**3GPP TSG RAN2 Meeting #116bis-e *DRAFT\_*R2-2201862**

**Online, 17 – 25 January, 2022**

**Title:** Further reply on QoE report handling at QoE pause

**Response to:** R2-2109385 / S4-211290

**Release:** Rel-17

**Work Item:** NR\_QoE-Core

**Source:** RAN2

**To:** SA4

**Cc:** SA3, SA5, RAN3

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**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**1. Overall Description:**

RAN2 thanks SA4 for their LS in S4-211290 and for the replies to RAN2 questions contained therein.

RAN2 discussed the additional questions posed by SA4 and would like to provide the following replies:

* **SA4 question 1:** “What is the expected typical duration of a temporary stop – e.g., in the order of minutes or perhaps much longer, say hours? As per-session QoE reports are typically sent relatively seldom (at the end of each session or say every few minutes for longer sessions), we would expect that a temporary stop lasting about half an hour should not require additional AS layer storage beyond the supported buffer size limitation, e.g., 64 kB as indicated for Option 2.”

**RAN2 reply to Q1:** RAN2 would like to indicate the duration of the overload situation may vary depending on multiple factors such as the cause of overload, area and time where it occurs, cell size, UE density, network actions etc. RAN2 could not get consensus on the expected typical duration of a temporary stop.

* **SA4 question 2:** “In case a temporary stop can last for a very long time (e.g., hours), are there any mechanisms already defined or being considered at the RAN side to ensure that subsequent resumption of delivery of potentially a large volume of buffered QoE reports, upon recovery from RAN overload, will not trigger RAN overload recurrence?”

**RAN2 reply to Q2:** There are already several mechanisms that can be used to prevent triggering RAN overload recurrence due to QoE resume, e.g.:

* the network may move some of the UEs to non-overloaded cells/frequencies or utilize Unified Access Control
* in some cases, the network may decide to release some QoE configurations to avoid/address overload
* QoE reports will be provided over the radio bearer with a lower priority (i.e. SRB4)
* QoE resume can be performed gradually, i.e. the network may indicate resume for different UEs or QoE configurations at different time
* **SA4 question 3:** “Will pausing of QoE reporting during RAN overload effectively help the RAN, given that the average QoE load per application is <100 bits/sec?”

**RAN2 reply to Q3:** RAN2 would like to indicate there can be multiple applications running at the UE and generating QoE reports simultaneously, so the load generated by QoE may be larger than what SA4 indicated. It should also be noted that it was decided by RAN plenary that the work on pause/resume for QoE should continue in Rel-17.

Furthermore, RAN2 would like to thank for all the feedback received from SA3, SA4 and SA5 on this issue and would like to inform that RAN2 made the following agreements with respect to QoE pause/resume mechanism:

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| --- |
| * AS layer is responsible for storing QoE reports when the UE receives QoE pause indication at RAN overload (overrides earlier decisions)
* There is no need for interaction between AS and Application for Pause Resume (overrides earlier decisions)
* The minimal memory size of QoE paused measurements report is 64KB
* At RAN overload scenarios, when the memory reserved for the QoE paused measurements becomes full, the UE is allowed to discard extra QoE paused measurements report. The action of how UE AS layer discards extra QoE paused measurements report is based on UE implementation.
* When the UE receives QoE resume indication after RAN overload, AS layer should send the stored QoE paused measurements report to the RAN.
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Based on these agreements, RAN2 has currently not identified any impact of QoE pause/resume mechanism on other WGs.

**2. Actions:**

**To SA3, SA4, SA5, RAN3 group.**

**ACTION:** RAN2 respectfully asks SA3, SA4, SA5, RAN3 to take the above information into account.

**3. Dates of next TSG-RAN WG2 meetings:**

RAN2#117-e 21 February – 3 March 2022 Online

RAN2#118-e 16 May – 27 May 2022 Online