3GPP TSG-RAN WG3 #119-bis-e R3-231877

17th - 26th Apr 2023

Online

**Agenda Item: 11.4**

**Source: ZTE - Moderator**

**Title:** **Summary of Offline Discussion on CB: # QoE4\_Others**

**Document for: Approval**

# **Introduction**

**CB: # QoE4\_Others**

**- Check the incoming LSs**

**- Whether to introduce threshold-based trigger, event-based triggers for RVQoE?**

**- Discuss the procedures for DU participation in deactivation of QoE reporting over F1, e.g., class-1 or class 2, to reuse legacy procedure or to define a new procedure?**

**- Whether DU can participate in assembling RVQoE configuration?**

**- Discuss the details of assistance information, e.g. priorities per QoE configuration? Types or characteristics of the consumers?**

**- Proceed to TP(s) if agreeable**

(moderator - ZTE)

Summary of offline disc [R3-231877](Inbox%5C%5CR3-231877.zip)

Please Note:

There would be two rounds of email discussion.

The 1st round is to be closed by the first Wednesday, 8:00 UTC, 19th Apr.

The 2nd round is to be closed on Tuesday of the second week, 8: 00 UTC, 25th Apr.

# **2 For the Chairman’s Notes**

Propose to capture the following for the 2nd round discussion:

# **3 Discussion (1st round)**

**3.1 Incoming LSes**

There are two incoming LSes received from other WGs in this CB:

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| R3-231111 | LS on buffer level threshold-based RVQoE reporting (RAN2, Apple) | LS in |
| R3-231123 | LS on Approval of eQoE CRs for NR (SA5, Ericsson) | LS in |

R3-231111[1] is an LS cc RAN3, which is purposed to ask SA4 whether APP layer triggering of buffer level threshold-based RVQoE reporting can be supported. But there are some papers in RAN3 showing concern on how threshold-based triggers is used, it is supposed that RAN3 can also have some discussion on this issue, and whether a LS out to RAN2 and/or SA4 is needed can be further discussed at this meeting. **But before we receive the confirmation from SA4, it is suggested that we do not make any assumption like threshold-based trigger is handled in APP layer.**

R3-231123[2] is an LS from SA5 to inform us specification updates on NR QMC, including the completion of Signalling Based Activation with MDT Alignment Information and RAN visible QoE Metrics in 28.404. There seems no problem from RAN3 perspective.

**Proposal 1: The LSes (R3-231111 and R3-231123) can be simply noted.**

**Proposal 2: Whether an LS out related to threshold-based trigger can be further discussed at this meeting based on RAN3 understanding.**

**Question 1: Do you agree with the above proposals?**

Pls leave your comments here.

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| Company | Yes/No | Comments |
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**3.2 Triggers for RVQoE reporting**

3.2.1 threshold-based trigger

*Introduce buffer level as a threshold-based trigger for RVQoE reporting*

*Do not introduce the threshold-based trigger for reporting playout delay for media startup*

Some contributions[4][5][8] provide their discussion on threshold-based trigger this time. Although this issue is quite depended on the discussion on other WGs, e.g., RAN2, SA4. It is no harm that RAN3 have some discussion and provide our understanding to other WGs if we can achieve some consensus.

A common issue that has been mentioned in [4][5][8] is whether periodic RVQoE reporting and threshold-based RVQoE reporting can co-exist.

[4] proposes that ran-VisiblePeriodicity (reporting periodicity) should not be configured in case threshold-based triggers are used for reporting RVQoE metrics (e.g., buffer level).

[8] holds a similar view that RVQoE threshold-based trigger feature and RVQoE reporting periodicity feature should not be activated at the same time.

[5] tends to support that periodic RVQoE reporting has been configured together with threshold-based RVQoE reporting —— when threshold-based RVQoE reporting starts, the reports start to be sent immediately, and are sent periodically.

**Question 2: Do you think periodic reporting for RVQoE can be configured together with threshold-based trigger?**

Note: the question is meant for the same RVQoE configuration.

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| Company | Yes/No | Comments |
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Other detailed issues on threshold-based trigger have also been discussed in the papers mentioned, including:

- Whether NG-RAN node can indicate a Time-to-Trigger (TTT) for reporting buffer level, in addition to the threshold. [4]

- Whether and how to stop trigger-based RVQoE reporting. [5]

- Two types of threshold evaluation: a) Report buffer level if greater than a threshold b) Report buffer level if less than a threshold. [8]

**Considering the above issues is depended on the discussion of the Question 2 and probably related to the progress of other WGs, they would NOT be discussed in the first round.**

3.2.2 Event-based trigger

The event-based trigger for RVQoE reporting has been discussed for several meetings but still has no consensus.

[5] supports RVQoE reporting triggered by a radio related event (as defined in TS 38.331), holding the view that it may be useful for optimization of mobility related decisions.

While [3][4][8][9] shared negative opinions on the event-based triggers for RVQoE. The reasons can are summarized as follows:

- it would bring higher UE complexity in UE APP or UE AS layer.

- post-processing in the MCE and RAN already suffice.

- threshold-based triggers may also be used to detect mobility events.

**Question 3: Are you convinced that radio related event triggers can be introduced for mobility optimization?**

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**3.3 DU participation in RVQoE**

3.3.1 Deactivation of RVQoE reporting

*Introduce the deactivation of RAN visible QoE information transfer via F1. No need to introduce pause/resume mechanism in Release 18.*

The deactivation of RVQoE reporting over F1 has been agreed at last meeting. [4][5][6][7][9] provides further discussion on the deactivation mechanism over F1. Based on the contributions, the basic understanding is that DU should send an indication to CU that the RVQoE reporting over F1 can be deactivated. The detailed procedure and signaling design should be discussed at this meeting, e.g., whether to use a class-1/class-2 message and whether to reuse an existing message or define a new message [4].

[5] proposes a new class-2 F1AP UE-associated procedure to control the transfer of RVQoE information from the CU to the DU.

[7] would like to Enhance the F1 SETUP REQUEST message to enable the gNB-DU to provide a deactivation indication.

[9] prefers to add the deactivation indication for RVQoE reporting over F1 in the GNB-DU CONFIGURATION UPDATE message.

In [6], it is proposed that the gNB-CU should take the control of the deactivation of QoE information transfer, instead of gNB-DU. The gNB-CU can decide whether to deactivate the QoE information transfer based on the need information from gNB-DU.

**Question 4: How to define the procedure for deactivation of RVQoE reporting over F1AP, e.g., class-1 or class-2? reuse legacy procedure or define a new procedure?**

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| Company | Class-1 or Class-2? | Legacy or new procedure? | Comments |
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**Question 5: Do you think it should be the CU to take control of the deactivation of RVQoE reporting over F1, i.e., DU only provides a suggestion/requirement to deactivate RVQoE reporting.**

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| Company | Yes/No | Comments |
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3.3.2 RVQoE configuration

The DU participation of RVQoE configuration is mentioned in [4][5][9].

[5] supports to Introduce a new class-1 UE-associated F1AP procedure) initiated by the CU, where:

-The CU indicates to the DU the available RVQoE metrics and the intended reporting periodicity.

-The DU indicates to the CU its preferred available RVQoE metrics and its preferred reporting periodicity.

While [4] provides the view that there is no need for gNB-DU to participate in assembling the RVQoE configuration.

[9] thinks the DU participation in RVQoE configuration can be further discussed.

**Question 6: Do you think the DU participation in RVQoE configuration should be supported?**

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| Company | Yes/No | Comments |
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**3.4 Assistance Information for RAN overload**

*In case assistance information for handling of QoE reporting upon RAN overload is sent to the RAN, it is sent together with QoE measurement configuration. RAN3 to further discuss what the assistance information is. From RAN3 perspective, there is no need to send assistance information to UE.*

Among all the contributions, [3][4][8][9][11] agree that priority can be introduced as an assistance information per QoE reference.

1. suggests RAN3 further discuss whether assistance information for handling of QoE reporting upon RAN overload should include the type of consumer that will receive the QoE reports, or some characteristics of the consumers. However, it is mentioned in [8] that although the OAM is not the only consumer, other consumers can participate in setting the assistance information in an implicit way.

**Question 7: Do you think priority can be introduced as assistance information from OAM per QoE reference?**

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**Question 8: Do you think the type of consumer that will receive the QoE reports, or some characteristics of the consumers can be introduced as assistance information from OAM?**

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| Company | Yes/No | Comments |
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**Note:**

- Some issues in companies’ contributions are not listed in the SoD, which are out of the scope of this CB, e.g., intra-5GC inter RAT handover, failure indication.

- Text Proposals and LSes would be handled in the second round if we can achieve consensus.

- Please leave it below if you think anything was missed:

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| Company | Comments |
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# **4 Conclusion, Recommendations**

See section 2.

# **5 References**

[1] R3-231111 LS on buffer level threshold-based RVQoE reporting (RAN2, Apple) LS in

[2] R3-231123 LS on Approval of eQoE CRs for NR (SA5, Ericsson) LS in

[3] R3-231321 Discussion on Left-over issues (CATT) discussion

[4] R3-231347 Enhancements to RAN visible QoE (Qualcomm Incorporated) discussion

[5] R3-231489 (TP for QoE BL CR for TS 38.473) Enhancements of Rel-17 QoE and RVQoE Features (Ericsson) other

[6] R3-231521 Discussion on RVQoE information (TP to BL CR TS 38.473 Enhancement on NR QoE) (Xiaomi) discussion

[7] R3-231627 (TP for BL CR to TS 38.473) Deactivation of RAN visible QoE information transfer via F1 (Nokia, Nokia Shanghai Bell) other

[8] R3-231762 Further discussion on the support of R17 left-over features (Huawei) discussion

[9] R3-231779 Discussion on left-over issues from R17 (ZTE, China Unicom, China Telecom) discussion

[10] R3-231780 TP to BL CR of 38.473 on NR QoE enhancement (ZTE, China Unicom, China Telecom) other

[11] R3-231831 Further discussion on assistance information when RAN overload (China Unicom) discussion