**3GPP TSG-SA5 Meeting #143-e *S5-223467***

**e-meeting, 9- 17May 2022**

**Source: Huawei**

**Title: pCR 28.865 Add issue service assurance for video monitoring**

**Document for: Approval**

**Agenda Item: 6.5.21**

# 1 Decision/action requested

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

# 2 References

[1]  [SP-211442](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3693): "New SID on deterministic communication service assurance"

[2] S5-222745: "draft TR 28.865 Study on deterministic communication service assurance"; v0.1.0

# 3 Rationale

In TS 22.104, some UCs are provided, e.g. periodic communication for video-operated remote control, real-time streaming data transmission (video data) from a mobile robot to the guidance control system.

For video operated remote control services, in which video backhaul and remote control are performed together, video backhaul is a large uplink URLLC service. Video backhaul features large uplink data packets and high bandwidth requirements, as well as the stability of uplink bandwidth. Latency stability of the frame arrival time is also important. This documents provides the characteristics and requirements for its service assurance.

It is proposed to add issue service assurance for video monitoring in draft TR 28.865.

# 4 Detailed proposal

This document proposes the following changes in TR 28.865.

|  |
| --- |
| **1st Change** |

# 5 Issues and potential solutions

*Editor's note: this clause will contain the key issues and potential solutions for deterministic communication service assurance.* *Relation and potential enhancements to eCOSLA will also be studied for the related key issues.*

## 5.Y Issue #2: Service assurance for video monitoring

*Editor's note: this clause will contain the description and potential solutions for the service assurance of video monitoring, e.g. service requirements, related measurements and service performance analysis. Video monitoring is one of the deterministic communication services in cyber-physical control scenarios described in TS 22.104.*

### 5.Y.1 Description

Editor’s note: This clause provides a description of the key issue#2.

In TS 22.104, some UCs are provided, e.g. periodic communication for video-operated remote control, Real-time streaming data transmission (video data) from a mobile robot to the guidance control system. For video operated remote control services, the video backhaul and remote control are performed together.

The use case of video monitoring is a large uplink URLLC service. This type of service features large uplink data packets, high bandwidth, stability of bandwidth and latency. Typical scenarios include remote control of gantry cranes or bridge cranes in smart ports and remote surgery in smart medical care. The service requirements modeling is studied from the frame-level.

The three-layer model of service experience, service quality and network performance for video monitoring is depicted in figure 1.



Figure 1: Service requirement modeling of video monitoring service

Service experience layer: establishes service experience related indicators for video monitoring based on subjective and objective evaluation. Analyzes frame-level features and provides experience-layer KQIs.

Service quality layer: studies the relation between KQIs and QoS indicators. The impacts on the guaranteed bandwidth, frame skipping rate and the assumed packet loss rate on the equivalent frame impairment rate are uniformly distributed. It describes the impacts of indicators such as delay jitter, rate distribution, and burst packet loss ratio on the frame arrival time distribution in different scenarios.

Network capability layer: studies the relation between QoS and air interface bandwidth/delay, radio network performance measurements, and core network bandwidth/delay requirements, core network performance measurements and capacity etc.

The above information is used as the assurance objective of the video backhaul service. The deterministic communication service assurance should support network preparation based on the assurance objective. The DCSA MnS producer collects related data, analyzes service experience and network performance, optimizes and verifies deterministic communication service experience, and achieving the SLA assurance objective through the above steps. The DCSA MnS producer may need to collaborate with other related management services, such as performance management, fault management, eMDAS, eCOSLA, and provisioning.

DCSA-REQ-VideoMon 1: 3GPP management system should provide service assurance capabilities for video monitoring services.

DCSA-REQ-VideoMon 2: 3GPP management system should provide capabilities to enable consumers to monitor the service requirements fulfilment status and the corresponding analysis information for video monitoring service

### 5.Y.2 Potential solutions

#### 5.Y.2.a Potential solution #<a>: <Potential Solution a Title>

##### 5.Y.2.a.1 Introduction

Editor's Note: This clause describes briefly the potential solution for key issue#2 at a high-level.

##### 5.Y.2.a.2 Description

Editor's Note: This clause further details the potential solution and any assumptions made for key issue#2.

### 5.Y.3 Conclusion - Impact on normative work

Editor's Note: This clause provides the conclusion from the aspect of impact on normative work for key issue#2.

|  |
| --- |
| **End of change** |