**3GPP TSG-RAN2 Meeting #111-e *R2-200xxxx***

**E-Meeting, 17 – 28 August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **36.331** | **CR** | **4361** | **rev** | **1** | **Current version:** | **16.1.1** |  |
|  | | | | | | | | |
| *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:*** | Add *tdm-PatternConfig2-r16* in the inter-node message | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Google Inc. | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_NR\_DC\_CA\_enh-Core | | | | |  | ***Date:*** | | | 2020-08-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | *tdm-PatternConfig* and *tdm-PatternConfig2* are defined for different purposes. Currenlty, *tdm-PatternConfig* can be included in the inter-node message but *tdm-PatternConfig2* cannot. Therefore, the source cannot forward *tdm-PatternConfig2* to the target for delta configuration in handover. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Clarify *tdm-PatternConfig* is used to indicate the *tdm-PatternConfig* configured to the UE in the source PCell. 2. Add *tdm-PatternConfig2* in the inter-node message and a corresponding field description.   **Impact analysis**  Impacted 5G architectures:  EN-DC  Impacted functionality:  Dual UL transmission in EN-DC with LTE FDD PCell and for single UL transmission in EN-DC with LTE FDD/TDD PCell  Inter-operability:  If the network is implemented according to the CR, there is no inter-operability issue. If the network is not implemented according to the CR and applies delta configuration, inconsistency in *tdm-PatternConfig2* between the UE and the target after handover may occur. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Delta configuration is not supported for the *tdm-PatternConfig2*. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.2.1, 10.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

## 10.2 Inter-node RRC messages

### 10.2.1 General

This clause specifies RRC messages that are sent either across the X2- or the S1-interface, either to or from the eNB, i.e. a single 'logical channel' is used for all RRC messages transferred across network nodes. The information could originate from or be destined for another RAT.

### *– EUTRA-InterNodeDefinitions*

This ASN.1 segment is the start of the E‑UTRA inter-node PDU definitions.

-- ASN1START

EUTRA-InterNodeDefinitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

AntennaInfoCommon,

AntennaInfoDedicated-v10i0,

ARFCN-ValueEUTRA,

ARFCN-ValueEUTRA-v9e0,

ARFCN-ValueEUTRA-r9,

CellIdentity,

C-RNTI,

DL-DCCH-Message,

DRB-Identity,

DRB-ToReleaseList,

DRB-ToReleaseList-r15,

FreqBandIndicator-r11,

InDeviceCoexIndication-r11,

LWA-Config-r13,

MasterInformationBlock,

maxBands,

maxFreq,

maxDRB,

maxDRBExt-r15,

maxDRB-r15,

maxSCell-r10,

maxSCell-r13,

maxServCell-r10,

maxServCell-r13,

MBMSInterestIndication-r11,

MeasConfig,

MeasGapConfig,

MeasGapConfigPerCC-List-r14,

MeasResultForRSSI-r13,

MeasResultListWLAN-r13,

OtherConfig-r9,

PhysCellId,

P-Max,

PowerCoordinationInfo-r12,

SidelinkUEInformation-r12,

SL-CommConfig-r12,

SL-DiscConfig-r12,

SubframeAssignment-r15,

RadioResourceConfigDedicated,

RadioResourceConfigDedicated-v13c0,

RadioResourceConfigDedicated-v1370,

RAN-NotificationAreaInfo-r15,

RCLWI-Configuration-r13,

RSRP-Range,

RSRQ-Range,

RSRQ-Range-v1250,

RS-SINR-Range-r13,

SCellToAddModList-r10,

SCellToAddModList-v13c0,

SCellToAddModListExt-r13,

SCellToAddModListExt-v13c0,

SCG-ConfigPartSCG-r12,

SCG-ConfigPartSCG-v12f0,

SCG-ConfigPartSCG-v13c0,

SecurityAlgorithmConfig,

SCellIndex-r10,

SCellIndex-r13,

SCellToReleaseList-r10,

SCellToReleaseListExt-r13,

ServCellIndex-r10,

ServCellIndex-r13,

ShortMAC-I,

MeasResultServFreqListNR-r15,

MeasResultSSTD-r13,

SL-V2X-ConfigDedicated-r14,

SystemInformationBlockType1,

SystemInformationBlockType1-v890-IEs,

SystemInformationBlockType2,

TDM-PatternConfig-r15,

UEAssistanceInformation-r11,

UECapabilityInformation,

UE-CapabilityRAT-ContainerList,

UE-RadioPagingInfo-r12,

WLANConnectionStatusReport-r13,

WLAN-OffloadConfig-r12

FROM EUTRA-RRC-Definitions;

-- ASN1STOP

## 10.3 Inter-node RRC information element definitions

#### *– AS-Config*

The *AS-Config* IE contains information about RRC configuration information in the source eNB which can be utilized by target eNB to determine the need to change the RRC configuration during the handover preparation phase. The information can also be used after the handover is successfully performed or during the RRC connection re-establishment or resume.

*AS-Config* information element

-- ASN1START

AS-Config ::= SEQUENCE {

sourceMeasConfig MeasConfig,

sourceRadioResourceConfig RadioResourceConfigDedicated,

sourceSecurityAlgorithmConfig SecurityAlgorithmConfig,

sourceUE-Identity C-RNTI,

sourceMasterInformationBlock MasterInformationBlock,

sourceSystemInformationBlockType1 SystemInformationBlockType1(WITH COMPONENTS

{..., nonCriticalExtension ABSENT}),

sourceSystemInformationBlockType2 SystemInformationBlockType2,

antennaInfoCommon AntennaInfoCommon,

sourceDl-CarrierFreq ARFCN-ValueEUTRA,

...,

[[ sourceSystemInformationBlockType1Ext OCTET STRING (CONTAINING

SystemInformationBlockType1-v890-IEs) OPTIONAL,

sourceOtherConfig-r9 OtherConfig-r9

-- sourceOtherConfig-r9 should have been optional. A target eNB compliant with this transfer

-- syntax should support receiving an AS-Config not including this extension addition group

-- e.g. from a legacy source eNB

]],

[[ sourceSCellConfigList-r10 SCellToAddModList-r10 OPTIONAL

]],

[[ sourceConfigSCG-r12 SCG-Config-r12 OPTIONAL

]],

[[ as-ConfigNR-r15 AS-ConfigNR-r15 OPTIONAL

]],

[[ as-Config-v1550 AS-Config-v1550 OPTIONAL

]],

[[ as-ConfigNR-v1570 AS-ConfigNR-v1570 OPTIONAL

]] ,

[[ as-ConfigNR-v16xy AS-ConfigNR-v16xy OPTIONAL

]]

}

AS-Config-v9e0 ::= SEQUENCE {

sourceDl-CarrierFreq-v9e0 ARFCN-ValueEUTRA-v9e0

}

AS-Config-v10j0 ::= SEQUENCE {

antennaInfoDedicatedPCell-v10i0 AntennaInfoDedicated-v10i0 OPTIONAL

}

AS-Config-v1250 ::= SEQUENCE {

sourceWlan-OffloadConfig-r12 WLAN-OffloadConfig-r12 OPTIONAL,

sourceSL-CommConfig-r12 SL-CommConfig-r12 OPTIONAL,

sourceSL-DiscConfig-r12 SL-DiscConfig-r12 OPTIONAL

}

AS-Config-v1320 ::= SEQUENCE {

sourceSCellConfigList-r13 SCellToAddModListExt-r13 OPTIONAL,

sourceRCLWI-Configuration-r13 RCLWI-Configuration-r13 OPTIONAL

}

AS-Config-v13c0 ::= SEQUENCE {

radioResourceConfigDedicated-v13c01 RadioResourceConfigDedicated-v1370 OPTIONAL,

radioResourceConfigDedicated-v13c02 RadioResourceConfigDedicated-v13c0 OPTIONAL,

sCellToAddModList-v13c0 SCellToAddModList-v13c0 OPTIONAL,

sCellToAddModListExt-v13c0 SCellToAddModListExt-v13c0 OPTIONAL

}

AS-Config-v1430 ::= SEQUENCE {

sourceSL-V2X-CommConfig-r14 SL-V2X-ConfigDedicated-r14 OPTIONAL,

sourceLWA-Config-r14 LWA-Config-r13 OPTIONAL,

sourceWLAN-MeasResult-r14 MeasResultListWLAN-r13 OPTIONAL

}

AS-ConfigNR-r15 ::= SEQUENCE {

sourceRB-ConfigNR-r15 OCTET STRING OPTIONAL,

sourceRB-ConfigSN-NR-r15 OCTET STRING OPTIONAL,

sourceOtherConfigSN-NR-r15 OCTET STRING OPTIONAL

}

AS-ConfigNR-v1570 ::= SEQUENCE {

sourceSCG-ConfiguredNR-r15 ENUMERATED {true}

}

AS-Config-v1550 ::= SEQUENCE {

tdm-PatternConfig-r15 SEQUENCE {

subframeAssignment-r15 SubframeAssignment-r15,

harq-Offset-r15 INTEGER (0.. 9)

} OPTIONAL,

p-MaxEUTRA-r15 P-Max OPTIONAL

}

AS-Config-v16xy ::= SEQUENCE {

tdm-PatternConfig2-r16 TDM-PatternConfig-r15 OPTIONAL,

}

-- ASN1STOP

NOTE: The *AS-Config* re-uses information elements primarily created to cover the radio interface signalling requirements. Consequently, the information elements may include some parameters that are not relevant for the target eNB e.g. the SFN as included in the *MasterInformationBlock*.

| *AS-Config* field descriptions |
| --- |
| ***antennaInfoCommon***  This field provides information about the number of antenna ports in the source PCell. |
| ***p-MaxEUTRA***  Indicates the *p-MaxEUTRA* in the source PCell. |
| ***sourceOtherConfigSN-NR***  Other NR config set by SN (cell group, measurements) in case of (NG)EN-DC i.e. as defined by the *RRCReconfiguration* message in TS 38.331 [82]. |
| ***sourceRB-ConfigNR***  NR radio bearer config, as defined by *RadioBearerConfig* IE in TS 38.331 [82]. The field may e.g. be set by MN in case of (NG)EN-DC, by source eNB connected to 5GCN. |
| ***sourceRB-ConfigSN-NR***  NR radio bearer config set by SN in case of (NG)EN-DC or of SN terminated RB without SCG, as defined by *RadioBearerConfig* IE in TS 38.331 [82]. |
| ***sourceDL-CarrierFreq***  Provides the parameter Downlink EARFCN in the source PCell, see TS 36.101 [42]. If the source eNB provides *AS-Config-v9e0*, it sets *sourceDl-CarrierFreq* (i.e. without suffix) to *maxEARFCN*. |
| ***sourceLWA-Config***  LWA configuration in the source PCell when handover is triggered. |
| ***sourceOtherConfig***  Provides other configuration in the source PCell. |
| ***sourceMasterInformationBlock***  *MasterInformationBlock* transmitted in the source PCell. |
| ***sourceMeasConfig***  Measurement configuration in the source cell. The measurement configuration for all measurements existing in the source eNB when handover is triggered shall be included. See 10.5. |
| ***sourceRCLWI-Configuration***  RCLWI Configuration in the source PCell. |
| ***sourceSL-CommConfig***  This field covers the sidelink communication configuration. |
| ***sourceSL-DiscConfig***  This field covers the sidelink discovery configuration. |
| ***sourceRadioResourceConfig***  Radio configuration in the source PCell. The radio resource configuration for all radio bearers existing in the source PCell when handover is triggered shall be included. See 10.5. |
| ***sourceSCellConfigList***  Radio resource configuration (common and dedicated) of the SCells configured in the source eNB. |
| ***sourceSCG-ConfiguredNR***  Value *true* indicates that the UE is configured with NR SCG in source configuration. The field is included only if *sourceOtherConfigSN-NR* is not included. |
| ***sourceSecurityAlgorithmConfig***  This field provides the AS integrity protection (SRBs) and AS ciphering (SRBs and DRBs) algorithm configuration used in the source PCell. |
| ***sourceSystemInformationBlockType1***  *SystemInformationBlockType1* (or *SystemInformationBlockType1-BR*) transmitted in the source PCell. |
| ***sourceSystemInformationBlockType2***  *SystemInformationBlockType2* transmitted in the source PCell. |
| ***sourceSL-V2X-CommConfig***  Indicates the V2X sidelink communication related configurations configured in the source eNB. |
| ***sourceWLAN-MeasResult***  WLAN measurement results in the source PCell when handover is triggered. |
| ***tdm-PatternConfig***  Indicates the *tdm-PatternConfig* configured to the UE in the source PCell. |
| ***tdm-PatternConfig2***  Indicates the *tdm-PatternConfig2* configured to the UE in the source PCell. |