**3GPP TSG- Meeting # *S5-205117rev1***

**12 to 21 October 2020, E-meeting**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0268** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Add measurements on external parameter provisioning | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Intel | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ePM\_KPI\_5G | | | | |  | ***Date:*** | | | 01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | | 17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)*  *Rel-17 (Release 17)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The NEF allows an external party (AF) to provision the information, such as expected UE behaviour and service specific parameters, or the 5G VN group information to 5G network functions.  The failed external parameter provisioning would impact the UE behaviour or service fulfilment; therefore, the performance of external parameter provisioning needs to be monitored. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the measurements related to external parameter provisioning on NEF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The performance of external parameter provisioning cannot be monitored. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 3.3, 5.9.x (new), A.x (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 32.401: "Telecommunication management; Performance Management (PM); Concept and requirements".

[3] 3GPP TS 32.404: "Performance Management (PM); Performance measurements - Definitions and template".

[4] 3GPP TS 23.501: "System Architecture for the 5G System".

[5] IETF RFC 5136: "Defining Network Capacity".

[6] 3GPP TS 38.473: "NG-RAN; F1 Application Protocol (F1AP)".

[7] 3GPP TS 23.502: "Procedures for the 5G System".

[8] 3GPP TS 28.554: "Management and orchestration; 5G end to end Key Performance Indicators (KPI)".

[9] 3GPP TS 32.425: "Performance Management (PM); Performance measurements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN)".

[10] 3GPP TS 32.451: "Key Performance Indicators (KPI) for Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Requirements".

[11] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".

[12] Void.

[13] 3GPP TS 38.423: "NG-RAN; Xn Application Protocol (XnAP)".[14] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".

[15] Void.

[16] 3GPP TS 29.244: "Technical Specification Group Core Network and Terminals; Interface between the Control Plane and the User Plane Nodes; Stage 3".

[17] ETSI GS NFV-IFA027 v2.4.1: "Network Functions Virtualisation (NFV); Management and Orchestration; Performance Measurements Specification".

[18] Void.

[19] 3GPP TS 38.214: "NR; Physical layer procedures for data".

[20] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[21] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[22] 3GPP TS 29.413: "Application of the NG Application Protocol (NGAP) to non-3GPP access".

[23] 3GPP TS 29.122: "Technical Specification Group Core Network and Terminals; T8 reference point for Northbound APIs".

[24] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[25] ETSI ES 202 336-12 V1.2.1: "Environmental Engineering (EE); Monitoring and control interface for infrastructure equipment (power, cooling and building environment systems used in telecommunication networks); Part 12: ICT equipment power, energy and environmental parameters monitoring information model".

[26] 3GPP TS 28.541: "Management and orchestration; 5G Network Resource Model (NRM); Stage 2 and stage 3".

[27] 3GPP TS 29.274: "Evolved General Packet Radio Service (GPRS); Tunnelling Protocol for Control plane (GTPv2-C); Stage 3".

[28] 3GPP TS 29.510: "5G System; Network function repository services; Stage 3".

[29] 3GPP TS 38.314: "NR; layer 2 measurements".

[30] 3GPP TS 38.313: "Self-Organizing Networks (SON) for 5G networks".

[31] 3GPP TS 38.415: "NG-RAN; PDU session user plane protocol".

[32] 3GPP TS 38.321: "NR MAC protocol specification".

[33] 3GPP TS 38.214: "NR; Physical layer procedures for data".

[34] 3GPP TS 38.215: "NR; Physical layer measurements".

[35] 3GPP TS 38.133: "NR; Requirements for support of radio resource management".

[36] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[37] 3GPP TS 38.304: "NR; User Equipment (UE) procedures in Idle mode and RRC Inactive state".

[38] 3GPP TS 28.530: "Management and orchestration; Concepts, use cases and requirements".

[39] 3GPP TS 29.507: "5G System; Access and Mobility Policy Control Service; Stage 3".

[40] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

[41] 3GPP TS 29.531: "5G System; Network Slice Selection Services".

[42] 3GPP TS 29.281: "General Packet Radio System (GPRS) Tunnelling Protocol User Plane (GTPv1-U)"

[x] 3GPP TS 29.522: "5G System; Network Exposure Function Northbound APIs; Stage 3".

|  |
| --- |
| **Next modified section** |

## 3.3 Measurement family

The measurement names defined in the present document are all beginning with a prefix containing the measurement family name. This family name identifies all measurements which relate to a given functionality and it may be used for measurement administration.

The list of families currently used in the present document is as follows:

- DRB (measurements related to Data Radio Bearer).

- RRC (measurements related to Radio Resource Control).

- UECNTX (measurements related to UE Context).

- RRU (measurements related to Radio Resource Utilization).

- RM (measurements related to Registration Management).

- SM (measurements related to Session Management).

- GTP (measurements related to GTP Management).

- IP (measurements related to IP Management).

- PA (measurements related to Policy Association).

- MM (measurements related to Mobility Management).

- VR (measurements related to Virtualized Resource).

- CARR (measurements related to Carrier).

- QF (measurements related to QoS Flow).

- AT (measurements related to Application Triggering).

- SMS (measurements related to Short Message Service).

- PEE (measurements related to Power, Energy and Environment).

- NFS (measurements related to NF service).

- PFD (measurements related to Packet Flow Description).

- RACH (measurements related to Random Access Channel)

- MR (measurements related to Measurement Report)

- L1M (measurements related to Layer 1 Measurement)

- NSS (measurements related to Network Slice Selection)

- EPP (measurements related to external parameter provisioning)

|  |
| --- |
| **Next modified section** |

### 5.9.x External parameter provisioning related measurements

#### 5.9.x.1 External parameter creation

##### 5.9.x.1.1 Number of external parameter creation requests

a) This measurement provides the number of external parameter creation requests received by the NEF from AF.

b) CC.

c) Receipt by the NEF of an Nnef\_ParameterProvision\_Create request message from AF (see 3GPP TS 23.502 [7]).

d) A single integer value.

e) EPP.NbrCreatReq

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

##### 5.9.x.1.2 Number of successful external parameter creations

a) This measurement provides the number of successful external parameter creations by the NEF.

b) CC.

c) Transmission by the NEF of an Nnef\_ParameterProvision\_Create response message to AF indicating a successful external parameter creation (see 3GPP TS 29.522 [x]).

d) A single integer value.

e) EPP.NbrCreatSucc

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

##### 5.9.x.1.3 Number of failed external parameter creations

a) This measurement provides the number of failed external parameter creations by the NEF.

b) CC.

c) Transmission by the NEF of an Nnef\_ParameterProvision\_Create response message to AF indicating a failed AF external parameter creation (see 3GPP TS 29.522 [x]), each message increments the relevant subcounter per failure cause by 1.

d) Each measurement is an integer value.

e) EPP.NbrCreatFail*.cause*  
Where *cause* indicates the failure cause of the external parameter creation.

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

#### 5.9.x.2 External parameter update

##### 5.9.x.2.1 Number of external parameter update requests

a) This measurement provides the number of external parameter update requests received by the NEF from AF.

b) CC.

c) Receipt by the NEF of an Nnef\_ParameterProvision\_Update request message from AF (see 3GPP TS 23.502 [7]).

d) A single integer value.

e) EPP.NbrUpdateReq

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

##### 5.9.x.2.2 Number of successful external parameter updates

a) This measurement provides the number of successful external parameter updates by the NEF.

b) CC.

c) Transmission by the NEF of an Nnef\_ParameterProvision\_Update response message to AF indicating a successful external parameter update (see 3GPP TS 29.522 [x]).

d) A single integer value.

e) EPP.NbrUpdateSucc

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

##### 5.9.x.2.3 Number of failed external parameter updates

a) This measurement provides the number of failed external parameter updates by the NEF.

b) CC.

c) Transmission by the NEF of an Nnef\_ParameterProvision\_Update response message to AF indicating a failed external parameter update (see 3GPP TS 29.522 [x]), each message increments the relevant subcounter per failure cause by 1.

d) Each measurement is an integer value.

e) EPP.NbrUpdateFail*.cause*  
Where *cause* indicates the failure cause of the external parameter update.

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

#### 5.9.x.3 External parameter deletion

##### 5.9.x.3.1 Number of external parameter deletion requests

a) This measurement provides the number of external parameter deletion requests received by the NEF from AF.

b) CC.

c) Receipt by the NEF of an Nnef\_ParameterProvision\_Delete request message from AF (see 3GPP TS 23.502 [7]).

d) A single integer value.

e) EPP.NbrDelReq

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

##### 5.9.x.3.2 Number of successful external parameter deletions

a) This measurement provides the number of external parameter deletions by the NEF.

b) CC.

c) Transmission by the NEF of an Nnef\_ParameterProvision\_Delete response message to AF indicating a successful external parameter deletion (see 3GPP TS 29.522 [x]).

d) A single integer value.

e) EPP.NbrDelSucc

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

##### 5.9.x.3.3 Number of failed external parameter deletions

a) This measurement provides the number of failed external parameter deletions by the NEF.

b) CC.

c) Transmission by the NEF of an Nnef\_ParameterProvision\_Delete response message to AF indicating a failed external parameter deletion (see 3GPP TS 29.522 [x]), each message increments the relevant subcounter per failure cause by 1.

d) Each measurement is an integer value.

e) EPP.NbrDelFail*.cause*  
Where *cause* indicates the failure cause of the external parameter deletion.

f) NEFFunction.

g) Valid for packet switched traffic.

h) 5GS.

|  |
| --- |
| **Next modified section** |

# A.x Monitoring of external parameter provisioning

The NEF allows an external party (AF) to provision the information, such as expected UE behaviour (regarding UE movement or communication characteristics) and service specific parameters, or the 5G VN (Virtual Network) group information to 5G network functions.

The failed external parameter provisioning would impact the UE behaviour or service fulfilment; therefore, the performance of external parameter provisioning needs to be monitored.

|  |
| --- |
| **End of modified section** |