3GPP TSG-RAN WG2 Meeting #118e Tdoc R2-22xxxxx

Electronical meeting, May 9th – May 20th, 2022

Agenda: 6.14

Source: Ericsson

Title: Summary of [AT118-e][078][QoE] RRC (Ericsson) for 6.14

Document for: Discussion, Decision

# 1 Introduction

In this document the following offline is discussed:

* [AT118-e][078][QoE] RRC (Ericsson)

 Scope: Take into account online progress, address offline FFSes non-treated proposals, and open RILs. Consider CR proposals, Review Rapporteur CR resolutions. Determine agreeable parts. Update CR to reflect agreeable part and agree CR. LS out acc to agreement

 Consider: R2-2205439, R2-2206119, R2-2206130, R2-2205442, R2-2206129, R2-2205441, R2-2204874, R2-2204875, R2-2205443, R2-2205085, R2-2205087, R2-2205088, R2-2205086

 Intended outcome: Report, LS out, Agreed CR (in the end)

 Deadline: CB W2 Wed (and/or later), CR can be finally agreed in a post-meeting disc.

Contact information:

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| Lenovo | Hyung-Nam Choi, hchoi5@lenovo.com |
| Apple | Ping-Heng Wallace kuo, pingheng\_kuo@apple.com |
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# 2 Discussion

This offline discussion addresses issues raised in the referenced contributions, except for issues set to propReject and not flagged, issues already discussed and agreed in online session and editorial corrections which will be merged directly into the correction CR.

[R2-2205439](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_118-e%5CDocs%5CR2-2205439.zip) Correction CR for QoE measurements Ericsson CR Rel-17 38.331 17.0.0 3086 - F NR\_QoE-Core Late

* Baseline for further modifications

[R2-2206119](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_118-e%5CDocs%5CR2-2206119.zip) RIL List v207 for QoE L.M. Ericsson Limited discussion NR\_QoE-Core

* RIL statuses propAgree, propReject are confirmed, except 4 RILs (id’s are lost).

The RILs that were flagged are H909, I009, N014 and S751.

## 2.1 RIL H088

RIL H088 was discussed in online session with the following agreements:

R2-2205442:

* Keep the procedure text for reporting of buffer level values in RRC specification.
* Inform SA4 that the latest values of the buffer level need to be reported to the AS layer.

R2-2206129:

* FFS if we P1: Specify buffer level measurement sample periodicity within RAN visible QoE configuration.
* FFS if we need to add something to allow receiver to know the order of / timing of measurement samples.

[R2-2205442](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205442.zip), [Discussion on RIL issues H088 and H089 related to RAN visible QoE](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205442%20Ericsson%20Discussion%20on%20RIL%20issues%20H088%20and%20H089%20related%20to%20RAN%20visible%20QoE.docx), Ericsson, RAN2#118e, e, May 2022

[R2-2206129](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2206129.zip), [Clarifications for buffer level reporting (RIL: H088)](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2206129%20Huawei%20Clarifications%20for%20buffer%20level%20reporting%20%28RIL%3A%20H088%29.docx), Huawei, HiSilicon, RAN2#118e, e, May 2022

There is some FFSs related to the sample periodicity of the buffer level values and whether the order and/or timing of the values need to be known by the receiver. One option is to specify UE internal sampling periodicity. Another option is to have the same periodicity for the UE internal sampling as the periodicity in RRC signalling. The list can be used in RRC to avoid the UE having to discard values received from the application.

Question 1: What is your view on:

* Specifying the UE internal buffer level periodicity? Specifying the order and/or timing of the samples received from the application by the AS layer (e.g. in AT command)?
* Alternatively, use the same sampling periodicity for UE internal sampling as the RRC reporting periodicity?

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| **Company** | **Comments** |
| Apple | We tend to think it is simpler to just follow the RRC reporting periodicity to reduce specification effort in this late stage. |
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## 2.2 RIL H089

RIL H089 is related to whether the PDU session ID should be mandatory or optional in RRC signalling. RAN2 agreed:

* TBD if *pdu-SessionIdList* should be mandatory in *MeasurementReportAppLayer* and application layer should always provide at least one PDU session ID in the RAN visible application layer measurement report.

[R2-2205442](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205442.zip), [Discussion on RIL issues H088 and H089 related to RAN visible QoE](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205442%20Ericsson%20Discussion%20on%20RIL%20issues%20H088%20and%20H089%20related%20to%20RAN%20visible%20QoE.docx), Ericsson, RAN2#118e, e, May 2022

[R2-2206130](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2206130.zip), [Corrections for RAN visible QoE (RIL: H089, H090, H909)](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2206130%20Huawei%20Corrections%20for%20RAN%20visible%20QoE%20%28RIL%3A%20H089%2C%20H090%2C%20H909%29.docx), Huawei, HiSilicon, RAN2#118e, e, May 2022

Question 2: Do you think *pdu*-*SessionIdList* should be mandatory in the *MeasurementReportAppLayer* message?

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| **Company** | **Yes/No** | **Comments** |
| Lenovo | Tend to say Yes | Referring to the last LS R2-2202139 (RAN2#117-e) we received from RAN3 we got the impression that application layer is always required to send the PDU session ID(s) for each RVQoE report.RAN3 agreement:* *Include PDU session ID in RAN Visible QoE report, FFS on Slice information.*

*…**The PDU session ID information in the first agreement includes the PDU session ID(s) corresponding to the service that is measured.*  |
| Apple | No | We think in some cases the NW can figure out the PDU session ID by itself. For instance, in some simple use cases with only one service type or application that is providing QoE. Hence, the NW may optionally ask the UE to report PDU session ID when it is needed, but this is not necessary in all scenarios. |
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## 2.3 RIL H054

RIL H054 is related to whether the handling of messages exceeding 9 kBytes in case segmentation is NOT enabled needs to be specified.

**[Class]**: 1 **[Status]**: ToDo **[TDoc]**: None **[Proposed Conclusion]**: v31

**[Description]**: The discard of the oversized measurement report is missing.

**[Proposed Change]**:

2> If the encoded RRC message is larger than the maximum supported size of a PDCP SDU specified in TS 38.323 [5]:

 3> if the RRC message segmentation is enabled based on the field rrc-SegAllowed received in appLayerMeasConfig:

 4> initiate the UL message segment transfer procedure as specified in clause 5.7.7;

 3> else:

 4> discard the RRC message.

 2> else:

 3> submit the MeasurementReportAppLayer message to lower layers for transmission upon which the procedure ends

Question 3: Do you think that handling of *MeasurementReportAppLayer* messages exceeding 9 kBytes needs to be specified in RRC?

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| **Company** | **Yes/No** | **Comments** |
| Lenovo | Yes | To our understanding this captures the answer from SA4 in the LS reply R2-2203847 (RAN2#117-e) on RAN2 question about the awareness of maximum QoE report size:*Answer: The application layer is expected to strictly comply with its QoE configuration in the collection and encapsulation of measurements into QoE reports to be sent to the AS layer, i.e., by collecting metrics, encapsulating them into an XML file, compressing that file into a container to be sent to the AS layer after a fixed time period. SA4 believes that it is difficult for the application layer to adjust the size of its QoE report container, and therefore defers to RAN2 decision on UE handling of QoE reports which exceed the maximum report size (e.g., potentially dropping the report).* |
| Apple | Yes | We agree that the UE AS would just discard the RRC message in this case. |
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## 2.4 RIL H094

RIL H094 is related to whether the IE type for the IEs for *pauseReporting*, *transmissionOfSessionStartStop* and *reportPlayOutDelayForMediaStartup* should be BOOLEAN or ENUMERATED {true, false}.

[R2-2205443](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205443.zip), [Discussion on RIL issues H054 and H094](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205443%20Ericsson%20Discussion%20on%20RIL%20issues%20H054%20and%20H094.docx), Ericsson, RAN2#118e, e, May 2022

**[RIL]**: H094 **[Delegate]**: Huawei (Dawid) **[WI]**: QOE **[Class]**: 2 **[Status]**: ToDo **[TDoc]**: None **[Proposed Conclusion]**: v127

**[Description]**: **]**: Since this parameter is mandatory, it has to be sent whenever the QoE configuration is modified. This results in the UE forwarding it to app layer, even though the value has not changed.

**[Proposed Change]**: Make this parameter optional with NEED M.

**[Comments]**: [Ericsson]: Corrected in WI CR, and also the parameters pauseReporting and reportInitialPlayoutDelay.

The types were changed from BOOLEAN to ENUMERATED in order to have the IEs OPTIONAL, so that they do not always have to be signalled and thereby not always forwarded to the application layer.

Question 4: Do you think that the IE types for type for *pauseReporting*, *transmissionOfSessionStartStop* and *reportPlayOutDelayForMediaStartup* should be BOOLEAN or ENUMERATED OPTIONAL?

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| **Company** | **Comments** |
| Lenovo | Firstly, H094 did not suggest to change the type from BOOLEAN to ENUMERATED.Secondly, ENUMERATED {true, false} looks odd. Such IE has never been used before in RRC (36.331, 38.331).Therefore, we think that BOOLEAN should be kept. |
| Apple | We agree these should be optional, and the IE types for these could be changed to ENUMERATED. |
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## 2.5 RIL H909

RIL H909 is related to whether the last sentence of the field description for *ran-VisiblePeriodicity* needs to be updated.

***ran-VisiblePeriodicity***

The field indicates the periodicity of RAN visible reporting. Value ms120 indicates 120 ms, value ms240 indicates 240 ms and so on. If no value is indicated and the UE is configured with RAN visible reporting, the same periodicity as indicated in the *measConfigAppLayerContainer* is used.

[R2-2206130](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2206130.zip), [Corrections for RAN visible QoE (RIL: H089, H090, H909)](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2206130%20Huawei%20Corrections%20for%20RAN%20visible%20QoE%20%28RIL%3A%20H089%2C%20H090%2C%20H909%29.docx), Huawei, HiSilicon, RAN2#118e, e, May 2022

[R2-2204848](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2204848.zip), [Discussion on NR QoE issues](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2204848%20Lenovo%20Discussion%20on%20NR%20QoE%20issues.docx), Lenovo, RAN2#118e, e, May 2022

The issue was discussed in the online session with the following agreements:

* FFS if RAN2 to confirm that it is left to UE implementation how to send QoE and RVQoE reports to the gNB.
* FFS if RAN2 to agree to replace the RAN3 requirement in stage 2 saying “If there is no reporting periodicity defined in the RAN visible QoE configuration, RAN visible QoE reports should be sent together with the legacy QoE reports” by “If there is no reporting periodicity defined in the RAN visible QoE configuration, the reporting periodicity of the associated QoE measurement configuration shall be applied”.

The current text has some issues as the AS layer is not supposed to be required to decode the container. An option could be to remove the text with the understanding that gNB always configures the periodicity if RAN visible QoE is configured.

Question 5: Do you prefer to keep or remove the last sentence of the field description for *ran-VisiblePeriodicity*? If the text is kept, do you think it needs to be updated and to what in such case?

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| **Company** | **Comments** |
| Lenovo | We prefer to keep it as it is to be complete, i.e. what absence of the parameter means.Furthermore, the change proposed by H909 is in contradiction with what has been captured in 21.4, see below. That means the reporting of QoE/RVQoE reports is left to UE implementation.*“UE can send both RAN visible application layer measurement reports and the application layer measurement reports to the gNB in the same MeasurementReportAppLayer message.”* |
| Apple | Agree with Lenovo, whether to send QoE/RVQoE together is up to UE implementation |
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## 2.6 RIL I009/N014

RIL I009/N014 is related to setup/release of *AppLayerMeasConfig* and a release mechanism for *rrc-SegAllowed*. For further information see:

 appLayerMeasConfig-r17 AppLayerMeasConfig-r17 OPTIONAL, -- Need M

**[RIL]**: I009 **[Delegate]**: Intel (Sudeep) **[WI]**: **QOE [Class]**: 2 **[Status]**: ToDo **[TDoc]**: None **[Proposed Conclusion]**: v045

**[Description]**: No mechanism to release.

**[Proposed Change]**: Suggest to use SetupRelease.

 **[RIL]**: N014 **[Delegate]**: Nokia(Tero) **[WI]**: QOE **[Class]**: 2 **[Status]**: ToDo **[TDoc]**: None **[Proposed Conclusion]**:

**[Description]**: See I009 - either need code should be Need R or SetupRelease should be added.

**[Proposed Change]**: Add SetupRelease-wrapper.

Question 6: Do you think that SetupRelease or Need R should be used for *AppLayerMeasConfig*?

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| **Company** | **Comments** |
| Lenovo | We prefer to specify the need code for field rrc-SegAllowed as “Need R” instead of using SetupRelease {AppLayerMeasConfig-r17}. This is much simpler otherwise it requires some changes in the procedure text related to the reception of appLayerMeasConfig. Furthermore, use of SetupRelease type for an IE containing ToAddMod and ToRelease lists is redundant. |
| Apple | We think SetupRelease-wrapper can be used. |
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## 2.7 RIL S751

RIL S751 is related to the indentation of the text “consider itself to be configured to send application layer measurement report for the *measConfigAppLayerId* in accordance with 5.7.16” in chapter 5.3.5.13d, whether the text should be B3 or B4. The indentation was first changed to B4 in the RRC CR, but then it was commented that the current style B3 is correct. For further information see:

[R2-2205085](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205085.zip), [Correction on UE configuration for QoE (RIL#: S751)](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205085%20Samsung%20Correction%20on%20UE%20configuration%20for%20QoE%20%28RIL#: S751).docx), Samsung, RAN2#118e, e, May 2022

Question 7: Do you think the style should be B3 or B4 for the text “consider itself to be configured to send application layer measurement report for the *measConfigAppLayerId* in accordance with 5.7.16” in chapter 5.3.5.13d?

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| **Company** | **Comments** |
| Lenovo | Proposed change looks ok and style should be B4. |
| Apple | We think B3 is correct. The UE would anyway consider itself as configured to report QoE even if the container is not included. |
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# 3 Conclusion

TBD

# 4 References

1. [R2-2205439](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205439.zip), [Correction CR for QoE measurements](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.1%5CR2-2205439%20Ericsson%20Correction%20CR%20for%20QoE%20measurements.docx), Ericsson, RAN2#118e, e, May 2022
2. [R2-2206119](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206119.zip), [RIL List v207 for QoE](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.1%5CR2-2206119%20L.M.%20RIL%20List%20v207%20for%20QoE.docx), L.M. Ericsson Limited, RAN2#118e, e, May 2022

1. [R2-2204848](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2204848.zip), [Discussion on NR QoE issues](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2204848%20Lenovo%20Discussion%20on%20NR%20QoE%20issues.docx), Lenovo, RAN2#118e, e, May 2022

1. [R2-2204874](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2204874.zip), [[N024] Correction to storage of application layer measurements during Pause](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2204874%20Nokia%20%5BN024%5D%20Correction%20to%20storage%20of%20application%20layer%20measurements%20during%20Pause.docx), Nokia, Nokia Shanghai Bell, RAN2#118e, e, May 2022

1. [R2-2204875](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2204875.zip), [[N023] Correction to paused application layer measurements reporting](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2204875%20Nokia%20%5BN023%5D%20Correction%20to%20paused%20application%20layer%20measurements%20reporting.docx), Nokia, Nokia Shanghai Bell, RAN2#118e, e, May 2022

1. [R2-2205085](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205085.zip), [Correction on UE configuration for QoE (RIL#: S751)](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205085%20Samsung%20Correction%20on%20UE%20configuration%20for%20QoE%20%28RIL#: S751).docx), Samsung, RAN2#118e, e, May 2022

1. [R2-2205087](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205087.zip), [Further corrections on QoE configuration](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205087%20Samsung%20Further%20corrections%20on%20QoE%20configuration.docx), Samsung, RAN2#118e, e, May 2022

1. [R2-2205088](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205088.zip), [Further corrections on QoE report](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205088%20Samsung%20Further%20corrections%20on%20QoE%20report.docx), Samsung, RAN2#118e, e, May 2022

1. [R2-2205440](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205440.zip), [Discussion on naming of QoE measurements](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205440%20Ericsson%20Discussion%20on%20naming%20of%20QoE%20measurements.docx), Ericsson, RAN2#118e, e, May 2022

1. [R2-2205441](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205441.zip), [Discussion on RIL issue E138 related to handover](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205441%20Ericsson%20Discussion%20on%20RIL%20issue%20E138%20related%20to%20handover.docx), Ericsson, RAN2#118e, e, May 2022

1. [R2-2205442](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205442.zip), [Discussion on RIL issues H088 and H089 related to RAN visible QoE](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205442%20Ericsson%20Discussion%20on%20RIL%20issues%20H088%20and%20H089%20related%20to%20RAN%20visible%20QoE.docx), Ericsson, RAN2#118e, e, May 2022

1. [R2-2205443](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2205443.zip), [Discussion on RIL issues H054 and H094](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2205443%20Ericsson%20Discussion%20on%20RIL%20issues%20H054%20and%20H094.docx), Ericsson, RAN2#118e, e, May 2022

1. [R2-2206129](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2206129.zip), [Clarifications for buffer level reporting (RIL: H088)](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2206129%20Huawei%20Clarifications%20for%20buffer%20level%20reporting%20%28RIL%3A%20H088%29.docx), Huawei, HiSilicon, RAN2#118e, e, May 2022

1. [R2-2206130](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs//R2-2206130.zip), [Corrections for RAN visible QoE (RIL: H089, H090, H909)](file:///c%3A%5C3GPP_RAN1%5CRAN2_118e_e%5C6.14.3%5CR2-2206130%20Huawei%20Corrections%20for%20RAN%20visible%20QoE%20%28RIL%3A%20H089%2C%20H090%2C%20H909%29.docx), Huawei, HiSilicon, RAN2#118e, e, May 2022