**3GPP TSG-SA5 Meeting #130e *S5-202209***

**e-meeting 20-28 April 2020**

**Source: Huawei**

**Title: pCR TS 28.313 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

# 3 Rationale

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, e.g. PM control management service.

# 4 Detailed proposal

|  |
| --- |
| **1st modified section** |

# 7 Management services for SON

Editor’s note: this clause contains the management services for SON and definition of information, such as targets, control, parameters, and PM measurements that are needed to support SON functions.

## 7.1 Management services for D-SON management

### 7.1.1 RACH Optimization (Random Access Optimisation)

#### 7.1.1.1 MnS component type A and type B definition

Table 7.1.1.1-1: Components of RACH Optimization MnS

|  |  |  |
| --- | --- | --- |
| Management service | Management service component type A | Management service component type B |
| RACH Optimization MnS | Operations defined in clause 5 of TS 28.532 [3]:- getMOIAttributes operation- modifyMOIAttributes operation- notifyMOIAttributeValueChange operationNote: It is supported by Provisioning MnS for NF, as defined in 28.531 [11]. | IOCs for RACH Optimization NRM fragment defined in TS 28.541[13]. |
| Operations defined in clause 11.3.1.1.1 in TS 28.532 [3] and clause 6.2.3 of TS 28.550 [12]:- notifyFileReady operation- reportStreamData operationNote: It is supported by Performance Assurance MnS for NFs, as defined in 28.550 [12]. |

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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 7.1.1.3.1-1:

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, 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 |
| Distribution of UEs access delay | Distribution of the time needed for UEs to successfully attach to the network. | UE access delay probability |

### 7.1.2 MRO (Mobility Robustness Optimisation)

#### 7.1.2.1 MnS component type A and type B definition

Table 7.1.2.1-1: Components of MRO MnS

|  |  |  |
| --- | --- | --- |
| Management service | Management service component type A | Management service component type B |
| Mobility Robustness Optimization MnS  | Operations defined in clause 5 of TS 28.532 [3]:- getMOIAttributes operation- modifyMOIAttributes operation- notifyMOIAttributeValueChange operationNote: It is supported by Provisioning MnS for NF, as defined in 28.531 [11]. | IOCs for Mobility Robustness Optimization NRM fragment defined in TS 28.541 [13]. |
| Operations defined in clause 11.3.1.1.1 in TS 28.532 [3] and clause 6.2.3 of TS 28.550 [12]:- notifyFileReady operation- reportStreamData operationNote: It is supported by Performance Assurance MnS for NFs, as defined in 28.550 [12]. |

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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 7.1.2.3.1.-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 inter-RAT too early handover failures | Detected when an RLF occurs after the UE has stayed for a long period of time in the cell. | Imbalance of UE access delay on UL and SUL probability |
| 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. | Total intra-RAT handover failure rate |
| 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. | Total intra-RAT handover failure rate |
| 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. | Total intra-RAT handover failure rate |
| 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. | Total inter-RAT handover failure rate |
| 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. | Total inter-RAT handover failure rate |
| 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. | Total inter-RAT handover failure rate |

### 7.1.3 PCI configuration

#### 7.1.3.1 MnS component type A and type B definition

Table 7.1.3.1-1: Components of PCI configuration MnS

|  |  |  |
| --- | --- | --- |
| Management service | Management service component type A | Management service component type B |
| PCI configuration MnS | Operations defined in clause 5 of TS 28.532 [3]:- getMOIAttributes operation- modifyMOIAttributes operation- notifyMOIAttributeValueChange operationNote: It is supported by Provisioning MnS for NF, as defined in 28.531 [11]. | IOCs for PCI configuration NRM fragment defined in TS 28.541 [13]. |
|  | Operations defined in clause 11.2 of TS 28.532 [3]:- notifyNewAlarm- notifyClearedAlarmNote: It is supported by Fault Supervision MnS for NF, as defined in TS 28.545 [10]. |  |

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#### 7.1.3.3 MnS Component Type C definition

##### 7.1.3.3.1 Alarm information

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

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

Editor’s Note: need to consider ways (e.g. add new alarms or modify existing alarms in TS 28.545 or TS 32.111-2) to support PCI collision and confusion.

### 7.1.4 ANR management

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 type A and type B definition

Table 7.1.4.1-1: Components of ANR management MnS

|  |  |  |
| --- | --- | --- |
| Management service | Management service component type A | Management service component type B |
| ANR management MnS | he following operations are involved:createMOI operationmodifyMOIAttributes operationNote:  | IOCs for ANR management NRM fragment defined in TS 28.541 [13]. |

## 7.2 Management services for C-SON

### 7.2.1 PCI configuration

#### 7.2.1.1 MnS component type A and type B definition

Table 7.2.1.1-1: Components of PCI configuration MnS

|  |  |  |
| --- | --- | --- |
| Management service | Management service component type A | Management service component type B |
| PCI configuration MnS | Operations defined in clause 11.1.1 of TS 28.532 [3]:- getMOIAttributes operation- modifyMOIAttributes operation- notifyMOIAttributeValueChange operationNote: It is supported by Provisioning MnS for NF, as defined in 28.531 [11]. | IOCs for PCI configuration NRM fragment defined in TS 28.541 [13]. |
|  | Operations defined in clause 11.2.1 of TS 28.532 [3]:- notifyNewAlarm- notifyClearedAlarmNote: It is supported by Fault Supervision MnS for NF, as defined in TS 28.545 [10]. |  |
|  | Operations defined in clause 11.3.1.1.1 in TS 28.532 [3] and clause 6.2.3 of TS 28.550 [12]:- notifyFileReady operation- reportStreamData operationNote: It is supported by Performance Assurance MnS for NFs, as defined in 28.550 [12]. |  |

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#### 7.2.1.3 MnS Component Type C definition

##### 7.2.1.3.1 Alarm information

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

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

Editor’s Note: need to consider ways (e.g. add a new attribute or modify an existing attribute in 28.541) to support PCI list.

##### 7.2.1.3.2 Performance measurements

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

Table 7.2.1.3.2-1. 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** |