**3GPP TSG-SA5 Meeting #137-e *S5-213674***

**Online, 10st – 19th May 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **28.535** | **CR** |  | **rev** |  | **Current version:** | **17.1.0** |  |
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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:***  | Updated eCOSLA DraftCR |
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| ***Source to WG:*** | Samsung, Ericsson |
| ***Source to TSG:*** | S5 |
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| ***Work item code:*** | eCOSLA |  | ***Date:*** | 2021-05-25 |
|  |  |  |  |  |
| ***Category:*** | **B**  |  | ***Release:*** | Rel-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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | This contribution is draft CR for:S5-206326 Rel-17 draftCR TS 28.535 Coordination between control loopsS5-206366 Rel17 CR 28.535 Add use case and req for CL execution supe..S5-212397 Rel-17 CR TS 28.535 Input to eCOSLA draft CR S5-211358Reason for this update:It would be beneficial if the ACL can target a particular location while assuring the SLS. Strict SLS assurance for a service can be provided using ACL for a high-valued vertical customer present in a particular location. The example of this may include SP assuring assurance goal of guaranteed throughput for an eMBB service inside a customer premises.Further, it would be even beneficial to target particular UE(s) in a particular location for SLS assurance. Strict SLS assurance can be provided for a VIP customer(s) present in a particular location. The example of this may include SP assuring assurance goal of guaranteed throughput for an eMBB service for a particular UE(s) inside a customer premises |
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| ***Summary of change:*** | Adding Targeted ACCL use case and requirements  |
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| ***Consequences if not approved:*** | Inefficient COSLA implementations. |
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| ***Clauses affected:*** | 4.2.x (new), 6.1.X(new), 6.26.1.y (new), 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:*** | This draft CR includes:S5-206326S5-206366S5-212397S5-213674 (with agreed updates from S5-213287) |

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| **1st Change** |

## 4.2.x Coordination between closed control loops

Different closed control loops reside in the management domains or in the network functions to support automation and the autonomous networks. Different domains may involve overlapping or nonoverlapping coverage areas. The urposes and results of a closed control loop may have impact on other closed control loops. Coordination between closed control loops is needed for example in and between, the 5GC management domain and the NG-RAN management domain, to improve the performance in order to achieve the goal(s) of the closed control loops. Furthermore, coordination may also be needed when conflicts happen between closed control loops related to their activities.

A closed control loop may coordinate with other closed control loops in the same domain or in a different domain. Closed control loops in domain management for 5GC and NG-RAN are responsible for local optimization. Closed control loops in cross management domain may need to coordinate with closed control loops in multiple other management domains for the end to end optimization.

The relationships between closed control loops can be hierarchical and/or peer-to-peer. Coordination in the management domains include the following categories:

- Coordination between Cross Management Domain and the 5GC Management Domain

- Coordination between Cross Management Domain and the NG-RAN Management Domain

- Coordination within Cross Management Domain, 5GC Management Domain or NG-RAN Management Domain

- Coordination within:

- Cross Management Domain,

- 5GC Management Domain and

- NG-RAN Management Domain

Coordination in management domains provides the SLS assurance from the overall management perspective. It also provides governance and goals for the 5GC NFs and gNBs.

Editor’s NOTE: This will be revisited.

Editor’s NOTE: Cross management domain interactions are FFS

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| **2nd Change** |

### 6.1.X Assurance closed loop execution supervision

Assurance closed loops have a defined goal related to a communication service SLS may execute various actions in the deployed operator network. To fully understand and trust the execution of such an assurance closed loop in the system, The MnS consumer of the assurance closed loop may want to supervise the execution of the assurance closed loop at “pause point” during the Execute step of the closed loop. At this pause point the consumer is enabled to review the available information. MnS consumer can set the pause point before the closed loop is running or when the closed loop is de-activated.

The 3GPP management system provides the ability to enable or disable such “pause point” during the Execute step of the assurance closed loop. At a pause point, when notification is sent to the MnS consumer, the consumer of the control loop can enable pausing the execution of the control.

The assurance closed loop pause point can be defined by the assurance closed loop and set for “Execute” step only.

The MnS consumer obtain the pause point capabilities for assurance closed loop(s) from the MnS producer. For example, for NR coverage optimization closed loop, the pause point can be coverage adjustment action execution.

Based on the pause capabilities, MnS consumer requests the MnS producer to enable pause point for an assurance closed loop.

When a pause point is reached, the flow of the assurance closed loop is paused and the authorized MnS consumer is informed with the pause information. When the notified MnS consumer sends a resume request, the assurance closed loop flow will continue to execute to the next step of the assurance closed loop. For example, when a pause point at coverage adjustment execute step is enabled, the MnS producer will not execute coverage adjustment action and instead inform the authorized MnS consumer that coverage adjustment action is determined and wait for approval.

- If the coverage adjustment action is approved by the MnS consumer, the MnS consumer will request the MnS producer to resume. Then MnS producer can continue to execute the coverage adjustment action.

- If the coverage adjustment action is not approved by the MnS consumer, the MnS consumer requests MnS producer to reject execution of the coverage adjustment action.

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| **3rd Change**  |

### 6.1.y Targeted Assurance Closed Control Loop.

The goal of this use case is to provide the consumer of an assurance closed loop the ability to set targets (example location, UEs) per assurance goal(s) of an ACCL. This implies that an ACCL will be assuring goal(s) pertaining to the configured targets only. The SLS requirement may come for a particular location. It would be beneficial if the ACL can target a particular location while assuring the SLS. Strict SLS assurance for a service can be provided using ACL for a high-valued vertical customer present in a particular location. This will require configuring the ACL accordingly and would need ACL to collect the performance measurements, while monitoring the network, for the same target location. The example of this may include SP assuring assurance goal of guaranteed throughput for an eMBB service inside a customer premises.

Editor’s Note1: Relation of this use case and use case in clause 6.1.1 needs to be clarified, whether to merge is FFS.

Editor’s Note2: Providing assurance for a particular location requires the 3GPP management system to map the specification of location into NFs serving that location. How/If that mapping is done/possible is FFS. If it is possible it can be used for other functions as well, in particular MADCOL.

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| **4th Change**  |

## 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 to ensure the target goal.

**REQ-CSA-CON-10** The 3GPP management system shall have the capability to translate network slice requirements to cross domain network slicesubnet SLS goal and single domain network slicesubnet 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 fulfilment status information.

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

**REQ-CSA-CON-14** 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-15** 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.

**REQ-CSA-CON-16** The 3GPP management system shall have the capability to allow its authorized consumer to limit the set of action capabilities executable by an assurance closed loop.

**REQ-CSA-CON-17** The 3GPP management system shall allow an authorized consumer to set a condition to enable/disable an ACCL.

**REQ-CSA-CON-xx1** The 3GPP management system shall have the capability to configure SLS assurance goals for the 5GC management domain and the NG-RAN management domain.

**REQ-CSA-CON-xx2** The 3GPP management system shall have the capability to allow closed control loops in cross management domain to collect SLS assurance goal status of closed control loops in 5GC management domain and NG-RAN management domain.

**REQ-CSA-CON-X** The 3GPP management system shall have the capability to allow an authorized consumer to enable or disable pause point(s) connected to actions on managed entities during the ACCL’s execution phase and prior to the actions’ execution.”

**REQ-CSA-CON-XX3** The 3GPP Management System shall have the ability to provide SLS assurance within a particular location.

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| **End of Change** |