**3GPP TSG-SA5 Meeting #144-e *S5-224130***

e-meeting, 27 June-01 July 2022*Revision of S5-223320*

**Source: China Mobile, Huawei**

**Title: pCR TR 28.909 Add key issues of generic methodology for autonomous network levels evaluation**

**Document for: approval**

**Agenda Item: 6.7.2.1**

# 1 Decision/action requested

***The group is asked to discuss and approval.***

# 2 References

[1] 3GPP draft TR 28.909: “Management and orchestration; Study on evaluation of autonomous network levels v0.1.0”.

# 3 Rationale

This contribution proposes to add key issues for generic methodology for autonomous network levels evaluation based on concept for autonomous network level evaluation in clause 4.1 to reflect which aspects needs to be considered

# 4 Detailed proposal

It proposes to make the following changes to TR 28.909[1].

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| **1st Change** |

## 5.2 Key Issue# 2: Generic methodology for autonomous network levels evaluation

*Editor's note: this clause will contain the description and potential solutions of generic methodology for quantitatively evaluating the autonomous network levels (evaluation mechanisms for autonomous network levels).*

### 5.2.1 Description

Based on the dimensions for evaluating autonomous network level specified in TS 28.100[2] , the following aspects need to be considered to support autonomous network level evaluation:

**Consideration-1**: Autonomous network levels upgrading need to be carried out under the premise of network and service performance assurance, for example existing KPI and measurements can be used to evaluate the network performance. Besides the consideration of network and service performance assurance, KEI (defined in clause 4.1.3) is introduced to describe the effectiveness of introducing autonomy capability into telecom system. Different telecom systems can achieve different KEI values by introducing different autonomy capabilities. For example, telecom system A takes 5 days to optimize the radio network and obtain certain coverage performance gain, while telecom system B takes one day to optimize the radio network and obtain the same coverage performance gain. The autonomy capability for telecom system A and telecom system B may need to be differentiated according to the effect they achieved for the same purpose (i.e. radio network coverage optimization).

Thus, performance assurance is an essential prerequisite for autonomous network level evaluation and besides that, KEI needs to be considered for the evaluation as well.

**Consideration-2**: To upgrade the autonomous network to different levels, autonomy capabilities corresponding to different tasks need to be improved. Using the network optimization for example, if operators want to upgrade their telecom system from level 2 to level 3, the corresponding autonomy capabilities for all the 7 tasks (task C to task I) may need to be improved (see figure 5.2.1-1). If the telecom system A improves the autonomy capability for one of the 7 tasks, while telecom system B improves the autonomy capability for one of the other tasks out of the 7 tasks, the autonomy capability for telecom system A and telecom system B may need to be differentiated according to the improvement on different tasks which may effect or not effect the level upgrading.

Thus, the satisfaction degree for the each key tasks (the task with different autonomy capability between the current autonomous network level (e.g., level 2) and higher autonomous network level (e.g. level 3)) needs to be focused on for autonomous network level evaluation.



Figure 5.2.1-1 autonomous network level example for network optimization

**Consideration-3**: Different tasks have different implementation difficulty to improve the autonomy capability from one level to a higher level. Using the network optimization for example, if operators want to upgrade their telecom system from level 2 to level 3, the autonomy capability for 6 tasks needs to be improved (see figure 5.2.1-1). Telecom system may take more effort to improve the autonomy capability for certain task (e.g. Task D: Network deterioration prediction) than other task (Task C: Network related information collection), the autonomy capability for telecom system corresponding to different tasks may need to be differentiated.

Thus, the weight assigned to each individual task for ANLS calculation needs to be considered for autonomous network level evaluation. The weight can be used to represent implementation difficulty and operational cost for human to perform. One example is frequency of the task, the more often the task is expected to be accomplished by human (specially by experts), the bigger savings can be achieved by introducing autonomy capability. Another example is where and when the task is executed, if the human executing the task is in a country or region where the workforce costs a lot, big savings are expected if this task becomes automated. The detailed value for the weight of each task is implementation dependent, which will not be standardized.

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| **End of Changes** |