**3GPP TSG-SA5 Meeting #144-e S5-22xxxx**

**e-meeting, 27 June – 01 July 2022**

**Source: Huawei**

**Title: DP on difference of KPI, KQI and QoE**

**Document for: Discussion**

**Agenda Item: 6.5.20**

# 1 Decision/action requested

*This document provide the discussion of difference of KPI, KQI and QoE.*

# 2 References

[1] 3GPP TS 28.863: "Study on Key Quality Indicators (KQIs) for 5G service experience"

[2] 3GPP TS 28.554: "5G end to end Key Performance Indicators (KPI)"

[3] ITU-T P.10/G.100 (11/2017): Vocabulary for performance and quality of service.

[4] ETSI TS 102 250-1 V2.2.1 (2011-04): "Speech and multimedia Transmission Quality (STQ); QoS aspects for popular services in mobile networks; Part 1: Assessment of Quality of Service".

# 3 Discussion

3.1 Difference between KPI and KQI

KPI (Key Performance Indicator): Indicators that reflect the network performance. KPIs are collected from the network or are calculated from the network measurements (e.g. PM). KPIs are defined in TS28.554 [2].

KQIs (Key Quality Indicators): Indicators that reflect the service quality. KQIs are collected or calculated according to service aspect.

The difference between KPI and KQI is that KPI is from network aspect and KQI is from service aspect. The measurements or related attributes for KPI are generic for all of the data at the interface (e.g. N3 interface), while the measurements or statistics for KQI are for a certain service. The service characteristics must be recognized first for KQI.

3.2 Difference between KQI and QoE

In ITU-T P.10/G.100 the definition of QoE is given:

*Quality of experience (QoE)*

*The degree of delight or annoyance of the user of an application or service.*

In ETSI TS 102 250-1 the definition of QoE is given:

*Quality of Experience (QoE): The inclusion of the user himself to the overall quality in telecommunications extends the rather objective Quality of Service to the highly subjective Quality of Experience. The QoE differs from user to user since it is influenced by personal experiences and expectations of the individual user.*

*QoE is defined in Recommendation ITU-T P.10/G.100 [i.2] as the degree of delight or annoyance of the user of an application or service. It includes the complete end-to-end system effects (client, terminal, network, services infrastructure, etc.) and may be influenced by user expectations and context. Hence the QoE is measured subjectively by the end-user and may differ from one user to the other. However, it is often estimated using objective measurements.*

From the above definition of QoE we see that QoE is a overall quality experience for a user of a service.

The difference between QoE and KQI is that QoE is the overall quality experience, while KQIs are the key indicators to reflect the service quality.

There are also QoE metrics in SA4. QoE metrics are the metrics related to QoE in SA4 aspect and these metrics collected by the client will be reported to the OAM or QoE server in the QoE metrics reporting. SA4 focuses on the definition of QoE metrics to be collected by the client. How to make use of these QoE metrics is up to OAM and QoE server. The difference is that the QoE metrics are collected from the client side for all of the aspects of the media e.g. the buffer, play list, MPD information, while KQIs are the key indicators and some of them are chosen or calculated from QoE matrics to reflect the quality of the service from the management aspect. E.g. from the management aspect, the consumer could express the expectation for a service through KQI to the producer, or KQIs may be added into the Serviceprofile as SLA requirement. KQIs may be collected from application layer, calculated from KPI, or may be calculated based on some of the collected QoE metrics. QoE metrics are one source of KQI.

# 4 Detailed proposal

It is proposed that the difference of KPI, KQI and QoE will be added as one sub-section in the issue of the definition of KQI.