TSG-RAN Meeting #18 ***RP-020731***

***New-Orleans, USA, 03* - 06 December 2002**

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	-	R99	Correction to reporting event 6f for FDD	F	4.7.0	4.8.0
R2-023183	Agreed	25.331	1787	-	Rel-4	Correction to reporting event 6f for FDD	A	5.2.0	5.3.0
R2-023234	Agreed	25.331	1801	-	R99	ASN.1 corrections	F	4.7.0	4.8.0
R2-023235	Agreed	25.331	1802	-	Rel-4	ASN.1 corrections	A	5.2.0	5.3.0
R2-023264	Agreed	25.331	1804	-	R99	Asymmetric ROHC Configuration	F	4.7.0	4.8.0
R2-023265	Agreed	25.331	1805	-	Rel-4	Asymmetric ROHC Configuration	A	5.2.0	5.3.0
R2-023266	Agreed	25.331	1806	-	R99	Reference Cell for GSM OTD Measurement	F	4.7.0	4.8.0
R2-023267	Agreed	25.331	1807	-	Rel-4	Reference Cell for GSM OTD Measurement	A	5.2.0	5.3.0

3GPP TSG-RAN WG2 Meeting #33 **Tdoc ⌘R2-023182**
Sophia Antipolis, France, November 12 – 15, 2002

CR-Form-v7

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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Correction to reporting event 6f for FDD
Source:	⌘	Siemens AG
Work item code:	⌘	TEI
Date:	⌘	21/10/2002
Category:	⌘	**F**
Release:	⌘	Rel-4

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

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

Reason for change: ⌘ 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 Other core specifications		
			X Test specifications		
			X O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

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

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

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

3GPP TSG-RAN WG2 Meeting #33 **Tdoc ⌘R2-023183**
Sophia Antipolis, France, November 12 – 15, 2002

CR-Form-v7

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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Correction to reporting event 6f for FDD
Source:	⌘	Siemens AG
Work item code:	⌘	TEI
Date:	⌘	21/10/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

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

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

Reason for change: ⌘ 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 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-5.

Clauses affected:	⌘	14.6.2.6			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	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

~~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

3GPP TSG-RAN WG2 Meeting #33 **Tdoc ⌘R2-023234**
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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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	ASN.1 corrections
Source:	⌘	Nokia
Work item code:	⌘	TEI4
Date:	⌘	05/11/2002
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘
- 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

	Y	N		
Other specs Affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	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.

11.2 PDU definitions

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

AssistanceDataDelivery ::= CHOICE {
    r3                              SEQUENCE {
        assistanceDataDelivery-r3       AssistanceDataDelivery-r3-IEs,
        v3a0NonCriticalExetensions      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             DL-InformationPerRL-PostTDD,
                        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-Paremeters      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 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,
    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
        }       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
                                }       OPTIONAL
                            }       OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       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~~
~~        }~~                                                                             ~~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
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-TransChInfoList              DL-AddReconfTransChInfoList-r4      OPTIONAL,
    -- Measurement report
        measurementReport               MeasurementReport                   OPTIONAL,
        failureCause                    FailureCauseWithProtErr             OPTIONAL
}

-- IE definitions

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

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

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

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

CipheringStatus ::=                 ENUMERATED {
                                        started, notStarted }

CipheringStatusList-r4 ::=          SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CipheringStatusCNdomain-r4

CipheringStatusCNdomain-r4 ::=      SEQUENCE {
        cn-DomainIdentity               CN-DomainIdentity,
        cipheringStatus                 CipheringStatus,
        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
}

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       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
}

END
```

3GPP TSG-RAN WG2 Meeting #33 **Tdoc ⌘R2-023235**
Sophia Antipolis, France, 12-15 November 2002

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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	ASN.1 corrections
Source:	⌘	Nokia
Work item code:	⌘	TEI4
Date:	⌘	05/11/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

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

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

Reason for change: ⌘
- 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

		Y	N		
Other specs Affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘

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

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

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

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

11.2 PDU definitions

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

AssistanceDataDelivery ::= CHOICE {
    r3                              SEQUENCE {
        assistanceDataDelivery-r3       AssistanceDataDelivery-r3-IEs,
        v3a0NonCriticalExetensions      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             DL-InformationPerRL-PostTDD,
                        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-Paremeters      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,
    srncRelocation                      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
        }       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
                                }       OPTIONAL
                            }       OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       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
        }                                                                                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
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-TransChInfoList              DL-AddReconfTransChInfoList-r4      OPTIONAL,
    -- Measurement report
        measurementReport               MeasurementReport                   OPTIONAL,
        failureCause                    FailureCauseWithProtErr             OPTIONAL
}

-- IE definitions

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

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

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

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


CipheringStatus ::=                 ENUMERATED {
                                        started, notStarted }

CipheringStatusList-r4 ::=          SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CipheringStatusCNdomain-r4

CipheringStatusCNdomain-r4 ::=      SEQUENCE {
        cn-DomainIdentity               CN-DomainIdentity,
        cipheringStatus                 CipheringStatus,
        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
```

3GPP TSG-RAN WG2 #33 ***R2-023264***
Sophia Antipolis, France, 12nd-15th November, 2002

CR-Form-v7

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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Asymmetric ROHC Configuration
Source:	⌘	LG Electronics Inc.
Work item code:	⌘	TEI4
Date:	⌘	15/11/2002
Category:	⌘	**F**
Release:	⌘	Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	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:	⌘	**Y**	**N**		
		[ ]	[ ]	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.

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

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-*LosslessCriteria*		Boolean	TRUE means support	
Max PDCP SN window size	CV-*Lossless*		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 <maxPDCPAlgoType>			
>CHOICE *algorithm type*	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	OP			Indicates the necessary information elements for Uplink.	REL-4
>>>>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 UE compressor. Default value is 15.	REL-4
>>>>Profiles	MP	1 to <maxROHC-Profiles>		Profiles supported by the UTRAN 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-PacketSizes>		List of packet sizes that are allowed to be produced by UE compressor~~RFC 3095~~.	REL-4
>>>>>Packet size	MP		Integer (2 .. 1500)	Packet size as defined in RFC 3095.	REL-4
>>>Downlink	OP			Indicates the necessary information elements for Downlink.	REL-4
>>>>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 UE decompressor. Default value is 15.	REL-4

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
LosslessCriteria	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.
Lossless	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 ::=                            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
}

--------------------------------------------------------------------//----------------------------------------------------------------
```

3GPP TSG-RAN WG2 #33 ***R2-023265***
Sophia Antipolis, France, 12nd-15th November, 2002

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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Asymmetric ROHC Configuration
Source:	⌘	LG Electronics Inc.
Work item code:	⌘	TEI4
Date:	⌘	15/11/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

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

Use one of the following releases:

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

Reason for change:	⌘	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

		Y	N			
Other specs Affected:	⌘	[ ]	[ ]	Other core specifications	⌘	
		[ ]	[ ]	Test specifications		
		[ ]	[ ]	O&M Specifications		

Other comments: ⌘

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

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 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-*LosslessCriteria*		Boolean	TRUE means support	
Max PDCP SN window size	CV-*Lossless*		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 <maxPDCPAlgoType>			
>CHOICE *algorithm type*	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	OP			Indicates the necessary information elements for Uplink.	REL-4
>>>>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 UE compressor. Default value is 15.	REL-4
>>>>Profiles	MP	1 to <maxROHC-Profiles>		Profiles supported by the UTRAN 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-PacketSizes>		List of packet sizes that are allowed to be produced by UE compressor~~RFC 3095~~.	REL-4
>>>>>Packet size	MP		Integer (2 .. 1500)	Packet size as defined in RFC 3095.	REL-4
>>>Downlink	OP			Indicates the necessary information elements for Downlink.	REL-4
>>>>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 UE decompressor. Default value is 15.	REL-4

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
LosslessCriteria	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.
Lossless	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
}

--------------------------------------------------------------------//----------------------------------------------------------------------
```

3GPP TSG-RAN2 Meeting #33
Sophia Antipolis, France, 11 - 15 November 2002

Tdoc ⌘R2-023266

CR-Form-v7

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

Use one of the following releases:

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

Reason for change:	⌘	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: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	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 <maxOtherRAT-16>		
>CHOICE *system*	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 *BSIC*	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id	MP		Integer(0..<maxCellMeas>-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
}
```

3GPP TSG-RAN2 Meeting #33 ***Tdoc ⌘R2-023267***
Sophia Antipolis, France, 11 - 15 November 2002

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 [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Reference Cell for GSM OTD Measurement
Source:	⌘	Nokia
Work item code:	⌘	TEI
Date:	⌘	11/11/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	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: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	

8.4.2 Measurement report

Figure 8.4.2-1: Measurement report, normal case

8.4.2.1 General

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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 <maxOtherRAT-16>		
>CHOICE *system*	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 *BSIC*	MP			
>>>>>Verified BSIC				
>>>>>>inter-RAT cell id	MP		Integer(0..<maxCellMeas>-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
}
```