**3GPP TSG-SA5 Meeting #156 *S5-243694***

Maastricht, Netherlands, 19 - 23 August 2024

**Source: Huawei**

**Title: Add solution for NF fault evaluation**

**Document for: Approval**

**Agenda Item: 6.19.2**

# 1 Decision/action requested

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

# 2 References

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

# 3 Rationale

This contribution proposes to add a potential solution for NF evaluation for TR 28.866 based on [1]

# 4 Detailed proposal

It proposes to make the following changes to TR 28.866[1].

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| **1st Change** |

### 5.7.5 Use case 5: NF failure evaluation

#### 5.7.5.1 Description

The MDARequest IOC as defined in clause 9.3.2 in TS 28.104 [2] is used to request MDA analysis service by the consumer. In the MDARequest, it includes analyticsScope attriburte used to indicate the scope of the analytics requested by the MnS consumer. The analyticsScope attribute can be expressed as managedEntitiesScope which possibly can carry the DN of one or more ManagedFunction (see Table 9.5.1 in TS 28.104 [2]). In case the analyticsScope only contains the DN of a ManagedFunction, it means that the analytics should only relate to a specific ManagedFunction.

The existing MDA capability for failure prediction is mainly used to analysis and predict whether a failure will occur in the 5G network. The analytics output for failure prediction analysis mainly contains failurePredictionObject, potentialFailureType, eventTime, perceivedSeverity and recommendedActions (see table 8.4.3.1.3-1 in TS 28.104 [2]). Those information elements in the analytics output are about to express the predicted faults that may occur. As described in the above scenario that the analyticsScope only contains the DN of a ManagedFunction and the target ManagedFunction running well, then the current analytics output is not applicable.

When consumer requests failure prediction analysis for a specific ManagedFunction, it is not clearly specified in TS 28.104 [2] how the MDA report can indicate that no failure is predicted. In addition, when a failure is predicted to occur, quick and accurate identification of the affected users, services, cells, and geographical areas is also crucial for fault management and subsequent handling. The MDAS producer should identify the affected network entities, users, and geographical areas related to the predicted failure by correlating with the analysing data from multiple sources. The analysis results can assist the consumer to quickly assess the impact of failures and take appropriate actions for failure recovery and service assurance, thereby minimizing the negative impact caused by the failure.

#### 5.7.5.2 Potential Requirements

**REQ-FAULT\_EVALUATION\_MDA-01:** The MDAS producer should have a capability to provide the information of network impacts related to a predicted failure, including:

* a geographical information description of the affected areas, such as longitude and latitude ranges, polygon areas, etc.

#### 5.7.5.3 Potential solutions

The MDA analytics output for failure prediction analysis may be enhanced with the following attributes.

- predictedImpactArea. This attribute may indicate the predicted network impact of the potential failure. This attribute may be described as geographical information of the affected areas, such as longitude and latitude ranges, polygon areas, etc.

#### 5.7.5.4 Evaluation of solutions

Only potential solution #1 is proposed, the requirements are satisfied and this solution is feasible for normative work.

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| **2nd Change** |

# 6 Conclusions

## 6.x Fault management related analytics and alarm prediction

The use case, requirements and solution for Use case: NF failure evaluation is described in clause 5.7.5. It is recommended to add new attribute in the MDA analytics output for failure prediction analysis in TS 28.104 [2] to support providing predicted network impact information in the analytics output.

The detailed solution is described in clause 5.7.5.3.

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| **End of Changes** |