**3GPP TSG SA WG5 Meeting #156 *S5-244502***

**Maastricht, The Netherlands 19 - 23 August 2024**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **28.201** | **CR** | **0014** | **rev** | **1** | **Current version:** | **18.1.0** |  |
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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 |  | Core Network | **X** |

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| ***Title:*** | Rel-19 CR 28.201 Support the energy related information per network slice | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EnergySys\_CH | | | | |  | ***Date:*** | | | 2024-08-22 |
|  |  | | | |  | |  | | |  |
| ***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 o. | | | | | | | | *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:*** | | As defined in SA1 service requirement for energy efficiency as service criteria , “the 5G system shall support a means to associate energy consumption information with charging information based on subscription policies for services without QoS criteria.”  Energy consumption is a performance metric of network slice, collected by OAM for a given analytics period, as defined in TS 28.554 clause 6.7.3.3 ECns.  This ECns metric could be associated with NSPA charging information, in a similar way as other performance metrics of the network slice that are collected as NSPA charging information, e.g. latency, throughput, load level information. | | | | | | | | |
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| ***Summary of change:*** | | Add energy consumption in the NSPA charging information. | | | | | | | | |
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| ***Consequences if not approved:*** | | The charging for network slice performance and analytics does not support the SA1 requirement on energy efficiency as service criteria. | | | | | | | | |
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| ***Clauses affected:*** | | 5.1.3, 6.2.1.3 | | | | | | | | |
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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:*** | | Revision of S5-244012. | | | | | | | | |

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| **First change** |

### 5.1.3 Network slice performance and analytics charging information

The following is a non-exhaustive list related to one or more of the performance and analytics inputs relevant to charging for network slice:

- Latency as defined in clause 6.3, TS 28.554 [271]

- Throughput as defined in clause 6.3, TS 28.554 [271]

- Maximum packet loss rate as defined in GSMA NG.116 [500]

- Service Experience statistics information as defined in clause 6.4, TS 23.288 [150]

- The number of PDU sessions as defined in clause 6.4, TS 28.554 [271]

- The number of registered subscribers as defined in clause 6.2, TS 28.554 [271]

- Load level information as defined in clause 6.3, TS 23.288 [150].

- Estimated Energy Consumption as defined in clause 6.7.3.3, TS 28.554 [271].

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| **Next Change** |

#### 6.2.1.3 Definition of NSPA Container Information

Specific charging information used for network slice performance and analytics charging is provided within the NSPA Container Information.

The detailed structure of the NSPA Charging Information can be found in table 6.2.1.3.1.

Table 6.2.1.3-1: Structure of NSPA Container Information

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| Information Element | Category | Description |
| Uplink Latency | OC | This field holds uplink latency as described in TS 28.541 [252] clause 6.4 uLLatency attribute (see NOTE 1). |
| Downlink Latency | OC | This field holds downlink latency as described in TS 28.541 [252] clause 6.4 dLLatency attribute. |
| Uplink Throughput | OC | This field holds uplink throughput of one single network slice as described in TS 28.541 [252] clause 6.4 uLThptPerSlice attribute (see NOTE 2). |
| Downlink Throughput | OC | This field holds downlink throughput of one single network slice as described in TS 28.541 [252] clause 6.4 dLThptPerSlice attribute |
| Maximum packet loss rate UL | OC | This field holds maximum packet loss rate uplink as described in TS 28.541 [252] clause 5.4 maxPacketLossRateUl attribute (see NOTE 3). |
| Maximum packet loss rate DL | OC | This field holds maximum packet loss rate downlink as described in TS 28.541 [252] clause 5.4 maxPacketLossRateDl attribute. |
| Service Experience statistics data | OC | This field holds service experience statistics data as described in TS 23.288 [150] |
| Number of PDU sessions | OC | This field holds the number of PDU sessions as described in TS 28.554 [271]. |
| Number of registered Subscribers | OC | This field holds the number of registered subscribers as described in TS 28.554 [271]. |
| Load level | OC | This field holds the load level as described in TS 23.288 [150]. |
| Estimated Energy Consumption | OC | This field holds the KPI that describe the estimated energy consumption of one single network slice during the measured period, as described in TS 28.554 [271] clause 6.7.3.3. |
| Note 1: For the back compatible, by default, the Latency holds the uplink latency.  Note 2: For the back compatible, by default, the Throughput holds the uplink throughput.  Note 3: For the back compatible, by default, the Maximum packet loss rate UL holds Maximum packet loss rate uplink. | | |

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| **End of change** |