**3GPP TSG-SA5 Meeting #140-e *S5-216306rev2***

e-meeting, 15 - 24 November 2021 (revision of xx-yyxxxx)

Source: Lenovo, Motorola Mobility

Title: New R18 SID on Conflict management and coordination

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:

Enablers for conflict management and coordination in management and control plane closed loops

Acronym: CoMCo

Unique identifier:

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

Potential target Release: *Rel-18*

# 1 Impacts

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

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work is a study item

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | Work Task |
| x | Study Item |

## 2.2 Parent Work Item

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

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
|  |  | {optional free text}  |

Dependency on non-3GPP (draft) specification:

# 3 Justification

Automation is a key ongoing topic for telco networks. In R17 SA5 has worked on eCOSLA while SA2 has created NWDAF driven closed loops. Having multiple closed loops in a system is likely to result in conflicting actions in some cases where multiple closed loops may react to the same issue and solve it in conflicting or sub-optimal manner. For example: The NWDAF may determine that a NSI is above a certain load threshold – this may cause different NFs or OAM to take different conflicting/or sub optimal actions.

Conflicts include multiple aspects such as:

* issuing contradictory actions. Example two different closed loops configuring the same entity to achieve conflicting goals.
* configurations to managed entities that result in a sub-optimal network behaviour example: multiple entities responding to an analytics output performing various actions, all of which may not be necessary.
* oscillating configurations such as thrashing

The issue is exacerbated by sharing the operator network to multiple tenants who may even want their individual closed loops to optimize different aspects of the network. In conclusion, the closed loops developed by SA5 and those existing in the control plane over multiple tenants, network slices and management domains need to be coordinated to avoid such conflicts.

This work should be done in SA5 as only the management system has to entire network view to be able to correctly detect and possible avoid or resolve such conflicts.

# 4 Objective

The key objectives would be

* Identifications of scenarios that result in possible conflicts in management or NWDAF driven closed loops and requirements towards possible resolutions
* Mechanisms for coordinating various aspects, such as but not limited to:
* Goal configuration coordination of closed loops
* Pre and Post execution coordination in closed loops
* Coordination at the NF
* Enablers for impact assessment of conflict management solutions

# The study will propose potential solutions in the form of generic enablers that can assist in conflict detection and coordination mechanism across vendor implementations. The work will coordinate with other related R18 studies or work items in SA5 such as but not limited to COSLA, SON, MDAS, ANL. 5 Expected Output and Time scale

|  |
| --- |
| 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 conflict management and coordination | Dec 2021SA#94e | Sep 2022 SA#97 | Vaishnavi, Ishan ivaishnavi@lenovo.com |
|  |  |  |  |  |  |

# 6 Work item Rapporteur(s)

## Vaishnavi, Ishan; Lenovo; ivaishnavi@lenovo.com

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

Conflicts and coordination aspects related to the control or user plane may involve discussion with SA2

Conflicts and coordination aspects related to the radio networks may involve discussion with RAN groups, primarily, RAN3

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Lenovo |
| Motorola Mobility |
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