threshold and stays there for the requested hysteresis time. If no hysteresis time is given, the DRNC shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to 'Event C', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity rises ~~by an amount greater more~~ than the requested threshold within the requested time.

If the *Report Characteristics* IE is set to 'Event D', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity falls ~~by an amount greater more~~ than the requested threshold within the requested time.

If the *Report Characteristics* IE is set to 'Event E', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity rises above the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). ~~The~~ DRNS shall also initiate ~~a-the Dedicated~~ Measurement Reporting procedure ~~periodically~~. ~~If the conditions for Report A have been met and when~~ the measured entity falls below the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time', ~~the DRNS shall initiate the Measurement Reporting procedure~~ (Report B) ~~as well as terminating any corresponding periodic reporting~~. ~~If the Report Periodicity IE is provided, the DRNS shall initiate Measurement Reporting procedures periodically, with the requested frequency, between Report A and Report B.~~ If 'Measurement Threshold 2' is not present, the DRNS shall use 'Measurement Threshold 1' instead. If no 'Measurement Hysteresis Time' is provided, the DRNC shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is set to 'Event F', the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure when the measured entity falls below the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). ~~The~~ DRNS shall also initiate ~~a-the Dedicated~~ Measurement Reporting procedure ~~periodically~~. ~~If the conditions for Report A have been met and when~~ the measured entity rises above the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time', ~~the DRNS shall initiate the Measurement Reporting procedure~~ (Report B) ~~as well as terminating any corresponding periodic reporting~~. ~~If the Report Periodicity IE is provided, the DRNS shall initiate Measurement Reporting procedures periodically, with the requested frequency, between Report A and Report B.~~ If 'Measurement Threshold 2' is not present, the DRNS shall use 'Measurement Threshold 1' instead. If no 'Measurement Hysteresis Time' is provided, the DRNC shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is not set to 'On-Demand', the DRNS is required to perform reporting for a dedicated measurement object, in accordance with the conditions provided in the DEDICATED MEASUREMENT INITIATION REQUEST message, as long as the object exists. If no dedicated measurement object(s) for which a measurement is defined exists any more the DRNS shall terminate the measurement locally without reporting this to the SRNC.

If at the start of the measurement, the reporting criteria are fulfilled for any of Event A, Event B, Event E or Event F, the DRNS shall initiate ~~a-the Dedicated~~ Measurement Reporting procedure immediately, and then continue with the measurements as specified in the DEDICATED MEASUREMENT INITIATION REQUEST message.

Higher layer filtering

The *Measurement Filter Coefficient* IE indicates how filtering of the ~~dedicated~~ measurement values shall be performed before measurement event evaluation and reporting.

The averaging shall be performed according to the following formula.

$$F_n = (1 - a) \cdot F_{n-1} + a \cdot M_n$$

The variables in the formula are defined as follows:

F_n is the updated filtered measurement result

F_{n-1} is the old filtered measurement result

M_n is the latest received measurement result from physical layer measurements

$a = 1/2^{(k/2)}$, where k is the parameter received in the *Measurement Filter Coefficient* IE. If the *Measurement Filter Coefficient* IE is not present, a shall be set to 1 (no filtering)

In order to initialise the averaging filter, F_0 is set to M_1 when the first measurement result from the physical layer measurement is received.

Response message

If the DRNS was able to initiate the measurement requested by the SRNS it shall respond with the DEDICATED MEASUREMENT INITIATION RESPONSE message. The message shall include the same Measurement Id that was used in the DEDICATED MEASUREMENT INITIATION REQUEST message~~measurement request~~.

Only in the case when the *Report Characteristics* IE is set to "On-Demand", the DEDICATED MEASUREMENT INITIATION RESPONSE message shall contain the measurement result. In this case also the *Dedicated Measurement Object* IE shall be included if it was included in the DEDICATED MEASUREMENT INITIATION REQUEST~~request~~ message.

8.3.11.3 Unsuccessful Operation

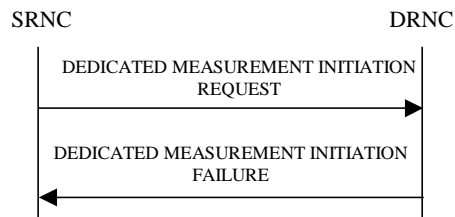


Figure 21: Dedicated Measurement Initiation procedure, Unsuccessful Operation

If the Dedicated Measurement Type received in the *Dedicated Measurement Type* IE is not defined in ref. [11] or [14] to be measured on the Dedicated Measurement Object Type received in the *Dedicated Measurement Object Type* IE in the DEDICATED MEASUREMENT INITIATION REQUEST message the DRNS shall regard the Dedicated Measurement Initiation procedure as failed.

If the requested measurement can not be initiated, the DRNC shall send a DEDICATED MEASUREMENT INITIATION FAILURE message. The message shall include the same Measurement Id that was used in the DEDICATED MEASUREMENT INITIATION REQUEST message and the *Cause* IE set to an appropriate value.

Typical cause values are:

Radio Network Layer Causes:

- Measurement not Supported For The Object
- Measurement Temporarily not Available

Miscellaneous Causes:

- Control Processing Overload
- HW Failure

8.3.11.4 Abnormal Conditions

-

8.3.12 Dedicated Measurements Reporting

8.3.12.1 General

This procedure is used by the DRNS to report results of measurements requested by the SRNS with the Dedicated Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE context.

The DRNC may initiate the Dedicated Measurement Reporting procedure at any time after establishing a Radio Link.

8.3.12.2 Successful Operation



Figure 22: Dedicated Measurement Reporting procedure, Successful Operation

If the requested measurement reporting criteria are met, the DRNS shall initiate ~~a~~-the Dedicated Measurement Reporting procedure. If the measurement was initiated (by the Dedicated Measurement Initiation procedure) for multiple dedicated measurement objects, the DRNC may include dedicated measurement values in the *Dedicated Measurement Value Information IE* for multiple objects in the DEDICATED MEASUREMENT REPORT message. Unless specified below, the meaning of the parameters are given in other specifications.

The *Dedicated Measurement Id* IE shall be set to the Dedicated Measurement Id provided by the SRNC when initiating the measurement with the Dedicated Measurement Initiation procedure.

If the achieved measurement accuracy does not fulfil the given accuracy requirement specified in ref. [23] and [24], the Measurement not available shall be reported in the *Dedicated Measurement Value Information IE*.

8.3.12.3 Abnormal Conditions

-

8.3.13 Dedicated Measurement Termination

8.3.13.1 General

This procedure is used by the SRNS to terminate a measurement previously requested by the Dedicated Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE context.

The Dedicated Measurement Termination procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.13.2 Successful Operation

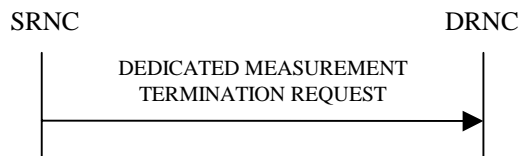


Figure 23: Dedicated Measurement Termination procedure, Successful Operation

This procedure is initiated with a DEDICATED MEASUREMENT TERMINATION REQUEST message, sent from the SRNC to the DRNC.

Upon reception, the DRNS shall terminate reporting of measurements corresponding to the received Dedicated Measurement Id.

8.3.13.3 Abnormal Conditions

-

8.3.14 Dedicated Measurement Failure

8.3.14.1 General

This procedure is used by the DRNS to notify the SRNS that a measurement previously requested by the Dedicated Measurement Initiation procedure can no longer be reported.

This procedure shall use the signalling bearer connection for the relevant UE context.

The DRNC may initiate the Dedicated Measurement Failure procedure at any time after establishing a Radio Link.

8.3.14.2 Successful Operation

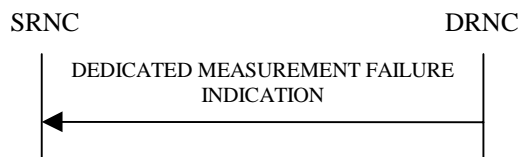


Figure 24: Dedicated Measurement Failure procedure, Successful Operation

This procedure is initiated with a DEDICATED MEASUREMENT FAILURE INDICATION message, sent from the DRNC to the SRNC, to inform the SRNC that a previously requested dedicated measurement can no longer be reported. The DRNC has locally terminated the indicated measurement.

Typical cause values are:

Miscellaneous Causes:

- Control Processing Overload
- HW Failure
- O&M Intervention

8.3.14.3 Abnormal Conditions

-

9.2.1.37 Measurement ID

The Measurement Id uniquely identifies ~~any a dedicated~~ measurement ~~on dedicated resources requested over RNSAP~~ within a UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement ID			INTEGER(0 .. 2 ²⁰ -1)	

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
Message Type				
>Procedure ID		1		
>>Procedure Code	M		ENUMERATED (RL Setup, RL Addition, RL Deletion, Synchronised RL Reconfiguration Preparation, Synchronised RL Reconfiguration Commit, Synchronised RL Reconfiguration Cancel, Unsynchronised RL Reconfiguration Request, RL Failure, RL Restoration, DL Power Control, DL Power Timeslot Control, Physical Channel Reconfiguration, UL Signalling Transfer, DL Signalling Transfer, Relocation Commit, Paging, <u>Dedicated</u> Measurement Initiation, <u>Dedicated</u> Measurement Reporting, <u>Dedicated</u> Measurement Termination, <u>Dedicated</u> Measurement Failure, Common Transport Channel Resources Initiation, Common Transport Channel Resources Release, Compressed Mode Command, Error Indication, ...)	
>>Ddmode	M		ENUMERATED (FDD, TDD, Common, ...)	Common = common to FDD and TDD.
>Type of Message	M		ENUMERATED (Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome)	

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

    CommonTransportChannelResourcesFailure,
    CommonTransportChannelResourcesRequest,
    CommonTransportChannelResourcesReleaseRequest,
    CommonTransportChannelResourcesResponseFDD,
    CommonTransportChannelResourcesResponseTDD,
    CompressedModeCommand,
    DedicatedMeasurementFailureIndication,
    DedicatedMeasurementInitiationFailure,
    DedicatedMeasurementInitiationRequest,
    DedicatedMeasurementInitiationResponse,
    DedicatedMeasurementReport,
    DedicatedMeasurementTerminationRequest,
    DL-PowerControlRequest,
    DL-PowerTimeslotControlRequest,
    DownlinkSignallingTransferRequest,
    ErrorIndication,
    PagingRequest,
    PhysicalChannelReconfigurationCommand,
    PhysicalChannelReconfigurationFailure,
    PhysicalChannelReconfigurationRequestFDD,
    PhysicalChannelReconfigurationRequestTDD,
    PrivateMessage,
```

RadioLinkAdditionFailureFDD,
RadioLinkAdditionFailureTDD,
RadioLinkAdditionRequestFDD,
RadioLinkAdditionRequestTDD,
RadioLinkAdditionResponseFDD,
RadioLinkAdditionResponseTDD,
RadioLinkDeletionRequest,
RadioLinkDeletionResponse,
RadioLinkFailureIndication,
RadioLinkPreemptionRequiredIndication,
RadioLinkReconfigurationCancel,
RadioLinkReconfigurationCommit,
RadioLinkReconfigurationFailure,
RadioLinkReconfigurationPrepareFDD,
RadioLinkReconfigurationPrepareTDD,
RadioLinkReconfigurationReadyFDD,
RadioLinkReconfigurationReadyTDD,
RadioLinkReconfigurationRequestFDD,
RadioLinkReconfigurationRequestTDD,
RadioLinkReconfigurationResponseFDD,
RadioLinkReconfigurationResponseTDD,
RadioLinkRestoreIndication,
RadioLinkSetupFailureFDD,
RadioLinkSetupFailureTDD,
RadioLinkSetupRequestFDD,
RadioLinkSetupRequestTDD,
RadioLinkSetupResponseFDD,
RadioLinkSetupResponseTDD,
RelocationCommit,
UplinkSignallingTransferIndicationFDD,
UplinkSignallingTransferIndicationTDD

FROM RNSAP-PDU-Contents

id-commonTransportChannelResourcesInitialisation,
id-commonTransportChannelResourcesRelease,
id-compressedModeCommand,
id-downlinkPowerControl,
id-downlinkSignallingTransfer,
id-downlinkPowerTimeslotControl,
id-errorIndication,
id-dedicatedmMeasurementFailure,
id-dedicatedmMeasurementInitiation,
id-dedicatedmMeasurementReporting,
id-dedicatedmMeasurementTermination,
id-paging,
id-physicalChannelReconfiguration,
id-privateMessage,
id-radioLinkAddition,
id-radioLinkDeletion,
id-radioLinkFailure,
id-radioLinkPreemption,


```

id-radioLinkRestoration,
id-radioLinkSetup,
id-relocationCommit,
id-synchronisedRadioLinkReconfigurationCancellation,
id-synchronisedRadioLinkReconfigurationCommit,
id-synchronisedRadioLinkReconfigurationPreparation,
id-unsynchronisedRadioLinkReconfiguration,
id-uplinkSignallingTransfer
FROM RNSAP-Constants;

```

<Editor's note: Parts of the module is skipped.>

```

-- *****
--
-- 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
    ...
}

RNSAP-ELEMENTARY-PROCEDURES-CLASS-2 RNSAP-ELEMENTARY-PROCEDURE ::= {
    uplinkSignallingTransferFDD             |
    uplinkSignallingTransferTDD             |
    downlinkSignallingTransfer              |
    relocationCommit                        |
    paging                                  |
    synchronisedRadioLinkReconfigurationCommit
    synchronisedRadioLinkReconfigurationCancellation
}

```

```

radioLinkFailure
radioLinkPreemption
radioLinkRestoration
dedicated#MeasurementReporting
dedicated#MeasurementTermination
dedicated#MeasurementFailure
downlinkPowerControlFDD
downlinkPowerTimeslotControl
compressedModeCommandFDD
commonTransportChannelResourcesRelease
errorIndication
privateMessage
...
}

```

<Editor's note: Parts of the module is skipped.>

```

dedicated#MeasurementInitiation RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementInitiationRequest
  SUCCESSFUL OUTCOME   DedicatedMeasurementInitiationResponse
  UNSUCCESSFUL OUTCOME DedicatedMeasurementInitiationFailure
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementInitiation, ddMode common }
  CRITICALITY          reject
}

```

<Editor's note: Parts of the module is skipped.>

```

dedicated#MeasurementReporting RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementReport
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementReporting, ddMode common }
  CRITICALITY          ignore
}

```

```

dedicated#MeasurementTermination RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementTerminationRequest
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementTermination, ddMode common }
  CRITICALITY          ignore
}

```

```

dedicated#MeasurementFailure RNSAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE   DedicatedMeasurementFailureIndication
  PROCEDURE ID         { procedureCode id-dedicated#MeasurementFailure, ddMode common }
  CRITICALITY          ignore
}

```

<Editor's note: The rest of the module is skipped.>

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-dedicatedMMMeasurementFailure                    ProcedureCode ::= 7
id-dedicatedMMMeasurementInitiation                 ProcedureCode ::= 8
id-dedicatedMMMeasurementReporting                  ProcedureCode ::= 9
id-dedicatedMMMeasurementTermination                ProcedureCode ::= 10
id-paging                                             ProcedureCode ::= 11
id-physicalChannelReconfiguration                    ProcedureCode ::= 12
id-privateMessage                                    ProcedureCode ::= 13
id-radioLinkAddition                                ProcedureCode ::= 14
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

<Editor's note: The rest of the module is skipped.>

CHANGE REQUEST

⌘ **25.423** **CR 335** ⌘ rev **1** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Introduction of the PC Preamble and SRB Delay IEs.
Source:	⌘ R-WG3
Work item code:	⌘ Date: ⌘ 2001-02-27
Category:	⌘ F Release: ⌘ R99
<i>Use <u>one</u> of the following categories:</i>	
F (essential 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.	
<i>Use <u>one</u> of the following releases:</i>	
2 (GSM Phase 2)	
R96 (Release 1996)	
R97 (Release 1997)	
R98 (Release 1998)	
R99 (Release 1999)	
REL-4 (Release 4)	
REL-5 (Release 5)	

Reason for change:	⌘ The RRC CR718 (Tdoc R2-010585) has introduced two new IEs, i.e. PC Preamble and SRB delay IEs to cope with problems with inner power control and loss of RRC messages (COMPLETE messages such as RB SETUP COMPLETE) while the synchronisation on the Uu interface has not been achieved. R1: The criticality information removed for the two new IEs.
Summary of change:	⌘ The new PC Preamble and SRB delay IEs are introduced in the RADIO LINK SETUP RESPONSE and RADIO LINK ADDITION RESPONSE messages.
Consequences if not approved:	⌘ Misalignment with RAN2 specification and as the result performance deterioration of the power control while acquiring synchronisation on the Uu and delayed response messages due to the RLC retransmission. Additional information: The proposed change is not backwards compatible.

Clauses affected:	⌘ 9.1.4, 9.1.7, 9.2.2.xx(two new IEs), 9.3.3 and 9.3.4.
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ 25.331, CR718 (Tdoc R2-010585) <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

9.1.4 RADIO LINK SETUP RESPONSE

9.1.4.1 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		–	
D-RNTI	O		9.2.1.24		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
RL Information Response		1..<maxno ofRLs>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>RL Set ID	M		9.2.2.35		–	
>URA Information	M		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>Received total wide band power	M		9.2.2.35A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		–	
>Diversity Indication	C-NotFirstRL		9.2.2.7		–	
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>>RL ID	M		9.2.1.49	Reference RL ID for the combining	–	
>> <i>Non Combining or First RL</i>					–	
>>>DCH Information Response	M		9.2.1.16A		–	
>SSDT Support Indicator	M		9.2.2.43		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.2.10		–	
>Minimum DL TX Power	M		DL Power 9.2.2.10		–	
>Primary Scrambling Code	O		9.2.1.45		–	
>UL UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nu in ref. [6]	–	
>DL UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nd in ref.	–	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
				[6]		
>Primary CPICH Power	O		9.2.1.44		–	
>DSCH Information Response	O		DSCH FDD Information Response 9.2.2.13B		YES	ignore
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		YES	ignore
<u>>PC Preamble</u>	<u>M</u>		<u>9.2.2.xx</u>		<u>-</u>	
<u>>SRB Delay</u>	<u>M</u>		<u>9.2.2.xx</u>		<u>-</u>	
Uplink SIR Target	O		Uplink SIR 9.2.1.69		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Condition	Explanation
NotFirstRL	The IE is present only if the RL is not the first RL in the RL Information

Range bound	Explanation
MaxnoofRLs	Maximum number of RLs for one UE.

9.1.7 RADIO LINK ADDITION RESPONSE

9.1.7.1 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		–	
RL Information Response		<i>1..<maxno ofRLs-1></i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>RL Set ID	M		9.2.2.35		–	
>URA Information	M		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>Received total wide band power	M		9.2.2.35A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		YES	ignore
>Diversity Indication	M		9.2.2.7		–	
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>>RL ID	M		9.2.1.49	Reference RL ID	–	
>> <i>Non Combining</i>					–	
>>>DCH Information Response	M		9.2.1.16A		–	
>SSDT Support Indicator	M		9.2.2.43		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.2.10		–	
>Minimum DL TX Power	M		DL Power 9.2.2.10		–	
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		YES	ignore
> <u>PC Preamble</u>	<u>M</u>		<u>9.2.2.xx</u>		<u>-</u>	
> <u>SRB Delay</u>	<u>M</u>		<u>9.2.2.xx</u>		<u>-</u>	
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
MaxnoofRLs	Maximum number of radio links for one UE.

9.2.2.xx PC Preamble

Indicates DPDCH power control preamble length [7].

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE type and reference</u>	<u>Semantics description</u>
<u>PCP Preamble</u>			<u>INTEGER(0..7...)</u>	<u>In number of frames.</u>

9.2.2.xx SRB Delay

Indicates the number of frames after the PC Preamble period during which transmission of data on some RRC Signalling Bearers shall be prohibited by UE in accordance with ref. [16].

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE type and reference</u>	<u>Semantics description</u>
<u>SRB Delay</u>			<u>INTEGER(0..7...)</u>	<u>In number of frames.</u>

9.3.3 PDU Definitions

Unaffected text has been omitted.

PagingCause,
 PagingRecordType,
 PDSCHCodeMapping,
 PayloadCRC-PresenceIndicator,
PC-Preamble,
 PowerAdjustmentType,
 PowerOffset,
 PrimaryCCPCH-RSCP,

Unaffected text has been omitted.

ScaledAdjustmentRatio,
 MaxAdjustmentStep,
 SecondaryCCPCH-SlotFormat,
SRB-Delay,
 SyncCase,
 TDD-ChannelisationCode,
 TDD-DCHs-to-Modify,

Unaffected text has been omitted.

```
-- *****
--
-- 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,
  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,
  -- 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,
  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 OPTIONAL,
  dschInformationResponse DSCH-InformationResponse-RL-SetupRspFDD OPTIONAL,
  neighbouring-UMTS-CellInformation Neighbouring-UMTS-CellInformation OPTIONAL,
  neighbouring-GSM-CellInformation Neighbouring-GSM-CellInformation-RL-SetupRspFDD 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 ::= {
  ...
}

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 ::= {
  ...
}

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 }
}

Neighbouring-GSM-CellInformation-RL-SetupRspFDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-SetupRspFDD }}

Neighbouring-GSM-CellInformationItem-RL-SetupRspFDD RNSAP-PROTOCOL-IES ::= {
  { ID id-Neighbouring-GSM-CellInformation  CRITICALITY ignore  TYPE  Neighbouring-GSM-CellInformation  PRESENCE
    mandatory }
}

```

```
RadioLinkSetupResponseFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
  ...
}
```

Unaffected text has been omitted.

```
-- *****
--
-- 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,
  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,
  -- 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-RL-AdditionRspFDD OPTIONAL,
pC-Preamble                   PC-Preamble,
SRB-Delay                     SRB-Delay,
iE-Extensions                  ProtocolExtensionContainer { {RL-InformationResponseItem-RL-AdditionRspFDD-ExtIEs} } OPTIONAL,
...
}

RL-InformationResponseItem-RL-AdditionRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
...
}

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 ::= {
...
}

NonCombining-RL-AdditionRspFDD ::= SEQUENCE {
  dCH-InformationResponse DCH-InformationResponse,
  iE-Extensions           ProtocolExtensionContainer { { NonCombiningItem-RL-AdditionRspFDD-ExtIEs} } OPTIONAL,
  ...
}

```

```
NonCombiningItem-RL-AdditionRspFDD-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Neighbouring-GSM-CellInformation-RL-AdditionRspFDD ::= ProtocolIE-Single-Container {{ Neighbouring-GSM-CellInformationItem-RL-
AdditionRspFDD }}

Neighbouring-GSM-CellInformationItem-RL-AdditionRspFDD RNSAP-PROTOCOL-IES ::= {
    { ID id-Neighbouring-GSM-CellInformation    CRITICALITY ignore    TYPE    Neighbouring-GSM-CellInformation    PRESENCE
    mandatory }
}

RadioLinkAdditionResponseFDD-Extensions RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

9.3.4 Information Element Definitions

Unaffected text has been omitted.

```
-- P

PagingCause ::= ENUMERATED {
    terminating-conversational-call,
    terminating-streaming-call,
    terminating-interactive-call,
    terminating-background-call,
    sms,
    ...
}
-- See in [16]

PagingRecordType ::= ENUMERATED {
    imsi-gsm-map,
    tmsi-gsm-map,
    p-tmsi-gsm-map,
    imsi-ds-41,
    tmsi-ds-41,
    ...
}
```



```
}
-- See in [16]

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

| PC-Preamble ::= INTEGER(0..7,...)

PDSCHCodeMapping ::= SEQUENCE {
    dl-ScramblingCode          DL-ScramblingCode,
    signallingMethod           PDSCHCodeMapping-SignallingMethod,
    iE-Extensions              ProtocolExtensionContainer { { PDSCHCodeMapping-ExtIEs } } OPTIONAL,
    ...
}
```

Unaffected text has been omitted.

```
-- S
```

Unaffected text has been omitted.

```
S-RNTI ::= INTEGER (0..1048575)
-- From 0 to 2^20-1
```

```
| SRB-Delay ::= INTEGER(0..7,...)
```