**3GPP TSG SA WG5 Meeting #142e S5-222089**

**Online, , 04 Apr 2022- 12 Apr 2022**

**Source: Samsung**

**Title: pCR 28.104 Maintenance Management**

**Document for: Approval**

**Agenda Item: 6.6.5**

# 1 Decision/action requested

***The group is asked to discuss and approve the proposals.***

# 2 References

None

# 3 Rationale

This contribution provides solution for maintenance management capability.

# 4 Detailed proposal

|  |
| --- |
| **First modification** |

### 8.4.x Maintenance management related analytics

#### 8.4.x.1 Maintenance management analysis

##### 8.4.x.1.1 MDA type

The MDA type for maintenance management is: Maintenance.MaintenanceAnalytics.

##### 8.4.x.1.2 Enabling data

The enabling data for maintenance management analysis are provided in table 8.4.x.1.2-1.

For general information about enabling data, see clause 8.2.1.

Table 8.4.x.1.2-1: Enabling data for maintenance analysis

|  |  |  |
| --- | --- | --- |
| Data category | Description | References |
| Performance Measurements | Number of Active DRB. | Mean number of DRBs being allocated (clause 5.1.1.10.9 of TS 28.552[4]). |
|  | Number of bearers undergoing handover | Number of requested preparations for handovers from 5GS to EPS (clause 5.1.1.6.3.1 of TS 28.552[4]).  Number of requested resource allocations for handovers from EPS to 5GS (clause 5.1.1.6.3.4 of TS 28.552[4])  Number of requested preparations for EPS fallback handovers (clause 5.1.1.6.3.10 of TS 28.552[4])  Number of successful executions for EPS fallback handovers (clause 5.1.1.6.3.13 of TS 28.552[4]) |
|  | Number of bearers being recovered from the error state. | Editors Note: to be defined in TS 28.552. |
|  | Number of successful bearer modification | Number of QoS flows attempted to modify (clause 5.1.1.13.4.1 of TS 28.552[4]) |
|  |  |  |

##### 8.4.x.1.3 Analytics output

The specific information elements of the analytics output for maintenance management analysis, in addition to the common information elements of the analytics outputs (see clause 8.3), are provided in table 8.4.x.1.3-1.

Table 8.4.x.1.3-1: Analytics output for maintenance analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Information element | Definition | Support qualifier | Properties |
| CurrentUpgradeOptimal | This data type defines whether gNB can be upgrade at present. | M | type: CurrentUpgrade  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: none  isNullable: False |
| FutureUpgradeOptimal | This data type defines whether the gNB can be upgrade in future and when. | M | type: FutureUpgrade  multiplicity: \*  isOrdered: N/A  isUnique: N/A  defaultValue: none  isNullable: False |
| gNBID | This identifies the gNB |  | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: none  isNullable: False |

|  |
| --- |
| **Second modification** |

## 8.5 Data type definitions

### 8.5.x CurrentUpgrade <<dataType>>

#### 8.5.x.1 Definition

This data type specifies whether it is optimal to upgrade the gNB at present.

#### 8.5.x.2 Information elements

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Definition | Support qualifier | Properties |
| CurrentUpgradeOptimal | Boolean attribute indicating whether RAN Node can be upgrade at present. |  | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| numberOfGBRDRB | This specifies the total number of GBR bearer at present |  | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NumberOfNonGBRDRB | This specifies the total number of non-GBR bearer at present |  | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |

### 8.5.y FutureUpgrade <<dataType>>

#### 8.5.y.1 Definition

This data type specifies whether it is optimal to upgrade the gNB at a future point of time.

#### 8.5.y.2 Information elements

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Definition | Support qualifier | Properties |
| FutureUpgradeOptimal | Boolean attribute indicating whether RAN Node can be upgrade at a future point of time. | M | type: Boolean  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| OptimalTime | This specifies the future time at which the gNB can be upgraded optimally.  This shall be present only if the FutureUpgradeOptimal is TRUE | CM | type: DateTime  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| numberOfGBRDRB | This specifies the total number of GBR bearer which will be present at the time stamp provided by the attribute OptimalTime.  This shall be present only if the FutureUpgradeOptimal is TRUE | CM | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| NumberOfNonGBRDRB | This specifies the total number of non-GBR bearer which will be present at the time stamp provided by the attribute OptimalTime.  This shall be present only if the FutureUpgradeOptimal is TRUE | CM | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
|  |  |  |  |