**3GPP TSG-SA5 Meeting #145e S5-225419rev5**

**e-meeting 15 - 24 August 2022**

**Source: China Unicom, CATT**

**Title: Add Issue on Support for URLLC Performance management on reliability in RAN**

**Document for: Approval**

**Agenda Item: 6.8.3 Study on Management Aspects of URLLC**

# 1 Decision/action requested

***The group is asked to approve the proposal.***

# 2 References

[1] 3GPP TR 28.832 v0.2.0: “Management Aspects of URLLC”

[2] 3GPP TS 22.104: “Service requirements for cyber-physical control applications in vertical domains; Stage 1”

[3] 3GPP TS 22.261: “Service requirements for the 5G system; Stage 1”

[4] 3GPP TS 28.552: “Management and orchestration; 5G performance measurements”

[5] 3GPP TS 28.554: “Management and orchestration; 5G end to end Key Performance Indicators (KPI)”

# 3 Rationale

It was approved in SP-220146 to study the management aspects of URLLC and one of the objectives is to investigate performance management related to URLLC. In order to achieve the objective mentioned above, issue on performance management related to URLLC is proposed in this contribution.

# 4 Detailed proposal

This contribution proposes to make the following changes in [1].

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| **1st Change** |

# 5 Key Issues Investigation and Potential Solutions

## 5.X Issue #X: Support for URLLC Performance management on reliability in RAN

### 5.X.1 Description

As a new service deployed in 5G, URLLC is significantly different from traditional eMBB service in terms of service requirement. In order to guarantee the performance of URLLC, the performance of 5G network which provides URLLC service needs to meet certain target for reliability accordingly.

Annex F in TS 22.104[2] depicts relation of reliability and communication service availability. It has the following description, “Communication service availability addresses the availability of a communication service. This definition follows the vertical standard IEC 61907 [7]. On the other hand, reliability is a 3GPP term and addresses the availability of a communication network.”

The issuemainly focuses on the 5G RAN network that provides URLLC service. In particular, the measurements on communication network performance need to be investigated.

#### 5.X.1.1 Support for network performance on reliability in RAN

Reliability is a typical network performance measurement used to evaluate whether the 5G network which provides URLLC services meets the corresponding performance requirements. As for 5G network, it is the radio network including air interface that mainly restricts the reliability and latency performance. Therefore, more attentions should be paid to the reliability and latency performance measurement for radio network from the perspective management. However, the reliability performance measurements for radio network are not totally enough.

The definition of reliability is specified in TS 22.261[3]:

* **reliability**: in the context of network layer packet transmissions, percentage value of the packets successfully delivered to a given system entity within the time constraint required by the targeted service out of all the packets transmitted.

According to the above definition, when trying to calculate the reliability of a network, time constraint (a required maximum time) needs to be considered. Neither PER defined in TS 28.552[4] nor reliability KPIs defined in TS 28.554[5] seem to totally match the definition of URLLC reliability in RAN.

URLLC performance management on reliability and latency should be supported by 5G management system and the measurement method should be studied.

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| **End of changes** |