**3GPP TSG-SA5 Meeting #141-e *S5-222341***

e-meeting, 17 -26 January 2022 (revision of xx-yyxxxx)

**Source: ZTE, China Telecom**

**Title: New SID on Closed control loop governance for autonomous network**

**Document for: Approval**

**Agenda Item: 6.2**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: Study on Closed control loop governance for autonomous network

Acronym: FS\_CCL\_AN

Unique identifier:

{A number to be provided by MCC at the plenary}

Potential target Release: Rel-18

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  | X | X |  |
| No | X | X |  |  |  |
| Don't know |  |  |  |  | X |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | *Work Task* |
| X | Study Item |

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

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| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

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| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 870030 | Rel-17 Work Item on Enhanced Closed loop SLS Assurance | This study will investigate the feasibility to reuse or extend the closed control loop mechanism proposed by this work item.  |
| 810027 | Rel-17 Work Item on Intent driven management services for mobile networks | This study will investigate whether the use cases in this work item can be part of a closed control loop. |
| 850028 | Rel-17 Work Item on Enhancement of Management Data Analytics Service | This study will investigate whether the use cases in this work item can be a closed control loop or part of a closed control loop. |
| 870028 | Rel-17 Work Item on Self-Organizing Networks (SON) for 5G networks | This study will investigate whether the use cases in this work item can be a closed control loop or part of a closed control loop. |
| 880027 | Rel-17 Work Item on Autonomous network levels | This study will investigate whether the use cases in this work item can be a closed control loop. |
| 870022 | Rel-17 Work Item on Enhancements on EE for 5G networks | This study will investigate whether the use cases in this work item can be a closed control loop or part of a closed control loop. |

# 3 Justification

Currently, SA5 has an ongoing closed control loop related work item - Enhanced Closed loop SLS Assurance (870030 - eCOSLA), which mainly focuses on the closed control loop for SLS assurance. At the meantime, there are several active autonomous network related work items in SA5, such as ANL, IDMS, eMDAS, eSON, EE5GPLUS etc., these work items have identified many use cases supporting autonomous networks, some of the use cases or combination of these use cases may need continuous iteration steps to support autonomous network. For example, Fault Management is mentioned in ANL (TS 28.100) and eMDAS (draft TS 28.104), for autonomous network, a closed control loop may be needed to continuously perform the health assurance of the network. Another example is Energy Saving, which is mentioned in EE5GPLUS (TS 28.310) and eMDAS (draft TS 28.104), for autonomous network, a closed control loop may be needed to continuously perform the energy efficiency assurance of the network.

The mechanism defined in eCOSLA may be general for closed control loops governance, but the existing use cases in TS 28.535 are all SLS assurance related, therefore it is necessary to take further study to identify whether the existing closed control loop mechanism is fully suitable for all kind of closed control loops or it needs to be enhanced. And the existing solution of the closed control loop mechanism obviously focuses on the closed control loop for SLS assurance, because the AssuranceGoal is based on serviceProfile or sliceProfile, and the attributes in serviceProfile and sliceProfile cannot fully cover the controlling of the closed control loops for the fault management or energy efficiency assurance. And from monitoring point of view, the consumer may need more detailed information of the closed control loop status, not only the lifecycle phase which includes Preparation, Commissioning, Operation and Decommissioning.

So it is proposed to study the closed control loops of the other use cases first, and check whether these use cases can be covered by the mechanism defined in eCOSLA. If all the use cases can be covered by eCOSLA directly, then no new WID is needed; and if some use cases can be covered by eCOSLA directly, but all other use cases can be covered by eCOSLA after enhancement, then a new WID to enhance the mechanism in eCOSLA is needed; and if some use cases cannot be covered by eCOSLA, even if eCOSLA is enhanced, then a new WID to define a new closed control loop governance mechanism is needed.

# 4 Objective

The objective of this study includes the follows:

1. Identify existing closed control loops which are not covered by eCOSLA based on the use cases or the combination of the use cases from the output of the existing autonomous network related work items (e.g. ANL, IDMS, eMDAS, eSON, EE5GPLUS);
2. Identify potential requirements to support the controlling and monitoring of the identified closed control loops, include but not limited the following closed control loops:
	* Closed control loop for Fault Management;
	* Closed control loop for energy efficiency assurance;
3. Study the potential solutions to support the identified requirements
4. Study the necessity and feasibility to reuse or enhance the current closed control loop controlling and monitoring mechanism in eCOSLA to support more autonomous network related use cases;
5. Derive recommendation for normative work item(s) if enhancement of eCOSLA and/or new mechanism for closed control loop governance is needed.

During the study, coordination with the work group or project in other SDOs (e.g. ETSI ZSM, TM Forum Autonomous Networks Project) may be needed.

# 5 Expected Output and Time scale

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| New specifications {One line per specification. Create/delete lines as needed} |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
| TR | 28.XXX | Study on Closed control loop governance for autonomous network | Sep 2022 (SA#97) | Dec 2022 (SA#98) | Zhu Weihong, ZTE, as primary rapporteur for items 2, 4, 5; andChen Xiumin, China Telecom, as rapporteur for item 1, 3 |
|  |  |  |  |  |  |

{Note 1: Only TSs may contain normative provisions. Study Items shall create or impact only TRs.
"Internal TR" is intended for 3GPP internal use only whereas "External TR" may be transposed by OPs.}

{Note 2: The first listed Rapporteur is the specification primary Rapporteur. Secondary Rapporteur(s) are possible for particular aspect(s) of the TS/TR. In this case, their responsibility has to be provided as "Remarks".}

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| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
|  |  |  |  |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Zhu Weihong, ZTE, zhu.weihong@zte.com.cn

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval}

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| Supporting IM name |
| ZTE |
| China Telecom |
| China Unicom |
| CATT |
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