**3GPP TSG-SA5 Meeting #131e *S5-203077***

**e-meeting 25th May-3rd June 2020**

**Source: Huawei**

**Title: pCR TS 28.313 Corrections of Management service description**

**Document for: Approval**

**Agenda Item: 6.4.9**

# 1 Decision/action requested

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

# 2 References

[1] 3GPP TS 28.541: "Management and orchestration ; 5G Network Resource Model (NRM); Stage 2 and stage3".

[2] 3GPP TS 28.531: "Management and orchestration; Provisioning; ".

[3] 3GPP TS 28.550: "Management and orchestration; Performance assurance".

# 3 Rationale

According to the TS 28.541 [1], SON NRM fragment is defined. This contribution proposes to update type B discrption of SON management services.

In addition, the MnS including the MnS component is used to describe the management capability which can be provided by the MnS producer and consumed by MnS consumer. The intention of this contribution to keep the MnS table in the feature TS (e.g. TS 28.531,TS 28.550) is to present the information of  which MnS components are used for which management purpose/ management service. Therefore, this contribution proposes to update clause 7.1 and 7.2 by merging the description of typeA and TypeB into a single table so as to align with other management services.

# 4 Detailed proposal

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| **1st modified section** |

# 7 Management services for SON

## 7.1 Management services for D-SON management

### 7.1.1 RACH Optimization (Random Access Optimisation)

#### 7.1.1.1 MnS component used for RACH Optimization

Table 7.1.1.1-1: Components of RACH Optimization

|  |  |  |  |
| --- | --- | --- | --- |
| Management purpose | Management service component type A | Management service component type B | Management service component type C |
| RACH Optimization Control | Following operations/notifications defined in Clause 11.1.1 in TS 28.532[3]:Operations:- createMOI- getMOIAttributes - modifyMOIAttributes- deleteMOINotifications:- notifyMOICreation- notifyMOIAttributeValueChanges- notifyMOIDeletion- notifyMOIChanges | Following IOC defined in RACH Optimization NRM fragment in TS 28.541[13]:* DRACHOptimizationFunction
 |  |
| RACH Optimization monitor | The operations/notifications defined in clause 11.3.1 in TS 28.532 [3] and clause 6.1 and 6.2 of TS 28.550 [12]. | Performance measurements related to RACH optimization refer to clause 7.1.1.2.1 |

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#### 7.1.1.2 MnS Component Type C definition

##### 7.1.1.2.1 Performance measurements

Performance measurements related to the RACH optimization are captured in Table 7.1.1.2.1-1:

Table 7.1.1.2.1-1. RACH optimization related performance measurements

|  |  |  |
| --- | --- | --- |
| Performance measurements | Description | Related targets |
| Distribution of RACH preambles sent | Distribution of the number of preambles UEs sent to achieve synchronization per SSB, where the number of preambles sent corresponds to PREAMBLE\_TRANSMISSION\_COUNTER (see clause 5.1.1 in TS 38.321 [4]) in UE. | UE access delay probability per SSB |
| Distribution of UEs access delay per SSB | Distribution of the time needed for UEs to successfully attach to the network per SSB. | Number of preambles send per SSB probability |

### 7.1.2 MRO (Mobility Robustness Optimisation)

#### 7.1.2.1 MnS component used for MRO

Table 7.1.2.1-1: Components of MRO

|  |  |  |  |
| --- | --- | --- | --- |
| Management purpose | Management service component type A | Management service component type B | Management service component type C |
| Mobility Robustness Optimization Control | Following operations/notifications defined in Clause 11.1.1 in TS 28.532[3]:Operations:- createMOI- getMOIAttributes - modifyMOIAttributes- deleteMOINotifications:- notifyMOICreation- notifyMOIAttributeValueChanges- notifyMOIDeletion- notifyMOIChanges | Following IOC defined in MRO NRM fragment in TS 28.541[13]:* DMROFunction
 |  |
| Mobility Robustness Optimization monitor | The operations/notifications defined in clause 11.3.1 in TS 28.532 [3] and clause 6.1 and 6.2 of TS 28.550 [12]. | Performance measurements related to Mobility Robustness optimization refer to clause 7.1.2.2.1. |

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#### 7.1.2.2 MnS Component Type C definition

##### 7.1.2.2.1 Performance measurements

Performance measurements related MRO are captured in Table 7.1.2.2.1.-1:

Table 7.1.2.2.1-1. MRO related performance measurements

|  |  |  |
| --- | --- | --- |
| Performance measurements | Description | Related targets |
| Number of handover events | Includes all successful and unsuccessful handover events (see clause 5.1.1.6 in TS 28.552 [5]).  | Total handover failure rate |
| Number of handover failures | Includes unsuccessful handover events with failure causes (see clause 5.1.1.6 in TS 28.552 [5]). | Total handover failure rate |
| Number of intra-RAT handover events | Includes all successful and unsuccessful intra-RAT handover eventsl | Total intra-RAT handover failure rate |
| Number of intra-RAT handover failures | Includes unsuccessful intra-RAT handover events with failure causes. | Total intra-RAT handover failure rate |
| Number of inter-RAT handover events | Includes all successful and unsuccessful inter-RAT handover events.  | Total inter-RAT handover failure rate |
| Number of inter-RAT handover failures | Includes unsuccessful inter-RAT handover events with failure causes. | Total inter-RAT handover failure rate |
| Number of intra-RAT too early handover failures | Detected when an RLF occurs after the UE has stayed for a long period of time in the cell. |  |
| Number of intra-RAT too late handover failures | Detected when an RLF occurs shortly after a successful handover from a source cell to a target cell or a handover failure occurs during the handover procedure. |  |
| Number of intra-RAT handover failures to wrong cell | Detected when an RLF occurs shortly after a successful handover from a source cell to a target cell or a handover failure occurs during the handover procedure. |  |
| Number of inter-RAT too early handover failures | Detected when an RLF occurs after the UE has stayed in an E-UTRAN cell which connects with 5GC for a long period of time. |  |
| Number of inter-RAT too late handover failures | Deteccted when an RLF occurs shortly after a successful handover from an E-UTRAN cell which connects with EPC to a target cell in a E-UTRAN cell which connects with 5GC. |  |
| Number of unnecessary handover to another RAT | Detected when a UE is handed over from NG-RAN to other system (e.g. UTRAN) even though quality of the NG-RAN coverage was sufficient for the service used by the UE. |  |
| Number of inter-RAT handover ping pong | Detected when an UE is handed over from a cell in a source system (e.g. NG-RAN) to a cell in a target system different from the source system (e.g. E-UTRAN), then within a predefined limited time the UE is handed over back to a cell in the source system, while the coverage of the source system was sufficient for the service used by the UE. |  |

### 7.1.3 PCI configuration

#### 7.1.3.1 MnS component used for PCI configuration

Table 7.1.3.1-1: Components of PCI configuration

|  |  |  |  |
| --- | --- | --- | --- |
| Management purpose | Management service component type A | Management service component type B | Management service component type C |
| PCI configuration Control | Following operations/notifications defined in Clause 11.1.1 in TS 28.532[3]:Operations:- createMOI- getMOIAttributes - modifyMOIAttributes- deleteMOINotifications:- notifyMOICreation- notifyMOIAttributeValueChanges- notifyMOIDeletion- notifyMOIChanges | Following IOC defined in D-SON PCI configuration NRM fragment in TS 28.541[13]:* DPCIConfigurationFunction
 |  |
| PCI configuration monitor | The operations/notifications defined in clause 11.3.1 in TS 28.532 [3] and clause 6.1 and 6.2 of TS 28.550 [12]. | Performance measurements related to PCI configuration refer to clause 7.1.3.2.1 |

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#### 7.1.3.2 MnS Component Type C definition

##### 7.1.3.2.1 Notification information

The table below lists the notifications related to D-SON PCI configuration,

|  |  |  |
| --- | --- | --- |
| Performance measurements | Description | Note |
| PCI collision notification | The collision notificationis used to indicate two neighbouring cells of a serving cell are using the same PCIs. |  |
| PCI Confusion notification | The confusion notificationis used to indicate that a serving cell has 2 neighbouring cells that are using the same PCI value. |  |

### 7.1.4 ANR management

This management service is used for management of ANR, and ANR is specified in TS 38.300 [7], clauses 15.3.3.

Stage 2 for ANR management is located in TS 28.541 [13], clauses 4.3.2.2, 4.3.2.3, 4.3.32.2 and 4.3.32.3.

Stage 3 for ANR management is located in TS 28.541 [13], clauses C.4.3, D.4.3, and E.5.

#### 7.1.4.1 MnS component used for ANR management

Table 7.1.4.1-1: Components of ANR management

|  |  |  |
| --- | --- | --- |
| Management purpose | Management service component type A | Management service component type B |
| ANR management Control | Following operations/notifications defined in Clause 11.1.1 in TS 28.532[3]:Operations:- createMOI- getMOIAttributes - modifyMOIAttributes- deleteMOINotifications:- notifyMOICreation- notifyMOIAttributeValueChanges- notifyMOIDeletion- notifyMOIChanges | Following IOC defined in ANR management NRM fragment in TS 28.541[13]:- DANRManagementFunction |

## 7.2 Management services for C-SON

### 7.2.1 PCI configuration

#### 7.2.1.1 MnS component used for PCI configuration

Table 7.2.1.1-1: Components of PCI configuration

|  |  |  |  |
| --- | --- | --- | --- |
| Management purpose | Management service component type A | Management service component type B | Management service component type C |
| PCI configuration | Following operations/notifications defined in Clause 11.1.1 in TS 28.532[3]:Operations:- createMOI- getMOIAttributes - modifyMOIAttributes- deleteMOINotifications:- notifyMOICreation- notifyMOIAttributeValueChanges- notifyMOIDeletion- notifyMOIChanges | Following IOC defined in C-SON PCI configuration NRM fragment in TS 28.541[13]:* DPCIConfigurationFunction
 |  |
| PCI configuration monitor | The operations/notifications defined in clause 11.3.1 in TS 28.532 [3] and clause 6.1 and 6.2 of TS 28.550 [12]. | Performance measurements related to PCI configuration refer to clause 7.2.1.2.1 and 7.2.1.2.2 |

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#### 7.2.1.2 MnS Component Type C definition

##### 7.2.1.2.1 Notifications information

The table below lists the notificationsrelated to PCI configuration are generated from the NR cells,

|  |  |  |
| --- | --- | --- |
| Performance measurements | Description | Note |
| PCI collision notification | The collision notification is used to indicate two neighbouring cells of a serving cell are using the same PCIs. |  |
| PCI Confusion notification | The confusion notification is used to indicate that a serving cell has 2 neighbouring cells that are using the same PCI value. |  |

##### 7.2.1.2.2 Performance measurements

Performance measurements related to the PCI configuration are collected from the NR cells.

Table 7.2.1.2.2-1. PCI related performance measurements

|  |  |  |
| --- | --- | --- |
| Performance measurements | Description | Note |
| PCI of candidate cells | The measurement contains cumulative counter with subcounters that is identified by the PCI value(s) of the candidate cells, and is derived from *MeasResultListNR* (see clause 6.3.2 in TS 38.331 [9]) where it contains PCI in *PhysCellId*, and RSRP/RSRQ in *MeasQuantityResults* of candidate cells. It is generated when the RSRP received from the candidate cells exceeds certain thresholds.  |  |

Editor’s Note: Performance measurement needs to be defined in the TS 28.552 [5].

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| **End of modified section** |