**3GPP TSG-SA5 Meeting #142-e *S5-222336rev3***

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

**Source: Huawei**

**Title: Add stage 2 description of failure predication analytics**

**Document for: Approval**

**Agenda Item: 6.5.14**

# 1 Decision/action requested

This document is to request approval of the proposed text.

# 2 Rational

This document is to add description on fault prediction.

# 3 Proposed changes

The start of the change

### 8.4.x MDA assisted failure prediction

#### 8.4.x.1 MDA type

The MDA type for failure prediction analysis is: MDAAssistedFaultManagement.FailurePrediction.

#### 8.4.x.2 Enabling data

The enabling data for failure prediction analysis are provided in table 8.4.x.2-1.

For general information about enabling data, see clause 8.2.1.

Table 8.4.x.2-1: Enabling data for fault predication analysis

|  |  |  |
| --- | --- | --- |
| Data category | Description | References |
| Performance measurements | The deteriorated performance or the abnormal performance measurements based on certain performance monitoring threshold.  3GPP management system may monitor a set of performance measurements and their thresholds, so as to support the analytics of prediction of a network service failure. | The performance measurements as defined in TS 28.552 [4] |
| Alarm notifications | Alarm information, e.g., the alarm notification of network functions. | Alarm information and notifications as per TS 28.532 [11] |
| Configuration data | MOIs of the cells, UPFs and SMFs. | TS 28.541 [15] |
| Network analytics data | The control plane analysis result from the NWDAF, e.g., observed service experience related network data analytics. | TS 23.288 [10] |

#### 8.4.x.3 Analytics output

The specific information elements of the analytics output for failure prediction analysis, in addition to the common information elements of the analytics outputs (see clause 8.3), are provided in table 8.4.x.3-1.

Table 8.4.x.3-1: Analytics output for fault prediction analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Information element | Definition | Support qualifier | Properties |
| FailurePredictionObject | Indication of NR cells or NFs where the failure related issues occurred or potentially occur. | M | type: DN  multiplicity: 1..\*  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| PotentialFailureType | Indication of type of issues that can cause the failures.  NOTE: The values can be defined as a list of example values: "Operational Violation", "Physical Violation" and "Time Domain Violation". See alarmType described in TS 28.532 [x]. | M | type: string  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| eventTime | This field holds the time of potential failure predicted.  Examples: "20:15:00", "20:15:00-08:00" (for 8 hours behind UTC). | M | type: DateTime  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| IssueID | This filed holds the ID of this failure prediction which is reported.  When reports, this identifier can be used to provide the information to management system to maintain. | M | type: string  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| perceivedSeverity | This field holds the value to indicate relative level of urgency for operator attention.  NOTE: the value can be Critical, Major, Minor, Warning, Indeterminate, Cleared, see ITU-T Recommendation X.733. | M | type: enumerate  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |

Editor’s note: the IssueID can be updated if agree to use another identity to identify the failure prediction reported in TS 28.104.

End of change