3GPP TSG SA WG4 Meeting #122 TDoc S4-230164

Athens, Greece, February 20-24, 2023

**Title: Draft Reply LS on QoE measurements in RRC IDLE/INACTIVE states**

**Response to: R2-2213054 | S4-230xxx**

**Release: Rel-18**

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

**Source:** **3GPP SA4**

**To:** **3GPP RAN2**

**Cc: 3GPP RAN3, 3GPP SA5**

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**Attachments:** None

# 1 Overall description

SA4 thanks RAN2 for its liaison on the QoE measurements in RRC IDLE/INACTIVE states.

Regarding the questions 1-4, SA4 would like to provide following replies below:

***Question 1:*** *Can information about the applicable area scope of a QoE configuration be provided to the application layer in the UE as part of the QoE configuration container? If it can, how is this information defined at the application layer, e.g. does it indicate applicable tracking area, applicable cells etc.?*

**SA4 reply**: For QMC of 3GP-DASH Streaming, VR Streaming and MTSI, the area scope of a QoE configuration can be provided within the QoE configuration container and it can be indicated via the *Location Filter*, which can be a list of cell IDs and/or a geographic area expressed with one or more instances of *polygonList* and/or *circularAreaList*. Tracking area is not supported.

***Question 2:*** *Can the application layer know the UE location on the proper level (e.g. tracking area, cell) and use this information to decide whether to start QoE measurements when triggering conditions are met?*

**SA4 reply**: The application layer can know the UE’s location on a proper level (e.g. cell ID, geographical coordinates). The QoE configuration is then evaluated by the client at the start of a QoE measurement and reporting session (“QoE session”) associated with a streaming session. This includes evaluation of any filtering criteria such as by geographical area or cell ID. When the trigger conditions are met, e.g. the UE is in the target area at the start of the session, the QoE session is started for QoE measurement and reporting.

However, due to the relatively bulky XML format of the QoE configuration, delegating the area filtering to the application layer might result in very large QoE configuration messages if the listed area (e.g. cell ID:s) is large. It might be more efficient to instead handle this filtering at the AS layer of the UE, using ASN.1 syntax. This also has the benefit of making the QoE area filtering generic for all type of current and future services. For such AS layer filtering, SA4 assume that the area scope filtering will not be based on GNSS locations and polyon/circular shapes, but rather on radio network parameters like Cell Id or Tracking Area.

Further questions from RAN2 were related to any buffering of QoE reports generated in RRC IDLE/INACTIVE state, based on the assumption that the UE should not trigger an RCC connection setup only to send QoE reports.

***Question 3:*** *Is there a time after which the QoE reports collected by the UE are no longer useful for the OAM?*

**SA4 reply**: In SA4’s understanding, the QoE reports indicate the user experience for the media service within a specific time period. It's always useful for further evaluations and network optimizations. However, it depends on the views from SA5 since the OAM related issue is under the scope of SA5.

***Question 4:*** *In case of limited storage space for QoE reports at the UE, is there any preference from the OAM side on which QoE reports should be reported and which should be discarded, e.g. is there a principle that newer or older reports are more useful for the network?*

**SA4 reply**: In SA4’s understanding, the QoE reports have to be discarded due to the limited storage space. The old or latest QoE reports may be discarded accordingly. It depends on the views from SA5 since the OAM related issue is fully under the scope of SA5.

Regarding the general issue of buffering of QoE reports in MBS: While QoE handling for 5G MBS is still not specified, SA4 notes that for the existing non-5G (e)MBMS service (as specified in TS 26.346), the application will send QoE reports also during the session (and possibly resuming to RRC\_CONNECTED state) if periodic reporting interval has been specified in the QoE configuration (see TS 26.346, clause 8.3.2.1). If no periodic reporting interval has been specified, only a single QoE report covering the complete session is sent after the end of the session.

# 2 Actions

**To RAN2**

**ACTION:** SA4 kindly asks RAN2 to take the above information into account and provide feedback if any.

# 3 Dates of next TSG SA WG 4 meetings

SA4#123-e 17th–21st April 2023 Electronic

SA4#124 22nd-26th May 2023 Berlin, Germany