**3GPP TSG-SA5 Meeting #145-e *S5-225483***

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

**Source: Huawei**

**Title: pCR 28.865 Add solultion of service and network analysis**

**Document for: Approval**

**Agenda Item: 6.9.5.2**

# 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] S5-224421: "TR 28.865 Study on deterministic communication service assurance"; v0.3.0

# 3 Rationale

This tdoc addresses the solution of service and network analysis related to DCSA. In [2], it is described that service and network analysis is within the functional framework of DCSA MnS producer.

*Service and network analysis: The DCSA MnS producer evaluates and identifies service and network issues through monitoring and analysis, demarcates and analyzes the issues, and provides analysis recommendation for further optimization if needed.*

It is proposed to add generic solution of service and network analysis for DCSA.

# 4 Detailed proposal

This document proposes the following changes in TR 28.865.

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| **1st Change** |

# 5 Issues and potential solutions

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

### 5.X.2 Potential solutions

#### 5.X.2.a Potential solution #3: Service and network analysis

##### 5.X.2.a.1 Introduction

Editor's Note: This clause describes briefly the potential solution for issue#1 at a high-level.

Service and network collaborative analysis: to identify service experience and network performance issue through monitoring and analysis, and provide analysis results for network optimization.

Based on the analysis results, network optimization solutions are used to improve the service experience and network performance, e.g. reconfiguration of network resource and/or parameters to reduce the latency and increase data rates.

##### 5.X.2.a.2 Description

Editor's Note: This clause further details the potential solution and any assumptions made for issue#1.

**1. Monitoring**

Based on service and network modeling, service experience and network performance data are collected.

**2. Service and network collaborative analysis**

This step is used to identify network performance issues, e.g., uplink and/or downlink data rates and latency issues in the radio interface. If degradation situation is detected, the management system automatically analyzes the possible causes e.g., coverage, interference, and parameter configurations etc. Service and network modeling are used for poor performance quality analysis. For example, uplink data rate degradation may not be caused by network performance problems, but be caused by insufficient data injection volume on the application side.

**3. Demarcation**

Demarcation analyzes the service interruption/poor experience issues and demarcates which management domains the issues may reside in. It may be associated with KPI exceptions, alarm information etc.

Demarcation involves the following three scenarios:

(1) Generic service issue demarcation: monitors the service quality and detects potential issues.

(2) Demarcation for the concerned deterministic communication services, for example:(2.1) Demarcation for video monitoring service: demarcation based on characteristics of data packets transmission, e.g. latency, jitter, throughput and collision probabilities of I frame of the video monitoring service.

(2.2) Demarcation for PLC control service: demarcation based on periodic interactive data packets.

Based on the issue occurrence time window and data flow direction etc, demarcation and impacts scope are analyzed.

The analysis results may be reported to the MnS consumer for monitoring or further processing.

**4. Network optimization for deterministic communication Services**

The corresponding network are optimized if needed based on the service and network collaborative analysis, e.g. to meet the SLS requirements for determininstic communication services.

The optimization results may be reported to the MnS consumer for monitoring or further processing.

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| **End of change** |