**3GPP TSG-SA5 Meeting #132e *S5-204314***

**e-meeting 17th 28th August 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **28.535** | **CR** | **0005** | **rev** | **-** | **Current version:** | **16.0.0** |  |
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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:***  | Coordination between closed loops |
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| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | eCOSLA |  | ***Date:*** | 2020-08-05 |
|  |  |  |  |  |
| ***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-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:*** | There may be multiple control loops ongoing in the autonomous network. The control loops reside in different domains, including 3GPP Cross Management Domain, 5GC Management Domain, NG-RAN Management Domain, 5GC Domain and NG-RAN Domain etc. Within each domain, there may be multiple control loops for different purposes, e.g. control loops for different scenarios, control loops for different SLS assurance goals etc. Control loops in the same domain or in a different domain may need to interact for the overall network automation.  |
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| ***Summary of change:*** | Add stage 2 description on coordination between control loops. |
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| ***Consequences if not approved:*** | It is not clear whether multiple parallel control loops are correlated. |
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| ***Clauses affected:*** | 4.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 ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| **1st of changes** |

## 4.x Coordination between control loops

Different control loops reside in management domains and network function levels to support the overall network automation. The purposes and results of different control loops may have impacts on one another. Coordination between control loops are needed in the management, 5GC and NG-RAN domains, as shown in the figure 4.x-1. A control loop may coordinate with another control loop in the same domain or in a different domain. Control loops in domain management are responsible for local optimization. Control loops in the end to end management may need to coordinate with control loops in multiple domains for the end to end optimizations. Within the same domain, multiple control loops may influence behaviours of each other and coordinations are needed.

The coordinations can be classified into horizontal and vertical types. Vertical coordination occurs between Cross Management Domain and the 5GC or NG-RAN Management Domain, or occurs between the 5GC Management Domain and the 5GC Domain, or between the NG-RAN Management Domain and the NG-RAN Domain. Horizontal coordination occurs within Cross Management Domain or 5GC or NG-RAN Management Domain. Horizontal coordination can also occur between 5GC Management Domain and NG-RAN Management Domain.

Coordination in the management domain provides the SLS assurance from the management perspective. Core and RAN contribute to the fulfilment of network slice SLS control loop from both the control plane and user plane perspective.

Editor’s note: It is FFS the different coordination scenarios and the impacts on NRM of the control loops.

3GPP Cross Management Domain

5GC Management Domain

NG-RAN Management Domain

**3GPP Management System**

5GC Domain

NG-RAN Domain

Figure 4.x-1: Coordination between control loops

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| **2nd of changes** |