**3GPP TSG-SA5 Meeting #131e *S5-203056***

**25 May to 03 June 2020, E-meeting**

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| *CR-Form-v11.4* |
| **CHANGE REQUEST** |
|  |
|  | **28.554** | **CR** | **0049** | **rev** | **-** | **Current version:** | **16.4.0** |  |
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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:***  | Add KPIs on e2e UL delay for network slice |
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| ***Source to WG:*** | Intel |
| ***Source to TSG:*** | S5 |
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| ***Work item code:*** | 5G\_SLICE\_ePA |  | ***Date:*** | 2020-05-15 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | KPIs on e2e UL delay for network slice is missing in TS 28.554. The e2e UL delay can directly reflect the users’ experience, therefore the performance of the e2e UL delay needs to be monitored. |
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| ***Summary of change:*** | Added the KPIs on e2e UL delay for network slice. |
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| ***Consequences if not approved:*** | The e2e UL delay for network slice cannot be monitored. |
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| ***Clauses affected:*** | 6.3.1.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 ...  |
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| ***Other comments:*** |  |

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| **1st Modified Section** |

#### 6.3.1.x E2E delay fo network slice

##### 6.3.1.x.1 Average e2e uplink delay for a network slice

a) DelayE2EUlNs.

b) This KPI describes the average e2e UL packet delay between the PSA UPF and the UE for a network slice. It is the average packet delay from the time when an UL RLC SDU was scheduled at the UE until time when the corresponding GTP PDU was received by the PSA UPF. The KPI type is MEAN in unit of 0.1 ms.

c) This KPI is the weighted average of UL packet delay between PSA UPF and UE, for all N3 interfaces (modelled by EP\_N3 MOIs) and N9 interfaces (modelled by EP\_N9 MOIs) of all PSA UPFs supporting the network slice (modelled by NetworkSlice MOI) identified by the S-NSSAI.

This KPI is calculated in the equation below, where Wn3 and Wn9 are the measurements for the weighted average, Wn3 is one of the following:

- the data volume of UL GTP PDUs received by PSA UPF on the N3 interface;

- the number of UL GTP PDUs received by PSA UPF on the N3 interface;

- any other types of weight defined by the consumer of KPI.

And Wn9 is one of the following:

- the data volume of UL GTP PDUs received by PSA UPF on the N9 interface;

- the number of UL GTP PDUs received by PSA UPF on the N9 interface;

- any other types of weight defined by the consumer of KPI.

DelayE2EUlNs =

Where the *SNSSAI* identifies the S-NSSAI.

d) NetworkSlice

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| **End of Modified Sections** |