**3GPP TSG-RAN WG3 Meeting #119-bis-eR3-231919**

**Online, April 17th – 26th 2023**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **-** | **rev** | **-** | **Current version:** |  |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | QoE and RVQoE Measurements and Reporting in NR-DC Scenarios | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_QoE\_enh | | | | |  | ***Date:*** | | | 2023-04-26 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***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 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Description of support for QoE and RVQoE measurement and reporting for UEs in NR-DC. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Description of support for QoE and RVQoE measurement and reporting for UEs in NR-DC. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No support for QoE and RVQoE measurement and reporting for UEs in NR-DC. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 21.x (new), 21.x.1 (new), 21.x.2 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

-------------------------------------------Start of changes-------------------------------------------

## 21.x Support for QoE and RAN visible QoE measurements in NR-DC

### 21.x.1 The MN-SN coordination for QoE measurements and reporting

For a UE in NR-DC, the MN and the SN can coordinate for configuring the UE with QoE and RAN visible QoE measurements and reporting. The coordination procedure pertains to both signalling-based and management-based QoE/RAN visible QoE measurements and reporting. The MN-SN coordination procedure supports:

* Coordination for configuring the UE with QoE and RAN visible QoE measurements.
* Coordination for determining and establishing the SRB(s) used for receiving QoE/RAN visible QoE reports.
* Coordination about switching the reporting leg.
* Coordination of RAN visible QoE measurement configuration parameters.
* Coordination for sending the RAN visible QoE measurement configuration to the UE.
* Coordination of the *measConfigAppLayerId* for the measurements.

If the SN is interested in configuring a UE with a management-based QoE measurement configuration, it should send the coordination request to the MN. The MN should inform the SN that a UE is configured with a management-based QoE/RAN visible QoE measurement.

In case of management-based QoE, the MN decides which node to perform the QoE measurement configuration. For a management-based QoE/RAN visible QoE configuration in case the SN is interested in configuring a UE with a management-based QoE/RAN visible QoE measurement configuration, the MN can decide and notify the SN whether:

* The MN sends the configuration information to the UE (and not the SN), or
* The SN should send the configuration to the UE directly, or
* The SN should send the configuration information to the UE via the MN (inside a container on SRB1).

The MN is responsible for *measConfigAppLayerId* allocation for management-based sessions configured by the MN or by the SN, and the MN indicates the allocated *measConfigAppLayerId*(s) to the SN, on a per-configuration basis.

If the MN or the SN has configured the UE with QoE measurements, and the UE is configured to send the QoE reports to the peer node (the SN or the MN), which forwards the reports directly to the MCE, then the node that has configured the UE with QoE measurements should indicate the QoE reference, the MCE IP address and the *measConfigAppLayerId* to the node that receives the reports and forwards them directly to the MCE.

QoE reports can be transmitted to either the MN or the SN, and the reporting leg (MCG or SCG) can be changed during the application session.

### 21.x.2 Support for RAN visible QoE measurements and reporting in NR-DC

Subject to MN-SN coordination, either the MN or the SN can generate and send a RAN visible QoE configuration to the UE and receive the RAN visible QoE reports directly from the UE. In addition, the UE can send a RAN visible QoE report to the MN or the SN, and the MN or the SN can forward it to the peer node (the SN or the MN).

The MN or the SN can configure RAN visible QoE measurements at a UE, without a priori knowledge about which node(s) provide the bearer(s) for the application session. To ensure that the RAN visible QoE reports are sent to the node(s) that provide the bearer(s) associated to the corresponding RAN visible QoE measurement result in the RAN visible QoE report, the RAN needs to determine which node(s) provides these bearer(s). From the PDU session ID and the QFI indicated in the received RAN visible QoE report the node determines which node(s) provide the bearer(s) associated to the corresponding application session. If a node receives an RAN visible QoE report from a UE in NR-DC and determines that the bearers for the application session are also or only provided by the peer node, this node can send the received RAN visible QoE report to the peer node. In this case, the RAN visible QoE configuration can be modified. The above is applied both at the beginning of RAN visible QoE measurement session, and at every bearer type change.

-------------------------------------------End of changes-------------------------------------------