CR-Form-v5

CHANGE REQUEST

⌘ **25.306** CR **034** ⌘**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 **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Clarification on ICS version within UE radio access capabilities	
Source: ⌘	Ericsson	
Work item code: ⌘	TEI	***Date:*** ⌘ 05-03-2002

Category: ⌘ **F**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘	The changes included in this CR are proposed for the following reasons: • The ICS version is defined ambigously
Summary of change: ⌘	The original revision of this CR introduces the following changes • The ICS version is renamed to Access stratum release indicator and it is clarified to be the version of the core specification that is applicable for the UE e.g. R99, REL-4
Consequences if not approved: ⌘	The definition of ICS version remains ambigous and does not reflect what is actually being signalled

Clauses affected: ⌘	4.10, 5.1

Other specs affected: ⌘	☐ Other core specifications ⌘	
	☐ Test specifications	
	☐ O&M Specifications	

Other comments: ⌘	

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

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4.10 General capabilities

ICS version

This is defined as the release version of the Implementation Conformance Statement (ICS) proforma specification [3] that is applicable for the UE.

Access stratum release indicator

This is defined as the release of the UTRA layer 1, 2, and 3 specifications that is applicable for the UE e.g. R99, REL-4.

5.1   Value ranges

Table 5.1: UE radio access capability parameter value ranges

		UE radio access capability parameter	Value range
PDCP parameters		Support for RFC 2507	Yes/No
		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression context space	512, 1024, 2048, 4096, 8192 bytes
RLC parameters		Total RLC AM buffer size	2,10,50,100,150,500,1000 kBytes
		Maximum number of AM entities	3,4,5,6,8,16,30
PHY parameters	Transport channel parameters in downlink	Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum number of simultaneous transport channels	4, 8, 16, 32
		Maximum number of simultaneous CCTrCH	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks received within TTIs that end within the same 10 ms interval	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		Maximum number of TFC in the TFCS	16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo decoding	Yes/No
	Transport channel parameters in uplink	Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
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		Maximum number of simultaneous transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks transmitted within TTIs that start at the same time	2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		Maximum number of TFC in the TFCS	4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo encoding	Yes/No
	FDD Physical channel parameters in downlink	Maximum number of DPCH/PDSCH codes to be simultaneously received	1, 2, 3, 4, 5, 6, 7, 8
		Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)	600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 48000, 57600, 67200, 76800
		Support for SF 512	Yes/No
		Support of PDSCH	Yes/No
		Simultaneous reception of SCCPCH and DPCH	Yes/No
		Simultaneous reception of SCCPCH, DPCH and PDSCH	Yes/No

		UE radio access capability parameter	Value range
		Maximum number of simultaneous S-CCPCH radio links	1 NOTE: Only the value 1 is part of this release of the specification
		Support of dedicated pilots for channel estimation	Yes/No
	FDD Physical channel parameters in uplink	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600
		Support of PCPCH	Yes/No
	TDD physical channel parameters in downlink	Maximum number of timeslots per frame	1..14
		Maximum number of physical channels per frame	1,2,3..224
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Maximum number of physical channels per timeslot	1..16
	TDD physical channel parameters in uplink	Maximum Number of timeslots per frame	1..14
		Maximum number of physical channels per timeslot	1, 2
		Minimum SF	16,8,4,2,1
		Support of PUSCH	Yes/No
RF parameters	FDD RF parameters	UE power class	3, 4 NOTE: Only power classes 3 and 4 are part of this release of the specification
		Tx/Rx frequency separation	190 MHz 174.8-205.2 MHz 134.8-245.2 MHz
RF parameters	TDD RF parameters	UE power class	2,3 NOTE: Only power classes 2 and 3 are part of this release of the specification
		Radio frequency bands	a), b), c), a+b), a+c), a+b+c)
		Chip rate capability	3.84,1.28
Multi-mode related parameters		Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD
Multi-RAT related parameters		Support of GSM	Yes/No (per GSM frequency band)
		Support of multi-carrier	Yes/No
UE positioning related parameters		Standalone location method(s) supported	Yes/No
		Network assisted GPS support	Network based / UE based / Both/ None
		GPS reference time capable	Yes/No
		Support for IPDL	Yes/No
		Support for OTDOA UE based method	Yes/No
		Support for Rx-Tx time difference type 2 measurement	Yes/No
Measurement related capabilities		Need for downlink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
		Need for uplink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
General capabilities		Access Stratum release indicator~~ICS version~~	R99

CR-Form-v5

CHANGE REQUEST

⌘	**25.306** CR **035**	⌘ **rev**	**-**	⌘	Current version:	**4.3.0**	⌘

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Source: ⌘	Ericsson	
Work item code: ⌘	TEI	***Date:*** ⌘ 05-03-2002

Category: ⌘	**A**		***Release:*** ⌘ REL-4

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Table 5.1: UE radio access capability parameter value ranges

		UE radio access capability parameter	Value range
PDCP parameters		Support for RFC 2507	Yes/No
		Support for RFC 3095	Yes/No
		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression context space	512, 1024, 2048, 4096, 8192 bytes
RLC parameters		Total RLC AM buffer size	2,10,50,100,150,500,1000 kBytes
		Maximum number of AM entities	3,4,5,6,8,16,30
PHY parameters	Transport channel parameters in downlink	Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum number of simultaneous transport channels	4, 8, 16, 32
		Maximum number of simultaneous CCTrCH	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks received within TTIs that end within the same 10 ms interval	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		Maximum number of TFC in the TFCS	16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo decoding	Yes/No
	Transport channel parameters in uplink	Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum number of simultaneous transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks transmitted within TTIs that start at the same time	2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		Maximum number of TFC in the TFCS	4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo encoding	Yes/No
	FDD Physical channel parameters in downlink	Maximum number of DPCH/PDSCH codes to be simultaneously received	1, 2, 3, 4, 5, 6, 7, 8
		Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)	600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 48000, 57600, 67200, 76800
		Support for SF 512	Yes/No
		Support of PDSCH	Yes/No
		Simultaneous reception of SCCPCH and DPCH	Yes/No

		UE radio access capability parameter	Value range
		Support for RFC 2507	Yes/No
		Simultaneous reception of SCCPCH, DPCH and PDSCH	Yes/No
		Maximum number of simultaneous S-CCPCH radio links	1 NOTE: Only the value 1 is part of this release of the specification
		Support of dedicated pilots for channel estimation	Yes/No
	FDD Physical channel parameters in uplink	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600
		Support of PCPCH	Yes/No
	TDD 3.84 Mcps physical channel parameters in downlink	Maximum number of timeslots per frame	1..14
		Maximum number of physical channels per frame	1,2,3..224
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Maximum number of physical channels per timeslot	1..16
	TDD 3.84 Mcps physical channel parameters in uplink	Maximum Number of timeslots per frame	1..14
		Maximum number of physical channels per timeslot	1, 2
		Minimum SF	16,8,4,2,1
		Support of PUSCH	Yes/No
	TDD 1.28 Mcps physical channel parameters in downlink	Maximum number of timeslots per subframe	1..6
		Maximum number of physical channels per subframe	1,2,3,…,96
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Maximum number of physical channels per timeslot	1..16
		Support 8PSK	Yes/No
	TDD 1.28 Mcps physical channel parameters in uplink	Maximum number of timeslots per subframe	1..6
		Maximum number of physical channels per timeslot	1,2
		Minimum SF	16,8,4,2,1
		Support of 8PSK	Yes/No
		Support of PUSCH	Yes/No
RF parameters	FDD RF parameters	UE power class	3, 4 NOTE: Only power classes 3 and 4 are part of this release of the specification
		Tx/Rx frequency separation	190 MHz 174.8-205.2 MHz 134.8-245.2 MHz
RF parameters	TDD 3.84 Mcps RF parameters	UE power class	2,3 NOTE: Only power classes 2 and 3 are part of this release of the specification
		Radio frequency bands	a), b), c), a+b), a+c), b+c), a+b+c)
	TDD 1.28 Mcps RF parameters	UE power class	2,3
		Radio frequency bands	a), b), c), a+b), a+c), b+c), a+b+c)
Multi-mode related parameters		Support of UTRA FDD	Yes/No
		Support of UTRA TDD 3.84 Mcps	Yes/No
		Support of UTRA TDD 1.28 Mcps	Yes/No
Multi-RAT related parameters		Support of GSM	Yes/No (per GSM frequency band)
		Support of multi-carrier	Yes/No
UE positioning related parameters		Standalone location method(s) supported	Yes/No

	UE radio access capability parameter	Value range
	Support for RFC 2507	Yes/No
	Network assisted GPS support	Network based / UE based / Both/ None
	GPS reference time capable	Yes/No
	Support for IPDL	Yes/No
	Support for OTDOA UE based method	Yes/No
	Support for Rx-Tx time difference type 2 measurement	Yes/No
Measurement related capabilities	Need for downlink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
	Need for uplink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
General capabilities	~~ICS version~~Access Stratum release indicator	R99, REL-4

CR-Form-v5

CHANGE REQUEST

| ⌘ | **25.331** CR **1365** | ⌘ **rev** | **-** | ⌘ | Current version: | **3.9.0** | ⌘ |

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

Title: ⌘	Clarification on ICS version within UE radio access capabilities	
Source: ⌘	Ericsson	
Work item code: ⌘	TEI	***Date:*** ⌘ 05-02-2002

Category: ⌘	**F**		***Release:*** ⌘ R99

Use <u>one</u> of the following categories:
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Consequences if not approved: ⌘	The definition of ICS version remains ambigous and does not reflect what is actually being signalled

Clauses affected: ⌘	10.3.3.42, 11.3

Other specs affected: ⌘	☐	Other core specifications ⌘	
	☐	Test specifications	
	☐	O&M Specifications	

Other comments: ⌘	

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10.3.3.42   UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Access stratum release indicatorICS version	MP		Enumerated(R99)	Indicates the release ~~version of [42]-2 (Implementation Conformance Statement (ICS) proforma specification) that is applicable for the UE.~~ of the UE according to [35]. The IE also indicates the release of the RRC transfer syntax supported by the UE.
PDCP capability	MP		PDCP capability 10.3.3.24	
RLC capability	MP		RLC capability 10.3.3.34	
Transport channel capability	MP		Transport channel capability 10.3.3.40	
RF capability FDD	OP		RF capability FDD 10.3.3.33	
RF Capability TDD	OP		RF capability TDD 10.3.3.33b	
Physical channel capability	MP		Physical channel capability 10.3.3.25	
UE multi-mode/multi-RAT capability	MP		UE multi-mode/multi-RAT capability 10.3.3.41	
Security capability	MP		Security capability 10.3.3.37	
UE positioning capability	MP		UE positioning capability 10.3.3.45	
Measurement capability	CH-*fdd_req_sup*		Measurement capability 10.3.3.21	

Condition	Explanation
fdd_req_sup	The IE is mandatory present if the IE "Multi-mode capability" has the value "FDD" or "FDD/TDD" and a FDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.

11.3   Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

<Cut until the next modified section>

-- **************************************************
--
--     USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
--
-- **************************************************

<Cut until the next modified section>


GSM-Measurements ::=                  SEQUENCE {
    gsm900                               BOOLEAN,
    dcs1800                              BOOLEAN,
    gsm1900                              BOOLEAN
}


AccessStratumReleaseIndicatorICS Version ::=                        ENUMERATED {
                                      r99 }

IMSI-and-ESN-DS-41 ::=               SEQUENCE {
    imsi-DS-41                           IMSI-DS-41,
    esn-DS-41                            ESN-DS-41
}


<Cut until the next modified section>

UE-PowerClassExt ::=                ENUMERATED {class1, class2, class3, class4, spare1,
spare2, spare3, spare4}

UE-RadioAccessCapability ::=        SEQUENCE {
    accessStratumReleaseIndicatorics-Version
    AccessStratumReleaseIndicatorICS Version,
    pdcp-Capability                      PDCP-Capability,
    rlc-Capability                       RLC-Capability,
    transportChannelCapability           TransportChannelCapability,
    rf-Capability                        RF-Capability,
    physicalChannelCapability            PhysicalChannelCapability,
    ue-MultiModeRAT-Capability           UE-MultiModeRAT-Capability,
    securityCapability                   SecurityCapability,
    ue-positioning-Capability            UE-Positioning-Capability,
    measurementCapability                MeasurementCapability        OPTIONAL
}

UE-RadioAccessCapabilityInfo::=      SEQUENCE {
    ue-RadioAccessCapability             UE-RadioAccessCapability,
    ue-RadioAccessCapability-v370ext     UE-RadioAccessCapability-v370ext
}
```

CR-Form-v5

CHANGE REQUEST

⌘ **25.331 CR 1366** ⌘ **rev 1** ⌘ Current version: **4.3.0** ⌘

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Source: ⌘	Ericsson	
Work item code: ⌘	TEI	*Date:* ⌘ 05-02-2002
Category: ⌘ **A**		*Release:* ⌘ REL-4

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Consequences if not approved: ⌘	The definition of ICS version remains ambigous and does not reflect what is actually being signalled

Clauses affected: ⌘	10.2.39, 10.3.3.42, 11.2, 11.3, 11.5

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10.2.39 RRC CONNECTION REQUEST

RRC Connection Request is the first message transmitted by the UE when setting up an RRC Connection to the network.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE information elements					
Initial UE identity	MP		Initial UE identity 10.3.3.15		
Establishment cause	MP		Establishment cause 10.3.3.11		
Protocol error indicator	MD		Protocol error indicator 10.3.3.27	Default value is FALSE	
Measurement information elements					
Measured results on RACH	OP		Measured results on RACH 10.3.7.45		
Access stratum release indicator	MP		Enumerated(REL-4)	Absence of the IE implies R99. The IE also indicates the release of the RRC transfer syntax supported by the UE 15 spare values are needed	REL-4

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

10.3.3.42 UE radio access capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
~~ICS version~~Access stratum release indicator	MP		Enumerated(R99)	Indicates the ==release~~ version of [42] 2 (Implementation Conformance Statement (ICS) proforma specification) that is applicable for the UE.~~of the UE according to [35]. The IE also indicates the release of the RRC transfer syntax supported by the UE.==	
	CV-_not_rrc_connectionSetupComplete_		Enumerated(REL-4)	15 spare values are needed	REL-4
PDCP capability	MP		PDCP capability 10.3.3.24		
RLC capability	MP		RLC capability 10.3.3.34		
Transport channel capability	MP		Transport channel capability 10.3.3.40		
RF capability FDD	OP		RF capability FDD 10.3.3.33		
RF capability TDD	OP		RF capability TDD 10.3.3.33b	One "TDD RF capability" entity shall be included for every Chip rate capability supported.	
		1 to 2			REL-4
Physical channel capability	MP		Physical channel capability 10.3.3.25		
UE multi-mode/multi-RAT capability	MP		UE multi-mode/multi-RAT capability 10.3.3.41		
Security capability	MP		Security capability 10.3.3.37		
UE positioning capability	MP		UE positioning capability		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.3.45		
Measurement capability	CH-*fdd_req_sup*		Measurement capability 10.3.3.21		

Condition	Explanation
fdd_req_sup	The IE is mandatory present if the IE "Multi-mode capability" has the value "FDD" or "FDD/TDD" and a FDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.
not_rrc_connectionSetupComplete	The IE is not needed in the RRC CONNECTION SETUP COMPLETE message. Otherwise the IE is mandatory present.

11.2 PDU definitions

```
--*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    Rb-timer-indicator,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-r4-ext,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v4xyext,
    DL-PhysChCapabilityFDD-v380ext,
    UE-ConnTimersAndConstants,
```

```
        UE-SecurityInformation,
        URA-UpdateCause,
        UTRAN-DRX-CycleLengthCoefficient,
        WaitTime,
-- Radio Bearer IEs :
        DefaultConfigIdentity,
        DefaultConfigMode,
        DL-CounterSynchronisationInfo,
        PredefinedConfigIdentity,
        PredefinedConfigStatusList,
        RAB-Info,
        RAB-Info-Post,
        RAB-InformationList,
        RAB-InformationReconfigList,
        RAB-InformationSetupList,
        RAB-InformationSetupList-r4,
        RB-ActivationTimeInfoList,
        RB-COUNT-C-InformationList,
        RB-COUNT-C-MSB-InformationList,
        RB-IdentityList,
        RB-InformationAffectedList,
        RB-InformationReconfigList,
        RB-InformationReconfigList-r4,
        RB-InformationReleaseList,
        RB-WithPDCP-InfoList,    SRB-InformationSetupList,
        SRB-InformationSetupList2,
        UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
        CPCH-SetID,
        DL-AddReconfTransChInfo2List,
        DL-AddReconfTransChInfoList,
        DL-CommonTransChInfo,
        DL-CommonTransChInfo-r4,
        DL-DeletedTransChInfoList,
        DRAC-StaticInformationList,
        TFC-Subset,
        TFCS-Identity,
        UL-AddReconfTransChInfoList,
        UL-CommonTransChInfo,
        UL-DeletedTransChInfoList,
-- Physical Channel IEs :
        Alpha,
        CCTrCH-PowerControlInfo,
        CCTrCH-PowerControlInfo-r4,
        ConstantValue,
        CPCH-SetInfo,
        DL-CommonInformation,
        DL-CommonInformation-r4,
        DL-CommonInformationPost,
        DL-InformationPerRL,
        DL-InformationPerRL-List,
        DL-InformationPerRL-List-r4,
        DL-InformationPerRL-ListPostFDD,
        DL-InformationPerRL-PostTDD,
        DL-InformationPerRL-PostTDD-LCR-r4,
        DL-PDSCH-Information,
        DPCH-CompressedModeStatusInfo,
        FrequencyInfo,
        FrequencyInfoFDD,
        FrequencyInfoTDD,
        MaxAllowedUL-TX-Power,
        OpenLoopPowerControl-IPDL-TDD-r4,
        PDSCH-CapacityAllocationInfo,
        PDSCH-CapacityAllocationInfo-r4,
        PDSCH-Identity,
        PrimaryCCPCH-TX-Power,
        PUSCH-CapacityAllocationInfo,
        PUSCH-CapacityAllocationInfo-r4,
        PUSCH-Identity,
        RL-AdditionInformationList,
        RL-RemovalInformationList,
```

```
        SpecialBurstScheduling,
        SSDT-Information,
        TFC-ControlDuration,
        SSDT-UL-r4,
        TimeslotList,
        TimeslotList-r4,
        TX-DiversityMode,
        UL-ChannelRequirement,
        UL-ChannelRequirement-r4,
        UL-ChannelRequirementWithCPCH-SetID,
        UL-ChannelRequirementWithCPCH-SetID-r4,
        UL-DPCH-Info,
        UL-DPCH-Info-r4,
        UL-DPCH-InfoPostFDD,
        UL-DPCH-InfoPostTDD,
        UL-DPCH-InfoPostTDD-LCR-r4,
        UL-SynchronisationParameters-r4,
        UL-TimingAdvance,
        UL-TimingAdvanceControl,
        UL-TimingAdvanceControl-r4,
-- Measurement IEs :
        AdditionalMeasurementID-List,
        Frequency-Band,
        EventResults,
        InterFreqEventResults-LCR-r4-ext,
        InterRAT-TargetCellDescription,
        MeasuredResults,
        MeasuredResults-v390ext,
        MeasuredResultsList,
        MeasuredResultsList-LCR-r4-ext,
        MeasuredResultsOnRACH,
        MeasurementCommand,
        MeasurementCommand-r4,
        MeasurementIdentity,
        MeasurementReportingMode,
        PrimaryCCPCH-RSCP,
        TimeslotListWithISCP,
        TrafficVolumeMeasuredResultsList,
        UE-Positioning-GPS-AssistanceData,
        UE-Positioning-Measurement-v390ext,
        UE-Positioning-OTDOA-AssistanceData,
        UE-Positioning-OTDOA-AssistanceData-r4ext,
        UE-Positioning-OTDOA-AssistanceData-UEB,
        UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
        BCCH-ModificationInfo,
        CDMA2000-MessageList,
        GSM-MessageList,
        InterRAT-ChangeFailureCause,
        InterRAT-HO-FailureCause,
        InterRAT-UE-RadioAccessCapabilityList,
        InterRAT-UE-SecurityCapList,
        IntraDomainNasNodeSelector,
        ProtocolErrorMoreInformation,
        Rplmn-Information,
        Rplmn-Information-r4,
        SegCount,
        SegmentIndex,
        SFN-Prime,
        SIB-Data-fixed,
        SIB-Data-variable,
        SIB-Type
FROM InformationElements

        maxSIBperMsg
FROM Constant-definitions;

<Cut until the next modified section>

-- *************************************************
--
-- INTER RAT HANDOVER INFO
```

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

InterRATHandoverInfo ::= SEQUENCE {
    -- This structure is defined for historical reasons, backward compatibility with
04.18
    predefinedConfigStatusList      CHOICE {
        absent                          NULL,
        present                         PredefinedConfigStatusList
    },
    uE-SecurityInformation          CHOICE {
        absent                          NULL,
        present                         UE-SecurityInformation
    },
    ue-CapabilityContainer          CHOICE {
        absent                          NULL,
        present                         OCTET STRING (SIZE (0..63))
        -- octet aligned string containing IE UE-RadioAccessCapabilityInfo
    },
    -- Non critical extensions
    v390NonCriticalExtensions       CHOICE {
        absent                          NULL,
        present                         SEQUENCE {
            interRATHandoverInfo-v390ext    InterRATHandoverInfo-v390ext-IEs,
            ~~Reserved for future non critical extension~~
            v4xyNonCriticalExtensions       SEQUENCE {~~}~~ ~~OPTIONAL~~
                InterRATHandoverInfo-v4xyext            InterRATHandoverInfo-v4xyext-IEs,
                -- Reserved for future non critical extension
                nonCriticalExtensions           SEQUENCE {} OPTIONAL
            } OPTIONAL
        }
    }
}

InterRATHandoverInfo-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v380ext    UE-RadioAccessCapability-v380ext
    OPTIONAL,
        dl-PhysChCapabilityFDD-v380ext      DL-PhysChCapabilityFDD-v380ext
}

InterRATHandoverInfo-v4xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

<Cut until the next modified section>

-- **************************************************
--
-- RRC CONNECTION REQUEST
--
-- **************************************************

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        establishmentCause              EstablishmentCause,
        protocolErrorIndicator          ProtocolErrorIndicator,
        -- The IE above is MD, but for compactness reasons no default value
        -- has been assigned to it.
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
        v4xyNonCriticalExtensions       SEQUENCE {
            rrcConnectionRequest-v4xyext        RRCConnectionRequest-v4xyext-IEs,
            -- Reserved for future non critical extension
        ~~Extension mechanism for non- release99 information~~
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        } OPTIONAL
}
```

```
RRCConnectionRequest-v4xyext-IEs ::=    SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

<Cut until the next modified section>

-- **************************************************
--
-- UE CAPABILITY INFORMATION
--
-- **************************************************

UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier           OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability            OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList            OPTIONAL,
        v370NonCriticalExtensions       SEQUENCE {
            ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
            v380NonCriticalExtensions       SEQUENCE {
                ueCapabilityInformation-v380ext    UECapabilityInformation-v380ext-IEs,
                -- Reserved for future non critical extension
                v4NonCriticalExtensions        SEQUENCE {
                    ueCapabilityInformation-r3-r4-ext
                                            UECapabilityInformation-r3-r4-ext,
                    V4xyNonCriticalExtensions          SEQUENCE {
                        ueCapabilityInformation-v4xyext    UECapabilityInformation-
v4xyext-IEs,
                        -- Reserved for future non critical extension
                        nonCriticalExtensions-r4        SEQUENCE {}        OPTIONAL
                    }        OPTIONAL
                }        OPTIONAL
            }        OPTIONAL
        }        OPTIONAL
}

UECapabilityInformation-v370ext::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v370ext        UE-RadioAccessCapability-v370ext
    OPTIONAL
}

UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v380ext        UE-RadioAccessCapability-v380ext
    OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext          DL-PhysChCapabilityFDD-v380ext
}

UECapabilityInformation-r3-r4-ext ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-r4-ext     UE-RadioAccessCapability-r4-ext     OPTIONAL
}

UECapabilityInformation-v4xyext::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v4xyext        UE-RadioAccessCapability-v4xyext
}
```

11.3　Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

<Cut until the next modified section>

-- **************************************************
--
--      USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
--
-- **************************************************

<Cut until the next modified section>

--  If ICS Version r4 is included, the following IE shall be ignored.
ICS-Version ::=                         ENUMERATED {
                                        r99 }

ICS-Version-r4 ::=                      ENUMERATED {
                                        rel-4 }

AccessStratumReleaseIndicator::=        ENUMERATED {rel-4, spare15, spare14, spare13,
                                        spare12, spare11, spare10, spare9, spare8,
                                        spare7, spare6, spare5, spare4, spare3,
                                        spare2, spare1 }

<Cut until the next modified section>

UE-RadioAccessCapability ::=            SEQUENCE {
    ics-Version                         ICS-Version,
    pdcp-Capability                     PDCP-Capability,
    rlc-Capability                      RLC-Capability,
    transportChannelCapability          TransportChannelCapability,
    rf-Capability                       RF-Capability,
    physicalChannelCapability           PhysicalChannelCapability,
    ue-MultiModeRAT-Capability          UE-MultiModeRAT-Capability,
    securityCapability                  SecurityCapability,
    ue-positioning-Capability                   UE-Positioning-Capability,
    measurementCapability               MeasurementCapability      OPTIONAL
}

UE-RadioAccessCapabilityInfo::=     SEQUENCE {
    ue-RadioAccessCapability            UE-RadioAccessCapability,
    ue-RadioAccessCapability-v370ext    UE-RadioAccessCapability-v370ext
}

UE-RadioAccessCapability-v370ext ::=    SEQUENCE {
    ue-RadioAccessCapabBandFDDList      UE-RadioAccessCapabBandFDDList
}

UE-RadioAccessCapability-v380ext ::=    SEQUENCE {
    ue-PositioningCapabilityExt         UE-PositioningCapabilityExt
}


UE-PositioningCapabilityExt ::=         SEQUENCE {
    rx-tx-TimeDifferenceType2Capable    BOOLEAN
}

UE-RadioAccessCapabBandFDDList ::=  SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
                                    UE-RadioAccessCapabBandFDD

UE-RadioAccessCapabBandFDD ::=  SEQUENCE{
    radioFrequencyBandFDD               RadioFrequencyBandFDD,
    fddRF-Capability                    SEQUENCE {
        ue-PowerClass                   UE-PowerClass-v370,
        txRxFrequencySeparation         TxRxFrequencySeparation
    }                                                           OPTIONAL,
    measurementCapability               MeasurementCapability-v370
```

```
}

UE-RadioAccessCapability-r4-ext ::= SEQUENCE {
    pdcp-Capability-r4-ext                  PDCP-Capability-r4-ext,
    ics-Version-r4                          ICS-Version-r4,
    rf-Capability                           RF-Capability-r4-ext,
    physicalChannelCapability-LCR           PhysicalChannelCapability-LCR-r4,
    measurementCapability-r4-ext            MeasurementCapability-r4-ext    OPTIONAL
}

<Cut until the next modified section>

UE-RadioAccessCapability-v4xyext::=        SEQUENCE {
    -- R99 UEs shall include IE "ue-TestLevelIndicator"
    accessStratumReleaseIndicator               AccessStratumProtocolReleaseIndicator
}
```

11.5 RRC information between network nodes

```
Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo-r3-IEs,
    TransportChannelReconfiguration
FROM PDU-definitions

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    C-RNTI,
    DL-PhysChCapabilityFDD-v380ext,
    FailureCauseWithProtErr,
    RRC-MessageSequenceNumber,
    STARTList,
    U-RNTI,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v4xyext,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-AddReconfTransChInfoList,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-AddReconfTransChInfoList,
-- Measurement IEs :
    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    MeasurementType-r4,
    AdditionalMeasurementID-List,
    PositionEstimate,
    UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
InterRAT-UE-RadioAccessCapabilityList
FROM InformationElements

    maxCNdomains,
    maxNoOfMeas,

    maxRB,
    maxSRBsetup
FROM Constant-definitions
;
```

```
        <Cut until the next modified section>

-- ***************************************************
--
-- Handover to UTRAN information
--
-- ***************************************************

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
    r3                              SEQUENCE {
        interRATHandoverInfo-r3         InterRATHandoverInfoWithInterRATCapabilities-r3-
IEs,
    -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
    -- includes non critical extensions
        v390NonCriticalExtensions       SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
    InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }       OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs::=      SEQUENCE {
        -- The order of the IEs may not reflect the tabular format
        -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
        ue-RATSpecificCapability         InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
        interRATHandoverInfo             OCTET STRING (SIZE (0..255))
        -- Octet string is used to obtain 8 bit length field prior to actual information
        -- This makes it possible for BSS to transparently handle information received
via
        -- GSM air interface even when it includes non critical extensions
        -- The octet string shall include the InterRATHandoverInfo information
        -- The BSS can re-use the 04.18 length field received from the MS
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        failureCauseWithProtErr          FailureCauseWithProtErr
    OPTIONAL
}

-- ***************************************************
--
-- SRNC Relocation information
--
-- ***************************************************

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3                              SEQUENCE {
        sRNC-RelocationInfo-r3          SRNC-RelocationInfo-r3-IEs,
            v380NonCriticalExtensions           SEQUENCE {
                sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
                -- Reserved for future non critical extension
                v390NonCriticalExtensions           SEQUENCE {
                    sRNC-RelocationInfo-v390ext          SRNC-RelocationInfo-v390ext-IEs,
                    v4xyNonCriticalExtensions           SEQUENCE {
                        sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-v4xyext-IEs,
                        -- Reserved for future non critical extension
                        nonCriticalExtensions           SEQUENCE {} OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::=      SEQUENCE {
    -- Non-RRC IEs
```

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```
        stateOfRRC                       StateOfRRC,
        stateOfRRC-Procedure             StateOfRRC-Procedure,
    -- Ciphering related information IEs
    -- If the extension v380 is included use the extension for the ciphering status per
CN domain
        cipheringStatus                  CipheringStatus,
        calculationTimeForCiphering      CalculationTimeForCiphering    OPTIONAL,
        cipheringInfoPerRB-List          CipheringInfoPerRB-List        OPTIONAL,
        count-C-List                     COUNT-C-List                   OPTIONAL,
        integrityProtectionStatus        IntegrityProtectionStatus,
        srb-SpecificIntegrityProtInfo    SRB-SpecificIntegrityProtInfoList,
        implementationSpecificParams     ImplementationSpecificParams   OPTIONAL,
    -- User equipment IEs
        u-RNTI                           U-RNTI,
        c-RNTI                           C-RNTI                         OPTIONAL,
        ue-RadioAccessCapability         UE-RadioAccessCapability,
        ue-Positioning-LastKnownPos      UE-Positioning-LastKnownPos    OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability         InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                     URA-Identity                   OPTIONAL,
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo     NAS-SystemInformationGSM-MAP,
        cn-DomainInformationList         CN-DomainInformationList       OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList               OngoingMeasRepList             OPTIONAL,
    -- Radio bearer IEs
        predefinedConfigStatusList       PredefinedConfigStatusList,
        srb-InformationList              SRB-InformationSetupList,
        rab-InformationList              RAB-InformationSetupList       OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo             UL-CommonTransChInfo           OPTIONAL,
        ul-TransChInfoList               UL-AddReconfTransChInfoList    OPTIONAL,
        modeSpecificInfo                 CHOICE {
            fdd                              SEQUENCE {
                cpch-SetID                       CPCH-SetID             OPTIONAL,
                transChDRAC-Info                 DRAC-StaticInformationList  OPTIONAL
            },
            tdd                              NULL
        },
        dl-CommonTransChInfo             DL-CommonTransChInfo           OPTIONAL,
        dl-TransChInfoList               DL-AddReconfTransChInfoList    OPTIONAL,
    -- Measurement report
        measurementReport                MeasurementReport              OPTIONAL ,
        nonCriticalExtensions            SEQUENCE {
        -- In case of TDD only this IE is present otherwise this IE is absent
            up-Ipdl-Parameters-TDD           UE-Positioning-IPDL-Parameters-TDD-r4-ext
    OPTIONAL,
        -- Extension mechanism for non- release4 information
            nonCriticalExtensions            SEQUENCE {}
    OPTIONAL
        }                                                               OPTIONAL
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
    -- Ciphering related information IEs
        cn-DomainIdentity                CN-DomainIdentity,
        cipheringStatusList              CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
        cn-DomainInformationList-v390ext  CN-DomainInformationList-v390ext
    OPTIONAL,
        ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext
    OPTIONAL,
        ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext
    OPTIONAL,
        dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext,
        failureCauseWithProtErr           FailureCauseWithProtErr
    OPTIONAL
}
```

```
SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
        ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}
```