**3GPP TSG-SA5 Meeting #144-e *S5-224128***

e-meeting, 27 June-01 July 2022

**Source: China Mobile, Huawei**

**Title: pCR TR 28.910 Add key issue for enhancement of ANL for fault management**

**Document for: approval**

**Agenda Item: 6.7.1.1**

# 1 Decision/action requested

***The group is asked to discuss and approval.***

# 2 References

[1] 3GPP TS 28.100: "Management and orchestration; Levels of autonomous network".

[2] 3GPP draft TR 28.910: “Management and orchestration; Study on enhancement of autonomous network levels v0.2.0”.

# 3 Rationale

This contribution proposes to add key issues for the enhancement of generic autonomous network level for fault management.

The following generic autonomy capability description for management system for level 3 and level 4 is documented in clause 7.3.3 of TS 28.100[1], however, the corresponding MnS requirements for some generic autonomy capability (e.g. Additional MnS requirements to support autonomous network level 4) is missing.

In addition, MDA MnS is missing in the solutions for REQ-ANL-FM-Level\_3-MnS-5 and REQ-ANL-FM-Level\_3-MnS-6 in level 3. So this contribution proposes to add MDA MnS as the solution for the MnS requirements for level 3 defined in clause 7.3.5 of TS 28.100[1].

***/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Extracted from TS 28.100\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/***

### *7.3.3 Generic autonomy capability description for management system*

***Level 3 for Fault Management:*** *The 3GPP management system has the following autonomy capabilities:*

*- Analyse the root cause of the network fault based on specified fault root cause analysis control information.*

*- Analyse and generate the recommended fault recovery mechanism and determine the fault recover actions to be executed based on specified fault recovery mechanism analysis and decision control information.*

*- Predict the potential fault.*

***Level 4 for Fault Management:*** *The 3GPP management system has the following autonomy capabilities:*

*- Generate or update fault management control information according to fault management intent based on specified intent translation control information.*

*- Evaluate fault management intent fulfilment based on specified intent evaluation control information.*

### *7.3.4 Generic MnS requirements*

##### *7.3.4.3 Additional MnS requirements to support autonomous network level 3*

***REQ-ANL-FM-Level\_3-MnS-1*** *The 3GPP management system shall have the capability allowing its authorized consumer to specify the fault root cause analysis control information.*

***REQ-ANL-FM-Level\_3-MnS-2*** *The 3GPP management system shall have the capability allowing its authorized consumer to specify the fault recovery mechanism analysis control information.*

***REQ-ANL-FM-Level\_3-MnS-3*** *The 3GPP management system shall have the capability allowing its authorized consumer to specify the fault recovery mechanism decision control information.*

***REQ-ANL-FM-Level\_3-MnS-4*** *The 3GPP management system shall have the capability allowing its authorized consumer to obtain the root cause of the network fault.*

***REQ-ANL-FM-Level\_3-MnS-5*** *The 3GPP management system shall have the capability allowing its authorized consumer to obtain the recommended fault recovery mechanism.*

***REQ-ANL-FM-Level\_3-MnS-6*** *The 3GPP management system shall have the capability allowing its authorized consumer to obtain the potential fault prediction information.*

##### *7.3.4.4 Additional MnS requirements to support autonomous network level 4*

*The additional MnS requirements for level 4 are not specified in the present document.*

***/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Extracted from TS 28.100\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/***

# 4 Detailed proposal

It proposes to make the following changes to TR 28.910[2].

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| **1st Change** |

## 5.X Key Issue# 5.X: Enhancement of generic autonomous network level for fault management

#### 5.X.1 Description

#### 5.X.1.1 Issue descriptipn

The generic autonomous network level for fault management is defined in Clause 7.3 in TS 28.100 [4], which includes generic workflow, generic classification of autonomous network level, generic autonomy capability description for management system, generic MnS requirements and solutions for generic MnS requirements.

Based on current definition, the generic autonomy capability description for management system for level 4 is documented in clause 7.3.3 in TS 28.100 [4]. However, the corresponding MnS requirements for level 4 are not specified in clause 7.3.4 in TS 28.100 [4].

In addition, the generic autonomy capability description for recommended fault recovery mechanism and potential fault prediction in level 3 is documented in clause 7.3.3 in TS 28.100 [4]. And the MDA MnS specified in TS 28.104[6] delivers the recommended action in the analytics output and capability of MDA assisted failure prediction, however, such MDA MnS is missing in the solutions for MnS requirements for level 3.

#### 5.X.1.1 Potential requirements

Following additional MnS requirements for level 4 need to be specified to support generic autonomy capability description for management system for level 4.

**REQ-ANL-FM-Level\_4-MnS-1** The 3GPP management system shall have the capability allowing its authorized consumer to specify the fault management related intent.

**REQ-ANL-FM-Level\_4-MnS-2** The 3GPP management system shall have the capability allowing its authorized consumer to obtain the fulfilment information of the fault management related intent.

5.X.2 Potential solutions

Following solutions for MnS requirements for level 4 needs to be added in Table 7.3.5-1 of TS 28.100 [4].

**Table 5.X.2-1: Solutions for generic MnS requirements of autonomous network level 4 for fault management**

|  |  |  |
| --- | --- | --- |
| **Level4** | **REQ-ANL-FM-Level\_4-MnS-1** | This can be implemented by using generic provisioning MnS (e.g, createMOI) defined in TS 28.532 [4] to specify the intent related to fault management.  |
| **REQ-ANL-FM-Level\_4-MnS-2** | This can be implemented by using generic provisioning MnS (e.g, getMOIAttribbutes) defined in TS 28.532 [4] to obtain the fulfilment information related to fault management. |

Following solutions for MnS requirements for level 3 needs to be updated in Table 7.3.5-1 of TS 28.100 [4].

**Table 5.X.2-2: Solutions for generic MnS requirements of autonomous network level 3 for fault management**

|  |  |  |
| --- | --- | --- |
| **Level3** | **REQ-ANL-FM-Level\_3-MnS-5** | This can be implemented by MDA MnS (e.g. RecommendedAction) defined in TS 28.104 [6] to obtain the recommended fault recovery mechanism. |
| **REQ-ANL-FM-Level\_3-MnS-6** | This can be implemented by MDA MnS (i.e. MDAAssistedFaultManagement.FailurePrediction) defined in TS 28.104 [6] to obtain the potential fault prediction information. |

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| **End of Changes** |