**3GPP TSG-RAN WG3 Meeting #123 *R3-240843***

**Athens, GR, 26 Feb – 01 Mar, 2024**

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| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.473** | **CR** | **1307** | **rev** | **-** | **Current version:** | **18.0.0** |  |
|  |
| *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 |  | Radio Access Network | **X** | Core Network |  |

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| --- |
|  |
| ***Title:***  | Effective measurement window for inter-RAT measurement |
|  |  |
| ***Source to WG:*** | Huawei, China Telecom, China Unicom, Ericsson |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_MG\_enh2-Core |  | ***Date:*** | 2024-02-29 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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 canbe 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | RAN4 has agreed to introduce the effective measurement window (see R4-2310158), which is used to determine the location of scheduling and measurement restriction for inter-RAT E-UTRA measurement. In TS 38.331, the *effectiveMeasWindowConfig-r18* IE in *MeasConfig* IE is specified as follows. MeasWindowConfig-r18 ::= SEQUENCE { windowOffsetPeriodicity CHOICE { periodicityMs40 INTEGER (0..39), periodicityMs80 INTEGER (0..79), ... }, windowDuration ENUMERATED {ms2, ms5, ms5dot5, spare1}, ...}For gNB-CU/DU split scenario, and for measurement gaps, it is the gNB-DU that generates the *MeasGapConfig* IE and signals to the gNB-CU. Following the same logic, the effective measurement window should also be decided by the gNB-DU, since the gNB-DU can know whether the LTE MO(s) will cause scheduling and measurement restrictions.  |
|  |  |
| ***Summary of change:*** | * Clarify that the *MeasConfig* IE in the *CU to DU RRC information* IE sent by gNB-CU doesn’t include effective measurement window configuration
* The gNB-DU includes the effective measurement window in the *DU to CU RRC Information* IE.
 |
|  |  |
| ***Consequences if not approved:*** | The effective measurement window configuration has to be decided by the gNB-CU, while the gNB-DU cannot follow, thus unable to perform the scheduling and measurement restrictions.  |
|  |  |
| ***Clauses affected:*** | 8.3.1.2, 8.3.4.2, 9.3.1.25, 9.3.1.26, 9.4.5, 9.4.7 |
|  |  |
|  | **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:*** | Rev0: R3-240409Rev1: R3-240843 Add co-source and make minor update the procedure text and semantic descriptions.  |

*CHANGES START*

8.3.1 UE Context Setup

8.3.1.1 General

The purpose of the UE Context Setup procedure is to establish the UE Context including, among others, SRB,DRB, BH RLC channel, Uu Relay RLC channel, PC5 Relay RLC channel, and SL DRB configuration. The procedure uses UE-associated signalling.

8.3.1.2 Successful Operation

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**Figure** **8.3.1.2-1: UE Context Setup Request procedure: Successful Operation**

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If the received *CU to DU RRC Information* IE does not include source cell group configuration, the gNB-DU shall generate the cell group configuration using full configuration. Otherwise, delta configuration is allowed.

If the gNB-CU includes the SMTC information of the measured frequency(ies) in the *MeasurementTimingConfiguration* IE of the *CU to DU RRC Information* IE that is included in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall generate the measurement gaps based on the received SMTC information. Then the gNB-DU shall send the measurement gaps information to the gNB-CU in the *MeasGapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT SETUP RESPONSE message.

If the *MeasConfig* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall deduce that changes to the measurements configuration need to be applied. If the *measObjectToAddModList* IE is included in the *MeasConfig* IE, then the frequencies added in such IE are to be activated. Then the gNB-DU shall decide if measurement gaps are needed or not and, if needed, the gNB-DU shall send the measurement gaps information to the gNB-CU in the *MeasGapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT SETUP RESPONSE message. The gNB-DU shall, if supported, decide if the effective measurement window is needed or not and, if needed, the gNB-DU shall send the effective measurement window information to the gNB-CU in the e*ffectiveMeasWindowConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT SETUP RESPONSE message. If the *measObjectToRemoveList* IE is included in the *MeasConfig* IE, the gNB-DU shall ignore it.

If the *NeedForGapsInfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoEUTRA* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8].If the *NeedForInterruptionInfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8].

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8.3.4 UE Context Modification (gNB-CU initiated)

8.3.4.1 General

The purpose of the UE Context Modification procedure is to modify the established UE Context, e.g., establishing, modifying and releasing radio resources or sidelink resources. This procedure is also used to command the gNB-DU to stop data transmission for the UE for mobility (see TS 38.401 [4]). The procedure uses UE-associated signalling.

8.3.4.2 Successful Operation

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**Figure 8.3.4.2-1: UE Context Modification procedure. Successful operation**

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If the gNB-CU includes the SMTC information of the measured frequency(ies) in the *MeasurementTimingConfiguration* IE of the *CU to DU RRC Information* IE that is included in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall generate the measurement gaps based on the received SMTC information. Then the gNB-DU shall send the measurement gaps information to the gNB-CU in the *MeasGapConfig* IE of the *DU to CU RRC Information* IE that is included in the UE CONTEXT MODIFICATION RESPONSE message.

If the *MeasConfig* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall deduce that changes to the measurements’ configuration need to be applied. The gNB-DU shall take the received info, e.g. the *measObjectToAddModList* IE, and/or the *measObjectToRemoveList* IE into account, when generating measurement gap and when deciding if a measurement gap is needed or not, and when generating effective measurement window and when deciding if an effective measurement window is needed or not.

If the *NeedForGapsInfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForGapNCSG-InfoEUTRA* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8]. If the *NeedForInterruptionInfoNR* IE is included in the *CU to DU RRC Information* IE in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, use it as described in TS 38.331 [8].

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

9.3.1.25 CU to DU RRC Information

This IE contains the RRC Information that are sent from gNB-CU to gNB-DU.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| CG-ConfigInfo | O |  | OCTET STRING | Includes the *CG-ConfigInfo* message, as defined in TS 38.331 [8]. | - |  |
| UE-CapabilityRAT-ContainerList | O |  | OCTET STRING | This IE is used in the NG-RAN and it includes *the UE-CapabilityRAT-ContainerList* IE, as defined in TS 38.331 [8]. | - |  |
| MeasConfig  | O |  | OCTET STRING | Includes the *MeasConfig* IE, as defined in TS 38.331 [8] (without the *MeasGapConfig* IE and the *effectiveMeasWindowConfig* IE). For EN-DC/NGEN-DC operation, includes the list of FR2 frequencies for which the gNB-CU requests the gNB-DU to generate gaps.For NG-RAN, NE-DC and MN for NR-NR DC, includes the list of FR1 and/or FR2 frequencies, for which the gNB-CU requests the gNB-DU to generate gaps and the gap type (per-UE or per-FR). | - |  |
| Handover Preparation Information | O |  | OCTET STRING | Includes the *HandoverPreparationInformation* message, as defined in TS 38.331 [8]. | YES | ignore |
| CellGroupConfig | O |  | OCTET STRING | Includes the *CellGroupConfig* IE, as defined in TS 38.331 [8]. | YES | ignore |
| Measurement Timing Configuration | O |  | OCTET STRING | Contains the *MeasurementTimingConfiguration* inter-node message defined in TS 38.331 [8].In EN-DC/NGEN-DC, it is included when the gaps for FR2 are requested to be configured by the MeNB. For MN in NR-NR DC,it is included when the gaps for FR2 and/or FR1 are requested by the SgNB | YES | ignore |
| UEAssistanceInformation | O |  | OCTET STRING | Includes the *UEAssistanceInformation* message, as defined in TS 38.331 [8].  | YES | ignore |
| <<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>> |

9.3.1.26 DU to CU RRC Information

This IE contains the RRC Information that are sent from the gNB-DU to the gNB-CU.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| CellGroupConfig | M |  | OCTET STRING | Includes the *CellGroupConfig* IE, as defined in TS 38.331 [8]. | - |  |
| MeasGapConfig | O |  | OCTET STRING | Includes the *MeasGapConfig* IE as defined in TS 38.331 [8].For EN-DC/NGEN-DC operation, includes the gap for FR2, as requested by the gNB-CU via MeasConfig IE. For NG-RAN, NE-DC and MN for NR-NR DC, includes the gap(s) for FR1 and/or FR2, as requested by the gNB-CU via MeasConfig IE.For pre-configured measurement GAP scenario, it includes the *gapToAddModList* and/or *gapToReleaseList* as defined in TS 38.331 [8]. | - |  |
| Requested P-MaxFR1 | O |  | OCTET STRING | Includes the *requestedP-MaxFR1* contained in the *CG-Config* message, as defined in TS 38.331 [8]. For EN-DC, NGEN-DC and NR-DC operation, this IE should be included. | - |  |
| <<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>> |
| ncd-SSB-RedCapInitialBWP-SDT | O |  | OCTET STRING | Includes the *NonCellDefiningSSB* contained in the *RRCRelease* message, as specified in TS 38.331 [8]. | YES | ignore |
| ServCellInfoList | O |  | OCTET STRING | Includes the *ServCellInfoListSCG-NR* IE or the *ServCellInfoListMCG-NR* IE, as defined in TS 38.331 [8]. This IE is used for inter-node message for MN and SN in case of split gNB architecture. | YES | ignore |
| effectiveMeasWindowConfig | O |  | OCTET STRING | Includes the *effectiveMeasWindowConfig* contained in the *MeasConfig* IE, as specified in TS 38.331 [8]. | YES | ignore |

### 9.4.5 Information Element Definitions

-- ASN1START

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-- Information Element Definitions

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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 id-TwoPHRModeSCG,

 id-ncd-SSB-RedCapInitialBWP-SDT,

 id-nrofSymbolsExtended,

 id-repetitionFactorExtended,

 id-startRBHopping,

 id-startRBIndex,

 id-transmissionCombn8,

 id-ServCellInfoList,

 id-Preconfigured-measurement-GAP-Request,

 id-BWP-Id,

 id-ExtendedResourceSymbolOffset,

 id-MusimCapabilityRestrictionIndication,

 id-duplicationIndication,

 id-dRB-List,

 id-ChannelOccupancyTimePercentageUL,

 id-RadioResourceStatusNR-U,

 id-FiveG-ProSeLayer2Multipath,

 id-FiveG-ProSeLayer2UEtoUERelay,

 id-FiveG-ProSeLayer2UEtoUERemote,

 id-TSCTrafficCharacteristicsFeedback,

 id-RANfeedbacktype,

 id-Mobile-TRP-LocationInformation,

 id-Mobile-IAB-MT-UE-ID,

 id-MobileAccessPointLocation,

 id-SIBX-message,

 id-PDUSetQoSParameters,

 id-N6JitterInformation,

 id-ECNMarkingorCongestionInformationReportingRequest,

 id-ECNMarkingorCongestionInformationReportingStatus,

 id-ERedcap-Bcast-Information,

 id-NeedForInterruptionInfoNR,

 id-LTMCells-ToBeReleased-Item,

 id-effectiveMeasWindowConfig,

 maxNRARFCN,

 maxnoofErrors,

 maxnoofBPLMNs,

 maxnoofBPLMNsNR,

 maxnoofDLUPTNLInformation,

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

DU-RX-MT-TX-Extend ::= ENUMERATED {supported, not-supported, supported-and-FDM-required, ...}

DU-TX-MT-RX-Extend ::= ENUMERATED {supported, not-supported, supported-and-FDM-required, ...}

DUtoCURRCInformation ::= SEQUENCE {

 cellGroupConfig CellGroupConfig,

 measGapConfig MeasGapConfig OPTIONAL,

 requestedP-MaxFR1 OCTET STRING OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { DUtoCURRCInformation-ExtIEs} } OPTIONAL,

 ...

}

DUtoCURRCInformation-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

 { ID id-DRX-LongCycleStartOffset CRITICALITY ignore EXTENSION DRX-LongCycleStartOffset PRESENCE optional }|

 { ID id-SelectedBandCombinationIndex CRITICALITY ignore EXTENSION SelectedBandCombinationIndex PRESENCE optional }|

 { ID id-SelectedFeatureSetEntryIndex CRITICALITY ignore EXTENSION SelectedFeatureSetEntryIndex PRESENCE optional }|

 { ID id-Ph-InfoSCG CRITICALITY ignore EXTENSION Ph-InfoSCG PRESENCE optional }|

 { ID id-RequestedBandCombinationIndex CRITICALITY ignore EXTENSION RequestedBandCombinationIndex PRESENCE optional }|

 { ID id-RequestedFeatureSetEntryIndex CRITICALITY ignore EXTENSION RequestedFeatureSetEntryIndex PRESENCE optional }|

 { ID id-DRX-Config CRITICALITY ignore EXTENSION DRX-Config PRESENCE optional }|

 { ID id-PDCCH-BlindDetectionSCG CRITICALITY ignore EXTENSION PDCCH-BlindDetectionSCG PRESENCE optional }|

 { ID id-Requested-PDCCH-BlindDetectionSCG CRITICALITY ignore EXTENSION Requested-PDCCH-BlindDetectionSCG PRESENCE optional }|

 { ID id-Ph-InfoMCG CRITICALITY ignore EXTENSION Ph-InfoMCG PRESENCE optional }|

 { ID id-MeasGapSharingConfig CRITICALITY ignore EXTENSION MeasGapSharingConfig PRESENCE optional }|

 { ID id-SL-PHY-MAC-RLC-Config CRITICALITY ignore EXTENSION SL-PHY-MAC-RLC-Config PRESENCE optional }|

 { ID id-SL-ConfigDedicatedEUTRA-Info CRITICALITY ignore EXTENSION SL-ConfigDedicatedEUTRA-Info PRESENCE optional }|

 { ID id-RequestedP-MaxFR2 CRITICALITY ignore EXTENSION RequestedP-MaxFR2 PRESENCE optional }|

 { ID id-SDT-MAC-PHY-CG-Config CRITICALITY ignore EXTENSION SDT-MAC-PHY-CG-Config PRESENCE optional }|

 { ID id-MUSIM-GapConfig CRITICALITY ignore EXTENSION MUSIM-GapConfig PRESENCE optional }|

 { ID id-SL-RLC-ChannelToAddModList CRITICALITY ignore EXTENSION SL-RLC-ChannelToAddModList PRESENCE optional }|

 { ID id-InterFrequencyConfig-NoGap CRITICALITY ignore EXTENSION InterFrequencyConfig-NoGap PRESENCE optional }|

 { ID id-UL-GapFR2-Config CRITICALITY ignore EXTENSION UL-GapFR2-Config PRESENCE optional }|

 { ID id-TwoPHRModeMCG CRITICALITY ignore EXTENSION TwoPHRModeMCG PRESENCE optional }|

 { ID id-TwoPHRModeSCG CRITICALITY ignore EXTENSION TwoPHRModeSCG PRESENCE optional }|

 { ID id-ncd-SSB-RedCapInitialBWP-SDT CRITICALITY ignore EXTENSION Ncd-SSB-RedCapInitialBWP-SDT PRESENCE optional }|

 { ID id-ServCellInfoList CRITICALITY ignore EXTENSION ServCellInfoList PRESENCE optional }|

 { ID id-effectiveMeasWindowConfig CRITICALITY ignore EXTENSION EffectiveMeasWindowConfig PRESENCE optional },

 ...

}

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

E-CID-MeasuredResults-Value ::= CHOICE {

 valueAngleofArrivalNR UL-AoA,

 choice-extension ProtocolIE-SingleContainer { { E-CID-MeasuredResults-Value-ExtIEs} }

}

E-CID-MeasuredResults-Value-ExtIEs F1AP-PROTOCOL-IES ::= {

 { ID id-NR-TADV CRITICALITY ignore TYPE NR-TADV PRESENCE mandatory },

 ...

}

E-CID-ReportCharacteristics ::= ENUMERATED {

 onDemand,

 periodic,

 ...

}

EffectiveMeasWindowConfig ::= OCTET STRING

EgressBHRLCCHList ::= SEQUENCE (SIZE(1..maxnoofEgressLinks)) OF EgressBHRLCCHItem

EgressBHRLCCHItem ::= SEQUENCE {

 nextHopBAPAddress BAPAddress,

 bHRLCChannelID BHRLCChannelID,

 iE-Extensions ProtocolExtensionContainer {{EgressBHRLCCHItemExtIEs }} OPTIONAL

}

EgressBHRLCCHItemExtIEs F1AP-PROTOCOL-EXTENSION ::= {

 ...

}

EgressNonF1terminatingTopologyIndicator ::= ENUMERATED {true, ...}

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

### 9.4.7 Constant Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Constant definitions

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

<<<<<<<<<<<<<<<<<<<< Unmodified Text Omitted >>>>>>>>>>>>>>>>>>>>

id-NRA2XServicesAuthorized ProtocolIE-ID ::= 779

id-LTEA2XServicesAuthorized ProtocolIE-ID ::= 780

id-NRUESidelinkAggregateMaximumBitrateForA2X ProtocolIE-ID ::= 781

id-LTEUESidelinkAggregateMaximumBitrateForA2X ProtocolIE-ID ::= 782

id-NReRedCapUEIndication ProtocolIE-ID ::= 783

id-ERedcap-Bcast-Information ProtocolIE-ID ::= 784

id-NRPaginglongeDRXInformationforRRCINACTIVE ProtocolIE-ID ::= 785

id-effectiveMeasWindowConfig ProtocolIE-ID ::= aaa

*CHANGES END*