Source: Samsung Electronics Co. Ltd

**Title: [FS\_MS\_NS\_Ph2] Candidate Solution for Key Issue #1: Service Provisioning**

**Agenda Item: 8.10**

**Document for: Discussion and Agreement**

# **Introduction**

During the MBS SWG Post 121 meeting on Feb 9, a contribution S4aI230043 was discussed that covered the aspect of service provisioning with network slicing. Few comments were received for the proposal. The meeting minutes for the above contribution are included here: <https://docs.google.com/document/d/1-5ITMNqHs2hOc3nspieDukQHOfwvxOf2Zg3ytlkZAIU/edit?usp=sharing>.

The above contribution proposed both - a key issue and candidate solution for inclusion in TR 26941. Comments were received for both of them.

* A separate contribution S4-230251 is submitted to this meeting (SA4#122) with updates to key issue description.
* This contribution describes updates to the candidate solution that was discussed in S4aI230043. Specifically, this contribution addresses one of the open issues for the Key issue#1 (proposed in S4-230251): “Whether and how the 5GMS Application Provider provisions policy templates with alternate slice information”. We request to consider this contribution if the other contribution S4-230251 with the key issue is acceptable.

# **Aspects related to Service Provisioning**

Clause 7.9.3 of TS 26.512 describes data model for policy template resource as part of the M1 policy template provisioning API. Some of the information elements in the resource definition are the following:

| Property | Type | Cardinality | Description |
| --- | --- | --- | --- |
| policyTemplateId | ResourceId | 1..1 | Unique identifier of this Policy Template within the scope of the Provisioning Session. |
| externalReference | String | 1..1 | Additional identifier for this Policy Template, unique within the scope of its Provisioning Session, that can be cross-referenced with external metadata about the media streaming session. |
| qoSSpecification | M1QoSSpecification | 0..1 | Specifies the network quality of service to be applied to media streaming sessions at this Policy Template. |
| ApplicationSession‌Context | Object | 1..1 | Specifies information about the application session context to which this Policy Template can be applied. |
|  afAppId | AfAppId | 0..1 | As defined in clause 5.6.2.3 of TS 29.514 [34] and clause 5.3.2 of TS 29.571 [12]. |
|  sliceInfo | Snssai | 0..1 |
|  dnn | Dnn | 0..1 |
|  aspId | AspId | 1..1 |

From the above, it is clear that there is a 1:1 correspondence between the policyTemplate parent and the ApplicationSessionContext child. With this correspondence, multiple M1 API requests from the application provider to the 5GMS AF are required to provision a policy with identical externalReference tag and M1QoSSpecification but that differ in the members of ApplicationSessionContext (e.g., with differing application Ids, or slice and dnn combinations, or even different ASP identifiers).

To address the above issue and the open issue described in clause 1, we propose enhancement of data model of policy template resource in clause 7.9.3 of TS 26.512 to include an array of ApplicationSessionContext objects so one M1 API request could be enough for configuring a policy template that applies to one or more ApplicationSessionContext objects. Providing a second ApplicationSessionContext information helps with provisioning of alternate slice as described in the key issue. The change is proposed in clause 3 below.

One of the discussion points during the Post 121 MBS adhoc telco on Feb 9 is to allow for similar configuration for app identifiers as well, and that such a change is not required for ASP identifiers in the ApplicationSessionContext object. Below change takes this into account.

# **Proposal**

We propose following change be adopted into TR 26.941 for key issue #1. Summary of changes:

1. Make ApplicationSessionContext plural i.e an array
2. Add an array of NetworkContexts as a child which will include the sliceInfo and dnn fields.
3. Move aspId out of ApplicationSessionContext as we do not want to configure the same policy for multiple ASP identifiers

**===== 1. CHANGE =====**

## 6.1 Key Issue #1: Service Provisioning

### 6.1.1 Description

### 6.1.2 Candidate solutions

#### 6.1.2.1 Candidate solution #1: Policy template provisioning for a collection of Application Session Contexts

In this candidate solution, the Policy Template resource specified in clause 7.9.3.1 of TS 26.512 [21] is modified as follows:

1. To enable a Policy Template to be valid for more than one application, the applicationSessionContext property is converted into an array. The Application Service Provider and optional Application Identifier continue to be specified for each such Application Session Context using the existing aspId and afAppId properties respectively.

2. Each Application Session Context declares one or more alternative Network Slices and/or DNNs to which it applies. To achieve this plurality, the sliceInfo and dnn properties are moved into a networkContexts child array. Both properties remain optional, so it is syntactically valid for the networkContexts array to contain empty objects.

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| 7.9.3 Data model7.9.3.1 PolicyTemplate resourceThe data model for the PolicyTemplate resource is specified in table 7.9.3‑1 below:Table 7.9.3-1: Definition of PolicyTemplate resource

| Property | Type | Cardinality | Usage | Visibility | Description |
| --- | --- | --- | --- | --- | --- |
| policyTemplateId | ResourceId | 1..1 | C: ROR: ROU: RO |  | Unique identifier of this Policy Template within the scope of the Provisioning Session. |
| state | Enumeration of Strings | 1..1 | C: ROR: ROU: RO |  | A Policy Template may be in the PENDING, INVALID, READY, or SUSPENDED state.Only a Policy Template in the READY state may be instantiated as a Dynamic Policy Instance and applied to media streaming sessions. |
| apiEndPoint | String | 1..1 | C: RWR: ROU: RW | MNO Admin | The API endpoint that should be invoked when activating a Dynamic Policy Instance based on this Policy Template. |
| apiType | Enumeration of Strings | 1..1 | C: RWR: ROU: RW | MNO Admin | N5: Npcf\_PolicyAuthorization Service.N33: AsSessionWithQoS or ChargableParty. |
| externalReference | String | 1..1 | C: RWR: ROU: RW |  | Additional identifier for this Policy Template, unique within the scope of its Provisioning Session, that can be cross-referenced with external metadata about the media streaming session. |
| qoSSpecification | M1QoS‌Specification | 0..1 | C: RWR: ROU: RW |  | Specifies the network quality of service to be applied to media streaming sessions at this Policy Template. |
| applicationSession‌Contexts | Array(Object) | 1..1 |  |  | Specifies information about the application session context to which this Policy Template can be applied. |
|  afAppId | AfAppId | 0..1 | C: RWR: RWU: RW  |  | As defined in clause 5.6.2.3 of TS 29.514 [34] and clause 5.3.2 of TS 29.571 [12]. |
|  networkContexts | Array(Object) |  |  |  |
|  sliceInfo | Snssai | 0..1 | C: RWR: RWU: RW |  |
|  dnn | Dnn | 0..1 | C: RWR: RWU: RW |  |
|  aspId | AspId | 1..1 | C: RWR: RWU: RW |  |
| chargingSpecification | Charging‌Specification | 0..1 | C: RWR: RWU: RW  |  | Provides information about the charging policy to be used for this Policy Template. |

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**===== END CHANGES =====**