**3GPP TSG-SA5 Meeting #155 *S5-243157d1***

Jeju, South Korea, 27 - 31 May 2024

**Source: ZTE Corporation**

**Title: pCR TR 28.914 add use case, requirements and solution for negotiation on the possible outcomes or solutions during the fulfilment phase**

**Document for: Approval**

**Agenda Item: 6.19.3**

# 1 Decision/action requested

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

# 2 References

[1] Study on intent driven management service for mobile network phase 3 v0.0.0

[2] SP-231737 "Study on intent driven management services for mobile network phase 3"

# 3 Rationale

When the MnS Consumer expresses an intent for fulfilment, the producer may have numerous solutions for fulfilment. The MnS consumer may not have the capability to determine which solution is better, which means it should negotiate with the MnS Consumer to make a decision. It proposes to add a key issue for introducing the MnS capability to negotiate on the possible outcomes/solutions during the fulfilment phase.

This contribution is related to WT-3.1 of the FS\_IDMS\_MN\_Ph3 SID [2], which is to investigate intent negotiation functionalities.

# 4 Detailed proposal

***Start of First change***

# 5 Use cases

## 5.X Use case#<X>: Negotiation on the possible outcomes or solutions during the fulfilment phase

### 5.X.1 Description

In TS 28.312 R18, the intent fulfilment feasibility check is already supported. When intent intent-driven MnS producer receives the intent instance creation or modification request, it automatically conducts a feasibility check to determine whether the intent instance is feasible. If the feasibility check result is feasible, the MnS producer performs the service or network management tasks to satisfy the intent instance.

However, the MnS Producer cannot decide the content of intent it receives and the MnS Consumer may express a feasible intent but the producer has multiple ways to fulfil it. One of these solutions might be better in one aspect and another solution might be better in another aspect. Although this intent is feasible, the producer may not have the knowledge and capability to determine which solution is appropriate. For example, the MnS Consumer may express intent for energy saving but only specify the target for energy consumption reduction without more constraints, e.g., reduce 20% energy consumption. There will be numerous solutions to fulfil the energy consumption target with various impacts, e.g., one solution may reduce the coverage and one may reduce the user number. The consumer may have concerns on the unexpected impact of the selected solution by the Producer, which means that negotiation with the MnS Consumer is necessary. Therefore, it is important to introduce the MnS capability to enable the MnS producer to provide feedback (e.g., possible solutions, possible outcomes, and expected impacts) to allow the MnS Consumer to determine the appropriate solution.

### 5.X.2 Potential requirements

**REQ-Intent\_Negotiation \_01:**The intent-driven MnS should have the capability to enable the MnS producer to provide possible outcomes/solutions to the MnS Consumer.

**REQ-Intent\_Negotiation\_02:**The intent-driven MnS should have the capability to allow MnS Consumer decide appropriate outcome/solution for fulfilment based on possible outcomes.

Note: the relation and definition for outcome and solution are FFS.

### 5.X.3 Potential solutions

#### 5.X.3.i Potential solution #<i>: Negotiation on the possible outcomes/solutions during the fulfilment phase

This solution proposes to enhance the existing Intent IOC and IntentReport IOC defined in TS 28.312 [X] to enable the MnS producer to provide feedback including the possible outcomes and solutions to the MnS Consumer. Following are the proposed enhancements:

**Enhancement on Intent IOC**: Introduce attribute “recommendationType” in the Intent IOC to determine the possible feedback including the possible outcomes and solutions the MnS Consumer can obtain from the MnS Producer. The allowed values for “recommendationType” are as follows:

1. RecommendedOutcomes, it represents that the MnS Consumer requests the MnS Producer to provide possible outcomes based on the received intent.
2. RecommendedSolutions, it represents that the MnS Consumer requests the MnS Producer to provide possible solutions based on the received intent.

**Enhancement on IntentReport IOC**: Introduce IntentNegotiationReoprt <<dataType>> as an attribute of IntentReport IOC to represent the feedback including possible outcomes and solutions provided by MnS producer to allow the MnS Consumer determine the appropriate solution/outcome. IntentNegotiationReoprt <<dataType>> includes following attributes:

1. PossibleOutcomeList, supported when the recommendationType is “RecommendedOutcomes”. It includes a list of possible outcomes.
2. PossibleSolutionList, supported when the recommendationType is “RecommendedSolutions”. It includes a list of possible solutions.
3. ExpectedImpacts, it includes the potential impact of corresponding outcomes or solutions above.

Note: the relation and definition for outcome and solution are FFS.

***End of First change***