**3GPP TSG-SA5 Meeting #155 *S5-242826***

Jeju, South Korea, 27 - 31 May 2024

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.554** | **CR** | **0195** | **rev** | **-** | **Current version:** | **18.5.0** |  |
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| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **x** | Core Network | **x** |

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| ***Title:*** | Rel-19 CR TS 28.554 Add network availability KPI | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | PM\_KPI\_5G\_Ph4 | | | | |  | ***Date:*** | | | 2024-05-17 |
|  |  | | | |  | |  | | |  |
| ***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 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | Network availability KPI is an important parameter to 5G network customer. It can evaluate the availability of network by measuring the accumulated time within a measurement period for which some important network KPIs (e.g. registration success rate) can be kept within the certain value range. However, currently there is no method to measure availability at network level. It is useful to measure availability by defining KPIs for the 5G network and network slicing.  This contribution proposes some network KPIs to measure availability. | | | | | | | | |
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| ***Summary of change:*** | | Add use case for 5G network related availability KPI and propose some availability KPIs. | | | | | | | | |
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| ***Consequences if not approved:*** | | Network availability can not be measured. | | | | | | | | |
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| ***Clauses affected:*** | | A.X(new), 6.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:*** | |  | | | | | | | | |

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| **1st Change** |

# A.X Use case for 5G network availability KPI

The availability for 5G network is important to 5G network customer. It is useful for management system to evaluate the capability to consistently satisfy required network performance. The performance measurements from TS 28.552 [6] and KPIs from TS 28.554 can be obtained to calculate the time duration of these values within in a certain range. The calculated KPIs can be used to represent the availability of subnetwork and network slice.

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| **2nd Change** |

## 6.X Network availability KPI

### 6.X.1 Registration success rate satisfaction duration

a) RSRDuration.

b) This KPI describes the accumulated time within a measurement period for which the registration success rate is equal to or higher than the specified value requested by operator 5G network customer. It is obtained by accumulating the time when the value of registration success rate for a network slice (see clause 6.2.3) is equal to or higher than the specified value. It is a time interval (millisecond).

d) NetworkSlice

### 6.X.2 PDU session establishment success rate satisfaction duration

a) PDUSessionEstSRDuration.

b) This KPI describes the accumulated time within a measurement period for which the PDU session establishment success rate is equal to or higher than the specified value requested by operator. It is obtained by accumulating the time when the value of PDU session establishment success rate for a network slice (see clause 6.2.5) is equal to or higher than the specified value. It is a time interval (millisecond).

d) NetworkSlice

### 6.X.3 GTP Data Packet Loss satisfaction duration

#### 6.X.3.1 Incoming GTP Data Packet Loss satisfaction duration in UPF over N3

a) InDataPktPacketLossN3UPFDuration.

b) This KPI describes the accumulated time within a measurement period for which the incoming pakect loss rate in UPF over N3 is equal to or lower than the specified value requested by operator. It is obtained by accumulating the time when the value of incoming pakect loss rate in UPF over N3 (see TS 28.552 [6] clause 5.4.1.7) is equal to or lower than the specified value. It is a time interval (millisecond).

d) SubNetwork

#### 6.X.3.2 Outgoing GTP Data Packet Loss satisfaction duration in UPF over N3

a) OutDataPktPacketLossN3UPFDuration.

b) This KPI describes the accumulated time within a measurement period for which the outgoing pakect loss rate in UPF over N3 is equal to or lower than the specified value requested by operator. It is obtained by accumulating the time when the value of outgoing pakect loss rate in UPF over N3 (see TS 28.552 [6] clause 5.4.1.8) is equal to or lower than the specified value. It is a time interval (millisecond).

d) SubNetwork

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| **End of Change** |