

## CHANGE REQUEST

⌘ **25.331 CR 13XX** ⌘ rev - ⌘ Current version: **3.9.0** ⌘  
 Spec Title: **Radio Resource Control (RRC);** ⌘

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

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

<b>Title:</b>	⌘ Support of UP measurement reporting in CELL_PCH/URA_PCH		
<b>Source:</b>	⌘ Nortel Networks, Qualcomm, CPS, Ericsson		
<b>Work item code:</b>	⌘	<b>Date:</b>	⌘ 5 <sup>th</sup> March 2002
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

**Reason for change:** ⌘ In R99 the measurement performance requirements for UP measurements in CELL\_PCH/URA\_PCH are missing from RAN4 specifications.

With the current signalling it is possible to configure the measurement interval for UP event triggered measurement reporting at values which are too small in CELL\_PCH/URA\_PCH which may lead to unnecessary battery consumption. The same case applies also for periodical reporting.

**Summary of change:** ⌘ UE positioning reporting in CELL\_PCH and URA\_PCH is made an UE capability. If the UE supports this capability it will comply to the measurement performance requirements that will be defined in Release 5 RAN4 specifications.

For UEs in CELL\_PCH/URA\_PCH the measurement interval for event triggered measurement reporting is specified to be at least 15 seconds in order to save battery life of the UE.

For UEs in CELL\_PCH/URA\_PCH the measurement reporting interval for periodical reporting is specified to be at least 64 seconds in order to save battery life of the UE.

**Isolated impact analysis:**  
 Impacted function is UE Positioning reporting in CELL\_PCH and URA\_PCH states.  
 The proposed changes are isolated impact to this functionality.  
 If the UE does not implement this CR then UTRAN has no means to know if the UE supports this capability and therefore UTRAN can not rely on the UP reporting in these states.

**Consequences if** ⌘ UP measurement reporting in CELL\_PCH, URA\_PCH is misaligned between

**not approved:** RAN2 and RAN4 specifications in R99.

<b>Clauses affected:</b>	⌘	8.4.1.6.7, 10.3.3.45, 11.2, 11.5		
<b>Other specs affected:</b>	⌘	<input checked="" type="checkbox"/> Other core specifications	⌘	25.306
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> O&M Specifications		
<b>Other comments:</b>	⌘			

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

## 8.4.1.6 Measurements after transition from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state

The UE shall apply the following rules for different measurement types after transiting from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state:

< . . . >

### 8.4.1.6.7 UE positioning measurement

~~NOTE 1: Whether support for UE positioning measurement in CELL\_PCH and URA\_PCH states is mandatory or optional in Release 99 is FFS and pending ongoing work in TSG-RAN-WG2 and TSG-RAN-WG4.~~

~~NOTE 2: The applicability of UE positioning measurements in CELL\_PCH, URA\_PCH and CELL\_FACH needs to be aligned in all relevant specifications.~~

Upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH, the UE shall

- if the UE does not support UP measurement reporting in CELL\_PCH and URA\_PCH states as indicated in the IE "UE positioning capability" included in the IE "UE Radio Access Capability":
  - stop UE positioning measurement reporting.

Upon transition from CELL\_DCH to CELL\_FACH, or upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH and if the UE supports UP measurement reporting in CELL\_PCH and URA\_PCH states as indicated in the IE "UE positioning capability" included in the IE "UE Radio Access Capability", Upon transition from CELL\_DCH to CELL\_FACH or CELL\_PCH or URA\_PCH state, the UE shall:

- retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT\_IDENTITY; and
- if the optional IE "measurement validity" for this measurement has not been included:
  - delete the measurement associated with the variable MEASUREMENT\_IDENTITY.
- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL\_DCH":
  - stop measurement reporting;
  - store the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_DCH state.
- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
  - upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH:
    - if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 4664 seconds:
      - consider the value of the IE "Measurement interval" as being 4664 seconds;
    - if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 4664 seconds:
      - consider the value of the IE "Reporting Interval" as being 4664 seconds
  - continue measurement reporting according to its UP measurement reporting capability;
- if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL\_DCH":

- upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH:
  - if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 4664 seconds:
    - consider the value of the IE "Measurement interval" as being 4664 seconds;
  - if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 4664 seconds:
    - consider the value of the IE "Reporting Interval" as being 4664 seconds
- resume this measurement and associated reporting according to its UP measurement reporting capability;
- if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- if the transition is not due to a reconfiguration message:
  - delete the assistance data included in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED, UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED and UE\_POSITIONING\_GPS\_DATA.
- if the IE "Positioning Methods" stored in the variable MEASUREMENT\_IDENTITY is set to "OTDOA" or "OTDOA or GPS":
  - if the IE "Method type" stored in the variable MEASUREMENT\_IDENTITY is set to "UE-based" or "UE assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
    - begin monitoring assistance data received in System Information Block type 15.4 and System Information Block type 15.5 according to subclause 8.1.1.6.15.
  - if the IE "Method type" stored in the variable MEASUREMENT\_IDENTITY is set to "UE-assisted":
    - begin monitoring assistance data received in System Information Block type 15.4 according to subclause 8.1.1.6.15.
- if the UE is in CELL\_FACH state:
  - if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED or UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED contains neighbour cells on other frequencies than the current frequency:
    - perform measurements on other frequencies according to the IE "FACH measurement occasion info".

The UE may:

- if the IE "Positioning Methods" stored in the variable MEASUREMENT\_IDENTITY is set to "GPS" or "OTDOA or GPS":
  - begin monitoring assistance data received in System Information Block type 15 and/or System Information Block type 15.1 and/or System Information Block type 15.2 and/or System Information Block type 15.3 according to subclause 8.1.1.6.15.

### 10.3.3.45 UE positioning capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Standalone location method(s) supported	MP		Boolean	Defines if a UE can measure its location by some means unrelated to UTRAN TRUE means supported
UE based OTDOA supported	MP		Boolean	TRUE means supported
Network Assisted GPS support	MP		Enumerated ('Network based', 'UE based', 'Both', 'None')	Defines if the UE supports network based or UE based GPS methods.
Support for GPS timing of cell frames measurement	MP		Boolean	Defines if a UE has the capability to perform the UE GPS timing of cell frames measurement [7]. TRUE means capable
Support for IPDL	MP		Boolean	Defines if a UE has the capability to use IPDL to enhance its 'SFN-SFN observed time difference –type 2' measurement. TRUE means supported
Support for Rx-Tx time difference type2 measurement	MP		Boolean	TRUE means supported
<u>Support for UP measurement reporting in CELL_PCH and URA_PCH states</u>	<u>MD</u>		<u>Enumerated (true)</u>	<u>Absence of this element means not supported and presence means supported. Note 1.</u>

NOTE 1: The performance requirements for this capability are defined in Release 5.

## 11.2 PDU definitions

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IES :
  CN-DomainIdentity,
  CN-InformationInfo,
  CN-InformationInfoFull,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IES :
  URA-Identity,
-- User Equipment IES :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-v370ext,
  UE-RadioAccessCapability-v380ext,
  UE-RadioAccessCapability-v3a0ext

<...>

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

InterRATHandoverInfo ::= SEQUENCE {
  -- This structure is defined for historical reasons, backward compatibility with 04.18
```

```

predefinedConfigStatusList      CHOICE {
    absent                        NULL,
    present                       PredefinedConfigStatusList
},
uE-SecurityInformation          CHOICE {
    absent                        NULL,
    present                       UE-SecurityInformation
},
ue-CapabilityContainer          CHOICE {
    absent                        NULL,
    present                       OCTET STRING (SIZE (0..63))
    -- octet aligned string containing IE UE-RadioAccessCapabilityInfo
},
-- Non critical extensions
v390NonCriticalExtensions      CHOICE {
    absent                        NULL,
    present                       SEQUENCE {
        interRATHandoverInfo-v390ext  InterRATHandoverInfo-v390ext-IEs,
        -- Reserved for future non critical extension
        v3a0NonCriticalExtensions     SEQUENCE {
            interRATHandoverInfo-v3a0ext  InterRATHandoverInfo-v3a0ext,
            -- Reserved for future non critical extension
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        } OPTIONAL
    }
}

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

InterRATHandoverInfo-v3a0ext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

<...>

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    startList                          STARTList,
    ue-RadioAccessCapability            UE-RadioAccessCapability            OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability            InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
    -- Non critical extensions
    v370NonCriticalExtensions           SEQUENCE {
        rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
        v380NonCriticalExtensions          SEQUENCE {
            rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
            -- Reserved for future non critical extension
            v3a0NonCriticalExtensions        SEQUENCE {
                rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
                nonCriticalExtensions          SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

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

RRCConnectionSetupComplete-v380ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext      OPTIONAL,

```

```

        dl-PhysChCapabilityFDD-v380ext        DL-PhysChCapabilityFDD-v380ext
    }
}
RRCConnectionSetupComplete-v3a0ext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext        UE-RadioAccessCapability-v3a0ext        OPTIONAL
}
<...>

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

UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier                RRC-TransactionIdentifier                OPTIONAL,
    ue-RadioAccessCapability                UE-RadioAccessCapability                OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability                InterRAT-UE-RadioAccessCapabilityList
OPTIONAL,
    -- Non critical extensions
    v370NonCriticalExtensions                SEQUENCE {
        ueCapabilityInformation-v370ext    UECapabilityInformation-v370ext,
        v380NonCriticalExtensions        SEQUENCE {
            ueCapabilityInformation-v380ext    UECapabilityInformation-v380ext-IEs,
            -- Reserved for future non critical extension
            v3a0NonCriticalExtensions        SEQUENCE {
                ueCapabilityInformation-v3a0ext    UECapabilityInformation-v3a0ext,
                nonCriticalExtensions        SEQUENCE {}                OPTIONAL
            }                OPTIONAL
        }                OPTIONAL
    }                OPTIONAL
}

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

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

UECapabilityInformation-v3a0ext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext        UE-RadioAccessCapability-v3a0ext        OPTIONAL
}
<...>

```



## 11.3 Information element definitions

InformationElements DEFINITIONS AUTOMATIC TAGS ::=

< . . . >

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

< . . . >

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

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

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

UE-RadioAccessCapability-v380ext ::=   SEQUENCE {
    ue-PositioningCapabilityExt-v380  UE-PositioningCapabilityExt-v380
}

UE-RadioAccessCapability-v3a0ext ::=   SEQUENCE {
    ue-PositioningCapabilityExt-v3a0  UE-PositioningCapabilityExt-v3a0
}

UE-PositioningCapabilityExt-v380 ::=   SEQUENCE {
    rx-tx-TimeDifferenceType2Capable  BOOLEAN
}

UE-PositioningCapabilityExt-v3a0 ::=   SEQUENCE {
    reporting-CellPCH-UraPCH          ENUMERATED { true }
}
```

< . . . >



```

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
}

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 ::= SEQUENCE {
  ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext  OPTIONAL,
}

```

<...>

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

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<b>Source:</b>	⌘ Nortel Networks, Qualcomm, CPS, Ericsson		
<b>Work item code:</b>	⌘	<b>Date:</b>	⌘ 5 <sup>th</sup> March 2002
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-4
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<b>Reason for change:</b>	⌘ In REL4 the measurement performance requirements for UP measurements in CELL_PCH/URA_PCH are missing from RAN4 specifications.  With the current signalling it is possible to configure the measurement interval for UP event triggered measurement reporting at values which are too small in CELL_PCH/URA_PCH which may lead to unnecessary battery consumption. The same case applies also for periodical reporting.
<b>Summary of change:</b>	⌘ UE positioning reporting in CELL_PCH and URA_PCH is made an UE capability. If the UE supports this capability it will comply to the measurement performance requirements that will be defined in Release 5 RAN4 specifications.  For UEs in CELL_PCH/URA_PCH the measurement interval for event triggered measurement reporting is specified to be at least 15 seconds in order to save battery life of the UE.  For UEs in CELL_PCH/URA_PCH the measurement reporting interval for periodical reporting is specified to be at least 64 seconds in order to save battery life of the UE.  <b>Isolated impact analysis:</b> Impacted function is UE Positioning reporting in CELL_PCH and URA_PCH states. The proposed changes are isolated impact to this functionality. If the UE does not implement this CR then UTRAN has no means to know if the UE supports this capability and therefore UTRAN can not rely on the UP reporting in these states.

<b>Consequences if not approved:</b>	⌘	UP measurement reporting in CELL_PCH, URA_PCH is misaligned between RAN2 and RAN4 specifications in REL4.	
<b>Clauses affected:</b>	⌘	8.4.1.6.7, 10.3.3.45, 11.2, 11.5	
<b>Other specs affected:</b>	⌘	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ 25.306
<b>Other comments:</b>	⌘		

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## 8.4.1.6.7 UE positioning measurement

~~NOTE: The applicability of UE positioning measurements in CELL\_PCH, URA\_PCH and CELL\_FACH needs to be aligned in all relevant specifications.~~

~~Upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH, the UE shall~~

- ~~- if the UE does not support UP measurement reporting in CELL\_PCH and URA\_PCH states as indicated in the IE "UE positioning capability" included in the IE "UE Radio Access Capability":~~
- ~~- stop UE positioning measurement reporting.~~

~~Upon transition from CELL\_DCH to CELL\_FACH or CELL\_PCH or URA\_PCH state, Upon transition from CELL\_DCH to CELL\_FACH, or upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH and if the UE supports UP measurement reporting in CELL\_PCH and URA\_PCH states as indicated in the IE "UE positioning capability" included in the IE "UE Radio Access Capability", the UE shall:~~

- ~~- retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT\_IDENTITY; and~~
- ~~- if the optional IE "measurement validity" for this measurement has not been included:
 
  - ~~- delete the measurement associated with the variable MEASUREMENT\_IDENTITY.~~~~
- ~~- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL\_DCH":
 
  - ~~- stop measurement reporting;~~
  - ~~- store the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_DCH state.~~~~
- ~~- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
 
  - ~~- upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH:
 
    - ~~- if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 4664 seconds:
 
      - ~~- consider the value of the IE "Measurement interval" as being 4664 seconds;~~~~
    - ~~- if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 4664 seconds:
 
      - ~~- consider the value of the IE "Reporting Interval" as being 4664 seconds~~~~~~
  - ~~- continue measurement reporting according to its UP measurement reporting capability;-~~~~
- ~~- if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL\_DCH":
 
  - ~~- upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH:
 
    - ~~- if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 4664 seconds:
 
      - ~~- consider the value of the IE "Measurement interval" as being 4664 seconds;~~~~
    - ~~- if the choice in the IE "Reporting Criteria" included the IE "UE Positioning" stored in the variable MEASUREMENT\_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 4664 seconds:~~~~~~

- consider the value of the IE "Reporting Interval" as being 1664 seconds
- resume this measurement and associated reporting according to its UP measurement reporting capability;
- if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- if the transition is not due to a reconfiguration message:
  - delete the assistance data included in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED, UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED and UE\_POSITIONING\_GPS\_DATA.
- if the IE "Positioning Methods" stored in the variable MEASUREMENT\_IDENTITY is set to "OTDOA" or "OTDOA or GPS":
  - if the IE "Method type" stored in the variable MEASUREMENT\_IDENTITY is set to "UE-based" or "UE assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
    - begin monitoring assistance data received in System Information Block type 15.4 and System Information Block type 15.5 according to subclause 8.1.1.6.15.
  - if the IE "Method type" stored in the variable MEASUREMENT\_IDENTITY is set to "UE-assisted":
    - begin monitoring assistance data received in System Information Block type 15.4 according to subclause 8.1.1.6.15.
- if the UE is in CELL\_FACH state:
  - if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED or UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED contains neighbour cells on other frequencies than the current frequency:
    - perform measurements on other frequencies according to the IE "FACH measurement occasion info".

The UE may:

- if the IE "Positioning Methods" stored in the variable MEASUREMENT\_IDENTITY is set to "GPS" or "OTDOA or GPS":
  - begin monitoring assistance data received in System Information Block type 15 and/or System Information Block type 15.1 and/or System Information Block type 15.2 and/or System Information Block type 15.3 according to subclause 8.1.1.6.15.

10.3.3.45 UE positioning capability

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Standalone location method(s) supported	MP		Boolean	Defines if a UE can measure its location by some means unrelated to UTRAN TRUE means supported
UE based OTDOA supported	MP		Boolean	TRUE means supported
Network Assisted GPS support	MP		Enumerated ('Network based', 'UE based', 'Both', 'None')	Defines if the UE supports network based or UE based GPS methods.
Support for GPS timing of cell frames measurement	MP		Boolean	Defines if a UE has the capability to perform the UE GPS timing of cell frames measurement [7]. TRUE means capable
Support for IPDL	MP		Boolean	Defines if a UE has the capability to use IPDL to enhance its 'SFN-SFN observed time difference –type 2' measurement. TRUE means supported
Support for Rx-Tx time difference type2 measurement	MP		Boolean	TRUE means supported
<u>Support for UP measurement reporting in CELL_PCH and URA_PCH states</u>	<u>MD</u>		<u>Enumerated (true)</u>	<u>Absence of this element means not supported and presence means supported. Note 1.</u>

NOTE 1: The performance requirements for this capability are defined in Release 5.



## 11.2 PDU definitions

```

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IES :
  CN-DomainIdentity,
  CN-InformationInfo,
  CN-InformationInfoFull,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IES :
  URA-Identity,
-- User Equipment IES :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4-ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-r4-ext,
  UE-RadioAccessCapability-v370ext,
  UE-RadioAccessCapability-v380ext,
  UE-RadioAccessCapability-v3a0ext,
  DL-PhysChCapabilityFDD-v380ext,

< . . . >

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

```

```

InterRATHandoverInfo ::= SEQUENCE {
  -- This structure is defined for historical reasons, backward compatibility with 04.18
  predefinedConfigStatusList      CHOICE {
    absent          NULL,
    present        PredefinedConfigStatusList
  },
  ue-SecurityInformation          CHOICE {
    absent          NULL,
    present        UE-SecurityInformation
  },
  ue-CapabilityContainer          CHOICE {
    absent          NULL,
    present        OCTET STRING (SIZE (0..63))
  },
  -- octet aligned string containing IE UE-RadioAccessCapabilityInfo
  -- Non critical extensions
  v390NonCriticalExtensions      CHOICE {
    absent          NULL,
    present        SEQUENCE {
      interRATHandoverInfo-v390ext  InterRATHandoverInfo-v390ext-IEs,
      -- Reserved for future non critical extension
      v3a0NonCriticalExtensions      SEQUENCE {
        interRATHandoverInfo-v3a0ext  InterRATHandoverInfo-v3a0ext,
        -- Reserved for future non critical extension
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
      } OPTIONAL
    }
  }
}

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

InterRATHandoverInfo-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

< . . . >

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  startList                          STARTList,
  ue-RadioAccessCapability            UE-RadioAccessCapability            OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability            InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
  -- Non critical extensions
  v370NonCriticalExtensions          SEQUENCE {
    rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
    v380NonCriticalExtensions          SEQUENCE {
      rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
      -- Reserved for future non critical extension
      v3a0NonCriticalExtensions          SEQUENCE {
        rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
        v4NonCriticalExtensions          SEQUENCE {
          rrcConnectionSetupComplete-r3-r4-ext
          RRCConnectionSetupComplete-r3-r4-ext-IEs,
          nonCriticalExtensions-r4      SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

RRCConnectionSetupComplete-v370ext ::= SEQUENCE {
  -- User equipment IEs

```

```

    ue-RadioAccessCapability-v370ext    UE-RadioAccessCapability-v370ext    OPTIONAL
}

```

```

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

```

```

RRCConnectionSetupComplete-v3a0ext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    OPTIONAL
}

```

```

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

```

< . . . >

```

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

```

```

UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier            RRC-TransactionIdentifier            OPTIONAL,
    ue-RadioAccessCapability              UE-RadioAccessCapability              OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability              InterRAT-UE-RadioAccessCapabilityList
OPTIONAL,
    v370NonCriticalExtensions              SEQUENCE {
        ueCapabilityInformation-v370ext    UECapabilityInformation-v370ext,
        v380NonCriticalExtensions          SEQUENCE {
            ueCapabilityInformation-v380ext    UECapabilityInformation-v380ext-IEs,
            -- Reserved for future non critical extension
        }
        v3a0NonCriticalExtensions          SEQUENCE {
            ueCapabilityInformation-v3a0ext    UECapabilityInformation-v3a0ext,
            v4NonCriticalExtensions          SEQUENCE {
                ueCapabilityInformation-r3-r4-ext
                UECapabilityInformation-r3-r4-ext,
            }
            nonCriticalExtensions-r4        SEQUENCE {} OPTIONAL
        }
    } OPTIONAL
} OPTIONAL

```

```

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

```

```

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

```

```

UECapabilityInformation-v3a0ext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext      UE-RadioAccessCapability-v3a0ext      OPTIONAL
}

```

```

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

```

## 11.3 Information element definitions

InformationElements DEFINITIONS AUTOMATIC TAGS ::=

< . . . >

```

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

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

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

UE-RadioAccessCapability-v380ext ::=  SEQUENCE {
  ue-PositioningCapabilityExt-v380    UE-PositioningCapabilityExt-v380
}

UE-RadioAccessCapability-v3a0ext ::=  SEQUENCE {
  ue-PositioningCapabilityExt-v3a0    UE-PositioningCapabilityExt-v3a0
}

UE-PositioningCapabilityExt-v380 ::=  SEQUENCE {
  rx-tx-TimeDifferenceType2Capable    BOOLEAN
}

UE-PositioningCapabilityExt-v3a0 ::=  SEQUENCE {
  reporting-CellPCH-UraPCH           ENUMERATED { true }
}

```

< . . . >

## 11.5 RRC information between network nodes

```

Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=
BEGIN

IMPORTS

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

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    C-RNTI,
    DL-PhysChCapabilityFDD-v380ext,
    FailureCauseWithProtErr,
    RRC-MessageSequenceNumber,
    STARTList,
    U-RNTI,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-AddReconfTransChInfoList,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-AddReconfTransChInfoList,
-- Measurement IEs :
    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    MeasurementType-r4,
    AdditionalMeasurementID-List,
    PositionEstimate,
    UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :

< . . . >

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

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

```

```

        v3a0nonCriticalExtensions SEQUENCE {
        -----
        sRNC-RelocationInfo-v3a0ext SRNC-RelocationInfo-v3a0ext,
        -----
        nonCriticalExtensions SEQUENCE {} OPTIONAL
        -----
        } OPTIONAL
    } 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,
cipheringInfoPerRB-List CipheringInfoPerRB-List OPTIONAL,
count-C-List COUNT-C-List OPTIONAL,
integrityProtectionStatus IntegrityProtectionStatus,
srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
implementationSpecificParams ImplementationSpecificParams OPTIONAL,
-- User equipment IEs
u-RNTI U-RNTI,
c-RNTI C-RNTI OPTIONAL,
ue-RadioAccessCapability UE-RadioAccessCapability,
ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
-- Other IEs
ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
-- UTRAN mobility IEs
ura-Identity URA-Identity OPTIONAL,
-- Core network IEs
cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
cn-DomainInformationList CN-DomainInformationList OPTIONAL,
-- Measurement IEs
ongoingMeasRepList OngoingMeasRepList OPTIONAL,
-- Radio bearer IEs
predefinedConfigStatusList PredefinedConfigStatusList,
srb-InformationList SRB-InformationSetupList,
rab-InformationList RAB-InformationSetupList OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
modeSpecificInfo CHOICE {
fdd SEQUENCE {
cpch-SetID CPCH-SetID OPTIONAL,
transChDRAC-Info DRAC-StaticInformationList OPTIONAL
},
tdd NULL
},
dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
dl-TransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
-- Measurement report
measurementReport MeasurementReport OPTIONAL,
nonCriticalExtensions SEQUENCE {
-- In case of TDD only this IE is present otherwise this IE is absent
up-IpdL-Parameters-TDD UE-Positioning-IPDL-Parameters-TDD-r4-ext OPTIONAL,
-- Extension mechanism for non- release4 information
nonCriticalExtensions SEQUENCE {} OPTIONAL
}
}

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 ::= SEQUENCE {
ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL,

```

```

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

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

SRNC-RelocationInfo-r4 ::=      SEQUENCE {
-- Non-RRC IEs
    stateOfRRC                  StateOfRRC,
    stateOfRRC-Procedure        StateOfRRC-Procedure,
    cipheringStatus             CipheringStatus,
    calculationTimeForCiphering CalculationTimeForCiphering      OPTIONAL,
    cipheringInfoPerRB-List     CipheringInfoPerRB-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-r4         OPTIONAL,
-- Radio bearer IEs
    predefinedConfigStatusList   PredefinedConfigStatusList,
    srb-InformationList          SRB-InformationSetupList,
    rab-InformationList          RAB-InformationSetupList       OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo           OPTIONAL,
    ul-TransChInfoList          UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID            CPCH-SetID                OPTIONAL,
            transChDRAC-Info      DRAC-StaticInformationList  OPTIONAL
        },
        tdd                      NULL
    },
    dl-CommonTransChInfo        DL-CommonTransChInfo           OPTIONAL,
    dl-TransChInfoList          DL-AddReconfTransChInfoList   OPTIONAL,
-- Measurement report
    measurementReport            MeasurementReport                OPTIONAL,
    nonCriticalExtensions        SEQUENCE {
-- In case of TDD only this IE is present otherwise this IE is absent
        up-Ipdl-Parameters-TDD    UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL,
-- Extension mechanism for non- release4 information
        nonCriticalExtensions      SEQUENCE {}
    }
}
}

```