**3GPP TSG-SA5 Meeting #154 *S5-242042***

Changsha, China, 15 - 19 April 2024

**Source: Huawei**

**Title: Add fault management use case**

**Document for: Approval**

**Agenda Item: 6.19.2**

# 1 Decision/action requested

***For approval.***

# 2 References

[1] 3GPP TR 28.866: “Study on Management Data Analytics (MDA) – Phase 3”.

# 3 Rationale

This contribution proposes to add a use case for fault management.

# 4 Detailed proposal

It is proposed to make the following changes to TR 28.866 [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] 3GPP TS 28.104: "Management and orchestration; Management Data Analytics (MDA)".

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| **2nd change** |

## 5.7 Fault management related analytics and alarm prediction

### 5.7.1 Description

TS 28.104 [x] clause 7.2.3.2 describes a use case for service failure recovery. To explore possible issues, this use case is elaborated in more detail as follows:

1. The network operator discovers that a service problem exists. This may be a failed service or a degraded service. The network operator may discover the issue because of an alarm or because of performance measurements.

2. The network operator requests MDA to analyse the service problem.

3. MDA produces a report, which includes recommendations to resolve the issue.

4. The network operator evaluates the recommendations.

5. If the network operator accepts the recommendations, the network operator implements the recommended actions.

The above use case raises the following issues:

It is not clear how the MDA MnS consumer should request analysis of a particular service problem. The MDARequest IOC contains an attribute analyticsScope which may be expressed as managedEntitiesScope. The definition of managedEntitiesScope says that it “carries the DN(s) of SubNetwork MOI(s), ManagedElement MOI(s), and/or the MOI(s) of the derivative IOCs of ManagedFunction”. It is not obvious how a service problem can be identified by any of the allowed DN types. For example, if the MDA MnS consumer wishes to use an alarm to identify a service failure, it is not possible to express an alarm identifier in managedEntitiesScope.

It is not clear which MDA type supports the use case for service failure recovery. The analytics output for MDA type MDAAssistedFaultManagement.FailurePrediction includes an information element recommendedActions which mentions “recovery”, but there is no description of what this means. Also, the related analytics output contains mandatory information elements which are not appropriate for service failure recovery.

MDA type MDAAssistedFaultManagement.FailurePrediction contains recommendations on how to resolve a predicted failure, but there is not enough information for the MDA MnS consumer to evaluate whether the recommendations are valid or not. Missing important information includes the root cause of the service problem and demarcation information. This information is essential to allow the MDA MnS consumer to trust the recommendations and to discover underlying issues that could cause a similar service problem to occur in the future.

### 5.7.2 Potential requirements

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| Requirement label | Description | Related use case(s) |
| **REQ-FAILURE\_RECORV\_MDA-xx** | MDA capability for failure recovery shall allow a consumer to select an alarm for analysis. | Failure recovery |
| **REQ-FAILURE\_RECORV\_MDA-xx** | MDA capability for failure recovery shall be able to provide the analytics output including the probable cause of the failure. | Failure recovery |

### 5.7.3 Potential solutions

### 5.7.4 Evaluation of solutions

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| **End of changes** |