CB: # QoE1_BLCR_RAN2LS_RAN3_119bis-e - Version 0.0.3

RAN3

https://nwm-trial.etsi.org/#/documents/8446

3GPP TSG-RAN WG3 Meeting #119b-e *R3-231874*

Online, 17-26th April, 2023

Agenda Item: 11.1

Source: China Unicom (moderator)

Title: CB: # QoE1_BLCR_RAN2LS - Summary of email discussion

Document for: Discussion

1 Introduction

CB: # QoE1_BLCR_RAN2LS

- Endorse BL CRs if no comments raised

- Check work plan, revise R3-231827 if needed

- Check the progress in R3-231110, identify possible impact on RAN3, reply LS?

(moderator - CU)

[NWM] Summary of offline disc R3-231874

2 For the Chairman's Notes

Endorse BL CR 38.401

Endorse BL CR 38.473

For 2nd round discussion:

Revise the BLCR 38.300 based on TS38.300 V17.4.0, a new Tdoc number is needed.

The work plan noted.

Check R3-231110, LS for inter-RAT from RAN2:

WA: For HO from LTE/5GC to NR, there is no impacts to RAN3.

https://nwm-trial.etsi.org/#/documents/8446

To be discussed in next meeting:

For HO from NR to LTE/5GC:

1. FFS Whether source NR node knows which QoE measurement can be supported by the target LTE node?

2. FFS Whether all the s-based and m-based QoE measurements should be transmit to the target LTE outside the Source NG-RAN Node to Target NG-RAN Node Transparent Container?

3. FFS Whether an indicator from OAM is needed to indicate which QoE measurement should be kept during inter-RAT handover from gNB to ng-eNB?

The LS reply to RAN2 can be sent when RAN3 have a clear conclusion.

3 Discussion

3.1 Discussion on the BLCR

3.1.1 BLCR to 38.401

R3-231130[1] CR to 38.401 on QoE measurement configuration which was endorsed in RAN3#119 meeting.

Feedback Form 1: Please fill in the table if you have any comments on the BLCR to 38.401.

3.1.2 BLCR to 38.473

R3-231131[2] CR to 38.473 on QoE measurement configuration which was endorsed in RAN3#119 meeting.

Feedback Form 2: Please fill in the table if you have any comments on the BLCR to 38.473.

3.1.3 BLCR to 38.300

R3-231132[3] CR to 38.300 on QoE measurement configuration which was endorsed in RAN3#119 meeting.

Feedback Form 3: Please fill in the table if you have any comments on the BLCR to 38.300.

1 – Ericsson LM

The BL CR should be based on v17.4.0 of TS 38.300, now it is based on the v17.3.0.

3.2 Discussion on the work plan

The work plan in R3-231827[4] is proposed according to approved WID on NR QoE [5].

Feedback Form 4: Please fill in the table in case you have any general comments on the work plan.

3.3 for QoE mobility during intra-5GC inter-RAT handover

During RAN2 Meeting #121, there is a LS[6] send to RAN3:

Table 1: LS from RAN2

RAN2 discussed the objective and made the following agreements: • **1: RAN2 understanding is that for HO between LTE/5GC and NR, QoE continuity is done in AS layer (rather than APP layer), that means the QoE measurement continuity in application layer may not be guaranteed.** • **2: Agree on the principles of Option 3 and Option 4:** **- Option 3: For HO from NR to LTE/5GC, the UE can keep and continue measurements for only one configuration for a service type supported in LTE** **- Option 4: For HO from LTE/5GC to NR, the UE can keep and continue measurements for the ongoing configuration for a service type supported in NR** 3: Option 3 and Option 4 can be worked on in this WI only if there are no impacts to LTE specifications.

Feedback Form 5: Q1: For HO from NR to LTE/5GC, only one QoE configuration can be keep, which node (source or target) to decide the QoE configuration to keep?

1 – CATT The target node decide which service type QoE should be kept based on its supporting. But for multiple QoE reference for the same service type the source should decide which one is kept
2 – Samsung R&D Institute UK If we do not want to have LTE spec impact, then in such case the source node (hosting NR cell) to decide is the only choice.

3 – Ericsson LM

The LS refers to LTE specifications - this is misleading - they should have refered to either NG-RAN or E-UTRA. As of now, it is unclear whether RAN2 considers TS 38.423 to be the NR spec only or both an LTE and NR spec. Anyway, **the target should decide which configuration to keep**, even if there are multiple configurations for the same service type.

4 – HUAWEI TECHNOLOGIES Co. Ltd.

It should be target to decide. The source NR node does not know whether the target LTE node supports certain QoE measurement. In addition, when the source NR node only configures the management based QoE measurements for UE, the source NR node does not know which management based QoE measurement has been received by the target LTE node from OAM. (The rule for m-based QoE is, a node can only configure the QoE configuration when it receives it from OAM)

5 – China Unicom

1. In the latest WID, the impacted existing TS/TR had been modified to has no impact with 36.*** specification, so TS38.423 can be modified even it is related to gNB and NG-eNB.

2. There are some issues for which node to decide the QoE configuration to keep:

(a) If source node decides which QoE configuration to keep: source NR node does not know whether the target LTE node supports certain QoE measurement.

(b) If target node decides which QoE configuration to keep: in the RRC container(HandoverPreparationInformation) which is defined in TS36.331, only one QoE configuration can be included in the message if we assume to have no impacts with 36.** specification, so which QoE configuration should be transfered to target NG-eNB(inside the RRC container) should be discussed. Our proposal is:

Proposal 1: For HO from NR to LTE/5GC, only one QoE configuration can be keep, soruce gNB should transmit all signaling-based QoE configuration to target NG-eNB, and include a recommended QoE configuration in RRC container(HandoverPreparationInformation);

Proposal 2: Target NG-eNB should make the final decision about which configuration to keep.

6 – ZTE Corporation

In our view, it should be the source node to decide which configuration to keep. Since the QoE measurements are hold be the source node, it is the source knows better about which configuration is more important and it can make the best decision on which configuration deserves to be kept.

7 – Lenovo Information Technology

In our view, it should be the source node to decide which configuration to keep.

- [Impact on TS 38.413] The OAM system or CN provides an inter-RAT QoE continuity indication of one of QoE measurements which is used to indicate which QoE measurement (i.e., application layer measurement) is continued and kept during inter-RAT handover from gNB to ng-eNB;

- [Impact on TS 38.331] For the QoE measurement, the gNB provides the inter-RAT QoE continuity indication to the UE as received from OAM system or CN.

- [Potential Impact on stage 2] The source gNB generates and provides LTE RRC QoE configuration of the QoE measurement configuration in the source eNB to target ng-eNB transparent container to the target ng-gNB. The LTE RRC QoE configuration is encoded in LTE RRC ASN.1 format.

- [Impact on TS 38.331] When UE receives the LTE QoE configuration in the *MobilityFromNRCommand* message, the UE continues the QoE measurement with provided 'IRAT continuity indication' of the service type and release the other QoE configurations of the service type.

Feedback Form 6: Q2: Whether NGAP/XnAP handover procedures need to be enhanced for the continuity of NR to LTE/5GC handover? Whether there is any impacts to LTE specifications for RAN3?

1 – CATT

maybe needed based on the last question answer

2 – Samsung R&D Institute UK

If the source node (hosting NR cell) selects the QMC to be kept, and send the QoE configuration in LTE RRC encoding, then there seems to be little LTE spec impact for RAN3.

3 – Ericsson LM

Again, we need to ask RAN2 what is an LTE spec? Is TS 38.423 an LTE spec as well?

4 – HUAWEI TECHNOLOGIES Co. Ltd.

This depends on the answer to the previous question. In our view, one possible impact to XnAP is the source NR node should send all the signalling based QoE measurements configuration container to target LTE node and the target node send all these signalling based QoE measurements to new target NR node if UE moves back to NR node.

5 – China Unicom

According to the LS from RAN2, we should consider about the solution which will have no impacts with 36** specifications.

The impacts for XnAP and NGAP:

1. The area scope should be extend to support the NG-eNB;
2. The source NR node should send all the signalling based QoE measurements configuration container to target LTE node which can be used when UE moves back to NR node.

6 – ZTE Corporation

Since we are discussing the handover under 5GC, no matter the radio access technology is NR or LTE, from the network side, both nodes are NG-RAN nodes. LTE specs in RAN3 would not be impacted. Maybe there would be some impacts on NG or Xn to allow the configuration continuity from NR to LTE, as China Unicom mentioned. Details can be further checked.

7 – Lenovo Information Technology

To support QoE measurement continuity for HO from NR to LTE/5GC without LTE spec impact:

- [Impact on TS 38.413] The OAM system or CN provides an inter-RAT QoE continuity indication of one of QoE measurements which is used to indicate which QoE measurement (i.e., application layer measurement) is continued and kept during inter-RAT handover from gNB to ng-eNB;

- [Impact on TS 38.331] For the QoE measurement, the gNB provides the inter-RAT QoE continuity indication to the UE as received from OAM system or CN.

- [Potential Impact on stage 2] The source gNB generates and provides LTE RRC QoE configuration of the QoE measurement configuration in the source eNB to target ng-eNB transparent container to the target ng-gNB. The LTE RRC QoE configuration is encoded in LTE RRC ASN.1 format.

- [Impact on TS 38.331] When UE receives the LTE QoE configuration in the *MobilityFromNRCommand* message, the UE continues the QoE measurement with provided 'IRAT continuity indication' of the service type and release the other QoE configurations of the service type.

Feedback Form 7: Q3: Whether NGAP/XnAP handover procedures need to be enhanced for the continuity of LTE/5GC to NR handover? Whether there is any impacts to LTE specifications for RAN3?

1 – CATT

not needed, no LTE spec impact forseen

2 – Samsung R&D Institute UK

No LTE spec impact is foreseen.

3 – Ericsson LM

No impact, it seems.

4 – HUAWEI TECHNOLOGIES Co. Ltd.

We don't see the need for enhancement for now, can be further checked with more progress

5 – China Unicom

No impact

6 – ZTE Corporation

No LTE impact.

7 – Lenovo Information Technology

yes, the RRC ID needs to be allocated for an on-going QoE measurement:

- [Already supported] The source ng-NB provides QoE Configurations to the target gNB, e.g., provides the UE Application Layer Measurement Information IE of the *QMC Configuration Information* IE in XnAP

Handover Request message. The source ng-eNB also provides an indication that whether the QoE measurement is already configured to UE in LTE.

- [Impact on TS 38.331] The gNB allocates an measConfigAppLayerID to the on-going QoE measurement and sends an on-going QoE measurement association information in handover command, to indicate that UE associates the on-going QoE measurement.

Feedback Form 8: Q4: Based on the discussion above, whether a LS reply to RAN2 needed?

1 – CATT LS needed. maybe next meeting. but we should have clear agreeements
2 – Samsung R&D Institute UK After we achieve consensus on inter-RAT HO related issues, then a LS reply to RAN2 would help.
3 – Ericsson LM Depends on what we conclude.
4 – HUAWEI TECHNOLOGIES Co. Ltd. Depends on our discussion
5 – China Unicom Depends on RAN3's conclusion, maybe next meeting.
6 – ZTE Corporation The LS can be sent when we have a clear view in RAN3, probably next meeting.
7 – Lenovo Information Technology Depends on our discussion

3.4 Further aspects

Feedback Form 9: Please add any further aspects that are in scope and were not included in the above:

4 Conclusion, Recommendations [if needed]

If needed

5 References

[1] R3-231130 (BLCR) Enhancement on NR QoE, Samsung

[2] R3-231131 (BLCR) Enhancement on NR QoE, ZTE Corporation

[3] R3-231132 (BLCR to 38.300) for QoE Enh, China Unicom

[4] R3-231827 Update Workplan for Rel-18 NR QoE Enhancement, China Unicom

[5] RP-223488 WID update for Enhancement on NR QoE, China Unicom

[6] R3-231110 LS on Continuity of QoE measurements during intra-5GC inter-RAT HO, RAN2, Huawei