3GPP TSG-RAN WG2 Meeting #119e Tdoc R2-22xxxxx

Electronical meeting, August 17th – 29th, 2022

Agenda: 6.14.2

Source: Ericsson

Title: Summary of [AT119-e][251][R17 QoE] NR RRC corrections to Rel-17 QoE (Ericsson)

Document for: Discussion, Decision

# 1 Introduction

In this document the following offline is discussed:

* [AT119-e][251][R17 QoE] NR RRC corrections to Rel-17 QoE (Ericsson)

      Scope: Discuss NR RRC corrections for Rel-17 QoE marked for this discussion.

Intended outcome: Report in in [R2-2208777](file:///C:\\Users\\terhentt\\Documents\\Tdocs\\RAN2\\RAN2_119-e\\R2-2208777.zip). Merged 38.331 CR in [R2-2208778](file:///C:\\Users\\terhentt\\Documents\\Tdocs\\RAN2\\RAN2_119-e\\R2-2208778.zip).

Deadline: Deadline 1 (report) / Deadline 2 (final CRs)

Contact information:

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| --- | --- |
| **Company** | **Contact Name, Email** |
| Lenovo | Hyung-Nam Choi, hchoi5@lenovo.com |
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# 2 Discussion

## 2.1 Clarification of CAPC for SRB4

The following CR addresses a clarification for CAPC:

[R2-2207425](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207425.zip) Clarification of CAPC for SRB4 Apple CR Rel-17 38.331 17.1.0 3261 - F NR\_QoE-Core

In Clause 4.2.2, adding the CAPC definition for SRB4, which can be configurable.  
In Clause 6.3.2, the description of field channelAccessPriority for the IE LogicalChannelConfig is updated to support CAPC configurability for SRB4.

Rapporteur’s comment:

This seems to be a relevant correction.

Question 1: Do you have any comments on R2-2207425?

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| --- | --- | --- |
| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Not agree | We understood that NR-U is not in the scope of Rel-17 NR QoE. |
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Summary question 1:

TBD

## 2.2 Clarification of QoE Reporting with Session Start/Stop Information

The following CR proposes a clarification in the procedure text related to session start/stop indication:

[R2-2207426](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207426.zip) Clarification of QoE Reporting with Session Start/Stop Information Apple CR Rel-17 38.331 17.1.0 3262 - F NR\_QoE-Core

Change the text in Clause 5.7.16.2 as:  
  
2> if session start or stop information has been received from upper layers for the measConfigAppLayerId:  
3> set the appLayerSessionStatus in the MeasurementReportAppLayer message to the received value of session start or stop the application layer measurement information;

Rapporteur’s comment:

This correction seems to clarify the UE behaviour.

Question 2: Do you have any comments on R2-2207426?

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| --- | --- | --- |
| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Not agree | From the context it should be clear that   * the appLayerSessionStatus is set in the MeasurementReportAppLayer message (see title of clause 5.7.16 and ASN.1), * the appLayerSessionStatus refers to session start or stop information (see field description). |
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Summary question 2:

TBD

## 2.3 Corrections to application layer measurement reporting procedure

[R2-2207531](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207531.zip) Corrections to application layer measurement reporting procedure Lenovo draftCR Rel-17 38.331 17.1.0 F NR\_QoE-Core Late

Not available yet.

Question 3: TBD

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| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo |  | Intention was to provide the CR after online discussion if the issue addressed in the contribution R2-2207530 has been confirmed. Therefore, we suggest to skip any comments to this CR for now. |
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Summary question 3:

TBD

## 2.4 Correction CR for QoE measurements

The following CR includes various corrections to 38.331:

**[**[R2-2207722](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207722.zip) Correction CR for QoE measurements Ericsson, Huawei CR Rel-17 38.331 17.1.0 3303 - F NR\_QoE-Core

Separate field descriptions for RAN-VisibleMeasurements in MeasurementReportAppLayer message in 6.2.2.

ApplicationLayerMeasurement-Parameters corrected to AppLayerMeasParameters in 6.3.3.

Suffix -r17 added for pauseReporting and transmissionOfSessionStartStop in 6.3.4.

Need code and field description for ran-VisibleParameters corrected in 6.3.4.

Field description corrected for ran-VisiblePeriodicity in 6.3.4.

Rapporteur’s comment: The corrections seem relevant.

Question 4: Do you have any comments on the CR?

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| --- | --- | --- |
| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Agree but | * Cover page issues need to be fixed: meetings dates and Tdoc# are missing; “Impacted 5G architecture options” is not correct since NR QoE is supported only for NR SA. * “MeasurementReportAppLayer field descriptions” may be better changed to “MeasReportAppLayer field descriptions” and field description for ran-VisibleMeasurements should be added therein.   The following minor issues can be fixed as well:   * 6.3.4, MeasConfigAppLayerId: add “IE” in the sentence below.   The IE *MeasConfigAppLayerId* identifies the application layer measurement.   * 6.4: in the comment for constant maxNrofAppLayerMeas-1-r17, remove underline.   maxNrofAppLayerMeas-1-r17 INTEGER ::= 15 -- Max number of simultaneous application layer measurements\_minus 1 |
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Summary question 4:

TBD

## 2.5 Correction on QoE configuration and reporting

The following CR includes corrections on QoE configuration and reporting:

[R2-2207734](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207734.zip) Correction on QoE configuration and reporting Qualcomm Incorporated CR Rel-17 38.331 17.1.0 3305 - F NR\_QoE-Core

1. Clarify application layer measurement includes RAN visible application layer measurement.

2. Correct the despricption on receiving *pauseReporting* set to *False, to cover* both cases of the QoE configuration is suspended or not suspended.

3. Add a NOTE to clarify that in case the RRC message segmentation is enabled, UE will discard the RRC message if the number of segments of the RRC message is larger than 16.

Rapporteur’s comment: The first two changes seem relevant. The last change was briefly discussed in the last meeting and companies didn’t think it was necessary to clarify this as it is a rare case.

Question 5: Do you have any comments on R2-2207734?

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| --- | --- | --- |
| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Partly | To change 1): Agree, but it may be better to say “RAN visible application layer measurement **reports**”.  To change 2): Not sure. Does it make sense that the NW sets pauseReporting to False for a QoE configuration that has not been suspended?  To change 3): Here we have to distinguish two cases:   * Case 1: The MeasurementReportAppLayer message carries a single application layer measurement report and exceeds the max size of 144 kB. * Case 2: The MeasurementReportAppLayer message carries multiple application layer measurement reports and exceeds the max size of 144 kB. * To Case 1: we wonder whether this case can happen since SA4 estimated an average QoE load per application of <100 bits/sec. To exceed 144 kB the UE must collect measurements for hours. And even if a single measurement report may exceed the max size of 144 kB then it is better to discard such report immediately when it has been received from application layer instead of performing the reporting procedure and discarding the RRC message. * To Case 2: this case should not happen. The UE knows the size of the measurement reports to put in the MeasurementReportAppLayer message. So, if UL segmentation is enabled by NW then the UE should ensure that the size of MeasurementReportAppLayer message does not exceed the max size of 144 kB. |
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Summary question 5:

TBD.

## 2.6 Correction on TS 38.331 for QoE

The following CR includes two changes:

[R2-2207821](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207821.zip) Correction on TS 38.331 for QoE CATT CR Rel-17 38.331 17.1.0 3318 - F NR\_QoE-Core

Change 1: In the description of *transmissionOfSessionStartStop* field, add the content that “The UE transmits a session stop indication upon configuration of this field if a session already has started in the application layer. ”

Change 2: In the description of *ran-VisiblePeriodicity,* add the content that “If this field is absent, RAN visible QoE reports are sent together with the non-RAN visible QoE reports.”

Rapporteur’s comment: The rapporteur has the understanding that no agreements have been made that motivate these changes. The first change could cause some issue in that the UE would have to remember if there has previously been a session running in case it later gets configured with QoE. The second change was discussed last meeting and RAN2 is waiting for a reply from RAN3.

Question 6: Do you have any comments on R2-2207821?

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| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Partly | Change 1 looks ok.  Change 2 should be postponed for now. Agree with rapporteur’s comment that we should wait for the response from RAN3 on this reporting requirement. |
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Summary question 6:

TBD

## 2.7 Correction to the transmission of appLayerSessionStatus when pause is enabled

The following CR includes a change related to appLayerSessionStatus:

[R2-2207950](file:///C:\\Users\\terhentt\\Documents\\Tdocs\\RAN2\\RAN2_119-e\\R2-2207950.zip) Correction to the transmission of appLayerSessionStatus when pause is enabled Huawei, HiSilicon, China Unicom CR Rel-17 38.331 17.1.0 3333 - F NR\_QoE-Core

NOTE 2 in section 5.3.5.13d is updated to clarify that the transmission of *appLayerSessionStatus* is also not paused when *pauseReporting* is set to true.

Rapporteur’s comment: The clarification seems relevant.

Question 7: Do you have any comments on R2-2207950?

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| --- | --- | --- |
| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Agree but | Instead of referring to field appLayerSessionStatus it may be better to say “application layer measurement session start or stop information”. |
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Summary question 7:

TBD

## 2.8 Correction to storage of application layer measurements during Pause

The following CR includes changes related to transmission of reports:

[R2-2208238](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208238.zip) Correction to storage of application layer measurements during Pause Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.1.0 3387 - F NR\_QoE-Core

1. Storing application layer measurements during Pause concerns only newly coming measurement results from application layer (not previous).
2. Storing application layer measurements uon RRC Relase with *suspendConfig* concerns only newly coming measurement results from application layer (not previous).
3. Clarifying the variable *measReportAppLayerContainer* is used for storing the application layer based mesurements upon Pause

Rapporteur’s comment: The first changes may possibly cause some issue on the network side. If the UE submits part of a report before the pause and the rest of the report after resume, the network may not be able to reassemble the whole report if the resume is done in a different gNB. The first part of the report may need to be transferred in network signalling to the new gNB and this may currently not be supported. The MCE has little use of incomplete reports according to previous information from SA4. It is also unclear whether there is any issue with the existing UE behaviour and why the behaviour would need to be changed. The need for the last change is a bit unclear, there is currently no UE variable measReportAppLayerContainer.

Question 8: Do you have any comment on R2-2208328?

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| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Not agree | To our understanding the first two changes imply that the UE sends application layer measurement reports “immediately” upon reception from application layer. But such requirement has neither been agreed nor specified in the reporting procedure.  The third change is not needed since the UE AS layer receives the QoE reports encapsulated in the container from the application layer. |
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Summary question 8:

TBD

## 2.9 Correction to paused reporting of the application layer measurements

The following CR is related to paused reporting:

[R2-2208239](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208239.zip) Correction to paused reporting of the application layer measurements Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.1.0 3388 - F NR\_QoE-Core

1. Adding reference to application layer based measurements reporting procedure upon receivng *pauseReporting* set to *false*
2. Adding resumed pausing related actions in section dedicated to application layer based reporting

Rapporteur’s comment: This is related to the change in CR R2-2207734 in 2.5. A clarification of the UE behaviour when pauseReporting is set to False may be useful, but the proposed change in R2-2207734 may be clearer.

Question 9: Do you have any comments on R2-2208239?

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| --- | --- | --- |
| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Partly | The first change looks ok to us in-principle, but in the new condition below we prefer to say “application layer measurement **reports**” and to remove “in the measReportAppLayerContainer” (see our comment to 3rd change in R2-2208238 above).  4> initiate reporting of the stored application layer measurement in the *measReportAppLayerContainer* associated with the *measConfigAppLayerId* according to 5.7.16.2;  If we are not wrong the second change is missing in the CR. |
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Summary question 9:

TBD

## 2.10 Correction on MeasurementReportAppLayer message per measConfigAppLayerId

The following CR changes the procedure description at segmentation:

[R2-2208393](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208393.zip) Correction on MeasurementReportAppLayer message per measConfigAppLayerId Samsung draftCR Rel-17 38.331 17.1.0 F NR\_QoE-Core

Indentation levels regarding RRC segmentation and submission of *MeasurementReportAppLayer* message are updated

Rapporteur’s comment: It is the rapporteur’s understanding that the content of the message is first set, and then it is determined whether the message should be segmented or not. If so, the current specification is correct.

Question 10: Do you have any comment on R2-2208393?

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| **Company** | **Agree/Not agree** | **Comments** |
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Summary question 10:

TBD

## 2.11 Correction on QoE report only including measConfigAppLayerId

The following CR clarifies the UE behaviour if only measConfigAppLayerId is received from the application layer:

[R2-2208394](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208394.zip) Correction on QoE report only including measConfigAppLayerId Samsung draftCR Rel-17 38.331 17.1.0 F NR\_QoE-Core

After *MeasReportAppLayer* is set,

* If *MeasReportAppLayer* includes *measConfigAppLayerId* only, the *MeasReportAppLayer* is removed from *measurementReportAppLayerList.*
* Else, the *MeasReportAppLayer* is included in *measurementReportAppLayerList.*

Rapporteur’s comment: The addition seems to be related to an abnormal case where the application layer only sends the measConfigAppLayerId and no other information together with the Id. It may not be needed to capture all different failure cases in the specification.

Question 11: Do you have any comment on R2-2208394?

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| --- | --- | --- |
| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Not agree | We are not sure about the scenario where the UE receives measConfigAppLayerId without associated QoE data (i.e., application layer QoE report, session start/stop indication, and RAN visible QoE report). When does this scenario happen? |
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Summary question 11:

TBD

## 2.12 Correction on MeasurementReportAppLayer retransmission

The following CR corrects the behaviour related to reconfigurationWithSync:

[R2-2208479](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208479.zip) Correction on MeasurementReportAppLayer retransmission Google Inc. CR Rel-17 38.331 17.1.0 3426 - F NR\_QoE-Core

Add the bullet “2> if reconfigurationWithSync was included in masterCellGroup:” to specify only the PCell change may cause the application layer measurement report retransmission.

Rapporteur’s comment: The change seems to be relevant.

Question 12: Do you have any comment on R2-2208479?

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| **Company** | **Agree/Not agree** | **Comments** |
| Lenovo | Agree |  |
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Summary question 12:

TBD

# 3 Summary

Based on the discussion in the previous sections the following is proposed:

[Proposal 1 TBD.](#_Toc103256338)

# 4 References

1. [R2-2207425](file:///C:\\Users\\terhentt\\Documents\\Tdocs\\RAN2\\RAN2_119-e\\R2-2207425.zip) Clarification of CAPC for SRB4 Apple CR Rel-17 38.331 17.1.0 3261 - F NR\_QoE-Core
2. [R2-2207426](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207426.zip) Clarification of QoE Reporting with Session Start/Stop Information Apple CR Rel-17 38.331 17.1.0 3262 - F NR\_QoE-Core
3. [R2-2207531](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207531.zip) Corrections to application layer measurement reporting procedure Lenovo draftCR Rel-17 38.331 17.1.0 F NR\_QoE-Core Late
4. [R2-2207722](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207722.zip) Correction CR for QoE measurements Ericsson, Huawei CR Rel-17 38.331 17.1.0 3303 - F NR\_QoE-Core
5. [R2-2207734](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207734.zip) Correction on QoE configuration and reporting Qualcomm Incorporated CR Rel-17 38.331 17.1.0 3305 - F NR\_QoE-Core
6. [R2-2207821](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207821.zip) Correction on TS 38.331 for QoE CATT CR Rel-17 38.331 17.1.0 3318 - F NR\_QoE-Core
7. [R2-2207950](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2207950.zip) Correction to the transmission of appLayerSessionStatus when pause is enabled Huawei, HiSilicon, China Unicom CR Rel-17 38.331 17.1.0 3333 - F NR\_QoE-Core
8. [R2-2208238](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208238.zip) Correction to storage of application layer measurements during Pause Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.1.0 3387 - F NR\_QoE-Core
9. [R2-2208239](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208239.zip) Correction to paused reporting of the application layer measurements Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.1.0 3388 - F NR\_QoE-Core
10. [R2-2208393](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208393.zip) Correction on MeasurementReportAppLayer message per measConfigAppLayerId Samsung draftCR Rel-17 38.331 17.1.0 F NR\_QoE-Core
11. [R2-2208394](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208394.zip) Correction on QoE report only including measConfigAppLayerId Samsung draftCR Rel-17 38.331 17.1.0 F NR\_QoE-Core
12. [R2-2208479](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_119-e\R2-2208479.zip) Correction on MeasurementReportAppLayer retransmission Google Inc. CR Rel-17 38.331 17.1.0 3426 - F NR\_QoE-Core