3GPP TSG RAN Meeting #91e
Electronic Meeting, March 16 - 26, 2021
Agenda : 9.1.3

RP-210461

Motivation for new WI on NR QoE management and optimizations for diverse services

China Unicom

Background

- QoE Measurement Collection mechanism has been specified for 3G and 4G.
- 5G is designed for providing various types of new services, therefore, operators have strong demand to continuously upgrade 5G network to provide sufficient good user service experiences for the corresponding services.
- With the new emerging 5G services, 5G QoE management is aiming to specify the mechanism to collect the experience parameters for the eMBB service and the URLLC service, including streaming, MTSI, MBMS, VR, XR, etc.
- In the Rel-17 study item phase, the generic mechanisms for activation, deactivation, configuration, mobility support and reporting of QoE measurement were studied. Besides, some enhanced features were also discussed, including RAN-visible QoE, per-slice QoE measurement, alignment of MDT and QoE measurements, etc.
- The potential NR QoE solutions and procedures are captured in TR 38.890 v0.3.0.

Use cases and benefits of QoE management

- QoE management function enables collection of application layer measurements from the UE.
- The CN can initiates the activation of the **signalling-based** QoE measurement, which enable collection of application layer measurements for **a specific UE**.
- The OAM can initiates the activation of the **management-based QoE** measurement, which enable collection of application layer measurements for UEs within **a specific area**.
- Based on the QoE report, the quality of experience for diverse service types can be evaluated and optimized. For instance, NG-RAN node can optimize the resource allocation based on the analysis results.

Recommended way forward in SI

Features recommended by RAN3 to be specified in Rel-17 normative phase	Features recommended by RAN3 to be deprioritized in Rel-17 normative phase
➢ Signalling-based activation/deactivation ➢ Management-based activation/deactivation ➢ QoE measurement handling at RAN overload ➢ Multiple QMC support ➢ QoE continuity for intra-RAT mobility ➢ QoE measurement in RRC_INACTIVE ➢ RAN visible QoE ➢ Per-slice QoE measurement ➢ Alignment of MDT and QoE measurements	➢ QoE continuity for Inter-system mobility ➢ QoE measurement in RRC_IDLE ➢ QoE continuity for Inter-RAT mobility ➢ QoE support for MR-DC

From TR 38.890 v0.3.0

Proposed WI objectives

- Specify the support for QoE measurement collection in NR standalone mode. [RAN2, RAN3]
  - Specify activation and deactivation procedures for both signalling-based and management-based QoE measurement, taking LTE QoE solutions as baseline, as defined in the TR 38.890.
  - Specify configuration and reporting for multiple simultaneous QoE measurements at a UE.
  - Specify QoE measurement handling at RAN overload, including pause and resume of QoE measurement reporting.
  - Specify QoE measurement handling in RRC_INACTIVE.
  - Specify the use of RRC segmentation for QoE reports.
- Specify the support for QoE measurement collection and reporting continuity in intra-system intra-RAT mobility scenario. [RAN3, RAN2]
- With respect to the support for RAN-visible QoE: [RAN3, RAN2]
  - Specify RAN-visible QoE parameters if confirmed.
  - Specify configuration and reporting for RAN-visible QoE parameters.
  - Specify necessary information exchange over interfaces, e.g. F1.
- Specify the support for per-slice QoE measurement. [RAN3, RAN2]
- Specify the support for alignment of radio-related measurement (i.e. MDT) and QoE measurement. [RAN2, RAN3]
  - Specify the mechanism to support the alignment of MDT measurement and QoE measurement.
  - Specify the support for enabling correlation of MDT report and QoE report.