**3GPP TSG-SA5 Meeting #142-e *S5-222271rev1***

**e-meeting, 4 - 12 April** **2022**

**Source: Huawei**

**Title: Key Issue on E2E fault management**

**Document for: Approval**

**Agenda Item: 6.5.17**

# 1 Decision/action requested

***Discuss and approve on the proposal.***

# 2 References

[1] TR 28.907 Study on enhancement of management of non-public networks v0.0.0

# 3 Rationale

It is proposed to add a Key Issue on E2E fault management in draft TR 28.907 [1].

# 4 Detailed proposal

This document proposes the following changes in TR 28.907 [1].

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| **1st Change** |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[x] 5G-ACIA: Exposure of 5G Capabilities for Connected Industries and Automation Applications, https://5g-acia.org/whitepapers/exposure-of-5g-capabilities-for-connected-industries-and-automation-applications-2/

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| **2nd Change** |

## 5.X Key Issue #X: E2E fault management

### 5.X.1 Description

In TS 28.557 [x], the deployment scenarios and solutions for management of standalone NPN (SNPN) and public network integrated NPN (PNI-NPN) have been specified. However, fault supervision management which is very important for NPN operators is not specified in detail. Furthermore, in some vertical scenarios, 5G industry terminal, e.g. camera, programmable logic controller (PLC) and Smart Distribution Transformer Terminal and so on, are widely deployed. These large quantity 5G industry terminals which may be provided by multiple vendors are managed by multiple standalone terminal management systems and this increases the complexity and difficulty of NPN management, especially for E2E fault location. For example, if an NPN goes down, it is difficult to locate rapidly where the fault occurred or to determine whether the fault is caused by the industry terminal.

5G-ACIA has described the functional requirements for exposing the capabilities of non-public 5G systems to industrial factory applications in [x]. 3GPP should also provide potential solutions to support the use cases and requirements from 5G-ACIA. The requirements given in section 4.3 of 5G-ACIA white paper in [x] are aspects of network management, as following,

*[R-4.3.1-07] The 5G exposure reference points must allow monitoring of errors and other alarms from physical/logical network components and connections.*

*[R-4.3.1-08] The 5G exposure reference points must provide the monitoring information in such a way that it can be effectively used for error detection, localization, root-cause analysis, and error resolution.*

Therefore, for vertical industry scenarios, 3GPP management system needs to provide fault management capabilities scoping NPN and UEs representing 5G industry terminals. These capabilities need to be integrated with the ones scoping OT domain (non-3GPP domain), to allow for E2E fault location.

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| **End of change** |