**GPP** **TSG SA WG5 Meeting 134-e S5-206151rev3**

**electronic meeting, online, 16th - 25th November 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **28.535** | **CR** | 0001 | **rev** | **-** | **Current version:** | **16.1.0** |  |
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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 | **X** | Core Network | **X** |

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| ***Title:*** | Add use case of network resource usage and performance prediction assisted SLS communication service Assurance | | | | | | | | | |
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| ***Source to WG:*** | China Mobile | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
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| ***Work item code:*** | eCOSLA | | | | |  | ***Date:*** | | | 2020-10-30 |
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| ***Category:*** | B |  | | | | | ***Release:*** | | | 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)* | |
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| ***Reason for change:*** | | Network resource usage and performance prediction is important for SLA communication service assurance in specification level. Once the 3GPP management system has predicted network resource or performance degredation, it will activate closeloop to fullfil SLS requirements from CSP or NOP. So it is very useful to add this part in the specification. | | | | | | | | |
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| ***Summary of change:*** | | Add use case of network resource usage and performance prediction assisted SLS communication service Assurance | | | | | | | | |
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| ***Consequences if not approved:*** | | The use case and requirement of network resource usage and performance prediction are missing. | | | | | | | | |
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| ***Clauses affected:*** | | 6.1.x, 6.2 | | | | | | | | |
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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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| ***This CR's revision history:*** | |  | | | | | | | | |

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| **1st of Changes** |

6.1.x Network prediction assisted SLS communication service Assurance

The goal of this use case is to identify the management of network prediction assisted SLS communication service assurance. The SLS related to a particular communication service can be assured by considering the predicted network resource usage and performance within a certain time frame.

The 3GPP management system will have the most comprehensive network operating data, such as network resource utilization, network performance parameters in different periods. By introducing MDAS and NWDAF into both the management system and core network, it is possible that the network operating data can be the input of the closeloop to fulfil SLS requirements from CSP or NOP.

In a certain period of time, the current network condition is good enough to satisfy the SLS requirements. By introducing the prediction results from the analysis of MDAF and NWDAF, the historical data shows that the network will experience a traffic burst in certain area and certain time which can cause network resource shortage and performance degradation. This predictional results can directly trigger network actions such as reconfiguration and resource reallocation before the predicted traffic burst time. Similarly, in office area, the network will not active during holiday but will have network surges on working day, the network prediction can also trigger resource release and network function reconfiguration. This can not only save network operating costs on holiday but also achieve the goal of network service assurance on working day.

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| **2nd of Changes** |

6.2 Requirements

**REQ-CSA-CON-01** The 3GPP management system shall have the capability to take actions for a set of communication services serving certain group of UEs based on the target SLS.

**REQ-CSA-CON-02** The 3GPP management system shall have the capability to collect service experience information.

**REQ-CSA-CON-03** The 3GPP management system shall have the capability to analyse the performance information related to the set of communication services serving certain group of UEs.

**REQ-CSA-CON-04** The 3GPP management system shall have the capability to modify the configuration parameters related to the set of communication services serving certain group of UEs.

**REQ-CSA-CON-05** The 3GPP management system shall have the capability to collect NSI related data from one or more 5GC NF(s).

NOTE 1: An example for NSI related data may be QoE data.

**REQ-CSA-CON-06** The 3GPP management system shall have the capability to derive which communication service is associated to the QoE data from the collected NSI related QoE data.

**REQ-CSA-CON-07** The 3GPP management system shall have the capability to ascertain SLS breach.

**REQ-CSA-CON-08** The 3GPP management system shall have the capability to perform the root cause analysis (e.g., identifying the underlying reason) for an SLS breach.

**REQ-CSA-CON-09** The 3GPP management system shall have the capability to take corrective actions against the root cause identified.

**REQ-CSA-CON-10** The 3GPP management system shall have the capability to translate communicate service requirements to cross domain SLS goal and single domain SLS goal.

**REQ-CSA-CON-11** The 3GPP management system shall have the capability to collect single domain SLS analysis as input to cross domain SLS analysis.

**REQ-CSA-CON-12** The 3GPP management system shall have the capability to allow its authorized consumer to control the SLS assurance (e.g. specify the SLS to be assured, enable/disable, specify the assurance time and update the SLS assurance requirements).

**REQ-CSA-CON-13** The 3GPP management system shall have the capability to allow its authorized consumer to obtain the SLS assurance progress information and fulfil information.

NOTE 2: The management system refers to the producer of management service for SLS assurance.

**REQ-CSA-CON-x** The 3GPP management system shall have the capability to do network prediction (e.g. network resource usage and network performance) by analysing the network operation information in special scenarios.

**REQ-CSA-CON-y** The 3GPP management system shall have the capability to take actions such asnetwork configuration and perform network resource reallocation according to the network prediction results.

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| **End of Change** |