**3GPP TSG-RAN WG3 Meeting #117-bis-eR3-225914**

**Online, October 10th – 18th 2022**

Agenda Item: 11.3

Source: Ericsson (moderator)

Title: CB # QoE2\_NRDC- Summary of email discussion

Document for: Approval

# Introduction

The deadline for providing replies to Phase 1 is **Wednesday, October 12th at 06:00 UTC.**

**Relevant papers:**

R3-225412 Support for QoE in NR-DC (Qualcomm Incorporated)

R3-225413 MDT-QoE alignment and QoE measurement continuity in mobility scenarios in NR-DC (Qualcomm Incorporated)

R3-225431 NR QoE Discussion on support for NR-DC (Samsung)

R3-225480 QoE measurement in NR-DC (Lenovo)

R3-225481 (TP to TS 38.420) Support of QoE measurement in NR-DC (Lenovo)

R3-225558 The Support for QoE and RVQoE Measurement and Reporting in NR-DC Scenarios (Ericsson)

R3-225590 Handling of QMC configuration for NR-DC (Nokia, Nokia Shanghai Bell)

R3-225747 Discussion on QoE in NR-DC (Xiaomi)

R3-225765 Discussion on Support for legacy QoE in NR-DC (CATT)

R3-225766 Discussion on Support for RV-QoE in NR-DC (CATT)

R3-225819 Discussion on QoE configuration and reporting in NR-DC (ZTE, China Telecom)

R3-225820 Diccussion on RVQoE configuration and reporting in NR-DC (ZTE, China Telecom)

R3-225821 stage-2 TP to BL CR of 37.340 on QoE in NR-DC (ZTE, China Telecom)

R3-225837 Discussion on QoE measurement in NR-DC (China Unicom)

R3-225843 Further discussions on the support for QoE in NR-DC (Huawei)

# For the Chairman notes

**TBW**

# Round 1

At this meeting we will discuss the baseline solution for QoE and RVQoE measurement and reporting in NR-DC. The proposals related to mobility support and alignment with radio related measurements should not be treated before the basic solution is agreed.

## QoE configuration and reporting in NR-DC

### MN-SN coordination procedure

**Q1-1: Which of the following should be supported by the MN-SN coordination procedure:**

1. **Initiation by either the MN or the SN.**
2. **Coordination for deciding which node should configure the UE.**
3. **Coordination of *measConfigApplayerId.***
4. **Indication of the UEs that were configured with QoE/RVQoE measurements.**
5. **Indication of QoE reference and MCE IP address for forwarding the QoE reports directly to MCE.**
6. **Coordination for establishing the SRB for receiving QoE/RVQoE reports.**
7. **Switching the QoE/RVQoE reporting leg.**
8. **Indication of session start/stop.**

Please write your company name in the appropriate column. A separate table for leaving detailed comments is provided below as well.

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| **Functionality** | **Companies in favour** | **Companies against** |
| **a)** | Ericsson | Xiaomi, question is not clear |
| **b)** | Ericsson | Xiaomi, MN is responsible for configurating UE. |
| **c)** | Ericsson | Xiaomi, MN is responsible for assigning the measConfigApplayerId |
| **d)** | Ericsson  Xiaomi, partially yes, only MN indicate what’s configured in UE |  |
| **e)** | Ericsson, but excluding the MCE IP if both nodes are in area scope.  Xiaomi |  |
| **f)** | Ericsson  Xiaomi |  |
| **g)** | Ericsson  Xiaomi, MN is responsible for configuring and switching the QoE/RVQoE reporting leg. |  |
| **h)** | Ericsson  Xiaomi: suggest reword to “coordination for the indication of session start/stop” |  |

If you have any detailed comments, please provide them below.

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| **Company** | **Comment regarding any of a)- h)** |
| **Ericsson** | Regarding e), if both MN and SN are in the scope, they both have the MCE IP for m-QoE, so there is no need to indicate it via XnAP. If one of them is in the area scope, then indicating the MCE IP should be considered, e.g., for the sake of reporting in overload. |
| Xiaomi | a) is not clear for us, which kind of initiation does this mean?  b) we support MN is responsible for configurating UE, which has less complexity, no need to coordinate.  c) we support MN is responsible for assigning the measConfigApplayerId if MN decides to configure UE, no need to coordinate  d) if MN is responsible for the configuration, MN can indicate the configuration result to SN.  h) we support “coordination for the indication of session start/stop”, as in our understanding the session start/stop can also be sent directly to MN or SN |
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### UE selection and configuration for m-QoE

**Q2-1: If an m-based QoE configuration is received only by the SN, does the SN perform UE selection and sends the QoE configuration to the UE?**

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| **Company** | **Answer** | **Comment** |
| **Ericsson** | **Yes** | The MN cannot select the UEs and configure them, since it is out of area scope. SN should be able to do that – there is no reason to preclude QoE measurements in this case. |
| Xiaomi | No | We don’t think this is related to area scope. If the SN finds that the UE is in the area scope, SN can send the QoE configuration to MN, MN can decide whether to select UE based on the UE capability and the already configured QoEs, e.g. s-based QoE or m-based QoE in MN. In this way, there will be no duplicated configuration issue. |
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**Q2-2: If only MN or only SN receives an m-based QoE configuration, should this node notify the other node about it?**

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| **Company** | **Answer** | **Comment** |
| **Ericsson** | **Yes** | Even if the other node is not in area scope, it may be needed to use this other node for QoE reporting, for example during overload. |
| Xiaomi | Partially yes | In our understanding, MN should be in charge of all the QoE configurations for the UE, SN should notify the QoE configuration to MN if the UE is in the scope.  Thus, we think only SN needs to notify MN the m-based QoE configuration in SN. And the RVQoE measurement interests can be discussed separately. |
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**Q2-3: If both MN and SN receive an m-based QoE configuration, can the SN select the UEs, and configure them with measurements?**

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| **Company** | **Answer** | **Comment** |
| **Ericsson** | **Yes** | This should be coordinated between the MN and SN, and the decision is up to the MN. |
| Xiaomi | No | As we commented above, only one entity should be responsible for UE selection, to avoid configuration duplication, and we think MN should take this responsibility. |
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### QoE measurement reporting

**Q3-1: With respect to switching of the reporting leg, do you agree that:**

1. **For RLF, the UE switches the reporting leg based on configuration received from the network?**
2. **For other leg-switching scenarios, the network sends the command to the UE via RRC to switch the reporting leg?**
3. **RAN3 should discuss which node can command the UE to switch the reporting leg?**

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| **Company** | **Answer** | **Comment** |
| **Ericsson** | **Agree to all** |  |
| Xiaomi | Yes to all with rewording comment | For b), we think it is also possible to use lower layer signalling to switch the leg, which should be discussed in RAN2. And we suggest to reword it like this “**For other leg-switching scenarios, the network sends the command to the UE ~~via RRC~~ to switch the reporting leg, FFS on via RRC or lower layer signalling**”  For c), we think MN should be responsible for sending the command to UE |
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**Q3-2: With SN forwarding the QoE reports directly to the MCE, do you agree that:**

1. **The following WA is turned into an agreement: “*WA: If QoE reports are received by the SN, SN can forward the QoE reports to MCE directly.*”?**
2. **The MN should indicate to the SN the QoE reference and the MCE IP address?**
3. **The SN should at least indicate to the MN the session start and stop?**

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| **Company** | **Answer** | **Comment** |
| **Ericsson** | **a), c): yes**  **b): see comment** | b) If both MN and SN are in area scope for m-based QoE, the SN already knows the MCE IP, so no need to indicate the MCE IP in that case.  c) The MN must be aware of when the session that it configured for the UE starts/stops, even if the reporting occurs via the SN. |
| Xiaomi | a) yes  b) and c): rewording | b) agree with E///’s observation, suggest rewording “**The MN may ~~should~~ indicate to the SN the QoE reference and the MCE IP address**”, which means this IE is optional.  c) if both MN and SN can receive the session start and stop indication, there’s no need for additional indication transfer, suggest rewording “**The SN may ~~should at least~~ indicate to the MN the session start and stop**” |
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## RVQoE configuration and reporting in NR-DC

### Generating the RVQoE configuration

**Q4-1: With respect to generating the RVQoE configuration, do you agree that:**

1. **The following WA is turned into an agreement: “*WA: MN and SN can generate RVQoE configurations”?***
2. **The node that received the QoE configuration from the AMF/OAM sends to the other node the list of available RVQoE metrics?**
3. **If both the MN and SN are “interested” in RVQoE measurements from the UE, the MN and SN can indicate the interest to each other, negotiate the RVQoE configuration parameters, after which a common RVQoE configuration is sent to the UE?**
4. **If only the SN is “interested” in RVQoE measurements from the UE (and the MN is not), the SN generates the RVQoE configuration and configures the UE with it?**

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| **Company** | **Answer** | **Comment** |
| **Ericsson** | **Agree to all** |  |
| Xiaomi | a) is in contradictory with c)  b) Yes  c) Yes | For a), if c) is agreed, it means a common configuration is sent to UE, and in our understanding, only one node can generate the common configuration, and it should be MN. |
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### RVQoE reporting

**Q4-2: With respect to RVQoE measurement reporting, do you agree that:**

1. **The following WA is turned into an agreement: “*WA: UE can send RVQoE report to MN, MN then forward the RVQoE report to SN if needed, and vice versa.”?***
2. **Both MN and SN can receive RVQoE reports directly from the UE (not necessarily at the same time)?**
3. **If the node carrying data for a service is different from the node receiving the corresponding RVQoE reports from the UE, the reporting leg for RVQoE can be changed so that the node carrying the session receives the RVQoE reports directly from the UE?**

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| **Company** | **Answer** | **Comment** |
| **Ericsson** | **Yes to all** |  |
| Xiaomi | a), b): Yes  c)No | For c), gNB is not aware of the service session. |
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### Determining which node delivers the application session to the UE

**Q4-3: Should RAN3 discuss how the MN/SN can learn which of them carries the data for an application session subject to RVQoE measurements? If not, why?**

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| **Company** | **Answer** | **Motivation** |
| **Ericsson** | **Yes** | This is needed because **the node that carries the application session must be able to receive the corresponding RVQoE reports.** |
| Xiaomi | No | gNB is not aware of the application session. |
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