**3GPP TSG-SA5 Meeting #157S5-245404**

**14 - 18 October 2024, Hyderabad, India**

**Source: Nokia**

**Title:** **pCR 28.867 Coordinating CCLs and other management features**

**Document for: Approval**

**Agenda Item: 6.19.4**

# 1 Decision/action requested

***The group is asked to discuss and agree on the proposal.***

# 2 References

[1] 3GPP TR 28.867-041 “Closed control loop management”.

# 3 Rationale

CCLs will make decisions in different network contexts. Yet within the network, there may be other managememt function that are making decision that affect network functions and their parameters. The operation of CCLs need to be coordinated with the other management functions. This pCR adds a UC on coordinating CCLs with the other management functions.

This supports WT5 of te study, i.e.:

WT-5: Management Coordination: Study the relation between closed loops and other management features e.g. SON functions, MDA.

# 4 Detailed proposal

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| **Start of modification** |

# 5. Use Cases

### 5.X Coordinating CCLs with other management functions

5.X.1 Description

A CCL makes and executes decisions in different network contexts and for different network functions and parameters. Yet within the network, there may be other managememt functions or features including MDA functions, SON functions, and AIML Functions, which also make decisions that affect the same network functions and parameters as the CCL. The operation of CCLs need to be coordinated with the other management functions.

#### 5.X.2 Potential requirements

**REQ- CCL-ESC-1:** The CCL MnS producer should have a capability to indicate to a coordination functionality the set of network functions including their parameters which it is interested in changing

**REQ- CCL-ESC-2:** The CCL coordination MnS producer should have a capability to enabling an authorized MnS consumer to receive information on the latest changes to a network function parameter and an identifier of a management entity/function responsible for the change to the parameter

Note y1: an example MnS consumer may be a CCL instance

Note y2: an example of management entity/function responsible for the change to the parameter may include an instance of a MDA Function, a SON Function or an AI/ML inference Function. These finctions may not necessarily execute or be responsible for executing the change

**REQ- CCL-ESC-3:** The CCL coordination MnS producer should have a capability to enabling an authorized MnS consumer to receive the history of previous values of the parameter, e.g, from the coordination functionality.

Note: The history includes, for each previous value, the identifier of a respective management entity/function responsible for that change to the parameter

### 5.x.3 Possible solutions

###### 5.x.3.1 Required capabilities and interactions.

For a given context, the CCL should should indicate to a coordination functionality the set of network functions and corresponding parameters which it is interested in changing. Accordingly, the coordination functionality may subscribe to changes to the network functions and corresponding parameters. Then in case of changes to subscribed-to network functions and parameters, the network functions notifies the coordination functionality of these chnages. The coordination functionality subsequently notifies the CCL of the information on the latest changes to a network function parameter and an identifier of a management entity/function (e.g. CCL, MDA, SON, AI/ML inference Function) responsible for the change to the parameter;

The CCL determines the history of previous values of the parameter, e.g, from the coordination functionality. The history includes, for each previous value, the identifier of a respective management entity/function responsible for that change to the parameter. The CCL defines a favorable range of values of the parameter based on the received information on the latest change and the history of previous changes to the parameter The CCL calculates a new value of the parameter considering the favorable range as a constraint for the new value. The CCL can then update the value of the parameter of the network function to the new value

###### 5.x.3.2 Information objects to realize required capabilities and interactions

- update the sourceIndicator attribute of the notifyMOIcreation to include a CCL’s control scope. With this, the CCL coordination entity is notified of the specific control scopes when CCL is instantiated.

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- Introduce a data type and corresponding attribute on the CCL coordination entity representing information about the control scopes of different CCLs. The data type may be called cCLsControlScope and includes an attribute representing the history of changes to that control scope by any other management entity which is not the CCL. The attribute may be called cCLsControlScope.

Note: the logging of history may be a based on a generic logging data functionality that is not specific to CCLs

- introduce on the cCLsControlScope an attribute representing a change to that control scope by another management entity which is not the CCL. The attribute may be called ControlScopeChange. The attribute should be notifiable, so that in case of a change, the CCL coordination entity writes the change into the ControlScopeChangewhich is then notified to the CCL.

- Given the notification, the CCL may read the the ControlScopeChange to obtain the history of changes.

5.X.4 Evaluation of solutions

The solution in clause 5.x.3 provides the procedures and information objects to enable coordinating CCLs with other management functions including MDA functions, SON functions, and AIML Functions. No conflicting solution for coordinating CCLs with other management functions is provided. it is recommended to apply the solution in in clause 5.x.3 as the solution for coordinating CCLs with other management functions.

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| **End of modifications** |