

TSG-RAN Meeting #18
New-Orleans, USA, 03 - 06 December 2002

RP-020859

Title: CRs (Rel-4 and Rel-5 category A) to TS 25.331 (2).

Source: TSG-RAN WG2

Agenda item: 7.2.4

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Version
R2-023182	Agreed	25.331	1786	-	Rel-4	Correction to reporting event 6f for FDD	F	4.7.0	4.8.0
R2-023183	Agreed	25.331	1787	-	Rel-5	Correction to reporting event 6f for FDD	A	5.2.0	5.3.0
R2-023234	Agreed	25.331	1801	-	Rel-4	ASN.1 corrections	F	4.7.0	4.8.0
R2-023235	Agreed	25.331	1802	-	Rel-5	ASN.1 corrections	A	5.2.0	5.3.0
R2-023264	Agreed	25.331	1804	-	Rel-4	Asymmetric ROHC Configuration	F	4.7.0	4.8.0
R2-023265	Agreed	25.331	1805	-	Rel-5	Asymmetric ROHC Configuration	A	5.2.0	5.3.0
R2-023266	Agreed	25.331	1806	-	Rel-4	Reference Cell for GSM OTD Measurement	F	4.7.0	4.8.0
R2-023267	Agreed	25.331	1807	-	Rel-5	Reference Cell for GSM OTD Measurement	A	5.2.0	5.3.0

CHANGE REQUEST

25.331 CR 1786 # rev - # Current version: 4.7.0

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

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Correction to reporting event 6f for FDD		
Source:	# Siemens AG		
Work item code:	# TEI4	Date:	# 21/10/2002
Category:	# F	Release:	# Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# The principle of this correction on reporting event 6f was already approved on RAN #17 as part of CR1527 rev1. Since this CR was not outlined on the correct source for Rel-4, it was in consequence not implemented in the related part of 25.331-470.
Summary of change:	# The current description of UE internal measurement reporting event 6f is interpreted to have an edge-triggered behaviour. The proposed change introduces a trigger condition and a leaving trigger condition for this event which corresponds to the following interpretation of the current description: The expression "becomes larger than a threshold" is changed to: if the corresponding variable is set to FALSE and if the value is greater than this threshold during "time_to_trigger" with the leaving condition: if the corresponding variable is set to TRUE and if the value is less or equal this threshold. The proposed event evaluation procedure is based on this trigger condition and leaving trigger condition: After the trigger condition is fulfilled, a report is sent and the corresponding variable is set to TRUE. As long as this variable stays set to TRUE, no more reports are sent. After the leaving trigger condition is fulfilled the variable is set to FALSE again.

For events 6f this is done per RL.

Isolated impact analysis:

Affected Functionality: UE internal measurements reporting events

Correction to a function where specification was ambiguous/not sufficiently explicit/missing procedural text or rules/containing some contradiction. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

If the UE does not implement this CR:

The edge-triggered behaviour might not be implemented correctly and there may be more or less reports than expected by UTRAN.

If the UTRAN does not implement this CR:

The edge-triggered behaviour might not be assumed correctly and there may be more or less reports than expected.

34.108:

The current specification contains no references to the concerned functions.

34.123

The current state of the specification reflects the behaviour according to the proposed description.

Consequences if not approved:

⌘ Reporting event 6f for FDD is not completely described in Rel-4.

Clauses affected:

⌘ 14.6.2.6

Other specs affected:

Y	N
⌘	X
⌘	X
⌘	X

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/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

14.6.2.6 Reporting event 6F (FDD): The UE Rx-Tx time difference for a RL included in the active set becomes larger than an absolute threshold

~~When this event is ordered by UTRAN in a MEASUREMENT CONTROL message, the UE shall send a MEASUREMENT REPORT message whenever the UE Rx-Tx time difference becomes larger than the threshold defined by the IE "UE Rx-Tx time difference threshold".~~

When an UE internal measurement configuring event 6f is set up, the UE shall:

1> create a variable TRIGGERED_6F_EVENT related to that measurement, which shall initially be set to FALSE for each RL;

1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

1> if the UE Rx-Tx time difference for a RL included in the active set is greater than the value in IE "UE Rx-Tx time difference threshold" stored for this event in the variable MEASUREMENT_IDENTITY for a time period indicated by the IE "time to trigger":

2> if the variable TRIGGERED_6F_EVENT is set to FALSE for this RL:

3> set the variable TRIGGERED_6F_EVENT to TRUE for this RL;

3> send a measurement report with IEs set as below:

4> set in "UE internal measurement event results": "UE internal event identity" to "6f";

4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.

1> if the variable TRIGGERED_6F_EVENT is set to TRUE for a RL and if the UE RX-Tx time difference for this RL included in the active set is less or equal the value in IE "UE Rx-Tx time difference threshold" stored for this event in the variable MEASUREMENT_IDENTITY:

2> set the variable TRIGGERED_6F_EVENT to FALSE for this RL

CHANGE REQUEST

25.331 CR 1787 # rev **-** # Current version: **5.2.0**

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

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Correction to reporting event 6f for FDD		
Source:	# Siemens AG		
Work item code:	# TEI4	Date:	# 21/10/2002
Category:	# A	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# The principle of this correction on reporting event 6f was already approved on RAN #17 as part of CR1528 rev1. Since this CR was not outlined on the correct source for Rel-5, it was in consequence not implemented in the related part of 25.331-520.
Summary of change:	# The current description of UE internal measurement reporting event 6f is interpreted to have an edge-triggered behaviour. The proposed change introduces a trigger condition and a leaving trigger condition for this event which corresponds to the following interpretation of the current description: The expression "becomes larger than a threshold" is changed to: if the corresponding variable is set to FALSE and if the value is greater than this threshold during "time_to_trigger" with the leaving condition: if the corresponding variable is set to TRUE and if the value is less or equal this threshold. The proposed event evaluation procedure is based on this trigger condition and leaving trigger condition: After the trigger condition is fulfilled, a report is sent and the corresponding variable is set to TRUE. As long as this variable stays set to TRUE, no more reports are sent. After the leaving trigger condition is fulfilled the variable is set to FALSE again.

For events 6f this is done per RL.

Isolated impact analysis:

Affected Functionality: UE internal measurements reporting events

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If the UE does not implement this CR:

The edge-triggered behaviour might not be implemented correctly and there may be more or less reports than expected by UTRAN.

If the UTRAN does not implement this CR:

The edge-triggered behaviour might not be assumed correctly and there may be more or less reports than expected.

34.108:

The current specification contains no references to the concerned functions.

34.123

The current state of the specification reflects the behaviour according to the proposed description.

Consequences if not approved:

⌘ Reporting event 6f for FDD is not completely described in Rel-5.

Clauses affected:

⌘ 14.6.2.6

Other specs affected:

Y	N
⌘	X
⌘	X
⌘	X

Other core specifications ⌘
Test specifications ⌘
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.

14.6.2.6 Reporting event 6F (FDD): The UE Rx-Tx time difference for a RL included in the active set becomes larger than an absolute threshold

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3> set the variable TRIGGERED_6F_EVENT to TRUE for this RL;

3> send a measurement report with IEs set as below:

4> set in "UE internal measurement event results": "UE internal event identity" to "6f";

4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.

1> if the variable TRIGGERED_6F_EVENT is set to TRUE for a RL and if the UE RX-Tx time difference for this RL included in the active set is less or equal the value in IE "UE Rx-Tx time difference threshold" stored for this event in the variable MEASUREMENT_IDENTITY:

2> set the variable TRIGGERED_6F_EVENT to FALSE for this RL

CR-Form-v7

CHANGE REQUEST

25.331 CR 1801 # rev **-** # Current version: **4.7.0**

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# ASN.1 corrections		
Source:	# Nokia		
Work item code:	# TEI4	Date:	# 05/11/2002
Category:	# F	Release:	# Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# - In "HandoverToUTRANCommand-r4-IEs", "rab-info-Post" IE is included twice in ASN.1 part. "rab-info-post" was corrected in "HandoverToUTRANCommand-r3-ies" (R2-011246 CR757), and is now included only once in "preconfiguration". The corresponding change was not done in the Rel-4 shadow CR (R2-011247 CR758).
	- IE "SFN-Offset-Validity" is missing from Rel-4 ASN.1
	- "UE-Positioning-IPDL-Parameters-TDD-r4-ext" is erroneously included in "SRNC-RelocationInfo-r3-ies". This makes "SRNC-RelocationInfo-r3-ies" in 25.331v4.7.0 backwards incompatible with 25.331v3.12.0. It should be noted that "UE-Positioning-IPDL-Parameters-TDD-r4-ext" is included in "SRNC-RelocationInfo-r4-ies", embedded in "OngoingMeasRepList-r4".
Summary of change:	# - The nonCritical Extension containing "UE-Positioning-IPDL-Parameters-TDD-r4-ext" is removed from r3-container
	- IE "SFN-Offset-Validity" is added to Rel-4 ASN.1
	- "rab-info-Post" removed from "HandoverToUTRANCommand-r4-IEs"
Consequences if not approved:	# Errors remain in ASN.1

Clauses affected:	# 11.2, 11.3, 11.5						
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	#
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications					
	<input checked="" type="checkbox"/>	O&M Specifications					

Other comments: ☒

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11.2 PDU definitions

```

-- *****
--
-- Assistance Data Delivery
--
-- *****

AssistanceDataDelivery ::= CHOICE {
  r3 SEQUENCE {
    assistanceDataDelivery-r3 AssistanceDataDelivery-r3-IEs,
    v3a0eNonCriticalExetensions SEQUENCE {
      assistanceDataDelivery-v3a0ext AssistanceDataDelivery-v3a0ext,
      v4xyNonCriticalExtensions SEQUENCE {
        assistanceDataDelivery-v4xyext
          AssistanceDataDelivery-v4xyext-IEs,
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
    later-than-r3 SEQUENCE {
      rrc-TransactionIdentifier RRC-TransactionIdentifier,
      criticalExtensions SEQUENCE {}
    }
  }

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Measurement Information Elements
  ue-positioning-GPS-AssistanceData UE-Positioning-GPS-AssistanceData
  OPTIONAL,
  ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB
  OPTIONAL
}

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
  sfn-Offset-Validity SFN-Offset-Validity OPTIONAL
}

AssistanceDataDelivery-v4xyext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext OPTIONAL
}

-- *****
--
-- HANDOVER TO UTRAN COMMAND
--
-- *****

HandoverToUTRANCommand ::= CHOICE {
  r3 SEQUENCE {
    handoverToUTRANCommand-r3 HandoverToUTRANCommand-r3-IEs,
    v4xyNonCriticalExtensions SEQUENCE {
      handoverToUTRANCommand-v4xyext HandoverToUTRANCommand-v4xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      handoverToUTRANCommand-r4 HandoverToUTRANCommand-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI U-RNTI-Short,
  -- dummy is not used in this version of specification, it should
  -- not be sent and if received it should be ignored.
  dummy ActivationTime OPTIONAL,
  cipheringAlgorithm CipheringAlgorithm OPTIONAL,
}

```

```

-- Radio bearer IEs
-- Specification mode information
specificationMode CHOICE {
  complete SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
    ul-CommonTransChInfo UL-CommonTransChInfo,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo DL-CommonTransChInfo,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
    ul-DPCH-Info UL-DPCH-Info,
    modeSpecificInfo CHOICE {
      fdd SEQUENCE {
        dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
        cpch-SetInfo CPCH-SetInfo OPTIONAL
      },
      tdd NULL
    },
    dl-CommonInformation DL-CommonInformation,
    dl-InformationPerRL-List DL-InformationPerRL-List,
    frequencyInfo FrequencyInfo
  },
  preconfiguration SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
    preConfigMode CHOICE {
      predefinedConfigIdentity PredefinedConfigIdentity,
      defaultConfig SEQUENCE {
        defaultConfigMode DefaultConfigMode,
        defaultConfigIdentity DefaultConfigIdentity
      }
    },
    rab-Info RAB-Info-Post OPTIONAL,
    modeSpecificInfo CHOICE {
      fdd SEQUENCE {
        ul-DPCH-Info UL-DPCH-InfoPostFDD,
        dl-CommonInformationPost DL-CommonInformationPost,
        dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
        frequencyInfo FrequencyInfoFDD
      },
      tdd SEQUENCE {
        ul-DPCH-Info UL-DPCH-InfoPostTDD,
        dl-CommonInformationPost DL-CommonInformationPost,
        dl-InformationPerRL-List DL-InformationPerRL-ListPostTDD,
        frequencyInfo FrequencyInfoTDD,
        primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
      }
    }
  },
}
-- Physical channel IEs
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
ssdt-UL SSdT-UL-r4 OPTIONAL,
cell-id CellIdentity OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
-- User equipment IEs
new-U-RNTI U-RNTI-Short,
cipheringAlgorithm CipheringAlgorithm OPTIONAL,
-- Radio bearer IEs
rab-Info RAB-Info-Post,
-- Specification mode information
specificationMode CHOICE {
  complete SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    rab-InformationSetupList RAB-InformationSetupList-r4 OPTIONAL,
    ul-CommonTransChInfo UL-CommonTransChInfo,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo DL-CommonTransChInfo,

```

```

dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList,
ul-DPCH-Info                      UL-DPCH-Info-r4,
modeSpecificInfo                 CHOICE {
  fdd                             SEQUENCE {
    dl-PDSCH-Information          DL-PDSCH-Information OPTIONAL,
    cpch-SetInfo                 CPCH-SetInfo          OPTIONAL
  },
  tdd                             NULL
},
dl-CommonInformation             DL-CommonInformation-r4,
dl-InformationPerRL-List        DL-InformationPerRL-List-r4,
frequencyInfo                   FrequencyInfo
},
preconfiguration                 SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
preConfigMode                   CHOICE {
  predefinedConfigIdentity       PredefinedConfigIdentity,
  defaultConfig                 SEQUENCE {
    defaultConfigMode           DefaultConfigMode,
    defaultConfigIdentity       DefaultConfigIdentity-r4
  }
},
rab-Info                          RAB-Info-Post          OPTIONAL,
modeSpecificInfo                 CHOICE {
  fdd                             SEQUENCE {
    ul-DPCH-Info                UL-DPCH-InfoPostFDD,
    dl-CommonInformationPost     DL-CommonInformationPost,
    dl-InformationPerRL-List     DL-InformationPerRL-ListPostFDD,
    frequencyInfo                FrequencyInfoFDD
  },
  tdd                             CHOICE {
    tdd384                       SEQUENCE {
      ul-DPCH-Info              UL-DPCH-InfoPostTDD,
      dl-InformationPerRL       DL-InformationPerRL-PostTDD,
      frequencyInfo             FrequencyInfoTDD,
      primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power
    },
    tdd128                       SEQUENCE {
      ul-DPCH-Info              UL-DPCH-InfoPostTDD-LCR-r4,
      dl-InformationPerRL       DL-InformationPerRL-PostTDD-LCR-r4,
      frequencyInfo             FrequencyInfoTDD,
      primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power
    }
  }
}
},
},
},
-- Physical channel IEs
maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power
}

```

11.3 Information element definitions

```

-- *****
--
-- MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

```

```

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd              SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd              SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo      FrequencyInfo OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters-r4 OPTIONAL,
  sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,

```

sfn-Offset-Validity	SFN-Offset-Validity	OPTIONAL,
sfn-SFN-Drift	SFN-SFN-Drift	OPTIONAL,
searchWindowSize	OTDOA-SearchWindowSize,	
positioningMode	CHOICE {	
ueBased	SEQUENCE {	
relativeNorth	INTEGER (-20000..20000)	OPTIONAL,
relativeEast	INTEGER (-20000..20000)	OPTIONAL,
relativeAltitude	INTEGER (-4000..4000)	OPTIONAL,
fineSFN-SFN	FineSFN-SFN	OPTIONAL,
-- actual value roundTripTime = (IE value * 0.0625) + 876		
roundTripTime	INTEGER (0.. 32766)	OPTIONAL
},		
ueAssisted	SEQUENCE {}	
}		
}		

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-DomainInformationListFull,
CN-DRX-CycleLengthCoefficient,
NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
CellIdentity,
URA-Identity,
-- User Equipment IEs :
AccessStratumReleaseIndicator,
C-RNTI,
ChipRateCapability,
DL-PhysChCapabilityFDD-v380ext,
DL-PhysChCapabilityTDD,
DL-PhysChCapabilityTDD-LCR-r4,
GSM-Measurements,
FailureCauseWithProtErr,
MaxHcContextSpace,
MaxNoPhysChBitsReceived,
MaxROHC-ContextSessions-r4,
NetworkAssistedGPS-Supported,
RadioFrequencyBandTDDList,
RLC-Capability,
RRC-MessageSequenceNumber,
SecurityCapability,
SimultaneousSCCPCH-DPCH-Reception,
STARTList,
STARTSingle,
START-Value,
SupportOfDedicatedPilotsForChEstimation,
TransportChannelCapability,
TxRxFrequencySeparation,
U-RNTI,
UE-MultiModeRAT-Capability,
UE-PowerClass-v370,
UE-RadioAccessCapabBandFDDList,
UE-RadioAccessCapability,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,

```

    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v4xyext,
    UL-PhysChCapabilityFDD,
    UL-PhysChCapabilityTDD,
    UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RAB-Identity,
    RB-Identity,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-CommonTransChInfo-r4,
    DL-AddReconfTransChInfoList,
    DL-AddReconfTransChInfoList-r4,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-CommonTransChInfo-r4,
    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
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is transferred in the same direction and across the same path is grouped
-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srncRelocation                SRNC-RelocationInfo-r3,
    extension                     NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

Target-RNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup              RadioBearerSetup,
    radioBearerReconfiguration    RadioBearerReconfiguration,
    radioBearerRelease            RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo              RRC-FailureInfo-r3-IEs,
    -- IE dl-DCCHmessage consists of an octet string that includes
    -- the IE DL-DCCH-Message
    dl-DCCHmessage                OCTET STRING,
    extension                     NULL
}

```

```

}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

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

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
  r3
    SEQUENCE {
      -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
      -- includes non critical extensions
      interRATHandoverInfo-r3
        InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
      v390NonCriticalExtensions
        SEQUENCE {
          interRATHandoverInfoWithInterRATCapabilities-v390ext
            InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
          -- Reserved for future non critical extension
          nonCriticalExtensions
            SEQUENCE {} 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 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
  interRATHandoverInfo
    OCTET STRING (SIZE (0..255))
}

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,
              v3a0NonCriticalExtensions
                SEQUENCE {
                  sRNC-RelocationInfo-v3a0ext
                    SRNC-RelocationInfo-v3a0ext-IEs,
                  v3b0NonCriticalExtensions
                    SEQUENCE {
                      sRNC-RelocationInfo-v3b0ext
                        SRNC-RelocationInfo-v3b0ext-IEs,
                      v3c0NonCriticalExtensions
                        SEQUENCE {
                          sRNC-RelocationInfo-v3c0ext
                            SRNC-RelocationInfo-v3c0ext-IEs,
                          v4xyNonCriticalExtensions
                            SEQUENCE {
                              sRNC-RelocationInfo-v4xyext
                                SRNC-RelocationInfo-v4xyext-
                                IEs,
                              -- Reserved for future non critical extension
                              nonCriticalExtensions
                                SEQUENCE {} OPTIONAL
                            }
                        }
                    }
                }
            }
        }
    },
  later-than-r3
    CHOICE {

```

```

    r4                               SEQUENCE {
        SRNC-RelocationInfo-r4      SRNC-RelocationInfo-r4-IEs,
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
    },
    criticalExtensions               SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
-- Non-RRC IEs
    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,
-- The order of occurrence in the IE cipheringInfoPerRB-List is the
-- same as the RBs in the IE "Signalling RB information list" and in the
-- IE "RAB information list". The signalling RBs are supposed to be listed
-- first. Only UM and AM RBs that are ciphered are listed here
    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 up Ipdl Parameters TDD 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
}

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-v3a0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
  -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
  startValueForCiphering-v3a0ext      START-Value,
  cipheringInfoForSRB1-v3a0ext        CipheringInfoForSRB1-v3a0ext,
  ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
  cn-DomainIdentity                    CN-DomainIdentity,
  -- the remaining start values are contained in IE startValueForCiphering-v3b0ext
  startValueForCiphering-v3b0ext      STARTList2                          OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
  -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
  rb-IdentityForHOMessage              RB-Identity                        OPTIONAL
}

STARTList2 ::=
  SEQUENCE (SIZE (2..maxCNdomains)) OF
  STARTSingle

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

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
  dl-UM-SN                             BIT STRING (SIZE (7))
}

CipheringStatusList ::=
  SEQUENCE (SIZE (1..maxCNdomains)) OF
  CipheringStatusCNdomain

CipheringStatusCNdomain ::=
  SEQUENCE {
    cn-DomainIdentity                    CN-DomainIdentity,
    cipheringStatus                      CipheringStatus
  }

SRNC-RelocationInfo-r4-IEs ::=
  SEQUENCE {
    -- Non-RRC IEs
    -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
    -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
    -- Only included if type is "UE involved"
    rb-IdentityForHOMessage              RB-Identity                        OPTIONAL,
    stateOfRRC                          StateOfRRC,
    stateOfRRC-Procedure                 StateOfRRC-Procedure,
    -- Ciphering related information IEs
    cipheringStatusList                  CipheringStatusList-r4,
    latestConfiguredCN-Domain            CN-DomainIdentity,
    calculationTimeForCiphering          CalculationTimeForCiphering          OPTIONAL,
    count-C-List                         COUNT-C-List                       OPTIONAL,
    cipheringInfoPerRB-List              CipheringInfoPerRB-List-r4          OPTIONAL,
    -- Integrity protection related information IEs
    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-r4,
    ue-RadioAccessCapability-ext          UE-RadioAccessCapabBandFDDList     OPTIONAL,
    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-DomainInformationListFull       OPTIONAL,
    -- Measurement IEs
    ongoingMeasRepList                   OngoingMeasRepList-r4              OPTIONAL,
    -- Radio bearer IEs
  }

```

```

    predefinedConfigStatusList      PredefinedConfigStatusList,
    srb-InformationList             SRB-InformationSetupList,
    rab-InformationList             RAB-InformationSetupList-r4      OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo           UL-CommonTransChInfo-r4      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-r4      OPTIONAL,
    dl-TransChInfoList             DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Measurement report
    measurementReport              MeasurementReport            OPTIONAL,
    failureCause                   FailureCauseWithProtErr      OPTIONAL
}

-- IE definitions

CalculationTimeForCipherring ::= SEQUENCE {
    cell-Id                        CellIdentity,
    sfn                            INTEGER (0..4095)
}

CipherringInfoPerRB ::= SEQUENCE {
    dl-HFN                         BIT STRING (SIZE (20..25)),
    ul-HFN                         BIT STRING (SIZE (20..25))
}

CipherringInfoPerRB-r4 ::= SEQUENCE {
    rb-Identity                    RB-Identity,
    dl-HFN                         BIT STRING (SIZE (20..25)),
    dl-UM-SN                       BIT STRING (SIZE (7))          OPTIONAL,
    ul-HFN                         BIT STRING (SIZE (20..25))
}

-- TABULAR: CipherringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipherringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipherringInfoPerRB

CipherringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipherringInfoPerRB-r4

CipherringStatus ::= ENUMERATED {
    started, notStarted }

CipherringStatusList-r4 ::= SEQUENCE (SIZE (1..maxCNDomains)) OF
    CipherringStatusCNDomain-r4

CipherringStatusCNDomain-r4 ::= SEQUENCE {
    cn-DomainIdentity              CN-DomainIdentity,
    cipherringStatus               CipherringStatus,
    start-Value                    START-Value
}

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff       CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNDomains)) OF
    CN-DomainInformation-v390ext

CompressedModeMeasCapability-r4 ::= SEQUENCE {
    fdd-Measurements               BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd384-Measurements            BOOLEAN                      OPTIONAL,
    tdd128-Measurements            BOOLEAN                      OPTIONAL,
    gsm-Measurements               GSM-Measurements            OPTIONAL,
    multiCarrierMeasurements       BOOLEAN                      OPTIONAL
}

COUNT-C-List ::= SEQUENCE (SIZE (1..maxCNDomains)) OF

```

```

COUNT-CSingle
COUNT-CSingle ::=
  cn-DomainIdentity          COUNT-CSingle
  count-C                    BIT STRING (SIZE (32))
}

DL-PhysChCapabilityFDD-r4 ::= SEQUENCE {
  maxNoDPCH-PDSCH-Codes      INTEGER (1..8),
  maxNoPhysChBitsReceived    MaxNoPhysChBitsReceived,
  supportForSF-512           BOOLEAN,
  supportOfPDSCH             BOOLEAN,
  simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception,
  supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation OPTIONAL
}

ImplementationSpecificParams ::= BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::= ENUMERATED {
  started, notStarted }

MeasurementCapability-r4 ::= SEQUENCE {
  downlinkCompressedMode      CompressedModeMeasCapability-r4,
  uplinkCompressedMode        CompressedModeMeasCapability-r4
}

MeasurementCommandWithType ::= CHOICE {
  setup      MeasurementType,
  modify     NULL,
  release    NULL
}

MeasurementCommandWithType-r4 ::= CHOICE {
  setup      MeasurementType-r4,
  modify     NULL,
  release    NULL
}

OngoingMeasRep ::= SEQUENCE {
  measurementIdentity          MeasurementIdentity,
  -- TABULAR: The CHOICE Measurement in the tabular description is included
  -- in MeasurementCommandWithType
  measurementCommandWithType    MeasurementCommandWithType,
  measurementReportingMode      MeasurementReportingMode OPTIONAL,
  additionalMeasurementID-List  AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRep-r4 ::= SEQUENCE {
  measurementIdentity          MeasurementIdentity,
  -- TABULAR: The CHOICE Measurement in the tabular description is included
  -- in MeasurementCommandWithType-r4.
  measurementCommandWithType    MeasurementCommandWithType-r4,
  measurementReportingMode      MeasurementReportingMode OPTIONAL,
  additionalMeasurementID-List  AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRepList ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
  OngoingMeasRep

OngoingMeasRepList-r4 ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
  OngoingMeasRep-r4

PDCP-Capability-r4 ::= SEQUENCE {
  losslessSRNS-RelocationSupport BOOLEAN,
  supportForRfc2507              CHOICE {
    notSupported    NULL,
    supported       MaxHcContextSpace
  },
  supportForRfc3095              CHOICE {
    notSupported    NULL,
    supported       SEQUENCE {
      maxROHC-ContextSessions MaxROHC-ContextSessions-r4 DEFAULT s16,
      reverseCompressionDepth INTEGER (0..65535) DEFAULT 0
    }
  }
}

```

```

PhysicalChannelCapability-r4 ::= SEQUENCE {
    fddPhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityFDD-r4,
        uplinkPhysChCapability UL-PhysChCapabilityFDD
    } OPTIONAL,
    tdd384-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD,
        uplinkPhysChCapability UL-PhysChCapabilityTDD
    } OPTIONAL,
    tdd128-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability UL-PhysChCapabilityTDD-LCR-r4
    } OPTIONAL
}

RF-Capability-r4 ::= SEQUENCE {
    fddRF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        txRxFrequencySeparation TxRxFrequencySeparation
    } OPTIONAL,
    tdd384-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,
        chipRateCapability ChipRateCapability
    } OPTIONAL,
    tdd128-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,
        chipRateCapability ChipRateCapability
    } OPTIONAL
}

SRB-SpecificIntegrityProtInfo ::= SEQUENCE {
    ul-RRC-HFN BIT STRING (SIZE (28)),
    dl-RRC-HFN BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
SRB-SpecificIntegrityProtInfo

StateOfRRC ::= ENUMERATED {
    cell-DCH, cell-FACH,
    cell-PCH, ura-PCH }

StateOfRRC-Procedure ::= ENUMERATED {
    awaitNoRRC-Message,
    awaitRB-ReleaseComplete,
    awaitRB-SetupComplete,
    awaitRB-ReconfigurationComplete,
    awaitTransportCH-ReconfigurationComplete,
    awaitPhysicalCH-ReconfigurationComplete,
    awaitActiveSetUpdateComplete,
    awaitHandoverComplete,
    sendCellUpdateConfirm,
    sendUraUpdateConfirm,
    -- dummy is not used in this version of specification
    -- It should not be sent
    dummy,
    otherStates
}

UE-Positioning-LastKnownPos ::= SEQUENCE {
    sfn INTEGER (0..4095),
    cell-id CellIdentity,
    positionEstimate PositionEstimate
}

UE-Positioning-Capability-r4 ::= SEQUENCE {
    standaloneLocMethodsSupported BOOLEAN,
    ue-BasedOTDOA-Supported BOOLEAN,
    networkAssistedGPS-Supported NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames BOOLEAN,
    supportForIPDL BOOLEAN,
    rx-tx-TimeDifferenceType2Capable BOOLEAN,
    validity-CellPCH-UraPCH ENUMERATED { true (0 ) } OPTIONAL
}

```

```
UE-RadioAccessCapability-r4 ::= SEQUENCE {
  accessStratumReleaseIndicator
  pdcp-Capability
  rlc-Capability
  transportChannelCapability
  rf-Capability
  physicalChannelCapability
  ue-MultiModeRAT-Capability
  securityCapability
  ue-positioning-Capability
  measurementCapability
}
END
```

SEQUENCE {
AccessStratumReleaseIndicator,
PDCP-Capability-r4,
RLC-Capability,
TransportChannelCapability,
RF-Capability-r4,
PhysicalChannelCapability-r4,
UE-MultiModeRAT-Capability,
SecurityCapability,
UE-Positioning-Capability-r4,
MeasurementCapability-r4 OPTIONAL

CR-Form-v7

CHANGE REQUEST

25.331 CR 1802 # rev **-** # Current version: **5.2.0**

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# ASN.1 corrections		
Source:	# Nokia		
Work item code:	# TEI4	Date:	# 05/11/2002
Category:	# A	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	# - In "HandoverToUTRANCommand-r4-IEs", "rab-info-Post" IE is included twice in ASN.1 part. "rab-info-post" was corrected in "HandoverToUTRANCommand-r3-ies" (R2-011246 CR757), and is now included only once in "preconfiguration". The corresponding change was not done in the Rel-4 shadow CR (R2-011247 CR758). - IE "SFN-Offset-Validity" is missing from Rel-4 ASN.1 - "UE-Positioning-IPDL-Parameters-TDD-r4-ext" is erroneously included in "SRNC-RelocationInfo-r3-ies". This makes "SRNC-RelocationInfo-r3-ies" in 25.331v4.7.0 backwards incompatible with 25.331v3.12.0. It should be noted that "UE-Positioning-IPDL-Parameters-TDD-r4-ext" is included in "SRNC-RelocationInfo-r4-ies", embedded in "OngoingMeasRepList-r4".
Summary of change:	# - The nonCritical Extension containing "UE-Positioning-IPDL-Parameters-TDD-r4-ext" is removed from r3-container - IE "SFN-Offset-Validity" is added to Rel-4 ASN.1 - "rab-info-Post" removed from "HandoverToUTRANCommand-r4-IEs"
Consequences if not approved:	# Errors remain in ASN.1

Clauses affected:	# 11.2, 11.3, 11.5						
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	#
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications					
	<input checked="" 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/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☒ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.2 PDU definitions

```

-- *****
--
-- Assistance Data Delivery
--
-- *****

AssistanceDataDelivery ::= CHOICE {
  r3 SEQUENCE {
    assistanceDataDelivery-r3 AssistanceDataDelivery-r3-IEs,
    v3a0eNonCriticalExetensions SEQUENCE {
      assistanceDataDelivery-v3a0ext AssistanceDataDelivery-v3a0ext,
      v4xyNonCriticalExtensions SEQUENCE {
        assistanceDataDelivery-v4xyext
          AssistanceDataDelivery-v4xyext-IEs,
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
    later-than-r3 SEQUENCE {
      rrc-TransactionIdentifier RRC-TransactionIdentifier,
      criticalExtensions SEQUENCE {}
    }
  }

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Measurement Information Elements
  ue-positioning-GPS-AssistanceData UE-Positioning-GPS-AssistanceData
  OPTIONAL,
  ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB
  OPTIONAL
}

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
  sfn-Offset-Validity SFN-Offset-Validity OPTIONAL
}

AssistanceDataDelivery-v4xyext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext OPTIONAL
}

-- *****
--
-- HANDOVER TO UTRAN COMMAND
--
-- *****

HandoverToUTRANCommand ::= CHOICE {
  r3 SEQUENCE {
    handoverToUTRANCommand-r3 HandoverToUTRANCommand-r3-IEs,
    v4xyNonCriticalExtensions SEQUENCE {
      handoverToUTRANCommand-v4xyext HandoverToUTRANCommand-v4xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      handoverToUTRANCommand-r4 HandoverToUTRANCommand-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI U-RNTI-Short,
  -- dummy is not used in this version of specification, it should
  -- not be sent and if received it should be ignored.
  dummy ActivationTime OPTIONAL,
  cipheringAlgorithm CipheringAlgorithm OPTIONAL,
}

```



```

-- Radio bearer IEs
-- Specification mode information
specificationMode CHOICE {
  complete SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
    ul-CommonTransChInfo UL-CommonTransChInfo,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo DL-CommonTransChInfo,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
    ul-DPCH-Info UL-DPCH-Info,
    modeSpecificInfo CHOICE {
      fdd SEQUENCE {
        dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
        cpch-SetInfo CPCH-SetInfo OPTIONAL
      },
      tdd NULL
    },
    dl-CommonInformation DL-CommonInformation,
    dl-InformationPerRL-List DL-InformationPerRL-List,
    frequencyInfo FrequencyInfo
  },
  preconfiguration SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
    preConfigMode CHOICE {
      predefinedConfigIdentity PredefinedConfigIdentity,
      defaultConfig SEQUENCE {
        defaultConfigMode DefaultConfigMode,
        defaultConfigIdentity DefaultConfigIdentity
      }
    },
    rab-Info RAB-Info-Post OPTIONAL,
    modeSpecificInfo CHOICE {
      fdd SEQUENCE {
        ul-DPCH-Info UL-DPCH-InfoPostFDD,
        dl-CommonInformationPost DL-CommonInformationPost,
        dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
        frequencyInfo FrequencyInfoFDD
      },
      tdd SEQUENCE {
        ul-DPCH-Info UL-DPCH-InfoPostTDD,
        dl-CommonInformationPost DL-CommonInformationPost,
        dl-InformationPerRL-List DL-InformationPerRL-ListPostTDD,
        frequencyInfo FrequencyInfoTDD,
        primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
      }
    }
  },
}
-- Physical channel IEs
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
ssdt-UL SSdT-UL-r4 OPTIONAL,
cell-id CellIdentity OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
-- User equipment IEs
new-U-RNTI U-RNTI-Short,
cipheringAlgorithm CipheringAlgorithm OPTIONAL,
-- Radio bearer IEs
rab-Info RAB-Info-Post,
-- Specification mode information
specificationMode CHOICE {
  complete SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    rab-InformationSetupList RAB-InformationSetupList-r4 OPTIONAL,
    ul-CommonTransChInfo UL-CommonTransChInfo,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo DL-CommonTransChInfo,

```

```

dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList,
ul-DPCH-Info                      UL-DPCH-Info-r4,
modeSpecificInfo                  CHOICE {
  fdd                              SEQUENCE {
    dl-PDSCH-Information           DL-PDSCH-Information OPTIONAL,
    cpch-SetInfo                  CPCH-SetInfo           OPTIONAL
  },
  tdd                              NULL
},
dl-CommonInformation              DL-CommonInformation-r4,
dl-InformationPerRL-List          DL-InformationPerRL-List-r4,
frequencyInfo                    FrequencyInfo
},
preconfiguration                  SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
preConfigMode                    CHOICE {
  predefinedConfigIdentity        PredefinedConfigIdentity,
  defaultConfig                  SEQUENCE {
    defaultConfigMode            DefaultConfigMode,
    defaultConfigIdentity        DefaultConfigIdentity-r4
  }
},
rab-Info                          RAB-Info-Post           OPTIONAL,
modeSpecificInfo                  CHOICE {
  fdd                              SEQUENCE {
    ul-DPCH-Info                 UL-DPCH-InfoPostFDD,
    dl-CommonInformationPost      DL-CommonInformationPost,
    dl-InformationPerRL-List      DL-InformationPerRL-ListPostFDD,
    frequencyInfo                FrequencyInfoFDD
  },
  tdd                              CHOICE {
    tdd384                        SEQUENCE {
      ul-DPCH-Info               UL-DPCH-InfoPostTDD,
      dl-InformationPerRL        DL-InformationPerRL-PostTDD,
      frequencyInfo              FrequencyInfoTDD,
      primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power
    },
    tdd128                        SEQUENCE {
      ul-DPCH-Info               UL-DPCH-InfoPostTDD-LCR-r4,
      dl-InformationPerRL        DL-InformationPerRL-PostTDD-LCR-r4,
      frequencyInfo              FrequencyInfoTDD,
      primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power
    }
  }
}
},
},
},
-- Physical channel IEs
maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power
}

```

11.3 Information element definitions

```

-- *****
--
-- MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd              SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd              SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo      FrequencyInfo OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters-r4 OPTIONAL,
}

```

sfn-SFN-RelTimeDifference	SFN-SFN-RelTimeDifference1,	
sfn-Offset-Validity	SFN-Offset-Validity	OPTIONAL,
sfn-SFN-Drift	SFN-SFN-Drift	OPTIONAL,
searchWindowSize	OTDOA-SearchWindowSize,	
positioningMode	CHOICE {	
ueBased	SEQUENCE {	
relativeNorth	INTEGER (-20000..20000)	OPTIONAL,
relativeEast	INTEGER (-20000..20000)	OPTIONAL,
relativeAltitude	INTEGER (-4000..4000)	OPTIONAL,
fineSFN-SFN	FineSFN-SFN	OPTIONAL,
-- actual value roundTripTime = (IE	value * 0.0625) + 876	
roundTripTime	INTEGER (0.. 32766)	OPTIONAL
},		
ueAssisted	SEQUENCE {}	
}		
}		

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-DomainInformationListFull,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    C-RNTI,
    ChipRateCapability,
    DL-PhysChCapabilityFDD-v380ext,
    DL-PhysChCapabilityTDD,
    DL-PhysChCapabilityTDD-LCR-r4,
    GSM-Measurements,
    FailureCauseWithProtErr,
    MaxHcContextSpace,
    MaxNoPhysChBitsReceived,
    MaxROHC-ContextSessions-r4,
    NetworkAssistedGPS-Supported,
    RadioFrequencyBandTDDList,
    RLC-Capability,
    RRC-MessageSequenceNumber,
    SecurityCapability,
    SimultaneousSCCPCH-DPCH-Reception,
    STARTList,
    STARTSingle,
    START-Value,
    SupportOfDedicatedPilotsForChEstimation,
    TransportChannelCapability,
    TxRxFrequencySeparation,
    U-RNTI,
    UE-MultiModeRAT-Capability,
    UE-PowerClass-v370,
    UE-RadioAccessCapabBandFDDList,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
```

```

    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v4xyext,
    UL-PhysChCapabilityFDD,
    UL-PhysChCapabilityTDD,
    UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RAB-Identity,
    RB-Identity,
    RB-Identity,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-CommonTransChInfo-r4,
    DL-AddReconfTransChInfoList,
    DL-AddReconfTransChInfoList-r4,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-CommonTransChInfo-r4,
    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,
    maxRBallRABs,
    maxRFC3095-CID,
    maxSRBsetup
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is tranferred in the same direction and across the same path is grouped

-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srcnRelocation                SRNC-RelocationInfo-r3,
    rfc3095-ContextInfo           RFC3095-ContextInfo-r5,
    extension                      NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

Target-RNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup              RadioBearerSetup,
    radioBearerReconfiguration    RadioBearerReconfiguration,
    radioBearerRelease            RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo               RRC-FailureInfo-r3-IEs,

```

```

    dL-DCCHmessage          OCTET STRING,
    extension               NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

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

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
    r3                SEQUENCE {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        interRATHandoverInfo-r3          InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        v390NonCriticalExtensions        SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
        }
        InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions            SEQUENCE {} 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 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
    interRATHandoverInfo                OCTET STRING (SIZE (0..255))
}

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

-- *****
--
-- RFC3095 context, source RNC to target RNC
--
-- *****

RFC3095-ContextInfo-r5 ::= CHOICE {
    r5                SEQUENCE {
        rfc3095-ContextInfoList-r5      RFC3095-ContextInfoList-r5,
        -- Reserved for future non critical extension
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    },
    criticalExtensions                SEQUENCE {}
}

RFC3095-ContextInfoList-r5 ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RFC3095-ContextInfo

-- *****
--
-- 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,
            v3a0NonCriticalExtensions       SEQUENCE {
                sRNC-RelocationInfo-v3a0ext SRNC-RelocationInfo-v3a0ext-IEs,
                v3b0NonCriticalExtensions    SEQUENCE {
                    sRNC-RelocationInfo-v3b0ext SRNC-RelocationInfo-v3b0ext-IEs,
                    v3c0NonCriticalExtensions    SEQUENCE {
                        sRNC-RelocationInfo-v3c0ext SRNC-RelocationInfo-v3c0ext-IEs,
                        v4xyNonCriticalExtensions SEQUENCE {
                            sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-v4xyext-
IEs,
                                -- Reserved for future non critical extension
                                nonCriticalExtensions SEQUENCE {} OPTIONAL
                            }
                        }
                    }
                }
            }
        }
    },
    later-than-r3
    CHOICE {
        r4
        SEQUENCE {
            sRNC-RelocationInfo-r4
            SRNC-RelocationInfo-r4-IEs,
            nonCriticalExtensions
            SEQUENCE {} OPTIONAL
        },
        criticalExtensions
        SEQUENCE {}
    }
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
    -- Non-RRC IEs
    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,
    -- The order of occurrence in the IE cipheringInfoPerRB-List is the
    -- same as the RBs in the IE "Signalling RB information list" and in the
    -- IE "RAB information list". The signalling RBs are supposed to be listed
    -- first. Only UM and AM RBs that are ciphered are listed here
    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 up Ipd1 Parameters TDD is present, otherwise
  this IE is absent
  up Ipd1 Parameters TDD UE-Positioning-IPDL-Parameters-TDD-r4-ext OPTIONAL,
  Extension mechanism for non release4 information
  nonCriticalExtensions SEQUENCE {} 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-v3a0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
  -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
  startValueForCIphering-v3a0ext    START-Value,
  cipheringInfoForSRB1-v3a0ext      CipheringInfoForSRB1-v3a0ext,
  ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
  cn-DomainIdentity          CN-DomainIdentity,
  -- the remaining start values are contained in IE startValueForCiphering-v3b0ext
  startValueForCIphering-v3b0ext  STARTList2              OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
  -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
  rb-IdentityForHOMessage      RB-Identity          OPTIONAL
}

STARTList2 ::= SEQUENCE (SIZE (2..maxCNdomains)) OF
  STARTSingle

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

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
  dl-UM-SN          BIT STRING (SIZE (7))
}

CipheringStatusList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
  CipheringStatusCNDomain

CipheringStatusCNDomain ::= SEQUENCE {
  cn-DomainIdentity  CN-DomainIdentity,
  cipheringStatus    CipheringStatus
}

SRNC-RelocationInfo-r4-IEs ::= SEQUENCE {
  -- Non-RRC IEs
  -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
  rb-IdentityForHOMessage      RB-Identity          OPTIONAL,
  stateOfRRC                  StateOfRRC,
  stateOfRRC-Procedure         StateOfRRC-Procedure,
  -- Ciphering related information IEs
  cipheringStatusList          CipheringStatusList-r4,
  latestConfiguredCN-Domain    CN-DomainIdentity,
  calculationTimeForCiphering  CalculationTimeForCiphering      OPTIONAL,
  count-C-List                 COUNT-C-List          OPTIONAL,
  cipheringInfoPerRB-List      CipheringInfoPerRB-List-r4  OPTIONAL,
}

```

```

-- Integrity protection related information IEs
  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-r4,
  ue-RadioAccessCapability-ext    UE-RadioAccessCapabBandFDDList    OPTIONAL,
  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-DomainInformationListFull      OPTIONAL,
-- Measurement IEs
  ongoingMeasRepList             OngoingMeasRepList-r4            OPTIONAL,
-- Radio bearer IEs
  predefinedConfigStatusList     PredefinedConfigStatusList,
  srb-InformationList            SRB-InformationSetupList,
  rab-InformationList            RAB-InformationSetupList-r4      OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo          UL-CommonTransChInfo-r4          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-r4          OPTIONAL,
  dl-TransChInfoList            DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Measurement report
  measurementReport              MeasurementReport                  OPTIONAL,
  failureCause                   FailureCauseWithProtErr           OPTIONAL
}

-- IE definitions

CalculationTimeForCipherring ::= SEQUENCE {
  cell-Id                        CellIdentity,
  sfn                            INTEGER (0..4095)
}

CipherringInfoPerRB ::= SEQUENCE {
  dl-HFN                          BIT STRING (SIZE (20..25)),
  ul-HFN                          BIT STRING (SIZE (20..25))
}

CipherringInfoPerRB-r4 ::= SEQUENCE {
  rb-Identity                    RB-Identity,
  dl-HFN                          BIT STRING (SIZE (20..25)),
  dl-UM-SN                        BIT STRING (SIZE (7))          OPTIONAL,
  ul-HFN                          BIT STRING (SIZE (20..25))
}

-- TABULAR: CipherringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipherringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
  CipherringInfoPerRB

CipherringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
  CipherringInfoPerRB-r4

CipherringStatus ::= ENUMERATED {
  started, notStarted }

CipherringStatusList-r4 ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
  CipherringStatusCNdomain-r4

CipherringStatusCNdomain-r4 ::= SEQUENCE {
  cn-DomainIdentity              CN-DomainIdentity,
  cipherringStatus                CipherringStatus,
  start-Value                     START-Value
}

```



```

}

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff    CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation-v390ext

CompressedModeMeasCapability-r4 ::= SEQUENCE {
    fdd-Measurements            BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd384-Measurements        BOOLEAN                                OPTIONAL,
    tdd128-Measurements        BOOLEAN                                OPTIONAL,
    gsm-Measurements           GSM-Measurements                    OPTIONAL,
    multiCarrierMeasurements    BOOLEAN                                OPTIONAL
}

COUNT-C-List ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    COUNT-CSingle

COUNT-CSingle ::= SEQUENCE {
    cn-DomainIdentity          CN-DomainIdentity,
    count-C                    BIT STRING (SIZE (32))
}

DL-PhysChCapabilityFDD-r4 ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes     INTEGER (1..8),
    maxNoPhysChBitsReceived   MaxNoPhysChBitsReceived,
    supportForSF-512          BOOLEAN,
    supportOfPDSCH            BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception,
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation    OPTIONAL
}

-- The structure of DL-RFC3095-Context is FFS
DL-RFC3095-Context ::= SEQUENCE {
    rfc3095-Context-Identity  INTEGER (0..16383),
    dl-mode                   ENUMERATED {u, o, r}
}

ImplementationSpecificParams ::= BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::= ENUMERATED {
    started, notStarted }

MeasurementCapability-r4 ::= SEQUENCE {
    downlinkCompressedMode    CompressedModeMeasCapability-r4,
    uplinkCompressedMode      CompressedModeMeasCapability-r4
}

MeasurementCommandWithType ::= CHOICE {
    setup                      MeasurementType,
    modify                     NULL,
    release                    NULL
}

MeasurementCommandWithType-r4 ::= CHOICE {
    setup                      MeasurementType-r4,
    modify                     NULL,
    release                    NULL
}

OngoingMeasRep ::= SEQUENCE {
    measurementIdentity        MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType MeasurementCommandWithType,
    measurementReportingMode   MeasurementReportingMode    OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List    OPTIONAL
}

OngoingMeasRep-r4 ::= SEQUENCE {
    measurementIdentity        MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included

```

```

-- in MeasurementCommandWithType-r4.
measurementCommandWithType      MeasurementCommandWithType-r4,
measurementReportingMode        MeasurementReportingMode          OPTIONAL,
additionalMeasurementID-List    AdditionalMeasurementID-List    OPTIONAL
}

OngoingMeasRepList ::=          SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                OngoingMeasRep

OngoingMeasRepList-r4 ::=       SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                OngoingMeasRep-r4

PDCP-Capability-r4 ::=         SEQUENCE {
    losslessSRNS-RelocationSupport  BOOLEAN,
    supportForRfc2507                CHOICE {
        notSupported                 NULL,
        supported                    MaxHcContextSpace
    },
    supportForRfc3095                CHOICE {
        notSupported                 NULL,
        supported                    SEQUENCE {
            maxROHC-ContextSessions  MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth  INTEGER (0..65535)         DEFAULT 0
        }
    }
}

PhysicalChannelCapability-r4 ::= SEQUENCE {
    fddPhysChCapability              SEQUENCE {
        downlinkPhysChCapability    DL-PhysChCapabilityFDD-r4,
        uplinkPhysChCapability      UL-PhysChCapabilityFDD
    } OPTIONAL,
    tdd384-PhysChCapability          SEQUENCE {
        downlinkPhysChCapability    DL-PhysChCapabilityTDD,
        uplinkPhysChCapability      UL-PhysChCapabilityTDD
    } OPTIONAL,
    tdd128-PhysChCapability          SEQUENCE {
        downlinkPhysChCapability    DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability      UL-PhysChCapabilityTDD-LCR-r4
    } OPTIONAL
}

RF-Capability-r4 ::=           SEQUENCE {
    fddRF-Capability                SEQUENCE {
        ue-PowerClass              UE-PowerClass-v370,
        txRxFrequencySeparation    TxRxFrequencySeparation
    } OPTIONAL,
    tdd384-RF-Capability            SEQUENCE {
        ue-PowerClass              UE-PowerClass-v370,
        radioFrequencyBandTDDList  RadioFrequencyBandTDDList,
        chipRateCapability          ChipRateCapability
    } OPTIONAL,
    tdd128-RF-Capability            SEQUENCE {
        ue-PowerClass              UE-PowerClass-v370,
        radioFrequencyBandTDDList  RadioFrequencyBandTDDList,
        chipRateCapability          ChipRateCapability
    } OPTIONAL
}

RFC3095-ContextInfo ::=        SEQUENCE {
    rb-Identity                     RB-Identity,
    rfc3095-Context-List            RFC3095-Context-List
}

RFC3095-Context-List ::=       SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
    dl-RFC3095-Context              DL-RFC3095-Context    OPTIONAL,
    ul-RFC3095-Context              UL-RFC3095-Context    OPTIONAL
}

SRB-SpecificIntegrityProtInfo ::= SEQUENCE {
    ul-RRC-HFN                      BIT STRING (SIZE (28)),
    dl-RRC-HFN                      BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber           RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber           RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
                                        SRB-SpecificIntegrityProtInfo

```

```

StateOfRRC ::=
    ENUMERATED {
        cell-DCH, cell-FACH,
        cell-PCH, ura-PCH }

StateOfRRC-Procedure ::=
    ENUMERATED {
        awaitNoRRC-Message,
        awaitRB-ReleaseComplete,
        awaitRB-SetupComplete,
        awaitRB-ReconfigurationComplete,
        awaitTransportCH-ReconfigurationComplete,
        awaitPhysicalCH-ReconfigurationComplete,
        awaitActiveSetUpdateComplete,
        awaitHandoverComplete,
        sendCellUpdateConfirm,
        sendUraUpdateConfirm,
        -- dummy is not used in this version of specification
        -- It should not be sent
        dummy,
        otherStates
    }

UE-Positioning-Capability-r4 ::= SEQUENCE {
    standaloneLocMethodsSupported    BOOLEAN,
    ue-BasedOTDOA-Supported          BOOLEAN,
    networkAssistedGPS-Supported     NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames    BOOLEAN,
    supportForIPDL                   BOOLEAN,
    rx-tx-TimeDifferenceType2Capable    BOOLEAN,
    validity-CellPCH-UraPCH          ENUMERATED { true ( 0 ) }    OPTIONAL
}

UE-Positioning-LastKnownPos ::= SEQUENCE {
    sfn                               INTEGER (0..4095),
    cell-id                           CellIdentity,
    positionEstimate                  PositionEstimate
}

UE-RadioAccessCapability-r4 ::= SEQUENCE {
    accessStratumReleaseIndicator     AccessStratumReleaseIndicator,
    pdcp-Capability                  PDCP-Capability-r4,
    rlc-Capability                    RLC-Capability,
    transportChannelCapability        TransportChannelCapability,
    rf-Capability                     RF-Capability-r4,
    physicalChannelCapability         PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability        UE-MultiModeRAT-Capability,
    securityCapability                SecurityCapability,
    ue-positioning-Capability         UE-Positioning-Capability-r4,
    measurementCapability             MeasurementCapability-r4    OPTIONAL
}

-- The structure of UL-RFC3095-Context is FFS
UL-RFC3095-Context ::= SEQUENCE {
    rfc3095-Context-Identity          INTEGER (0..16383),
    ul-mode                           ENUMERATED {u, o, r}
}

END

```

CHANGE REQUEST

⌘ **25.331 CR 1804** ⌘ rev **-** ⌘ Current version: **4.7.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Asymmetric ROHC Configuration		
Source:	⌘ LG Electronics Inc.		
Work item code:	⌘ TEI4	Date:	⌘ 15/11/2002
Category:	⌘ F	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ To manage the UE memory efficiently, it is required to configure ROHC asymmetrically for UL and DL.
Summary of change:	⌘ ROHC parameters are split into UL and DL.
Consequences if not approved:	⌘ ROHC cannot be configured asymmetrically for UL and DL. This wastes UE's memory.

Clauses affected:	⌘ 10.3.3.24, 10.3.4.2, 11.3								
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> </table>	Y	N					Other core specifications	⌘
Y	N								
		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/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

10.3.3.24 PDCP capability

Indicates which algorithms and which value range of their parameters are supported by the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Support for lossless SRNS relocation	MP		Boolean	TRUE means supported	
Support for RFC2507	MP		Boolean	TRUE means supported	
>Max HC context space			Integer(512, 1024, 2048, 4096, 8192)		
Support for RFC 3095	MP		Boolean	TRUE means supported	REL-4
>Maximum number of ROHC context sessions	MD		Integer(2, 4, 8, 12, 16, 24, 32, 48, 64, 128, 256, 512, 1024, 16384)	Default value is 16.	REL-4
>Reverse decompression depth	MD		Integer (0..65535)	Default value is 0 (reverse decompression <u>is not supported shall not be used</u>).	REL-4

10.3.4.2 PDCP info

The purpose of the PDCP info IE is to indicate which algorithms shall be established and to configure the parameters of each of the algorithms.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Support for lossless SRNS relocation	CV- <i>LosslessCriteria</i>		Boolean	TRUE means support	
Max PDCP SN window size	CV- <i>Lossless</i>		Enumerated(sn255, sn65535)	Maximum PDCP sequence number window size. The handling of sequence number when the Max PDCP SN window size is 255 is specified in [23].	
PDCP PDU header	MD		Enumerated (present, absent)	Whether a PDCP PDU header is existent or not. Default value is "present"	
Header compression information	OP	1 to <maxPDC PAIgoType >			
>CHOICE <i>algorithm type</i>	MP				
>>RFC 2507				Header compression according to IETF standard RFC 2507	
>>>F_MAX_PERIOD	MD		Integer (1..65535)	Largest number of compressed non-TCP headers that may be sent without sending a full header. Default value is 256.	
>>>F_MAX_TIME	MD		Integer (1..255)	Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5.	
>>>MAX_HEADER	MD		Integer (60..65535)	The largest header size in octets that may be compressed. Default value is 168.	
>>>TCP_SPACE	MD		Integer (3..255)	Maximum CID value for TCP connections. Default value is 15.	
>>>NON_TCP_SPACE	MD		Integer (3..65535)	Maximum CID value for non-TCP connections. Default value is 15.	
>>>EXPECT_REORDERING	MD		Enumerated (reordering)	Whether the algorithm shall	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			not expected, reordering expected)	reorder PDCP SDUs or not. Default value is "reordering not expected".	
>>RFC 3095				Header compression according to IETF standard RFC 3095	REL-4
>>>Uplink	<u>OP</u>			Indicates the <u>necessary information elements for Uplink.</u>	<u>REL-4</u>
>>>>CID inclusion info	MP		Enumerated (PDCP header, RFC3095 packet format)	Configures which method shall be used to carry RFC3095 CID values.	REL-4
>>>>Max_CID	MD		Integer (1.. 16383)	Highest context ID number to be used by the <u>UE</u> compressor. Default value is 15.	REL-4
>>>>Profiles	MP	1 to <maxROHC-Profiles>		Profiles supported by the <u>UTRAN</u> decompressor.	REL-4
>>>>>Profile instance	MP		Integer(1 .. 3)	Supported profile types. At least four spare values.	REL-4
>>>>>MRRU	MD		Integer (0 .. 65535)	Maximum reconstructed reception unit. Default value is 0 (no segmentation).	REL-4
>>>>>Packet_Sizes_Allowed	OP	1 to <maxROHC-PacketSize s>		List of packet sizes that are allowed to be produced by <u>UE</u> compressor <u>RFC 3095</u> .	REL-4
>>>>>Packet size	MP		Integer (2 .. 1500)	Packet size as defined in RFC 3095.	REL-4
>>>Downlink	<u>OP</u>			Indicates the <u>necessary information elements for Downlink.</u>	<u>REL-4</u>
>>>>CID inclusion info	<u>MP</u>		<u>Enumerated (PDCP header, RFC3095 packet format)</u>	<u>Configures which method shall be used to carry RFC3095 CID values.</u>	<u>REL-4</u>
>>>>Max_CID	<u>MD</u>		<u>Integer (1.. 16383)</u>	<u>Highest context ID number to be used by the UE decompressor. Default value is 15.</u>	<u>REL-4</u>

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>>>Reverse-Decompression_Depth	MD		Integer (0..65535)	Determines whether reverse decompression should be used or not and the maximum number of packets that can be reverse decompressed by the UE decompressor. Default value is 0 (reverse decompression shall not be used).	REL-4

Condition	Explanation
<i>LosslessCriteria</i>	This IE is mandatory present if the IE "RLC mode" is "Acknowledged", the IE "In-sequence delivery" is "True" and the IE "SDU Discard Mode" is "No discard" and not needed otherwise.
<i>Lossless</i>	This IE is mandatory present if the IE "Support for lossless SRNS relocation" Is TRUE, otherwise it is not needed.

11.3 Information element definitions

```

-- *****
--
-- RADIO BEARER INFORMATION ELEMENTS (10.3.4)
--
-- *****
-----//-----

DL-CounterSynchronisationInfo ::= SEQUENCE {
    rB-WithPDCP-InfoList          RB-WithPDCP-InfoList    OPTIONAL
}

DL-LogicalChannelMapping ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType       DL-TransportChannelType,
    logicalChannelIdentity         LogicalChannelIdentity    OPTIONAL
}

DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping

DL-RFC3095-r4 ::= SEQUENCE {
    cid-InclusionInfo              CID-InclusionInfo-r4,
    max-CID                       INTEGER (1..16383)          DEFAULT 15,
    reverseDecompressionDepth     INTEGER (0..65535)          DEFAULT 0
}

DL-RLC-Mode ::= CHOICE {
    dl-AM-RLC-Mode               DL-AM-RLC-Mode,
    dl-UM-RLC-Mode               NULL,
    dl-TM-RLC-Mode               DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::= SEQUENCE {
    timerStatusProhibit          TimerStatusProhibit    OPTIONAL,
    timerEPC                     TimerEPC                    OPTIONAL,
    missingPDU-Indicator         BOOLEAN,
    timerStatusPeriodic          TimerStatusPeriodic      OPTIONAL
}

DL-TM-RLC-Mode ::= SEQUENCE {
    segmentationIndication       BOOLEAN
}

-----//-----

RFC2507-Info ::= SEQUENCE {
    f-MAX-PERIOD                 INTEGER (1..65535)          DEFAULT 256,
    f-MAX-TIME                   INTEGER (1..255)              DEFAULT 5,
    max-HEADER                   INTEGER (60..65535)           DEFAULT 168,
    tcp-SPACE                    INTEGER (3..255)              DEFAULT 15,
    non-TCP-SPACE                INTEGER (3..65535)            DEFAULT 15,
    -- TABULAR: expectReordering has only two possible values, so using Optional or Default
    -- would be wasteful
    expectReordering             ExpectReordering
}

RFC3095-Info-r4 ::= SEQUENCE {
    ul-RFC3095                   UL-RFC3095-r4                OPTIONAL,
    dl-RFC3095                   DL-RFC3095-r4                OPTIONAL,
    cid-InclusionInfo             CID-InclusionInfo-r4,
    max-CID                      INTEGER (1..16383)            DEFAULT 15,
    rohcProfileList              ROHC-ProfileList-r4,
    mrru                         INTEGER (0..65535)            DEFAULT 0,
    rohcPacketSizeList           ROHC-PacketSizeList-r4
}

```

```

reverseDecompressionDepth INTEGER (0..65535) DEFAULT 0
}

RLC-Info ::=
    ul-RLC-Mode          UL-RLC-Mode          OPTIONAL,
    dl-RLC-Mode          DL-RLC-Mode          OPTIONAL
}

RLC-InfoChoice ::=
    rlc-Info            RLC-Info,
    same-as-RB         RB-Identity
}

-----//-----

UL-LogicalChannelMappingList ::= SEQUENCE {
    -- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
    -- of the specification
    rlc-LogicalChannelMappingIndicator BOOLEAN,
    ul-LogicalChannelMapping SEQUENCE (SIZE (maxLoCHperRLC)) OF
        UL-LogicalChannelMapping
}

UL-LogicalChannelMappings ::= CHOICE {
    oneLogicalChannel      UL-LogicalChannelMapping,
    twoLogicalChannels     UL-LogicalChannelMappingList
}

UL-RFC3095-r4 ::= SEQUENCE {
    cid-InclusionInfo      CID-InclusionInfo-r4,
    max-CID              INTEGER (1..16383) DEFAULT 15,
    rohcProfileList      ROHC-ProfileList-r4,
    mrru                 INTEGER (0..65535) DEFAULT 0,
    rohcPacketSizeList   ROHC-PacketSizeList-r4
}

UL-RLC-Mode ::= CHOICE {
    ul-AM-RLC-Mode      UL-AM-RLC-Mode,
    ul-UM-RLC-Mode      UL-UM-RLC-Mode,
    ul-TM-RLC-Mode      UL-TM-RLC-Mode,
    spare                NULL
}

UL-TM-RLC-Mode ::= SEQUENCE {
    transmissionRLC-Discard TransmissionRLC-Discard OPTIONAL,
    segmentationIndication BOOLEAN
}

-----//-----

```

CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 1805** ⌘ rev **-** ⌘ Current version: **5.2.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Asymmetric ROHC Configuration		
Source:	⌘ LG Electronics Inc.		
Work item code:	⌘ TEI4	Date:	⌘ 15/11/2002
Category:	⌘ A	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ To manage the UE memory efficiently, it is required to configure ROHC asymmetrically for UL and DL.
Summary of change:	⌘ ROHC parameters are split into UL and DL.
Consequences if not approved:	⌘ ROHC cannot be configured asymmetrically for UL and DL. This wastes UE's memory.

Clauses affected:	⌘ 10.3.3.24, 10.3.4.2, 11.3								
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> </table>	Y	N					Other core specifications	⌘
Y	N								
		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/specs/CR.htm>. Below is a brief summary:

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

10.3.3.24 PDCP capability

Indicates which algorithms and which value range of their parameters are supported by the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Support for lossless SRNS relocation	MP		Boolean	TRUE means supported	
Support for RFC2507	MP		Boolean	TRUE means supported	
>Max HC context space			Integer(512, 1024, 2048, 4096, 8192)		
Support for RFC 3095	MP		Boolean	TRUE means supported	REL-4
>Maximum number of ROHC context sessions	MD		Integer(2, 4, 8, 12, 16, 24, 32, 48, 64, 128, 256, 512, 1024, 16384)	Default value is 16.	REL-4
>Reverse decompression depth	MD		Integer (0..65535)	Default value is 0 (reverse decompression is not supported shall not be used).	REL-4
>Support for RFC 3095 context relocation	MP		Boolean	TRUE means supported	REL-5

10.3.4.2 PDCP info

The purpose of the PDCP info IE is to indicate which algorithms shall be established and to configure the parameters of each of the algorithms.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Support for lossless SRNS relocation	CV- <i>LosslessCriteria</i>		Boolean	TRUE means support	
Max PDCP SN window size	CV- <i>Lossless</i>		Enumerated(sn255, sn65535)	Maximum PDCP sequence number window size. The handling of sequence number when the Max PDCP SN window size is 255 is specified in [23].	
PDCP PDU header	MD		Enumerated (present, absent)	Whether a PDCP PDU header is existent or not. Default value is "present"	
Header compression information	OP	1 to <maxPDC PAlgoType >			
>CHOICE <i>algorithm type</i>	MP				
>>RFC 2507				Header compression according to IETF standard RFC 2507	
>>>F_MAX_PERIOD	MD		Integer (1..65535)	Largest number of compressed non-TCP headers that may be sent without sending a full header. Default value is 256.	
>>>F_MAX_TIME	MD		Integer (1..255)	Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5.	
>>>MAX_HEADER	MD		Integer (60..65535)	The largest header size in octets that may be compressed. Default value is 168.	
>>>TCP_SPACE	MD		Integer (3..255)	Maximum CID value for TCP connections. Default value is 15.	
>>>NON_TCP_SPACE	MD		Integer (3..65535)	Maximum CID value for non-TCP connections. Default value is 15.	
>>>EXPECT_REORDERING	MD		Enumerated (reordering)	Whether the algorithm shall	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			not expected, reordering expected)	reorder PDCP SDUs or not. Default value is "reordering not expected".	
>>RFC 3095				Header compression according to IETF standard RFC 3095	REL-4
>>>Uplink	<u>OP</u>			Indicates the <u>necessary information elements for Uplink.</u>	<u>REL-4</u>
>>>>CID inclusion info	MP		Enumerated (PDCP header, RFC3095 packet format)	Configures which method shall be used to carry RFC3095 CID values.	REL-4
>>>>Max_CID	MD		Integer (1.. 16383)	Highest context ID number to be used by the <u>UE</u> compressor. Default value is 15.	REL-4
>>>>Profiles	MP	1 to <maxROHC-Profiles>		Profiles supported by the <u>UTRAN</u> decompressor.	REL-4
>>>>>Profile instance	MP		Integer(1 .. 3)	Supported profile types. At least four spare values.	REL-4
>>>>>MRRU	MD		Integer (0 .. 65535)	Maximum reconstructed reception unit. Default value is 0 (no segmentation).	REL-4
>>>>>Packet_Sizes_Allowed	OP	1 to <maxROHC-PacketSize s>		List of packet sizes that are allowed to be produced by <u>UE</u> compressor <u>RFC 3095</u> .	REL-4
>>>>>Packet size	MP		Integer (2 .. 1500)	Packet size as defined in RFC 3095.	REL-4
>>>Downlink	<u>OP</u>			Indicates the <u>necessary information elements for Downlink.</u>	<u>REL-4</u>
>>>>CID inclusion info	<u>MP</u>		<u>Enumerated (PDCP header, RFC3095 packet format)</u>	<u>Configures which method shall be used to carry RFC3095 CID values.</u>	<u>REL-4</u>
>>>>Max_CID	<u>MD</u>		<u>Integer (1.. 16383)</u>	<u>Highest context ID number to be used by the UE decompressor. Default value is 15.</u>	<u>REL-4</u>

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>>>Reverse-Decompression_Depth	MD		Integer (0..65535)	Determines whether reverse decompression should be used or not and the maximum number of packets that can be reverse decompressed by the UE decompressor. Default value is 0 (reverse decompression shall not be used).	REL-4

Condition	Explanation
<i>LosslessCriteria</i>	This IE is mandatory present if the IE "RLC mode" is "Acknowledged", the IE "In-sequence delivery " is "True" and the IE "SDU Discard Mode" is "No discard" and not needed otherwise.
<i>Lossless</i>	This IE is mandatory present if the IE "Support for lossless SRNS relocation" Is TRUE, otherwise it is not needed.

11.3 Information element definitions

```

-- *****
--
-- RADIO BEARER INFORMATION ELEMENTS (10.3.4)
--
-- *****

-----//-----

DL-LogicalChannelMapping ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType,
    logicalChannelIdentity LogicalChannelIdentity OPTIONAL
}

DL-LogicalChannelMapping-r5 ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType-r5,
    logicalChannelIdentity LogicalChannelIdentity OPTIONAL
}

DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping

DL-LogicalChannelMappingList-r5 ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping-r5

DL-RFC3095-r4 ::= SEQUENCE {
    cid-InclusionInfo CID-InclusionInfo-r4,
    max-CID INTEGER (1..16383) DEFAULT 15,
    reverseDecompressionDepth INTEGER (0..65535) DEFAULT 0
}

DL-RLC-Mode ::= CHOICE {
    dl-AM-RLC-Mode DL-AM-RLC-Mode,
    dl-UM-RLC-Mode NULL,
    dl-TM-RLC-Mode DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::= SEQUENCE {
    timerStatusProhibit TimerStatusProhibit OPTIONAL,
    timerEPC TimerEPC OPTIONAL,
    missingPDU-Indicator BOOLEAN,
    timerStatusPeriodic TimerStatusPeriodic OPTIONAL
}

DL-TM-RLC-Mode ::= SEQUENCE {
    segmentationIndication BOOLEAN
}

-----//-----

RFC2507-Info ::= SEQUENCE {
    f-MAX-PERIOD INTEGER (1..65535) DEFAULT 256,
    f-MAX-TIME INTEGER (1..255) DEFAULT 5,
    max-HEADER INTEGER (60..65535) DEFAULT 168,
    tcp-SPACE INTEGER (3..255) DEFAULT 15,
    non-TCP-SPACE INTEGER (3..65535) DEFAULT 15,
    -- TABULAR: expectReordering has only two possible values, so using Optional or Default
    -- would be wasteful
    expectReordering ExpectReordering
}

RFC3095-Info-r4 ::= SEQUENCE {
    ul-RFC3095 UL-RFC3095-r4 OPTIONAL,
    dl-RFC3095 DL-RFC3095-r4 OPTIONAL
}

```

```

cid-InclusionInfo          CID-InclusionInfo-r4,
max-CID                  INTEGER (1..16383)          DEFAULT 15,
rohcProfileList         ROHC-ProfileList-r4,
mrru                    INTEGER (0..65535)          DEFAULT 0,
rohcPacketSizeList     ROHC-PacketSizeList-r4,
reverseDecompressionDepth INTEGER (0..65535)          DEFAULT 0
}

RLC-Info ::=                SEQUENCE {
    ul-RLC-Mode              UL-RLC-Mode              OPTIONAL,
    dl-RLC-Mode              DL-RLC-Mode              OPTIONAL
}

RLC-InfoChoice ::=          CHOICE {
    rlc-Info                  RLC-Info,
    same-as-RB                RB-Identity
}
-----//-----

UL-LogicalChannelMappingList ::= SEQUENCE {
    -- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
    -- of the specification
    rlc-LogicalChannelMappingIndicator    BOOLEAN,
    ul-LogicalChannelMapping              SEQUENCE (SIZE (maxLoCHperRLC)) OF
                                          UL-LogicalChannelMapping
}

UL-LogicalChannelMappings ::= CHOICE {
    oneLogicalChannel              UL-LogicalChannelMapping,
    twoLogicalChannels             UL-LogicalChannelMappingList
}

UL-RFC3095-r4 ::=          SEQUENCE {
cid-InclusionInfo          CID-InclusionInfo-r4,
max-CID                  INTEGER (1..16383)          DEFAULT 15,
rohcProfileList         ROHC-ProfileList-r4,
mrru                    INTEGER (0..65535)          DEFAULT 0,
rohcPacketSizeList     ROHC-PacketSizeList-r4
}

UL-RLC-Mode ::=            CHOICE {
    ul-AM-RLC-Mode              UL-AM-RLC-Mode,
    ul-UM-RLC-Mode              UL-UM-RLC-Mode,
    ul-TM-RLC-Mode              UL-TM-RLC-Mode,
    spare                        NULL
}

UL-TM-RLC-Mode ::=        SEQUENCE {
    transmissionRLC-Discard      TransmissionRLC-Discard    OPTIONAL,
    segmentationIndication       BOOLEAN
}
-----//-----

```

CHANGE REQUEST

25.331 CR 1806 # rev - # Current version: 4.7.0

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Reference Cell for GSM OTD Measurement		
Source:	# Nokia		
Work item code:	# TEI4	Date:	# 11/11/2002
Category:	# F	Release:	# Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# It is impossible to indicate to the network which UTRAN cell is used as reference for the GSM OTD measurement. The UE behaviour is unspecified if the network requests the reporting of this measurement quantity in FDD.
Summary of change:	# A new IE "gsmOTDreferenceCell" is added to the existing rel-4 extension of the MEASUREMENT REPORT message. It shall be used by the UE to indicate the primary CPICH info of the reference cell to the network. The change has an impact only on the reporting of the GSM OTD measurement.
Consequences if not approved:	# The UE behaviour remains unspecified if the network requests GSM OTD measurements from a UE that is in FDD mode. The measurement could not be used to optimise the radio resource management.

Clauses affected:	# 8.4.2; 10.2.19; 11.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	#	X	#	X	#	X	Other core specifications	#
Y	N										
#	X										
#	X										
#	X										
		Test specifications	#								
		O&M Specifications	#								
Other comments:	#										

8.4.2 Measurement report



Figure 8.4.2-1: Measurement report, normal case

8.4.2.1 General

The purpose of the measurement reporting procedure is to transfer measurement results from the UE to UTRAN.

8.4.2.2 Initiation

In CELL_DCH state, the UE shall:

- 1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT_IDENTITY are met for any ongoing measurements that are being performed in the UE.

In CELL_FACH state, the UE shall:

- 1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT_IDENTITY are met for any ongoing traffic volume measurement or UE positioning measurement that is being performed in the UE;
- 1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);
- 1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

In TDD, if the Radio Bearer associated with the MEASUREMENT_IDENTITY fulfilling the reporting criteria for an ongoing traffic volume measurement is mapped on transport channel of type USCH, the UE shall:

- 1> initiate the "PUSCH CAPACITY REQUEST" procedure instead of transmitting a MEASUREMENT REPORT (TDD Only).

In CELL_PCH or URA_PCH state, the UE shall:

- 1> first perform the cell update procedure according to subclause 8.3.1, using the cause "uplink data transmission", in order to transit to CELL_FACH state; and then
- 1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT_IDENTITY are fulfilled for any ongoing traffic volume measurement or UE positioning measurement which is being performed in the UE.

The reporting criteria are fulfilled if either:

- the first measurement has been completed according to the requirements set in [19] or [20] for a newly initiated measurement with periodic reporting; or
- the time period indicated in the stored IE "Periodical reporting criteria" has elapsed since the last measurement report was submitted to lower layers for a given measurement; or
- an event in stored IE "Measurement reporting criteria" was triggered. Events and triggering of reports for different measurement types are described in detail in clause 14.

For the measurement, which triggered the MEASUREMENT REPORT message, the UE shall:

- 1> set the IE "measurement identity" to the measurement identity, which is associated with that measurement in variable MEASUREMENT_IDENTITY;
- 1> set the IE "measured results" to include measurements according to the IE "reporting quantity" of that measurement stored in variable MEASUREMENT_IDENTITY; and
 - 2> if all the reporting quantities are set to "false":
 - 3> not set the IE "measured results".
- 1> set the IE "Measured results" in the IE "Additional measured results" according to the IE "reporting quantity" for all measurements associated with the measurement identities included in the "Additional measurements list" stored in variable MEASUREMENT_IDENTITY of the measurement that triggered the measurement report; and
 - 2> if more than one additional measured results are to be included:
 - 3> sort them in ascending order according to their IE "measurement identity" in the MEASUREMENT REPORT message.
- 1> if the MEASUREMENT REPORT message was triggered by an event (i.e. not a periodical report):
 - 2> set the IE "Event results" according to the event that triggered the report.

1> If the observed time difference for one or more GSM cells is included in the MEASUREMENT REPORT message:

2> set the IE "GSM OTD reference cell" to the primary CPICH info of the active set cell that was used as reference for the measurement.

The UE shall:

- 1> transmit the MEASUREMENT REPORT message on the uplink DCCH using either AM or UM RLC according to the stored IE "measurement reporting mode" associated with the measurement identity that triggered the report.

When the MEASUREMENT REPORT message has been submitted to lower layers for transmission:

- 1> the procedure ends.

10.2.19 MEASUREMENT REPORT

This message is used by UE to transfer measurement results to the UTRAN.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE information elements					
Integrity check info	CH		Integrity check info 10.3.3.16		
Measurement Information Elements					
Measurement identity	MP		Measurement identity 10.3.7.48		
Measured Results	OP		Measured Results 10.3.7.44		
Measured Results on RACH	OP		Measured Results on RACH 10.3.7.45		
Additional Measured results	OP	1 to <maxAdditional Meas>			
>Measured Results	MP		Measured Results 10.3.7.44		
Event results	OP		Event results 10.3.7.7		
GSM OTD reference cell	OP		Primary CPICH info 10.3.6.60		Rel-4

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxOther RAT-16>		
>CHOICE <i>system</i>	MP			One spare value is needed.
>>GSM				
>>>Measured GSM cells	MP	1 to <maxReportedGSMCells>		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit.
>>>>CHOICE <i>BSIC</i>	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id	MP		Integer(0..<maxCellMeasurements>-1)	
>>>>>Non verified BSIC				
>>>>>>BCCH ARFCN	MP		Integer (0..1023)	[45]
>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.52 Observed time difference to GSM cell

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Observed time difference to GSM cell	OP		Integer(0..,4095)	According to GSM_TIME in [19] and [20]

11.2 PDU definitions

```

-- *****
--
-- MEASUREMENT REPORT
--
-- *****

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults           MeasuredResults           OPTIONAL,
  measuredResultsOnRACH    MeasuredResultsOnRACH     OPTIONAL,
  additionalMeasuredResults MeasuredResultsList      OPTIONAL,
  eventResults              EventResults              OPTIONAL,
  -- Non-critical extensions
  v390nonCriticalExtensions SEQUENCE {
    measurementReport-v390ext MeasurementReport-v390ext,
    v4xyNonCriticalExtensions SEQUENCE {
      measurementReport-v4xyext MeasurementReport-v4xyext-IEs,
      -- Extension mechanism for non-Rel4 information
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

MeasurementReport-v390ext ::= SEQUENCE {
  measuredResults-v390ext MeasuredResults-v390ext OPTIONAL
}

```



```
MeasurementReport-v4xyext-IEs ::= SEQUENCE {  
    interFreqEventResults-LCR      InterFreqEventResults-LCR-r4-ext      OPTIONAL,  
    additionalMeasuredResults-LCR  MeasuredResultsList-LCR-r4-ext  OPTIONAL,  
    gsmOTDreferenceCell            PrimaryCPICH-Info                OPTIONAL  
}
```

CR-Form-v7

CHANGE REQUEST

25.331 CR 1807 # rev **-** # Current version: **5.2.0**

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

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Reference Cell for GSM OTD Measurement		
Source:	# Nokia		
Work item code:	# TEI4	Date:	# 11/11/2002
Category:	# A	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# It is impossible to indicate to the network which UTRAN cell is used as reference for the GSM OTD measurement. The UE behaviour is unspecified if the network requests the reporting of this measurement quantity in FDD.
Summary of change:	# A new IE "gsmOTDreferenceCell" is added to the existing rel-4 extension of the MEASUREMENT REPORT message. It shall be used by the UE to indicate the primary CPICH info of the reference cell to the network. The change has an impact only on the reporting of the GSM OTD measurement.
Consequences if not approved:	# The UE behaviour remains unspecified if the network requests GSM OTD measurements from a UE that is in FDD mode. The measurement could not be used to optimise the radio resource management.

Clauses affected:	# 8.4.2; 10.2.19; 11.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	#	X	#	X	#	X	Other core specifications	#
Y	N										
#	X										
#	X										
#	X										
		Test specifications	#								
		O&M Specifications	#								
Other comments:	#										

8.4.2 Measurement report



Figure 8.4.2-1: Measurement report, normal case

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- 1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

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- 1> first perform the cell update procedure according to subclause 8.3.1, using the cause "uplink data transmission", in order to transit to CELL_FACH state; and then
- 1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT_IDENTITY are fulfilled for any ongoing traffic volume measurement or UE positioning measurement which is being performed in the UE.

The reporting criteria are fulfilled if either:

- the first measurement has been completed according to the requirements set in [19] or [20] for a newly initiated measurement with periodic reporting; or
- the time period indicated in the stored IE "Periodical reporting criteria" has elapsed since the last measurement report was submitted to lower layers for a given measurement; or
- an event in stored IE "Measurement reporting criteria" was triggered. Events and triggering of reports for different measurement types are described in detail in clause 14.

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- 1> set the IE "measurement identity" to the measurement identity, which is associated with that measurement in variable MEASUREMENT_IDENTITY;
- 1> set the IE "measured results" to include measurements according to the IE "reporting quantity" of that measurement stored in variable MEASUREMENT_IDENTITY; and
 - 2> if all the reporting quantities are set to "false":
 - 3> not set the IE "measured results".
- 1> set the IE "Measured results" in the IE "Additional measured results" according to the IE "reporting quantity" for all measurements associated with the measurement identities included in the "Additional measurements list" stored in variable MEASUREMENT_IDENTITY of the measurement that triggered the measurement report; and
 - 2> if more than one additional measured results are to be included:
 - 3> sort them in ascending order according to their IE "measurement identity" in the MEASUREMENT REPORT message.
- 1> if the MEASUREMENT REPORT message was triggered by an event (i.e. not a periodical report):
 - 2> set the IE "Event results" according to the event that triggered the report.

1> If the observed time difference for one or more GSM cells is included in the MEASUREMENT REPORT message:

2> set the IE "GSM OTD reference cell" to the primary CPICH info of the active set cell that was used as reference for the measurement.

The UE shall:

- 1> transmit the MEASUREMENT REPORT message on the uplink DCCH using either AM or UM RLC according to the stored IE "measurement reporting mode" associated with the measurement identity that triggered the report.

When the MEASUREMENT REPORT message has been submitted to lower layers for transmission:

- 1> the procedure ends.

10.2.19 MEASUREMENT REPORT

This message is used by UE to transfer measurement results to the UTRAN.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE information elements					
Integrity check info	CH		Integrity check info 10.3.3.16		
Measurement Information Elements					
Measurement identity	MP		Measurement identity 10.3.7.48		
Measured Results	OP		Measured Results 10.3.7.44		
Measured Results on RACH	OP		Measured Results on RACH 10.3.7.45		
Additional Measured results	OP	1 to <maxAdditional Meas>			
>Measured Results	MP		Measured Results 10.3.7.44		
Event results	OP		Event results 10.3.7.7		
GSM OTD reference cell	OP		Primary CPICH info 10.3.6.60		Rel-4

10.3.7.26 Inter-RAT measured results list

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Inter-RAT measurement results	OP	1 to <maxOther RAT-16>		
>CHOICE <i>system</i>	MP			One spare value is needed.
>>GSM				
>>>Measured GSM cells	MP	1 to <maxReportedGSMCells>		
>>>>GSM carrier RSSI	OP		bit string(6)	RXLEV, [46]. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit.
>>>>CHOICE <i>BSIC</i>	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id	MP		Integer(0..<maxCellMeasurements>-1)	
>>>>>Non verified BSIC				
>>>>>>BCCH ARFCN	MP		Integer (0..1023)	[45]
>>>>Observed time difference to GSM cell	OP		Observed time difference to GSM cell 10.3.7.52	

10.3.7.52 Observed time difference to GSM cell

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Observed time difference to GSM cell	OP		Integer(0..4095)	According to GSM_TIME in [19] and [20]

11.2 PDU definitions

```

-- *****
--
-- MEASUREMENT REPORT
--
-- *****

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults          MeasuredResults          OPTIONAL,
  measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
  additionalMeasuredResults MeasuredResultsList     OPTIONAL,
  eventResults             EventResults             OPTIONAL,
  -- Non-critical extensions
  v390nonCriticalExtensions SEQUENCE {
    measurementReport-v390ext MeasurementReport-v390ext,
    v4xyNonCriticalExtensions SEQUENCE {
      measurementReport-v4xyext MeasurementReport-v4xyext-IEs,
      -- Extension mechanism for non-Rel4 information
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

MeasurementReport-v390ext ::= SEQUENCE {
  measuredResults-v390ext MeasuredResults-v390ext OPTIONAL
}

```

```
MeasurementReport-v4xyext-IEs ::= SEQUENCE {  
    interFreqEventResults-LCR      InterFreqEventResults-LCR-r4-ext      OPTIONAL,  
    additionalMeasuredResults-LCR  MeasuredResultsList-LCR-r4-ext  OPTIONAL,  
    gsmOTDreferenceCell            PrimaryCPICH-Info                OPTIONAL  
}
```