3GPP TSG-RAN WG1 Meeting #116bis-e Tdoc R2-22xxxxx

January 17th - 25th 2022

Agenda: 8.14.3

Source: Ericsson

Title: Feature summary for 8.14.3

Document for: Discussion, Decision

# 1 Introduction

In this document the following offline is discussed:

* [AT116bis-e][030][QoE] Other open issues (Ericsson)

 Scope: List the remaining other open issues not related to Mobility, Pause Resume, RV QoE or UE cap. Determine agreements (agreed offline), and points for online CB, if any.

 Intended outcome: Report

 Deadline: Friday W1 (can CB Mon W2 if needed).

Contact information:

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| **Company** | **Contact Name, Email** |
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# 2 Discussion

## 2.1 Multiple QoE reports in one message

The following proposals are related to the possibility to include multiple QoE reports in one *MeasurementReportAppLayer* message.

* It is not allowed to add multiple QoE reports in one RRC message.
* Select one option among:
- Option 1. MeasurementReportAppLayer message includes a single QoE report with a MeasConfigAppLayerID.
- Option 2. MeasurementReportAppLayer message includes multiple QoE reports with the same MeasConfigAppLayerID.
- Option 3. MeasurementReportAppLayer message includes multiple QoE reports with different MeasConfigAppLayerID.
* RAN2 to agree that it is up to UE implementation whether or not transmit multiple QoE reports in one RRC msg, and ASN.1 should support including more than one QoE report and measConfigAppLayerId in the one RRC msg.
* Multiple QoE report containers can be included in one *MeasReportAppLayer* message, and it is up to UE implementation on whether to include multiple QoE report container in one message.
* Multiple QoE reports can be included in a single QoE report message.
* allow multiple QoE reports in the same RRC message, and discuss in what scenrios QoE report aggeration should be performed.
* Allow multiple QoE reports in the same MeasurementReportAppLayer message.
* Add the report of QoE measurements by means of list to enable report of multiple simultaneous measurements.

Based on the proposals above, the following questions are asked:

Question 1: Do you think ASN.1 should support including multiple QoE reports in one *MeasurementReportAppLayer* message? If so, do you think there should be multiple QoE reports with different *measConfigAppLayerId* or multiple QoE reports with the same *measConfigAppLayerId* or both?

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| **Company** | **Yes/No** | **Comments** |
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## 2.2 Container size limitations

The following proposals are related to container size limitations and how to capture them in the specification.

* Maximum size of the QoE configuration container should be specified as 8000 bytes in RRC, to account for an overhead of other fields that may need to be included in the RRC Reconfiguration message.
* To avoid oversized QoE reports from being provided from application layer to the AS layer, AS layer should inform application layer whether the reports larger than 8000 bytes can be transmitted by the UE (i.e. depending on whether the UE is capable of and configured with RRC segmentation or not).
* Add a Note in field description of measConfigAppLayerContainer saying that the message containing the QoE configuration container(s) cannot exceed 9000 bytes.
* Add a Note in the field description of MeasurementReportAppLayerContainer saying that the message containing the QoE report container(s) cannot exceed 144 000 bytes.
* Send the reply LS to SA4 with the new size limitations for QoE configuration and report.

It is assumed that RAN2 sends a reply LS with the relevant RAN2 agreements related to size limitations as the size limitations are currently captured also in SA4 specifications and a reply LS has not been sent so far. Regarding the other proposals, the following questions are asked :

Question 2: Do you think the container size limitations should be captured as a maximum size of the BITSTRING in ASN.1 or in the field description with a maximum size of the RRC messages containing the containers?

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Question 3: In case the UE capability of RRC segmentation is not conditionally mandatory, do you think application layer needs to be informed of the UE capability to support RRC segmentation?

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## 2.3 AT-commands

The following proposals are related to AT commands and what to request CT1 to add in TS 27.007.

* Discuss whether the service type needs to be included in the AT command at release.
* Ask CT1 to define the QoE configuration in terms of a list.
* Ask CT1 to define the possibility to release all QoE configurations in an AT command.

The service type is used in the UE for routing the QoE configuration to the right application. The question is whether it is also needed at release to route the release command to the right application. In such case, the AS layer in the UE needs to store the service type together with the *measConfigAppLayerId*. Alternatively, the *measConfigAppLayerId* may be sufficient to route the release command to the right application.

RAN2 has agreed to support multiple QoE configurations, but the AT-command currently only supports one QoE configuration.

The AT command for release all QoE configurations seems to be needed e.g. in the case where an *RRCSetup* is triggered in a gNB not supporting QoE measurements and where the RRC layer has been cleared and does not know which QoE configurations that are configured in the application layer. In LTE, only one QoE configuration can be configured and then the release command also has the meaning release all.

Based on the proposals above, the following questions are asked:

Question 4: Do you think the service type needs to be forwarded to the application layer at release?

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Question 5: Do you agree that the AT-command needs to include QoE configurations in terms of a list, i.e. corresponding to the list in the RRC message? If you don’t agree, please explain why it is not needed.

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Question 6: Do you agree that the AT-command needs to include the option to release all QoE configurations? If you don’t agree, please explain why it is not needed.

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## 2.4 Other proposals

These are the remaining proposals:

* RAN2 to agree that source gNB should send the information of the air-interface resource consumption for transmission of the measurement report for each QoE configuration towards the target gNB to assist the target gNB to choose which QoE measurement configuration should be released.
* RAN2 to agree that the granularity of the indication of the release is of per QoE configuration, and the source gNB should send the historical information of the air-interface resource consumption for transmission of the measurement report for each QoE configuration towards the target gNB when UE context is retrieved.
* Categorize all QoE measurement in different sets/containers by service type and assgin the set/container with unique identify.
* Prioritize the use of identify of set/container to indicate gNB which QoE configurations should be kept.
* For QoE reporting control, RAN node is made aware of the reporting interval applied for QoE data collection as an assistance information to help RAN decide whether to pause or release the QoE.
* To support QoE measurement reporting control, RAN supports optionally configuration of QoE data collection cycle in AS layer.

The proposals seem not to be strictly needed in rel-17 in order to complete the WI with the defined scope and they are also not proposed by more than one company.

Question 7: Would you like to proceed with any of the proposals above? Which ones? Please motivate.

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# 3 Conclusion

# 4 References

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