**3GPP TSG-CT WG4 Meeting #110-eC4-223327**

**E-Meeting, 12th – 20th May 2022 Revision of C4-223046**

**Source: Samsung**

**Title: User Plane Traffic Flow Information**

**Spec: 3GPP TS 29.581 v0.1.0**

**Agenda item: 6.1.16 / 5MBS**

**Document for: Approval**

**1. Introduction**

As per feedback from SA4 in LS S4-220575:

|  |
| --- |
| **Background:** Table 4.5.6-1 of TS 26.502 specifies a parameter *MB‑UPF traffic flow information* which includes the multicast group destination address and port number. Clause 4.5.2 (Step #4) further indicates:*"….. In response, the MB-SMF provides the MB-UPF ingest information (specifically, the MB‑UPF tunnel endpoint address and traffic flow information to be used by the MBSTF) to the MBSF."*It is CT4's understanding that:1. If Nmb9 supports multicast, the MBSF needs to provide a multicast address assigned by MBSTF to MB-SMF which further provides it to MB-UPF, and MB-UPF correspondingly performs IGMP Join towards the MBSTF.
2. If Nmb9 supports unicast, the MBSF needs to provide *MB‑UPF tunnel endpoint address* to the MBSTF.

Hence, there is no scenario in which the MB-UPF's "multicast group destination address and port number" needs to be sent to the MBSTF.**Question 3:** CT4 would like to request SA4 to confirm if the CT4's understanding is correct.**Question 4:** If the CT4's understanding is not correct, CT4 kindly request SA4 to clarify how this parameter is used by the MBSTF. |

**SA4 Response:** With reference to the answer to question 2 above, SA4 understands direct multicast via IGMP Join is not supported at reference point Nmb9, so point a) above is not a valid scenario.

Regarding point b), SA4 agrees that the MBSF needs to provide the *MB‑UPF tunnel endpoint address* to the MBSTF as an input parameter to the Nmbstf\_MBSDistributionSession\_Create service operation, per the response to question 2 above.

Regarding the question about sending the multicast group destination address and port number in the Nmbstf\_MBSDistributionSession\_Create service operation: SA4 believes that this *MB-UPF Traffic Flow Information* (which SA4 has agreed to rename *User Plane Traffic Flow Information* for the sake of clarity) still needs to be passed from the MBSF to the MBSTF so that the latter knows which multicast group address and port number to use when generating packets in the case of Object Distribution Method and also Packet Distribution Method in proxy mode. In the case of Packet Distribution Method operating in Forward-only mode, the *MB‑UPF Traffic Flow Information* (renamed rename *User Plane Traffic Flow Information*) is redundant.

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The changes are accordingly proposed/planned to TS 26.502 in S4-220568.

This pCR proposes corresponding changes in MBSTF data-model.

**2. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.581 v0.1.0.

**\*\*\*\*\*\*\***

\* \* \* \* Start of Changes \* \* \* \*

#### 6.1.6.1 General

This clause specifies the application data model supported by the API.

Table 6.1.6.1-1 specifies the data types defined for the Nmbstf\_MBSDistributionSession service based interface protocol.

Table 6.1.6.1-1: Nmbstf\_MBSDistributionSession specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| CreateReqData | 6.1.6.2.2 | Data within the Create Request |  |
| CreateRspData | 6.1.6.1.3 | Data within the Create Response |  |
| DistSession | 6.1.6.2.4 | Data specific to distribution session |  |
| ObjDistributionData | 6.1.6.2.5 | Data specific to Object Distribution Method |  |
| PktDistributionData | 6.1.6.2.6 | Data specific to Packet Distribution Method |  |
| StatusSubscribeReqData | 6.1.6.2.7 | Data within Subscription creation request |  |
| StatusSubscribeRspData | 6.1.6.2.8 | Data within Subscription creation response |  |
| StatusNotifyReqData | 6.1.6.2.9 | Data within Notification request |  |
| DistSessionSubscription | 6.1.6.2.10 | Data specific to subscription request |  |
| DistSessionEventReportList | 6.1.6.2.11 | MBS distribution session event report list |  |
| DistSessionEventReport | 6.1.6.2.12 | MBS distribution session event report |  |
| UpTrafficFlowInfo | 6.1.6.2.X | IP Multicast Address and Port Number |  |
| DistSessionState | 6.1.6.3.3 | MBS distribution session state |  |
| ObjDistributionOperatingMode | 6.1.6.3.4 | Operating Mode for Object distribution method |  |
| ObjAcquisitionMethod | 6.1.6.3.5 | Object acquisition method |  |
| PktDistributionOperatingMode | 6.1.6.3.6 | Operating Mode for Packet distribution method |  |
| DistSessionEventType | 6.1.6.3.7 | MBS distribution session event type |  |

Table 6.1.6.1-2 specifies data types re-used by the Nmbstf\_MBSDistributionSession service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nmbstf\_MBSDistributionSession service based interface.

Table 6.1.6.1-2: Nmbstf\_MBSDistributionSession re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| TunnelAddress | 3GPP TS 29.571 [16] | Tunnel Address (UDP/IP) |  |
| Tmgi | 3GPP TS 29.571 [16] | TMGI |  |
| 5Qi | 3GPP TS 29.571 [16] | 5QI |  |
| BitRate | 3GPP TS 29.571 [16] | Bit Rate |  |
| PacketDelBudget | 3GPP TS 29.571 [16] | Maximum Delay |  |
| Uri | 3GPP TS 29.571 [16] | Uniform resource identifier |  |
| DateTime | 3GPP TS 29.571 [16] | Data and Time |  |
| NfInstanceId | 3GPP TS 29.571 [16] | NF Instance Identifier |  |
|  |  |  |  |
| Uinteger | 3GPP TS 29.571 [16] | Unsigned Integer |  |
| IpAddr | 3GPP TS 29.571 [16] | IP Address |  |

\* \* \* \* Next Change \* \* \* \*

##### 6.1.6.2.4 Type: DistSession

Table 6.1.6.2.4-1: Definition of type DistSession

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| distSessionId | string | M | 1 | An identifier for this MBS Distribution Session that is unique within the scope of the MBS User Service (see clause 4.5.3 of 3GPP TS 26.502) |  |
| distSessionState | DistSessionState | M | 1 | The current state of the MBS Distribution Session(see clause 4.6.1 of 3GPP TS 26.502) |  |
| mbUpfTunAddr | TunnelAddress | C | 0..1 | The tunnel endpoint address of the MB‑UPF that supports this MBS Distribution Session at reference point Nmb9FFS: 26.502 marks it mandatory, whereas it should be conditional (not needed if MB-UPF performs join towards MBSTF)? |  |
| upTrafficFlowInfo | UpTrafficFlowInfo | C | 0..1 | Details of the traffic flow to be used by the MBSTF for this MBS Distribution Session, including the multicast group destination address and port number |  |
| tmgi | Tmgi | O | 0..1 | The Temporary Mobile Group Identity (TMGI) of the MBS Session supporting the parent MBS Distribution Session |  |
| 5qi | 5Qi | M | 1 | A 5G QoS Identifier (5QI) to be applied to the traffic flow for this MBS Distribution Session |  |
| mbr | BitRate | M | 1 | The maximum bit rate for this MBS Distribution Session |  |
| maxDelay | PacketDelBudget | O | 0..1 | The maximum end-to-end distribution delay that is tolerated for this MBS Distribution Session by the MBS Application Provider |  |
| objDistributionData | ObjDistributionData | C | 0..1 | Additional MBS Distribution Session parameters for Object Distribution Method [NOTE 1] |  |
| pktDistributionData | PktDistributionData | C | 0..1 | Additional MBS Distribution Session parameters for Packet Distribution Method [NOTE 1] |  |
| fecInformation | FFS | O | 0..1 | FFS: Is this a URI? |  |
| NOTE 1: Either the objDistributionData IE or the pktDistributionData IE shall be present in a request/response. |

Editor's Note: Whether attributes in the distSession should be defined as write-only or read-only is FFS.

\* \* \* \* Next Change \* \* \* \*

##### 6.1.6.2.X Type: UpTrafficFlowInfo

Table 6.1.6.2.X-1: Definition of type UpTrafficFlowInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| destIpAddr | IpAddr | M | 1 | Multicast group destination Address  |  |
| portNumber | Uinteger | M | 1 | Source Port |  |

\* \* \* \* Next Change \* \* \* \*

# A.2 Nmbstf\_MBSDistributionSession API

openapi: 3.0.0

info:

 title: Nmbstf-distsession

 version: 1.0.0-alpha.1

 description: |

 MBSTF Distribution Session Service.

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externalDocs:

 description: 3GPP TS 29.581, MBSDistribution Service, version 0.1.0.

 url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.581/

servers:

 - url: '{apiRoot}/nmbstf-distsession/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

security:

 - {}

 - oAuth2ClientCredentials:

 - nmbstf-distsession

…

…

[skipped for clarity]

 DistSession:

 description: Mbs Distribution Session Information

 type: object

 properties:

 distSessionId:

 type: string

 distSessionState:

 $ref: '#/components/schemas/DistSessionState'

 mbUpfTunAddr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TunnelAddress'

 upTrafficFlowInfo:

 $ref: '#/components/schemas/UpTrafficFlowInfo'

 tmgi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Tmgi'

 5qi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/5Qi'

 mbr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/BitRate'

 maxDelay:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PacketDelBudget'

 objDistributionData:

 $ref: '#/components/schemas/ObjDistributionData'

 pktDistributionData:

 $ref: '#/components/schemas/PktDistributionData'

 fecInformation:

 type: string

 required:

 - distSessionId

 - distSessionState

 - 5qi

 - mbr

 oneOf:

 - required: [ objDistributionData ]

 - required: [ pktDistributionData ]

# Editor's Note: the encoding of the fecInformation IE is FFS

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[skipped for clarity]

 PktDistributionData:

 description: Info for Packet Distribution Method

 type: object

 properties:

 pktDistributionOperatingMode:

 $ref: '#/components/schemas/PktDistributionOperatingMode'

 mbStfIngressTunAddrReq:

 type: boolean

 default: false

 mbStfIngressTunAddr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TunnelAddress'

 mbStfTrafficFlowInfo:

 type: string

 required:

 - pktDistributionOperatingMode

…

…

[skipped for clarity]

 UpTrafficFlowInfo:

 description: IP Multicast Address and Port Number

 type: object

 properties:

 destIpAddr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/IpAddr'

 portNumber:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uinteger'

 required:

 - destIpAddr

 - portNumber

…

…

[skipped for clarity]

\* \* \* \* End of Changes \* \* \* \*