**3GPP TSG-RAN WG2 Meeting # 117-eR2-2203362**

**Electronic Meeting, Feb 21st - March 3rd, 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.331** | **CR** | **draft** | **rev** |  | **Current version:** | **16.7.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | RAN1 parameter list impact to RRC running CR | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_pos\_enh-Core | | | | |  | ***Date:*** | | | 2022-02-09 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change 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](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Capture RAN1 agreements impacting RRC  Capture RAN2 agreements impacting RRC  Capture RAN1 parameter list impacting RRC  (Please see the list of agreements in seperate document) | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * UE TEG association reporting to gNB * Preconfiguration of measurement gap * Preconfiguration of PPW | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | High accuracy and low latency features may not be supported | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.2.2, 6.3.1a | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*Beginning of Changes*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

5GC 5G Core Network

ACK Acknowledgement

AM Acknowledged Mode

ARQ Automatic Repeat Request

AS Access Stratum

ASN.1 Abstract Syntax Notation One

BAP Backhaul Adaptation Protocol

BCD Binary Coded Decimal

BH Backhaul

BLER Block Error Rate

BWP Bandwidth Part

CA Carrier Aggregation

CAG Closed Access Group

CAG-ID Closed Access Group Identifier

CAPC Channel Access Priority Class

CBR Channel Busy Ratio

CCCH Common Control Channel

CG Cell Group

CHO Conditional Handover

CLI Cross Link Interference

CMAS Commercial Mobile Alert Service

CP Control Plane

CPC Conditional PSCell Change

C-RNTI Cell RNTI

CSI Channel State Information

DAPS Dual Active Protocol Stack

DC Dual Connectivity

DCCH Dedicated Control Channel

DCI Downlink Control Information

DCP DCI with CRC scrambled by PS-RNTI

DFN Direct Frame Number

DL Downlink

DL-PRS Downlink Positioning Reference Signal

DL-SCH Downlink Shared Channel

DM-RS Demodulation Reference Signal

DRB (user) Data Radio Bearer

DRX Discontinuous Reception

DTCH Dedicated Traffic Channel

EN-DC E-UTRA NR Dual Connectivity with E-UTRA connected to EPC

EPC Evolved Packet Core

EPS Evolved Packet System

ETWS Earthquake and Tsunami Warning System

E-UTRA Evolved Universal Terrestrial Radio Access

E-UTRA/5GC E-UTRA connected to 5GC

E-UTRA/EPC E-UTRA connected to EPC

E-UTRAN Evolved Universal Terrestrial Radio Access Network

FDD Frequency Division Duplex

FFS For Further Study

GERAN GSM/EDGE Radio Access Network

GNSS Global Navigation Satellite System

GSM Global System for Mobile Communications

HARQ Hybrid Automatic Repeat Request

HRNN Human Readable Network Name

IAB Integrated Access and Backhaul

IAB-DU IAB-node DU

IAB-MT IAB Mobile Termination

IDC In-Device Coexistence

IE Information element

IMSI International Mobile Subscriber Identity

kB Kilobyte (1000 bytes)

L1 Layer 1

L2 Layer 2

L3 Layer 3

LBT Listen Before Talk

MAC Medium Access Control

MCG Master Cell Group

MDT Minimization of Drive Tests

MIB Master Information Block

MPE Maximum Permissible Exposure

MR-DC Multi-Radio Dual Connectivity

N/A Not Applicable

NE-DC NR E-UTRA Dual Connectivity

(NG)EN-DC E-UTRA NR Dual Connectivity (covering E-UTRA connected to EPC or 5GC)

NGEN-DC E-UTRA NR Dual Connectivity with E-UTRA connected to 5GC

NID Network Identifier

NPN Non-Public Network

NR-DC NR-NR Dual Connectivity

NR/5GC NR connected to 5GC

PCell Primary Cell

PDCP Packet Data Convergence Protocol

PDU Protocol Data Unit

PLMN Public Land Mobile Network

PNI-NPN Public Network Integrated Non-Public Network

posSIB Positioning SIB

PRS Positioning Reference Signal

PSCell Primary SCG Cell

PWS Public Warning System

QoS Quality of Service

RAN Radio Access Network

RAT Radio Access Technology

RLC Radio Link Control

RMTC RSSI Measurement Timing Configuration

RNA RAN-based Notification Area

RNTI Radio Network Temporary Identifier

ROHC Robust Header Compression

RPLMN Registered Public Land Mobile Network

RRC Radio Resource Control

RS Reference Signal

SBAS Satellite Based Augmentation System

SCell Secondary Cell

SCG Secondary Cell Group

SCS Subcarrier Spacing

SFN System Frame Number

SFTD SFN and Frame Timing Difference

SI System Information

SIB System Information Block

SL Sidelink

SLSS Sidelink Synchronisation Signal

SNPN Stand-alone Non-Public Network

SpCell Special Cell

SRB Signalling Radio Bearer

SRS Sounding Reference Signal

SSB Synchronization Signal Block

TAG Timing Advance Group

TDD Time Division Duplex

TEG Timing Error Group

TM Transparent Mode

UE User Equipment

UL Uplink

UM Unacknowledged Mode

UP User Plane

In the ASN.1, lower case may be used for some (parts) of the above abbreviations e.g. c-RNTI.

*Next Change*

## 5.7 Other

### 5.7.1 DL information transfer

<Skip unmodified changes>

### 5.7.XX UE Positioning Assistance Information

#### 5.7.XX.1 General



Figure 5.7.XX.1-1: UE Positioning Assistance Information procedure

The UE Positioning Assistance Information procedure is used by UE to report the UE Positioning Assistance Information. The UE reports the association between UL-SRS resources for positioning and the UE Tx TEG ID.

#### 5.7.XX.2 Initiation

A UE capable of providing the association between UL SRS Resource for positioning and UE Tx TEG ID in RRC\_CONNECTED may initiate the procedure upon being configured to provide this association information.

Upon initiation of the procedure, the UE shall:

1> if *ue-TxTEG-RequestUL-TDOA-Config* in *RRCReconfiguration* message to provide the association between UL SRS Resource for positioning and Tx TEG:

2> initiate transmission of the *UEPositioningAssistanceInfo* message in accordance with 5.7.XX.3 to provide the association.

#### 5.7.XX.3 Actions related to transmission of *UEPositioningAssistanceInfo* message

The UE shall set the contents of the *UEPositioningAssistanceInfo* message as follows:

1> if transmission of the *UEPositioningAssistanceInfo* message is initiated to provide the association between UL SRS Resource for positioning and Tx TEG according to 5.7.XX.2 ;

2> include *ue-TxTEG-AssociationList* in the *UEPositioningAssistanceInfo* message;

*Next Change*

### 6.2.1 General message structure

#### *– NR-RRC-Definitions*

This ASN.1 segment is the start of the NR RRC PDU definitions.

-- ASN1START

-- TAG-NR-RRC-DEFINITIONS-START

NR-RRC-Definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- TAG-NR-RRC-DEFINITIONS-STOP

-- ASN1STOP

*<Skip Unmodified Changes>*

*– UL-DCCH-Message*

The *UL-DCCH-Message* class is the set of RRC messages that may be sent from the UE to the network on the uplink DCCH logical channel.

-- ASN1START

-- TAG-UL-DCCH-MESSAGE-START

UL-DCCH-Message ::= SEQUENCE {

message UL-DCCH-MessageType

}

UL-DCCH-MessageType ::= CHOICE {

c1 CHOICE {

measurementReport MeasurementReport,

rrcReconfigurationComplete RRCReconfigurationComplete,

rrcSetupComplete RRCSetupComplete,

rrcReestablishmentComplete RRCReestablishmentComplete,

rrcResumeComplete RRCResumeComplete,

securityModeComplete SecurityModeComplete,

securityModeFailure SecurityModeFailure,

ulInformationTransfer ULInformationTransfer,

locationMeasurementIndication LocationMeasurementIndication,

ueCapabilityInformation UECapabilityInformation,

counterCheckResponse CounterCheckResponse,

ueAssistanceInformation UEAssistanceInformation,

failureInformation FailureInformation,

ulInformationTransferMRDC ULInformationTransferMRDC,

scgFailureInformation SCGFailureInformation,

scgFailureInformationEUTRA SCGFailureInformationEUTRA

},

messageClassExtension CHOICE {

c2 CHOICE {

ulDedicatedMessageSegment-r16 ULDedicatedMessageSegment-r16,

dedicatedSIBRequest-r16 DedicatedSIBRequest-r16,

mcgFailureInformation-r16 MCGFailureInformation-r16,

ueInformationResponse-r16 UEInformationResponse-r16,

sidelinkUEInformationNR-r16 SidelinkUEInformationNR-r16,

ulInformationTransferIRAT-r16 ULInformationTransferIRAT-r16,

iabOtherInformation-r16 IABOtherInformation-r16,

uePositioningAssistanceInfo-r17 UEPositioningAssistanceInfo-r17,

spare8 NULL, spare7 NULL, spare6 NULL,

spare5 NULL, spare4 NULL, spare3 NULL, spare2 NULL, spare1 NULL

},

messageClassExtensionFuture-r16 SEQUENCE {}

}

}

-- TAG-UL-DCCH-MESSAGE-STOP

-- ASN1STOP

*Next Change*

#### – *UEInformationResponse*

The *UEInformationResponse* message is used by the UE to transfer information requested by the network.

Signalling radio bearer: SRB1 or SRB2 (when logged measurement information is included)

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to network

*<Skip Unmodified Changes>*

#### – *UEPositioningAssistanceInfo*

The *UEPositioningAssistanceInfo* message is used to provide positioning assistance information as requested by the Network.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to Network

*UEPositioningAssistanceInfo message*

-- ASN1START

-- TAG-UEPOSITIONINGASSISTANCEINFO-START

UEPositioningAssistanceInfo-r17 ::= SEQUENCE {

criticalExtensions CHOICE {

uePositioningAssistanceInfo-r17 UEPositioningAssistanceInfo-IEs-r17,

criticalExtensionsFuture SEQUENCE {}

}

}

UEPositioningAssistanceInfo-IES-r17 ::= SEQUENCE {

ue-TxTEG-AssociationList-r17 UE-TxTEG-AssociationList-r17 OPTIONAL,

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

UE-TxTEG-AssociationList-r17 ::= SEQUENCE (SIZE (1..maxNrOfTEG-ID-r17)) OF UETxTEG-Association-r17

UE-TxTEG-Association-r17 ::= SEQUENCE {

ue-TxTEG-ID-r17 INTEGER (0..maxUE-TxTEG-ID),

nr-TimeStamp-r17 NR-TimeStamp-r17,

srs-PosResSetAssociationList-r17 SEQUENCE (SIZE (1.. maxNrofSRS-PosResourceSets)) OF SRS-PosResSetAssociation-r17

}

SRS-PosResSetAssociation-r17 ::= SEQUENCE {

associatedSRS-PosResourceSetID-r17 INTEGER (1.. SRS-PosResourceSetId-r16),

associatedSRS-PosResourceIdList-r17 SEQUENCE (SIZE(1.. maxNrofSRS-PosResources)) OF AssociatedSRS-PosResourceId-r17 OPTIONAL

}

AssociatedSRS-PosResourceId-r17 ::= INTEGER (1..SRS-PosResourceId-r16)

----------Editor Notes: maxNrOfTEG-ID-r17 should be decided by RAN1/4.

NR-TimeStamp-r17 ::= SEQUENCE {

nr-SFN-r17 INTEGER (0..1023),

nr-Slot-r17 CHOICE {

scs15-r17 INTEGER (0..9),

scs30-r17 INTEGER (0..19),

scs60-r17 INTEGER (0..39),

scs120-r17 INTEGER (0..79)

},

...

}

-- TAG-UEPOSITIONINGASSISTANCEINFO-STOP

-- ASN1STOP

|  |
| --- |
| *UEPositioningAssistanceInfo* field descriptions |
| ***AssocaitedSRS-PosResourceId***  The ID of SRS Positioning Resource (*SRS-PosResource*) which is associted to a specific UE Tx TEG. |
| ***associatedSRS-PosResourceSetID***  The ID of SRS Positioning Resource Set (*SRS-PosResourceSet*) which is associted to a specific UE Tx TEG. |
| ***nr-TimeSTamp***  This field specifies the latest time instance at which the association is valid prior to the reporting. |
| ***ueTxTEG-ID***  Identifies the ID of UE Tx TEG. |

#### – *ULDedicatedMessageSegment*

The *ULDedicatedMessageSegment* message is used to transfer segments of the *UECapabilityInformation* message.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to Network

*ULDedicatedMessageSegment message*

-- ASN1START

-- TAG-ULDEDICATEDMESSAGESEGMENT-START

ULDedicatedMessageSegment-r16 ::= SEQUENCE {

criticalExtensions CHOICE {

ulDedicatedMessageSegment-r16 ULDedicatedMessageSegment-r16-IEs,

criticalExtensionsFuture SEQUENCE {}

}

}

ULDedicatedMessageSegment-r16-IEs ::= SEQUENCE {

segmentNumber-r16 INTEGER (0..15),

rrc-MessageSegmentContainer-r16 OCTET STRING,

rrc-MessageSegmentType-r16 ENUMERATED {notLastSegment, lastSegment},

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-ULDEDICATEDMESSAGESEGMENT-STOP

-- ASN1STOP

|  |
| --- |
| *ULDedicatedMessageSegment* field descriptions |
| ***segmentNumber***  Identifies the sequence number of a segment within the encoded UL DCCH message. |
| ***rrc-MessageSegmentContainer***  Includes a segment of the encoded UL DCCH message. The size of the included segment in this container should be small enough that the resulting encoded RRC message PDU is less than or equal to the PDCP SDU size limit. |
| ***rrc-MessageSegmentType***  Indicates whether the included UL DCCH message segment is the last segment or not. |

*Next Changes*

### 6.2.2 Message definitions

#### – *CounterCheck*

The *CounterCheck* message is used by the network to indicate the current COUNT MSB values associated to each DRB and to request the UE to compare these to its COUNT MSB values and to report the comparison results to the network.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: Network to UE

*<Skip Unmodified Changes>*

#### – *RRCReconfiguration*

The *RRCReconfiguration* message is the command to modify an RRC connection. It may convey information for measurement configuration, mobility control, radio resource configuration (including RBs, MAC main configuration and physical channel configuration) and AS security configuration.

Signalling radio bearer: SRB1 or SRB3

RLC-SAP: AM

Logical channel: DCCH

Direction: Network to UE

*RRCReconfiguration message*

-- ASN1START

-- TAG-RRCRECONFIGURATION-START

RRCReconfiguration ::= SEQUENCE {

rrc-TransactionIdentifier RRC-TransactionIdentifier,

criticalExtensions CHOICE {

rrcReconfiguration RRCReconfiguration-IEs,

criticalExtensionsFuture SEQUENCE {}

}

}

RRCReconfiguration-IEs ::= SEQUENCE {

radioBearerConfig RadioBearerConfig OPTIONAL, -- Need M

secondaryCellGroup OCTET STRING (CONTAINING CellGroupConfig) OPTIONAL, -- Cond SCG

measConfig MeasConfig OPTIONAL, -- Need M

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension RRCReconfiguration-v1530-IEs OPTIONAL

}

RRCReconfiguration-v1530-IEs ::= SEQUENCE {

masterCellGroup OCTET STRING (CONTAINING CellGroupConfig) OPTIONAL, -- Need M

fullConfig ENUMERATED {true} OPTIONAL, -- Cond FullConfig

dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message OPTIONAL, -- Cond nonHO

masterKeyUpdate MasterKeyUpdate OPTIONAL, -- Cond MasterKeyChange

dedicatedSIB1-Delivery OCTET STRING (CONTAINING SIB1) OPTIONAL, -- Need N

dedicatedSystemInformationDelivery OCTET STRING (CONTAINING SystemInformation) OPTIONAL, -- Need N

otherConfig OtherConfig OPTIONAL, -- Need M

nonCriticalExtension RRCReconfiguration-v1540-IEs OPTIONAL

}

RRCReconfiguration-v1540-IEs ::= SEQUENCE {

otherConfig-v1540 OtherConfig-v1540 OPTIONAL, -- Need M

nonCriticalExtension RRCReconfiguration-v1560-IEs OPTIONAL

}

RRCReconfiguration-v1560-IEs ::= SEQUENCE {

mrdc-SecondaryCellGroupConfig SetupRelease { MRDC-SecondaryCellGroupConfig } OPTIONAL, -- Need M

radioBearerConfig2 OCTET STRING (CONTAINING RadioBearerConfig) OPTIONAL, -- Need M

sk-Counter SK-Counter OPTIONAL, -- Need N

nonCriticalExtension RRCReconfiguration-v1610-IEs OPTIONAL

}

RRCReconfiguration-v1610-IEs ::= SEQUENCE {

otherConfig-v1610 OtherConfig-v1610 OPTIONAL, -- Need M

bap-Config-r16 SetupRelease { BAP-Config-r16 } OPTIONAL, -- Need M

iab-IP-AddressConfigurationList-r16 IAB-IP-AddressConfigurationList-r16 OPTIONAL, -- Need M

conditionalReconfiguration-r16 ConditionalReconfiguration-r16 OPTIONAL, -- Need M

daps-SourceRelease-r16 ENUMERATED{true} OPTIONAL, -- Need N

t316-r16 SetupRelease {T316-r16} OPTIONAL, -- Need M

needForGapsConfigNR-r16 SetupRelease {NeedForGapsConfigNR-r16} OPTIONAL, -- Need M

onDemandSIB-Request-r16 SetupRelease { OnDemandSIB-Request-r16 } OPTIONAL, -- Need M

dedicatedPosSysInfoDelivery-r16 OCTET STRING (CONTAINING PosSystemInformation-r16-IEs) OPTIONAL, -- Need N

sl-ConfigDedicatedNR-r16 SetupRelease {SL-ConfigDedicatedNR-r16} OPTIONAL, -- Need M

sl-ConfigDedicatedEUTRA-Info-r16 SetupRelease {SL-ConfigDedicatedEUTRA-Info-r16} OPTIONAL, -- Need M

targetCellSMTC-SCG-r16 SSB-MTC OPTIONAL, -- Need S

nonCriticalExtension RRCReconfiguration-v17xy-IEs OPTIONAL

}

RRCReconfiguration-v17xy-IEs ::= SEQUENCE {

ue-TxTEG-RequestUL-TDOA-Config-r17 SetupRelease { UE-TxTEG-RequestUL-TDOA-Config-r17 } OPTIONAL, -- Need M

nonCriticalExtension SEQUENCE {} OPTIONAL

}

MRDC-SecondaryCellGroupConfig ::= SEQUENCE {

mrdc-ReleaseAndAdd ENUMERATED {true} OPTIONAL, -- Need N

mrdc-SecondaryCellGroup CHOICE {

nr-SCG OCTET STRING (CONTAINING RRCReconfiguration),

eutra-SCG OCTET STRING

}

}

BAP-Config-r16 ::= SEQUENCE {

bap-Address-r16 BIT STRING (SIZE (10)) OPTIONAL, -- Need M

defaultUL-BAP-RoutingID-r16 BAP-RoutingID-r16 OPTIONAL, -- Need M

defaultUL-BH-RLC-Channel-r16 BH-RLC-ChannelID-r16 OPTIONAL, -- Need M

flowControlFeedbackType-r16 ENUMERATED {perBH-RLC-Channel, perRoutingID, both} OPTIONAL, -- Need R

...

}

MasterKeyUpdate ::= SEQUENCE {

keySetChangeIndicator BOOLEAN,

nextHopChainingCount NextHopChainingCount,

nas-Container OCTET STRING OPTIONAL, -- Cond securityNASC

...

}

OnDemandSIB-Request-r16 ::= SEQUENCE {

onDemandSIB-RequestProhibitTimer-r16 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30}

}

T316-r16 ::= ENUMERATED {ms50, ms100, ms200, ms300, ms400, ms500, ms600, ms1000, ms1500, ms2000}

IAB-IP-AddressConfigurationList-r16 ::= SEQUENCE {

iab-IP-AddressToAddModList-r16 SEQUENCE (SIZE(1..maxIAB-IP-Address-r16)) OF IAB-IP-AddressConfiguration-r16 OPTIONAL, -- Need N

iab-IP-AddressToReleaseList-r16 SEQUENCE (SIZE(1..maxIAB-IP-Address-r16)) OF IAB-IP-AddressIndex-r16 OPTIONAL, -- Need N

...

}

IAB-IP-AddressConfiguration-r16 ::= SEQUENCE {

iab-IP-AddressIndex-r16 IAB-IP-AddressIndex-r16,

iab-IP-Address-r16 IAB-IP-Address-r16 OPTIONAL, -- Need M

iab-IP-Usage-r16 IAB-IP-Usage-r16 OPTIONAL, -- Need M

iab-donor-DU-BAP-Address-r16 BIT STRING (SIZE(10)) OPTIONAL, -- Need M

...

}

SL-ConfigDedicatedEUTRA-Info-r16 ::= SEQUENCE {

sl-ConfigDedicatedEUTRA-r16 OCTET STRING OPTIONAL, -- Need M

sl-TimeOffsetEUTRA-List-r16 SEQUENCE (SIZE (8)) OF SL-TimeOffsetEUTRA-r16 OPTIONAL -- Need M

}

SL-TimeOffsetEUTRA-r16 ::= ENUMERATED {ms0, ms0dot25, ms0dot5, ms0dot625, ms0dot75, ms1, ms1dot25, ms1dot5, ms1dot75,

ms2, ms2dot5, ms3, ms4, ms5, ms6, ms8, ms10, ms20}

UE-TxTEG-RequestUL-TDOA-Config-r17 ::= CHOICE {

oneShot-r17 NULL

periodicReporting-r17 ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240},

...

}

-- TAG-RRCRECONFIGURATION-STOP

-- ASN1STOP

|  |
| --- |
| *RRCReconfiguration-IEs* field descriptions |
| ***bap-Config***  This field is used to configure the BAP entity for IAB nodes. |
| ***bap-Address***  Indicates the BAP address of an IAB-node. The BAP address of an IAB-node cannot be changed once configured to the BAP entity. |
| ***conditionalReconfiguration***  Configuration of candidate target SpCell(s) and execution condition(s) for conditional handover or conditional PSCell change. For conditional PSCell change, this field may only be present in an *RRCReconfiguration* message for intra-SN PSCell change. The network does not configure a UE with both conditional PCell change and conditional PSCell change simultaneously. The field is absent if any DAPS bearer is configured or if the *masterCellGroup* includes *ReconfigurationWithSync*. For conditional PSCell change, the field is absent if the *secondaryCellGroup* includes *ReconfigurationWithSync*. The *RRCReconfiguration* message contained in *DLInformationTransferMRDC* cannot contain the field *conditionalReconfiguration* for conditional PSCell change. |
| ***daps-SourceRelease***  Indicates to UE that the source cell part of DAPS operation is to be stopped and the source cell part of DAPS configuration is to be released. |
| ***dedicatedNAS-MessageList***  This field is used to transfer UE specific NAS layer information between the network and the UE. The RRC layer is transparent for each PDU in the list. |
| ***dedicatedPosSysInfoDelivery***  This field is used to transfer *SIBPos* to the UE in RRC\_CONNECTED. |
| ***dedicatedSIB1-Delivery***  This field is used to transfer *SIB1* to the UE. The field has the same values as the corresponding configuration in *servingCellConfigCommon*. |
| ***dedicatedSystemInformationDelivery***  This field is used to transfer *SIB6*, *SIB7*, *SIB8* to the UE with an active BWP with no common serach space configured. For UEs in RRC\_CONNECTED, this field is used to transfer the SIBs requested on-demand. |
| ***defaultUL-BAP-RoutingID***  This field is used for IAB-node to configure the default uplink Routing ID, which is used by IAB-node during IAB-node bootstrapping*,* migration, IAB-MT RRC resume and IAB-MT RRC re-establishment for *F1-C* and *non-F1* traffic. The *defaultUL-BAP-RoutingID* can be (re-)configured when IAB-node IP address for *F1-C* related traffic changes. This field is mandatory only for IAB-node bootstrapping. |
| ***defaultUL-BH-RLC-Channel***  This field is used for IAB-nodes to configure the default uplink BH RLC channel*,* which is used by IAB-nodeduring IAB-node bootstrapping*,* migration, IAB-MT RRC resume and IAB-MT RRC re-establishment *for F1-C and non-F1 traffic*. The *defaultUL-BH-RLC-Channel* can be (re-)configured when IAB-node IP address for *F1-C* related traffic changes, and the new IP address is anchored at a different IAB-donor-DU. This field is mandatory for IAB-node bootstrapping. If the IAB-MT is operating in EN-DC, the default uplink BH RLC channel is referring to an RLC channel on the SCG; Otherwise, it is referring to an RLC channel on the MCG. |
| ***flowControlFeedbackType***  This field is only used for IAB-node that support hop-by-hop flow control to configure the type of flow control feedback. Value *perBH-RLC-Channel* indicates that the IAB-node shall provide flow control feedback per BH RLC channel, value *perRoutingID* indicates that the IAB-node shall provide flow control feedback per routing ID, and value *both* indicates that the IAB-node shall provide flow control feedback both per BH RLC channel and per routing ID. |
| ***fullConfig***  Indicates that the full configuration option is applicable for the *RRCReconfiguration* message for intra-system intra-RAT HO. For inter-RAT HO from E-UTRA to NR, *fullConfig* indicates whether or not delta signalling of SDAP/PDCP from source RAT is applicable. This field is absent if any DAPS bearer is configured or when the *RRCReconfiguration* message is transmitted on SRB3, and in an *RRCReconfiguration* message for SCG contained in another *RRCReconfiguration* message (or *RRCConnectionReconfiguration* message, see TS 36.331 [10]) transmitted on SRB1. |
| ***iab-IP-Address***  This field is used to provide the IP address information for IAB-node. |
| ***iab-IP-AddressIndex***  This field is used to identify a configuration of an IP address. |
| ***iab-IP-AddressToAddModList***  List of IP addresses allocated for IAB-node to be added and modified. |
| ***iab-IP-AddressToReleaseList***  List of IP address allocated for IAB-node to be released. |
| ***iab-IP-Usage***  This field is used to indicate the usage of the assigned IP address. If this field is not configured, the assigned IP address is used for all traffic. |
| ***iab-donor-DU-BAP-Address***  This field is used to indicate the BAP address of the IAB-donor-DU where the IP address is anchored. |
| ***keySetChangeIndicator***  Indicates whether UE shall derive a new KgNB. If *reconfigurationWithSync* is included, value *true* indicates that a KgNB key is derived from a KAMF key taken into use through the latest successful NAS SMC procedure, or N2 handover procedure with KAMF change, as described in TS 33.501 [11] for KgNB re-keying. Value *false* indicates that the new KgNB key is obtained from the current KgNB key or from the NH as described in TS 33.501 [11]. |
| ***masterCellGroup***  Configuration of master cell group. |
| ***mrdc-ReleaseAndAdd***  This field indicates that the current SCG configuration is released and a new SCG is added at the same time. |
| ***mrdc-SecondaryCellGroup***  Includes an RRC message for SCG configuration in NR-DC or NE-DC. For NR-DC (nr-SCG), *mrdc-SecondaryCellGroup* contains the *RRCReconfiguration* message as generated (entirely) by SN gNB. In this version of the specification, the RRC message can only include fields *secondaryCellGroup, otherConfig, conditionalReconfiguration* and *measConfig*.  For NE-DC (eutra-SCG), *mrdc-SecondaryCellGroup* includes the E-UTRA *RRCConnectionReconfiguration* message as specified in TS 36.331 [10]. In this version of the specification, the E-UTRA RRC message can only include the field *scg-Configuration*. |
| ***nas-Container***  This field is used to transfer UE specific NAS layer information between the network and the UE. The RRC layer is transparent for this field, although it affects activation of AS security after inter-system handover to NR. The content is defined in TS 24.501 [23]. |
| ***needForGapsConfigNR***  Configuration for the UE to report measurement gap requirement information of NR target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. |
| ***nextHopChainingCount***  Parameter NCC: See TS 33.501 [11] |
| ***onDemandSIB-Request***  If the field is present, the UE is allowed to request SIB(s) on-demand while in RRC\_CONNECTED according to clause 5.2.2.3.5. |
| ***onDemandSIB-RequestProhibitTimer***  Prohibit timer for requesting SIB(s) on-demand while in RRC\_CONNECTED according to clause 5.2.2.3.5. Value in seconds. Value s0 means prohibit timer is set to 0 seconds, value s0dot5 means prohibit timer is set to 0.5 seconds, value s1 means prohibit timer is set to 1 second and so on. |
| ***otherConfig***  Contains configuration related to other configurations. When configured for the SCG, only fields *drx-PreferenceConfig, maxBW-PreferenceConfig, maxCC-PreferenceConfig, maxMIMO-LayerPreferenceConfig*, *minSchedulingOffsetPreferenceConfig, btNameList, wlanNameList, sensorNameList* and *obtainCommonLocation* can be included. |
| ***radioBearerConfig***  Configuration of Radio Bearers (DRBs, SRBs) including SDAP/PDCP. In EN-DC this field may only be present if the *RRCReconfiguration* is transmitted over SRB3. |
| ***radioBearerConfig2***  Configuration of Radio Bearers (DRBs, SRBs) including SDAP/PDCP. This field can only be used if the UE supports NR-DC or NE-DC. |
| ***secondaryCellGroup***  Configuration of secondary cell group ((NG)EN-DC or NR-DC). |
| ***sk-Counter***  A counter used upon initial configuration of S-KgNB or S-KeNB, as well as upon refresh of S-KgNB or S-KeNB. This field is always included either upon initial configuration of an NR SCG or upon configuration of the first RB with *keyToUse* set to *secondary*, whichever happens first. This field is absent if there is neither any NR SCG nor any RB with *keyToUse* set to *secondary*. |
| ***sl-ConfigDedicatedNR***  This field is used to provide the dedicated configurations for NR sidelink communication. |
| ***sl-ConfigDedicatedEUTRA-Info***  This field includes the E-UTRA *RRCConnectionReconfiguration* as specified in TS 36.331 [10]. In this version of the specification, the E-UTRA *RRCConnectionReconfiguration* can only includes sidelink related fields for V2X sidelink communication, i.e. *sl-V2X-ConfigDedicated*, *sl-V2X-SPS-Config*, *measConfig* and/or *otherConfig*. |
| ***sl-TimeOffsetEUTRA***  This field indicates the possible time offset to (de)activation of V2X sidelink transmission after receiving DCI format 3\_1 used for scheduling V2X sidelink communication. Value *ms0dpt75* corresponds to 0.75ms, *ms1* corresponds to 1ms and so on. The network includes this field only when *sl-ConfigDedicatedEUTRA* is configured. |
| ***targetCellSMTC-SCG***  The SSB periodicity/offset/duration configuration of target cell for NR PSCell addition and SN change. When UE receives this field, UE applies the configuration based on the timing reference of NR PCell for PSCell addition and PSCell change for the case of no reconfiguration with sync of MCG, and UE applies the configuration based on the timing reference of target NR PCell for the case of reconfiguration with sync of MCG. If both this field and the *smtc* in *secondaryCellGroup* -> *SpCellConfig* -> *reconfigurationWithSync* are absent, the UE uses the SMTC in the *measObjectNR* having the same SSB frequency and subcarrier spacing, as configured before the reception of the RRC message. |
| ***t316***  Indicates the value for timer T316 as described in clause 7.1. Value *ms50* corresponds to 50 ms, value *ms100* corresponds to 100 ms and so on. This field can be configured only if the UE is configured with split SRB1 or SRB3. |
| ***ue-TxTEG\_Request\_UL-TDOA-Config***  Configures the periodicty of UE reporting for the association between Tx TEG and SRS Positioning resources. When configured with *oneShot* UE reports the association only one time. When configured with *periodicReporting* value ms120 means the UE reports every 120ms, ms240 means UE reports every 240ms and so on. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *nonHO* | The field is absent in case of reconfiguration with sync within NR or to NR; otherwise it is optionally present, need N. |
| *securityNASC* | This field is mandatory present in case of inter system handover. Otherwise the field is optionally present, need N. |
| *MasterKeyChange* | This field is mandatory present in case *masterCellGroup* includes *ReconfigurationWithSync* and *RadioBearerConfig* includes *SecurityConfig* with *SecurityAlgorithmConfig*, indicating a change of the AS security algorithms associated to the master key. If *ReconfigurationWithSync* is included for other cases, this field is optionally present, need N. Otherwise the field is absent. |
| *FullConfig* | The field is mandatory present in case of inter-system handover from E-UTRA/EPC to NR. It is optionally present, Need N, during reconfiguration with sync and also in first reconfiguration after reestablishment; or for intra-system handover from E-UTRA/5GC to NR. It is absent otherwise. |
| *SCG* | The field is mandatory present in:  - an *RRCReconfiguration* message contained in an *RRCResume* message (or in an *RRCConnectionResume* message, see TS 36.331 [10]),  - an *RRCReconfiguration* message contained in an *RRCConnectionReconfiguration* message, see TS 36.331 [10], which is contained in *DLInformationTransferMRDC* transmitted on SRB3 (as a response to *ULInformationTransferMRDC* including an *MCGFailureInformation*).  The field is optional present, Need M, in:  - an *RRCReconfiguration* message transmitted on SRB3,  - an *RRCReconfiguration* message contained in another *RRCReconfiguration* message (or in an *RRCConnectionReconfiguration* message, see TS 36.331 [10]) transmitted on SRB1  - an *RRCReconfiguration* message contained in another *RRCReconfiguration* message which is contained in *DLInformationTransferMRDC* transmitted on SRB3 (as a response to *ULInformationTransferMRDC* including an *MCGFailureInformation*)  Otherwise, the field is absent |

### 6.3.2 Radio resource control information elements

#### – *AdditionalSpectrumEmission*

The IE *AdditionalSpectrumEmission* is used to indicate emission requirements to be fulfilled by the UE (see TS 38.101-1 [15], clause 6.2.3, and TS 38.101-2 [39], clause 6.2.3).

*AdditionalSpectrumEmission* information element

**<Skip Unmodified Changes>**

#### – *DL-PRS-ProcessingWindowPreConfig*

The IE *DL-PRS-ProcessingWIndowPreConfig* specifies measurement window where a UE may receive data (PDCCH/PDSCH) and CSI-RS while also perform DL-PRS measurements in the configured window.

-- ASN1START

-- TAG-DL-PRS-PROCESSINGWINDOWCONFIG-START

DL-PRS-ProcessingWindowConfig-r17 ::= SEQUENCE {

dl-PRS-ProcessingWindowID-r17 INTEGER (0..FFS),

startingSystemFrameNumber-r17 INTEGER (0..1023),

startingSubframe-r17 INTEGER (0..9),

startingSlotSCS-r17 CHOICE {

scs15kHz-r17 NULL,

scs30KHz-r17 INTEGER (0..1),

scs60KHz-r17 INTEGER (0..3),

scs120KHz-r17 INTEGER (0..7)

}

length-r17 ENUMERATED { FFS },

periodicity-r17 ENUMERATED { FFS },

priority-r17 ENUMERATED {opt1-st1, opt1-st2, opt2-st1, opt2-st2, opt2-st3, opt3-st1}

cellID-r17 PhysCellId

}

----------Editor Notes: length and periodicty ranges should be discussed by RAN2.

----------Editor Notes: priority {state1, state2, state3}; if UE does not have have multiple capability.

-- TAG-DL-PRS-PROCESSINGWINDOWCONFIG-STOP

-- ASN1STOP

| *DL-PRS-ProcessingWindowConfig* field descriptions |
| --- |
| ***cellID***  Indicates the physciall cell ID where the DL-PRS processing window configuration is valid. |
| ***dl-PRS-ProcessingWindowID***  Indicates the pre-configured ID for DL-PRS processing window configuration. |
| ***startingSystemFrameNumber***  Indicates the system frame number where the DL-PRS\_processing window starts. |
| ***startingSubframe***  Indicates the system subframe number where the DL-PRS\_processing window starts. |
| ***startingSlotSCS***  Indicates the slot number where the DL-PRS\_processing window starts. |
| ***length***  Indicates the length of DL-PRS\_processing window. |
| ***periodicity***  Indicates the periodicty of the DL-PRS\_processing window. |
| ***priority***  Indicates the priority between PDCCH/PDSCH/CSI-RS and PRS. Value op1-st1 means option 1 state 1, opt1-st2 means option 1, state 2 and so on. The mapping of the values are shown in FFS (TS38.214) |

#### – *MeasConfig*

The IE *MeasConfig* specifies measurements to be performed by the UE, and covers intra-frequency, inter-frequency and inter-RAT mobility as well as configuration of measurement gaps.

*MeasConfig* information element

-- ASN1START

-- TAG-MEASCONFIG-START

MeasConfig ::= SEQUENCE {

measObjectToRemoveList MeasObjectToRemoveList OPTIONAL, -- Need N

measObjectToAddModList MeasObjectToAddModList OPTIONAL, -- Need N

reportConfigToRemoveList ReportConfigToRemoveList OPTIONAL, -- Need N

reportConfigToAddModList ReportConfigToAddModList OPTIONAL, -- Need N

measIdToRemoveList MeasIdToRemoveList OPTIONAL, -- Need N

measIdToAddModList MeasIdToAddModList OPTIONAL, -- Need N

s-MeasureConfig CHOICE {

ssb-RSRP RSRP-Range,

csi-RSRP RSRP-Range

} OPTIONAL, -- Need M

quantityConfig QuantityConfig OPTIONAL, -- Need M

measGapConfig MeasGapConfig OPTIONAL, -- Need M

measGapSharingConfig MeasGapSharingConfig OPTIONAL, -- Need M

...,

[[

interFrequencyConfig-NoGap-r16 ENUMERATED {true} OPTIONAL -- Need R

]],

[[

dl-PRS-ProcessingWindowPreConfigList-r17 DL-PRS-ProcessingWindowPreConfigList-r17 OPTIONAL --Need N

measGapPreConfigList-r17 MeasGapPreConfigList-r17 OPTIONAL -- Need N

]]

}

----------Editor Notes: FFS whether DL-PRS-Processing window is configured per BWP or as part of measConfig similar to existing measurement gap config----------.

MeasObjectToRemoveList ::= SEQUENCE (SIZE (1..maxNrofObjectId)) OF MeasObjectId

MeasIdToRemoveList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasId

ReportConfigToRemoveList ::= SEQUENCE (SIZE (1..maxReportConfigId)) OF ReportConfigId

DL-PRS-ProcessingWindowPreConfigList-r17 ::= SEQUENCE (SIZE (1..maxPRSWindow)) OF DL-PRS-ProcessingWindowPreConfig-r17

MeasGapPreConfigList-r17 ::= SEQUENCE (SIZE (1..maxGapConfig)) OF MeasGapPreConfig-r17

-- TAG-MEASCONFIG-STOP

-- ASN1STOP

| *MeasConfig* field descriptions |
| --- |
| ***interFrequencyConfig-NoGap-r16***  If the field is set to true, UE is configured to perform SSB based inter-frequency measurement without measurement gaps when the inter-frequency SSB is completely contained in the active DL BWP of the UE, as specified in TS 38.133 [14], clause 9.3. Otherwise, the SSB based inter-frequency measurement is performed within measurement gaps. In NR-DC, the field can only be configured in the *measConfig* associated with MCG, and when configured, it applies to all the inter-frequency measurements configured by MN and SN. |
| ***measGapConfig***  Used to setup and release measurement gaps in NR. |
| ***measIdToAddModList***  List of measurement identities to add and/or modify. |
| ***measIdToRemoveList***  List of measurement identities to remove. |
| ***measObjectToAddModList***  List of measurement objects to add and/or modify. |
| ***measObjectToRemoveList***  List of measurement objects to remove. |
| ***reportConfigToAddModList***  List of measurement reporting configurations to add and/or modify. |
| ***reportConfigToRemoveList***  List of measurement reporting configurations to remove. |
| ***s-MeasureConfig***  Threshold for NR SpCell RSRP measurement controlling when the UE is required to perform measurements on non-serving cells. Choice of *ssb-RSRP* corresponds to cell RSRP based on SS/PBCH block and choice of *csi-RSRP* corresponds to cell RSRP of CSI-RS. |
| ***measGapSharingConfig***  Specifies the measurement gap sharing scheme and controls setup/ release of measurement gap sharing. |

#### – *MeasGapConfig*

The IE *MeasGapConfig* specifies the measurement gap configuration and controls setup/release of measurement gaps.

*MeasGapConfig* information element

-- ASN1START

-- TAG-MEASGAPCONFIG-START

MeasGapConfig ::= SEQUENCE {

gapFR2 SetupRelease { GapConfig } OPTIONAL, -- Need M

...,

[[

gapFR1 SetupRelease { GapConfig } OPTIONAL, -- Need M

gapUE SetupRelease { GapConfig } OPTIONAL -- Need M

]]

}

GapConfig ::= SEQUENCE {

gapOffset INTEGER (0..159),

mgl ENUMERATED {ms1dot5, ms3, ms3dot5, ms4, ms5dot5, ms6},

mgrp ENUMERATED {ms20, ms40, ms80, ms160},

mgta ENUMERATED {ms0, ms0dot25, ms0dot5},

...,

[[

refServCellIndicator ENUMERATED {pCell, pSCell, mcg-FR2} OPTIONAL -- Cond NEDCorNRDC

]],

[[

refFR2ServCellAsyncCA-r16 ServCellIndex OPTIONAL, -- Cond AsyncCA

mgl-r16 ENUMERATED {ms10, ms20} OPTIONAL -- Cond PRS

]]

}

-- TAG-MEASGAPCONFIG-STOP

-- ASN1STOP

| *MeasGapConfig* field descriptions |
| --- |
| ***gapFR1***  Indicates measurement gap configuration that applies to FR1 only. In (NG)EN-DC, *gapFR1* cannot be set up by NR RRC (i.e. only LTE RRC can configure FR1 measurement gap). In NE-DC, *gapFR1* can only be set up by NR RRC (i.e. LTE RRC cannot configure FR1 gap). In NR-DC, *gapFR1* can only be set up in the *measConfig* associated with MCG. *gapFR1* can not be configured together with *gapUE*. The applicability of the FR1 measurement gap is according to Table 9.1.2-2 and Table 9.1.2-3 in TS 38.133 [14]. |
| ***gapFR2***  Indicates measurement gap configuration applies to FR2 only. In (NG)EN-DC or NE-DC, *gapFR2* can only be set up by NR RRC (i.e. LTE RRC cannot configure FR2 gap). In NR-DC, *gapFR2* can only be set up in the *measConfig* associated with MCG. *gapFR2* cannot be configured together with *gapUE*. The applicability of the FR2 measurement gap is according to Table 9.1.2-2 and Table 9.1.2-3 in TS 38.133 [14]. |
| ***gapUE***  Indicates measurement gap configuration that applies to all frequencies (FR1 and FR2). In (NG)EN-DC, *gapUE* cannot be set up by NR RRC (i.e. only LTE RRC can configure per UE measurement gap). In NE-DC, *gapUE* can only be set up by NR RRC (i.e. LTE RRC cannot configure per UE gap). In NR-DC, *gapUE* can only be set up in the *measConfig* associated with MCG. If *gapUE* is configured, then neither *gapFR1* nor *gapFR2* can be configured. The applicability of the per UE measurement gap is according to Table 9.1.2-2 and Table 9.1.2-3 in TS 38.133 [14]. |
| ***gapOffset***  Value *gapOffset* is the gap offset of the gap pattern with MGRP indicated in the field *mgrp*. The value range is from 0 to *mgrp*-1. |
| ***mgl***  Value *mgl* is the measurement gap length in ms of the measurement gap. The measurement gap length is according to in Table 9.1.2-1 in TS 38.133 [14]. Value *ms1dot5* corresponds to 1.5 ms, *ms3* corresponds to 3 ms and so on. If *mgl-r16* is present, UE shall ignore the *mgl* (without suffix). |
| ***mgrp***  Value *mgrp* is measurement gap repetition period in (ms) of the measurement gap. The measurement gap repetition period is according to Table 9.1.2-1 in TS 38.133 [14]. |
| ***mgta***  Value *mgta* is the measurement gap timing advance in ms. The applicability of the measurement gap timing advance is according to clause 9.1.2 of TS 38.133 [14]. Value *ms0* corresponds to 0 ms, *ms0dot25* corresponds to 0.25 ms and *ms0dot5* corresponds to 0.5 ms. For FR2, the network only configures 0 ms and 0.25 ms. |
| ***refFR2ServCellAsyncCA***  Indicates the FR2 serving cell identifier whose SFN and subframe is used for FR2 gap calculation for this gap pattern with asynchronous CA involving FR2 carrier(s). |
| ***refServCellIndicator***  Indicates the serving cell whose SFN and subframe are used for gap calculation for this gap pattern. Value pCell corresponds to the PCell, pSCell corresponds to the PSCell, and mcg-FR2 corresponds to a serving cell on FR2 frequency in MCG. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *AsyncCA* | This field is mandatory present when configuring FR2 gap pattern to UE in:  - (NG)EN-DC or NR SA with asynchronous CA involving FR2 carrier(s);  - NE-DC or NR-DC with asynchronous CA involving FR2 carrier(s), if the field *refServCellIndicator* is set to *mcg-FR2*.  In case the gap pattern to UE in NE-DC and NR-DC is already configured and the serving cell used for the gap calculation corresponds to a serving cell on FR2 frequency in MCG, then the field is optionally present, need M. Otherwise, it is absent, Need R. |
| *NEDCorNRDC* | This field is mandatory present when configuring gap pattern to UE in NE-DC or NR-DC. In case the gap pattern to UE in NE-DC and NR-DC is already configured, then the field is absent, need M. Otherwise, it is absent. |
| *PRS* | This field is optionally present, Need R, when configuring gap pattern to UE for measurements of DL-PRS configured via LPP (TS 37.355 [49]). Otherwise, it is absent. |

#### – *MeasGapPreConfig*

The IE *MeasGapPreConfig* specifies the preconfigured measurement gap configuration.

*MeasGapPreConfig* information element

-- ASN1START

-- TAG-MEASGAPPRECONFIG-START

MeasGapPreConfig ::= SEQUENCE {

gapConfigID-r17 INTEGER (0..FFS),

measGapConfig-r17 MeasGapConfig,

...

}

-- TAG-MEASGAPPRECONFIG-STOP

-- ASN1STOP

| *MeasGapPreConfig* field descriptions |
| --- |
| ***gapConfigID***  Indicates preconfigured measurement gap configuration ID. |
| ***measGapConfig***  Indicates the measurement gap configuration. |

*End of Changes*