Source: Samsung Electronics Co. Ltd

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

**Agenda Item: 2.6**

**Document for: Discussion and Agreement**

# **Introduction**

During the SA4#121 meeting, a contribution S4-221435 was discussed that covered the aspect of moving M4 media flows to other slices. Few comments were received for the key issue in the proposal. One of the suggestions is related to service provisioning aspects. This contribution discusses aspects related to service provisioning and proposes a simple enhancement to policy template data model.

# **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 provide better flexibility, the data model can be enhanced to include an array of ApplicationSessionContext objects so one M1 API request could be enough for this type of configuration.

# **Proposal**

We propose following change be adopted into TR 26.941 for key issue #3.

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

## 6.1 Key Issue #1: Service Provisioning

### 6.1.1 Description

#### 6.1.1.1 Provisioning media services with network slicing

Clause 7.9.3 of TS 26.512 describes a data model for PolicyTemplate resource to be used during M1 Policy Templates Provisioning API. In this data model, a strict one-to-one correspondence between the ApplicationSessionContext child and the parent policyTemplate is specified. With this correspondence, to configure a policy with identical externalReference and M1QoSSpecification for different ApplicationSessionContext members, multiple M1 Policy Templates Provisioning API requests from the 5GMS Application Provider to the 5GMS AF are required. For example, if the 5GMS Application Provider intends to allow identical policy treatment to application flows in PDU Sessions of multiple network slices, with the current design, the 5GMS Application Provider has to send a separate M1 Policy Templates Provisioning API request for each of the sliceInfo and DNN combinations. To provide better flexibility to 5GMS Application Provider, the data model of PolicyTemplate resource can be enhanced to include a collection of ApplicationSessionContext members to avoid unnecessary duplication.

### 6.1.2 Candidate solutions

#### 6.1.2.1 Candidate solution #1: Policy template provisioning for a collection of application session contexts

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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. |
| ApplicationSession‌Context | 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]. |
|  networkContext |  |  |  |  |
|  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 =====**