**3GPP TSG-RAN2 Meeting #118-e *R2-220xxxx***

**E-Meeting, 9th – 20th May 2022**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **36.331** | **CR** | 4775 | **rev** | **2** | **Current version:** | **15.17.0** |  |
|  |
| *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 |  | Core Network |  |

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| ***Title:***  | Correction to application layer measurement and reporting |
|  |  |
| ***Source to WG:*** | Google Inc., Qualcomm, Intel Corporation |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | LTE\_QMC\_Streaming-Core |  | ***Date:*** | 2022-05-19 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-15 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | The following agreement was made by RAN2#117-e.When full config is used, NW includes QoE config if it wants the measurements to continue. Otherwise UE releases and notifies the upper layers (which needs specification change).It was also discussed and clarified that the maximum number of QoE configurations in LTE for a UE at a time is 1 (i.e. the network cannot setup measurements for more than one serviceType e.g. cannot setup different service type until it has explicitly released previous configuration) (see email discussion [AT117-e][209][LTE]).It was further discussed and clarified that if the UE has been configured to perform application layer measurements for a particular service type and receives a QoE configuration for the service type during the full configuration, the UE discards the QoE configuration (see email discussion [Post117-e][209][QoE]. |
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| ***Summary of change:*** | 1. During the full configuration, the UE stores a QoE service type.
2. In cases where the *RRCConnectionReconfiguration* message includes *fullConfig* and *measConfigAppLayer* set to *setup*, if the UE was configured a QoE configuration for a service type before the full configuration, the UE discards the *measConfigAppLayer* and considers the *measConfigAppLayer* as not received in order to prevent the UE from performing actions described in section 5.3.10.9.
3. Otherwise, if the *measConfigAppLayer* in the current UE configuration is released as a result of the full configuration for a service, the UE releases the stored the QoE service type, informs upper layers to clear the stored application layer measurement configuration, discards received application layer measurement report information from upper layers and considers itself not to be configured to send application layer measurement report.
4. It is clarified that the maximum number of application layer measurement configurations that the UE supports is one regardless of *serviceType*.
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|  |  |
| ***Consequences if not approved:*** | The UE may unnecessarily continue to perform application layer measurement after the full configuration.**Impact analysis**Impacted functionality: Application layer measurement and reportingInteroperability:As the CR only impacts UE but not the network, no interoperability issue is foreseen |
|  |  |
| ***Clauses affected:*** | 5.3.5.8, 6.3.6 |
|  |  |
|  | **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:*** |  |

#### 5.3.5.8 Radio Configuration involving full configuration option

The UE shall:

1> if the UE is connected to EPC:

2> release/ clear all current dedicated radio configurations except for the following:

- the MCG C-RNTI,

- the MCG security configuration,

- the PDCP, RLC, logical channel configurations for the RBs,

- the logged measurement configuration;

- the *serviceType*;

1> else if the UE is connected to 5GC:

2> release/ clear all current dedicated radio configurations except for the following:

- the MCG C-RNTI,

- the MCG security configuration,

- the configurations (SDAP if configured, PDCP, RLC and logical channel) for the RBs;

NOTE 1: Radio configuration is not just the resource configuration but includes other configurations like *MeasConfig* and *OtherConfig*. In case (NG)EN-DC is configured, this also includes the entire NR SCG configuration. Such NR SCG configuration does not include the DRB configuration as configured by *nr-RadioBearerConfig1* and nr-*RadioBearerConfig2*).

1> if the *RRCConnectionReconfiguration* message includes the *measConfigAppLayer* set to *setup* and the *measConfigAppLayer* includes the *serviceType* stored in the current UE configuration:

2> discard the *measConfigAppLayer*;

2> consider the *measConfigAppLayer* as not received;

1> else if a *serviceType* is stored in the current UE configuration:

2> release the stored *serviceType*;

2> inform upper layers to clear the stored application layer measurement configuration;

2> discard received application layer measurement report information from upper layers;

2> consider itself not to be configured to send application layer measurement report;

1> if the *RRCConnectionReconfiguration* message includes the *mobilityControlInfo*:

2> release/ clear all current common radio configurations;

2> use the default values specified in 9.2.5 for timer T310, T311 and constant N310, N311;

1> else:

2> use values for timers T301, T310, T311 and constants N310, N311, as included in *ue-TimersAndConstants* received in *SystemInformationBlockType2* (or *SystemInformationBlockType2-NB* in NB-IoT);

1> apply the default physical channel configuration as specified in 9.2.4;

1> apply the default semi-persistent scheduling configuration as specified in 9.2.3;

1> apply the default MAC main configuration as specified in 9.2.2;

1> if the UE is a NB-IoT UE; or

1> for each *srb-Identity* value included in the *srb-ToAddModList* (SRB reconfiguration):

2> apply the specified configuration defined in 9.1.2 for the corresponding SRB;

2> apply the corresponding default RLC configuration for the SRB specified in 9.2.1.1 for SRB1 or in 9.2.1.2 for SRB2;

2> apply the corresponding default logical channel configuration for the SRB as specified in 9.2.1.1 for SRB1 or in 9.2.1.2 for SRB2;

2> if the corresponding SRB was configured with NR PDCP and the UE is connected to EPC:

3> release the NR PDCP entity and establish it with an E-UTRA PDCP entity and with the current (MCG) security configuration;

NOTE 1a: The UE applies the LTE ciphering and integrity protection algorithms that are equivalent to the previously configured NR security algorithms.

3> associate the RLC bearer of this SRB with the established PDCP entity;

NOTE 2: This is to get the SRBs (SRB1 and SRB2 for handover and SRB2 for reconfiguration after reestablishment) to a known state from which the reconfiguration message can do further configuration.

2> else if the UE is connected to 5GC:

3> apply the corresponding default PDCP configuration for the SRB as specified in TS 38.331 [82], clause 9.2.1;

1> for each *srb-Identity* value which was configured in the *srb-ToAddModListExt* but is not added in the RRC message configuring the full configuration:

2> release the RLC entity or entities;

2> release the DCCH logical channel;

2> release the PDCP entity;

1> if the UE is connected to EPC:

2> for each *eps-BearerIdentity* value included in the *drb-ToAddModList* or *nr-RadioBearerConfig1 or nr-RadioBearerConfig2* that is part of the current E-UTRA and NR UE configuration:

3> release the E-UTRA or NR PDCP entity;

3> release the RLC entity or entities;

3> release the DTCH logical channel;

3> release the *drb-identity*;

NOTE 3: This will retain the *eps-bearerIdentity* but remove the DRBs including *drb-identity* of these bearers from the current UE configuration and trigger the setup of the DRBs within the AS in clause 5.3.10.3 using the new configuration. The *eps-bearerIdentity* acts as the anchor for associating the released and re-setup DRB. In the AS the DRB re-setup is equivalent with a new DRB setup (including new PDCP and logical channel configurations).

2> for each *eps-BearerIdentity* value that is part of the current E-UTRA and NR UE configuration but not added with same *eps-BearerIdentity* in *drb-ToAddModList* nor in *nr-RadioBearerConfig1* nor in *nr-RadioBearerConfig2*:

3> perform DRB release as specified in 5.3.10.2;

1> if the UE is connected to 5GC:

2> for each *pdu-Session* that is part of the current NR UE configuration:

3> release the SDAP entity (clause 5.1.2 in TS 37.324 [97]);

3> release the NR PDCP entity for each DRB associated to the *pdu-Session*;

3> release the RLC entity or entities for each DRB associated to the *pdu-Session*;

3> release the DTCH logical channel for each DRB associated to the *pdu-Session*;

3> release the *drb-identity* for each DRB associated to the *pdu-Session*;

NOTE 4: This will retain the *pdu-Session* but remove the DRBs including *drb-identity* of these bearers from the current NR UE configuration and trigger the setup of the DRBs within the AS in clause 5.3.10.3 using the new configuration. The *pdu-Session* acts as the anchor for associating the released and re-setup DRB. In the AS the DRB re-setup is equivalent with a new DRB setup (including new PDCP and logical channel configurations).

2> for each *pdu-Session* that is part of the current NR UE configuration but not added with same *pdu-Session* in *nr-RadioBearerConfig1* nor in *nr-RadioBearerConfig2*:

3> if the procedure was triggered due to handover:

4> indicate the release of the user plane resources for the *pdu-Session* to upper layers after successful handover;

3> else:

4> indicate the release of the user plane resources for the *pdu-Session* to upper layers immediately;

### 6.3.6 Other information elements

<unrelated part omitted>

#### *– OtherConfig*

The IE *OtherConfig* contains configuration related to other configuration.

*OtherConfig* information element

-- ASN1START

OtherConfig-r9 ::= SEQUENCE {

 reportProximityConfig-r9 ReportProximityConfig-r9 OPTIONAL, -- Need ON

 ...,

 [[ idc-Config-r11 IDC-Config-r11 OPTIONAL, -- Need ON

 powerPrefIndicationConfig-r11 PowerPrefIndicationConfig-r11 OPTIONAL, -- Need ON

 obtainLocationConfig-r11 ObtainLocationConfig-r11 OPTIONAL -- Need ON

 ]],

 [[ bw-PreferenceIndicationTimer-r14 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20,

 s30, s60, s90, s120, s300, s600, spare3,

 spare2, spare1} OPTIONAL, -- Need OR

 sps-AssistanceInfoReport-r14 BOOLEAN OPTIONAL, -- Need ON

 delayBudgetReportingConfig-r14 CHOICE{

 release NULL,

 setup SEQUENCE{

 delayBudgetReportingProhibitTimer-r14 ENUMERATED {

 s0, s0dot4, s0dot8,

 s1dot6, s3, s6, s12, s30}

 }

 } OPTIONAL, -- Need ON

 rlm-ReportConfig-r14 CHOICE {

 release NULL,

 setup SEQUENCE{

 rlmReportTimer-r14 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30,

 s60, s90, s120, s300, s600, spare3, spare2, spare1},

 rlmReportRep-MPDCCH-r14 ENUMERATED {setup} OPTIONAL -- Need OR

 }

 } OPTIONAL -- Need ON

 ]],

 [[ overheatingAssistanceConfig-r14 CHOICE{

 release NULL,

 setup SEQUENCE{

 overheatingIndicationProhibitTimer-r14 ENUMERATED {s0, s0dot5, s1, s2, s5, s10,

 s20, s30, s60, s90, s120, s300, s600,

 spare3, spare2, spare1}

 }

 } OPTIONAL -- Need ON

 ]],

 [[ measConfigAppLayer-r15 CHOICE{

 release NULL,

 setup SEQUENCE{

 measConfigAppLayerContainer-r15 OCTET STRING (SIZE(1..1000)),

 serviceType-r15 ENUMERATED {qoe, qoemtsi, spare6, spare5, spare4, spare3, spare2, spare1}

 }

 } OPTIONAL, -- Need ON

 ailc-BitConfig-r15 BOOLEAN OPTIONAL, -- Need ON

 bt-NameListConfig-r15 BT-NameListConfig-r15 OPTIONAL, --Need ON

 wlan-NameListConfig-r15 WLAN-NameListConfig-r15 OPTIONAL --Need ON

 ]]

}

IDC-Config-r11 ::= SEQUENCE {

 idc-Indication-r11 ENUMERATED {setup} OPTIONAL, -- Need OR

 autonomousDenialParameters-r11 SEQUENCE {

 autonomousDenialSubframes-r11 ENUMERATED {n2, n5, n10, n15,

 n20, n30, spare2, spare1},

 autonomousDenialValidity-r11 ENUMERATED {

 sf200, sf500, sf1000, sf2000,

 spare4, spare3, spare2, spare1}

 } OPTIONAL, -- Need OR

 ...,

 [[ idc-Indication-UL-CA-r11 ENUMERATED {setup} OPTIONAL -- Cond idc-Ind

 ]],

 [[ idc-HardwareSharingIndication-r13 ENUMERATED {setup} OPTIONAL -- Need OR

 ]],

 [[ idc-Indication-MRDC-r15 CHOICE{

 release NULL,

 setup CandidateServingFreqListNR-r15

 } OPTIONAL -- Cond idc-Ind

 ]]

}

ObtainLocationConfig-r11 ::= SEQUENCE {

 obtainLocation-r11 ENUMERATED {setup} OPTIONAL -- Need OR

}

PowerPrefIndicationConfig-r11 ::= CHOICE{

 release NULL,

 setup SEQUENCE{

 powerPrefIndicationTimer-r11 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20,

 s30, s60, s90, s120, s300, s600, spare3,

 spare2, spare1}

 }

}

ReportProximityConfig-r9 ::= SEQUENCE {

 proximityIndicationEUTRA-r9 ENUMERATED {enabled} OPTIONAL, -- Need OR

 proximityIndicationUTRA-r9 ENUMERATED {enabled} OPTIONAL -- Need OR

}

CandidateServingFreqListNR-r15 ::= SEQUENCE (SIZE (1..maxFreqIDC-r11)) OF ARFCN-ValueNR-r15

-- ASN1STOP

| *OtherConfig* field descriptions |
| --- |
| ***ailc-BitConfig***Indicates whether the UE is allowed to provide assistance information bit for local cache. If configured, the UE shall only apply to a DRB configured with 12-bit PDCP SN format as specified in TS 36.323 [8]. |
| ***autonomousDenialSubframes***Indicates the maximum number of the UL subframes for which the UE is allowed to deny any UL transmission. Value n2 corresponds to 2 subframes, n5 to 5 subframes and so on. E-UTRAN does not configure autonomous denial for frequencies on which SCG cells are configured. |
| ***autonomousDenialValidity***Indicates the validity period over which the UL autonomous denial subframes shall be counted. Value sf200 corresponds to 200 subframes, sf500 corresponds to 500 subframes and so on. |
| ***bw-PreferenceIndicationTimer***Prohibit timer for bandwidth preference indication reporting. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***CandidateServingFreqListNR***Indicates for each candidate NR serving cells, the center frequency around which UE is requested to report IDC issues for MR-DC. |
| ***delayBudgetReportingProhibitTimer***Prohibit timer for delay budget reporting. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot4 means prohibit timer is set to 0.4 second, and so on. |
| ***idc-HardwareSharingIndication***The field is used to indicate whether the UE is allowed indicate in *InDeviceCoexIndication* that the cause of the problems are due to hardware sharing, and whether the UE is allowed to omit the TDM assistance information. |
| ***idc-Indication***The field is used to indicate whether the UE is configured to initiate transmission of the *InDeviceCoexIndication* message to the network. |
| ***idc-Indication-MRDC***The field is used to indicate whether the UE is configured to provide IDC indications for MR-DC using the InDeviceCoexIndication message. |
| ***idc-Indication-UL-CA***The field is used to indicate whether the UE is configured to provide IDC indications for UL CA using the *InDeviceCoexIndication* message. |
| ***measConfigAppLayerContainer***The field contains configuration of application layer measurements, see Annex L (normative) in TS 26.247 [90] and clause 16.5 in TS 26.114 [99]. The maximum number of configurations of application layer measurements that a UE supports is one regardless of *serviceType*. |
| ***serviceType***Indicates the type of application layer measurement. Value qoe indicates Quality of Experience Measurement Collection for streaming services, value qoemtsi indicates Enhanced Quality of Experience Measurement Collection for MTSI. |
| ***obtainLocation***Requests the UE to attempt to have detailed location information available using GNSS. E-UTRAN configures the field only if *includeLocationInfo* is configured for one or more measurements. |
| ***overheatingAssistanceConfig***Configuration for the UE to report assistance information to inform the eNB about UE detected internal overheating. |
| ***overheatingIndicationProhibitTimer***Prohibit timer for overheating assistance information reporting. Value in seconds. Value s0 means prohibit timer is set to 0 seconds, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***powerPrefIndicationTimer***Prohibit timer for Power Preference Indication reporting. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***reportProximityConfig***Indicates, for each of the applicable RATs (EUTRA, UTRA), whether or not proximity indication is enabled for CSG member cell(s) of the concerned RAT. Note. |
| ***rlmReportTimer***Prohibit timer for RLM event reporting, i.e. "early-out-of-sync" and "early-in-sync" event reporting, as specified in clause 5.6.10. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***rlmReportRep-MPDCCH***The field is used to indicate whether the UE is configured to report excess repetitions on MPDCCH.  |
| ***sps-AssistanceInfoReport***Value TRUE indicates that the UE is allowed to report SPS-AssistanceInformation. |

NOTE: Enabling/ disabling of proximity indication includes enabling/ disabling of the related functionality e.g. autonomous search in connected mode.

| Conditional presence | Explanation |
| --- | --- |
| *idc-Ind* | The field is optionally present if *idc-Indication* is present, need OR. Otherwise the field is not present. |