**3GPP TSG-SA5 Meeting #155 *S5-242632***

Jeju, Korea, 27 May - 31 May 2024

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** | **18.6.0** |  |
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| *For* [***HELP***](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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | New performance measurements for Number of PDU Session Establishment Requests and Rejects |
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| ***Source to WG:*** | Apple, Intel |
| ***Source to TSG:*** | SA5 |
|  |  |
| ***Work item code:*** | PM\_KPI\_5G\_Ph4 |  | ***Date:*** | 2024-27-05 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *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 canbe 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* *Rel-19 (Release 19)* |
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| ***Reason for change:*** | Currently there is no performance measure defined in TS 28.552 quantifying the number of PDU Session Establishement Request broken down by Request Type and whether PDU Session is moved from EPC or non 3GPP Access at the time of initiating its 5G session etablishement. In this CR, it is proposed to define the Number of PDU Session Establishment Requests, borken down by Request type, and their corrresponding PDU Session Reject Count, if any. One usage of this performance measurements is for performance assurance to characterize PDU session establishment success rate for scenarios where a handover happens from non 3GPP access and 3GPP access links with a pre-established PDU Session. |
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| ***Summary of change:*** | Adding new performance measures capturing the the Number of PDU Session Establishment Requests, borken down by Request type, and their corrresponding PDU Session Reject Count. |
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| ***Consequences if not approved:*** | Without these performance measures, percentage of rejected PDU Sessions, established on 5GC or handed over from EPC or non 3GPP access networks to 5GC, cannot be derived. |
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| ***Clauses affected:*** | 5.2.x (new), 5.2.y (new), A.x (new) |
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|  | **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:*** |  |

>>>>BEGINNING OF CHANGES<<<<

###### 5.2.x Number of PDU Session Establishment Requests

a) This measurement provides the number of PDU Sessions Establishment Requests received by AMF from UEs served by it. This measurement is split into subcounters per Request Type and Per whether the request refers to an existing PDU session switching from LTE access to NR access or from non 3GPP access to NR access (see clause 4.3.2.2.1 TS 23.502 [7] : for Request types = “Existing PDU Session”, the request refers to an existing PDU Session switching from non-3GPP access to 3GPP access or to a PDU Session handover from an existing PDN connection in EPC. If the request refers to an existing PDN connection in EPC, the S-NSSAI is set as described in clause 5.15.7.2 in TS 23.501 [4])

b) CC

c) On reception of PDU Session Establishment Request message at the AMF (see clause 8.3.3.1 of TS 24.501 [4]), from a UE served by it, the relevant subcounter per Request Type as explained above (see also clause 9.11.3.47 of TS 24.501 [4]) is incremented by 1.

d) Each measurement is an integer value.

e) The measurement name has the form SM.PDUSessionEstablishReq.I where I =1,2,3,4,5 or 6 identifies the Request Type as shown below :

* I = 1: Initial request, the PDU Session Establishment is a request to establish a new PDU Session
* I = 2: Existing PDU Session, from EPC: the request refers to an existing PDU Session switching between 3GPP access to a PDU Session handover from an existing PDN connection in EPC.
* I = 3: Existing PDU Session, from non 3GPP Access: the request refers to an existing PDU Session switching to 3GPP access from non-3GPP access.
* I = 4: Initial emergency request: When Emergency service is required and an Emergency PDU Session is not already established, a UE shall initiate the UE Requested PDU Session Establishment procedure with a Request Type indicating "(initial) Emergency Request".
* I = 5: existing emergency PDU session, from EPC: the request refers to an existing PDU Session for Emergency services switching between 3GPP access to a PDU Session handover from an existing PDN connection for Emergency services.
* I = 6: existing emergency PDU session, from non 3GPP Access: the request refers to an existing PDU Session for Emergency services switching between 3GPP access and non-3GPP access.

f) AMFFunction

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for performance assurance to characterize PDU session establishment success rate for scenarios where a handover happens from a non 3GPP access to 3GPP access links with a pre-established PDU Session.

>>>>NEXT CHANGE<<<<

##### 5.2.y Number of PDU Sessions Establishment Rejects Per PDU Session Establishment Request Type

a) This measurement provides the number of PDU Sessions Rejected by AMF, upon receiving a PDU Session Request from a UE served by it. This measurement is split into subcounters per Request Type corresponding to the PDU Session Request that gets rejected.

b) CC.

c) Upon transmission of PDU Session Establishment REJECT message to the UE, upon receiving a PDU Session Establishment Request with a given Request Type. The PDU Session Establishment Reject messages corresponding to a PDU Session Establishment Request with a given Request Type (as described in 5.1.1.5.x) increments the relevant subcounter per Request Type by 1.

d) Each subcounter is an integer value.

e) SM.PDUSessionEstablishReject.I

 Where I identifies the request type of the corresponding PDU Session Establishment Request, as described in 5.1.1.5.x.

f) AMFFunction.

g) Valid for packet switched traffic.

h) 5GS.

i) One usage of this performance measurements is for performance assurance to characterize PDU session establishment success rate for scenarios where a handover happens from a non 3GPP access to 3GPP access links with a pre-established PDU Session.

>>>>NEXT CHANGE<<<<

A.X Use case for Number of PDU Session Establishment Requests and Rejects related measurements.

The number of PDU Session Establishment Requests and Rejects related measurements are useful for characterizing PDU session establishment success rate for scenarios where a handover happens from non 3GPP access to 3GPP access links with a pre-established PDU Session.

>>>>END OF CHANGES<<<<