**3GPP TSG-RAN WG3 Meeting #111-e *R3-211236 WAS R3-211221***

**E-meeting, 25 Jan – 5 Feb 2021**

**Title:** TP to 38.890 on open issues of QoE configuration and reporting

**Source:** Huawei

**Agenda item:** 15.2

**Document Type:** other

# 1. Introduction

This TP tries to reflect the following agreements:

* Agree to support XR as new service type for QoE measurement
* Agree to supports for multiple QoE measurements for the same UE, detailed mechanisms on whether and how to deactivate one of them are up to RAN2
* In case of RAN overload, RAN could take some measures, detailed mechanisms are up to RAN2
* General rule for QoE measurement and its corresponding radio assisted measurement
	+ The two might be configured together and reported together
	+ The measurement task/session of the two should be triggered at the same time
	+ The measurement results of the two should be time aligned, e.g. based on time-stamp to correlate with each other
	+ Any intervention behaviour if allowed, e.g. release, stop or suspend, should apply to both of the two, if both were configured.

# Annex – TP

# 5 5G services, QoE metrics and UE KPI information

NR QoE supports the Application Layer Measurement Collection functionality.

This functionality enables the collection of application layer measurements from the UE. The supported service types include:

- Streaming services [3];

- MTSI services [4];

- VR [5];

- MBMS [6];

- XR

In addition to the QoE metrics, the radio related measurements and information to assist the NR QoE management functionality are considered. Whether the radio related measurements and information could be collected either from the RAN node or from the UE or both.

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### 6.2.1 Management-based activation procedures

The procedure is used for activating the QoE measurement configured and triggered by OAM shown in figure 6.2.1-1.

The OAM sends the QoE measurement configuration to NG-RAN node. NG-RAN finds multiple qualified UEs that meet the criteria (e.g. area scope, application layer capability, service type, etc.) or a single specific UE. NG-RAN node sends the QoE measurement configuration to the AS layer of the specific UE or each qualified UE. UE AS layer sends the QoE measurement configuration to UE application layer. When a session starts, the application layer in UE checks the criteria (e.g. cell list, service type, etc.), if the criteria are met, start QoE measurement and reporting.

Multiple QoE measurements could be configured for a UE at the same time.

UE application layer sends the QoE report to the UE AS layer. UE AS layer sends the QoE report to NG-RAN node. Then the NG-RAN node transmits the QoE report to the final destination configured (e.g. the MCE).

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## 6.5 QoE measurement handling at RAN overload

In case of RAN overload in standalone connectivity, RAN can stop new QoE measurement configurations, release existing QoE measurement configurations and pause QoE measurement reporting. In case of RAN overload in dual connectivity, the details have not been studied yet.

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## 6.8 Radio-related measurements and information for QoE

In order for the network to further evaluate and improve the QoE, RAN could also trigger radio-related measurements towards a certain UE, based on the QoE measurement configuration received from the OAM. For triggering the measurements an existing mechanism, e.g. MDT procedure can be used.

The radio-related QoE measurements are reported for all types of supported services, and they include MDT-like measurements and, potentially, additional measurements related to the radio interface. If new radio-related measurements, with respect to what is currently specified in MDT, are required for NR QoE management, these additional radio-related QoE measurements will be specified as a part of MDT measurements. Since the application-related QoE measurements are only collected when the application session is ongoing, the same requirement holds for radio-related QoE measurements, as well, i.e. they might be configured and reported together, and the measurement task/session should be started at the same time, the measurement results should be time aligned, e.g. based on time stamp to correlate. In addition, any intervention behaviour if allowed as mentioned in other sections, e.g. release, stop or suspend, should apply to both of the two, if both were configured. Besides radio-related measurement results, radio-related information may also be reported. Radio-related information may be reported even when radio-related measurements are not triggered over the radio.

Both of the radio-related measurement results and radio-related information, if reported, should be aligned and correlated with the QoE report, using e.g. trace ID.