**3GPP TSG-SA5 Meeting #145-e *S5-225482***

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

**Source: Huawei**

**Title: pCR 28.865 Add solultion of network preparation**

**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 network preparation related to DCSA. In [2], it is described that network preparation modelling is within the functional framework of DCSA MnS producer.

*Network preparation: Based on deterministic communication service requirements, the DCSA MnS producer prepares network capabilities to ensure the SLA, and provides the corresponding network deployment solution, e.g. deployment of network slice, RAN functions and CN functions related to URLLC, Industrial IoT, TSN integration with 5GS to support deterministic communication service.*

It is proposed to add generic solution of Network preparation 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 #2: Network capability preparation

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

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

Based on deterministic communication service requirements and the 3-layer model generated by service and network modeling, network capabilities and specifications required for SLA assurance are prepared and verified, and corresponding network deployment solutions are provided. The network capability preparation consists of network performance requirement evaluation and network functions provisioning. Capacity, coverage and reliability planning belongs to the work of network performance requirements evaluation.

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

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

In the deterministic communication service modeling phase, the coverage area and network requirements (rate, delay, and reliability) are provided. Network capability preparation needs to consider network deployment requirements of different locations and areas to minimize network requirements to avoid resource waste. The network capability preparation of deterministic communication services has SLA requirements and strict delay requirements. The objectives and indicators are different from those of non-deterministic services. For example, the performance indicators of video monitoring services focus more on uplink coverage, uplink capacity, uplink rate, and E2E delay. The delay stability of I-frame transmission is high. Convert service requirements into network requirements should be based on service characteristics. For example, provide a network capability preparation solution based on the 3-layer service requirement modeling for some typical deterministic communication services as specified in TS 22.261[2] and TS 22.104 [3].

Using the service modeling, network modeling results, and SLA requirements of deterministic communication services as input information to perform network capability preparation for deterministic communication services, including network performance requirement evaluation and network deployment solution and evaluation etc.

The processes are as follows:

(1) Network capability preparation for the deterministic communication service: consists of preparation of capacity, coverage, reliability and network functions provisioning etc.

Supports network capability preparation for deterministic communication services based on the combination of network performance objectives such as uplink data rate and downlink coverage. Based on factors which may impact the radio conditions such as site location and capacity planning can be performed with consideration of reliability support, e.g. redundant configuration of communication links.

(2) Evaluation for the deterministic communication service

After the network capability preparation, some evaluation activities may carry on. The evaluation may provide the results that meet the SLA requirements. Based on the actual service requirements of the customer, the final network capability preparation solution for the deterministic communication service will be provided.

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| **End of change** |