**3GPP TSG- Meeting #**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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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 |  |

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| ***Title:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
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| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
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| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | Some use cases and requirements where not addressed in Rel-16 and to be re-introduced in Rel-17. | | | | | | | | |
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| ***Summary of change:*** | | Use case for obtaining resource requirements for a communication service has been added  Use case for interaction with core network for service assurance has been added | | | | | | | | |
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| ***Consequences if not approved:*** | | Previously agreed us cases will be lost and not addressed in solution | | | | | | | | |
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| ***Clauses affected:*** | | 5.1.X (new), 5.1.Y (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:*** | | This CR builds on CR S5-211329 | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| **First change** |

### 5.1.X Use case for obtaining resource requirements for a communication service

Once a request for a communication service is received, in the communication service provisioning phase, the 3GPP management system needs to identify the resources required for this service in order to do service assurance. For example, during the feasibility study, in order to assure the performance, the 3GPP management system should be able to determine the resource availability for that service. This could be done by requesting the MDAS provider about the resource requirements and checking the available resources.

MDAS provider may already have resource requirement for a given service requirement, obtained by the historical analysis using offline or online monitoring of resource usage of similar services. In that case, the 3GPP management system can determine the feasibility and if feasible provision the communication services using those resources to go to the operational phase.

If the resource requirement cannot be determined (e.g. not sufficient prior data), the 3GPP management system may assign certain amount of initial resources and limit the number of users admitted by configuring the appropriate CN functions. The resource usage information and the services using those resources in a given time period with their performance (e.g. delay) is monitored by the 3GPP management system for different number of UEs to learn the resource requirement for different service requirements. This data could be used to determine resource requirements for future service requests during the provisioning phase or to adjust resources to reflect the changing service demands for the already admitted communication services.

It may be a continuous learning process in the run-time phase, since service degradation could happen due to various reasons and resources may need to be adjusted to address such situations.

**REQ-CSA\_RR-CON-01** The 3GPP management system shall be able to determine the resource requirement for a given communication service requirement.

**REQ-CSA\_RR-CON-02** The 3GPP management system shall be able to allocate certain amount of resources for a communication service and configure the 5GC functions to limit the number of users of a given communication service.

### 5.1.Y Use case for interaction with core network for service assurance

The goal is to enable the 3GPP management system to take early action to prevent service degradation.

The 3GPP management system configures the control plane functions (e.g. NWDAF) so as to report potential service degradation according to the SLS. Service load can be determined by considering both NF(s) load in 5GC and resource utilization in access network. If the service degradation occurs or predicted when the resources are scaled down, resources could be scaled up to solve the issue. Therefore, it is necessary for the 3GPP management system to configure the 5GC functions such that in the event that a potential service degradation or overloading is predicted, that is sent to the 3GPP management system. This can be done by properly configuring the overloading conditions (e.g. triggering parameters) in the 5GC functions of a selected service. The 3GPP management system could configure the 5GC functions to trigger when the service load is increased or predicted to be increased beyond a certain threshold level. The 3GPP management system could then do resource scaling or use MDAS to find a proper solution.

Similarly, when the resources are underutilized the 3GPP management system could do scaling down or deactivation of resources.

**REQ-CSA\_RR-CON-01** The 3GPP management system shall be able to configure the 5GC functions to make them report of a potential service load increase beyond a certain threshold so that the 3GPP management system can do scaling up of resources in time without impacting the SLA.

**REQ-CSA\_RR-CON-02** The 3GPP management system shall be able to determine the service load thresholds that need to be used by the 5GC functions to report, so that a potential resource overprovisioning situation can be ascertained.

**REQ-CSA\_RR-CON-03** The 3GPP management system shall be able to perform scaling down of resources when a resource overprovisioning is detected, and the overprovisioning is not needed.

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| **End of change** |