**3GPP TSG-SA5 Meeting #143-e *S5-223415***

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

**Source: CMCC, Huawei**

**Title: pCR TR 28.830 Add key issue 5GC service failure prediction**

**Document for: Approval**

**Agenda Item: 6.5.7.2**

# 1 Decision/action requested

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

# 2 References

[1]  [SP-220153](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3693): "New SID on Fault Supervision Evolution"

[2] S5-222733: "draft TR 28.830 Fault supervision evolution"; v0.1.0

# 3 Rationale

As a core component of a 5G network, a failure of the 5G core network will affect data services on a large scale. The fault management evolution service should proactively predict data service failure on 5G core networks in advance, automatically demarcate and locate faults on complex networks, and provide corresponding solutions to improve problem handling efficiency, reduce or even avoid service impact, and ensure stable network operation.

It is proposed to add description of key issue 5GC service failure prediction in draft TR 28.830.

# 4 Detailed proposal

This document proposes the following changes in TR 28.830.

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| **1st Change** |

# 5 Key Issues and potential solutions

## 5.X Key Issue #3: 5GC service failure prediction

### 5.X.1 Description

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

A failure of the 5G core network will affect data services on a large scale. The passive O&M operations are not very efficient for service recovery if it only responds after the faults have been reported. It is necessary to demarcate and locate cross-layer faults on the cloud-based core network.

The anomaly event MnS producer in fault supervision evolution should proactively predict 5GC service failure on the 5G core network in advance, demarcate and locate faults, and provide corresponding solutions to improve problem handling efficiency. This reduces the impact on services and ensures stable network operation. KPIs anomaly are predictively analysed to prevent potential failure in advance. This could be implemented based on single indicator trend analysis or multiple indicators correlated analysis. AI/ML technologies can be used for data analysis and proactively identify and prevent potential 5GC service failure. For the predicted service failure, associate alarms with different data sources, demarcate the NFs where the 5GC service failure may occur, and locate the affected object of the service failure prediction. Finally, solutions can be provided and implemented, or the related 5GC failure prediction anomaly event can be reported to the upper-layers.

FSEV X1: The 3GPP management system should provide the capability to report 5GC service failure prediction anomaly event related information.

FSEV X2: The 3GPP management system should provide the capability of querying 5GC service failure prediction anomaly events related information.

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| **End of change** |