**3GPP TSG- SA4 Meeting #119e *S4-220694***

**Electronic Meeting, 11th to 20th May 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **Psuedo CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.517** | **CR** |  | **rev** | **-** | **Current version:** | **1.1.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | [5MBP3]: Clause 7: Packet Delivery Method updates | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5MBUSA | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | *Rel-17* |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | This pCR focuses on corrections and additions to Packet Delivery Method | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\*\* First Change \*\*\*\*

# 7 Packet Delivery Method

Editor’s Note:

1. Specify the stage 3 protocols for the MBS distribution methods (between MBSTF and MBS Client) based on existing MBMS delivery methods.
   1. Object distribution method, based on or reference to clause 7 of TS 26.346.
2. Agreements per S4-220023
   1. the relevant delivery aspects of transparent delivery method, group communication delivery method and streaming delivery method as defined in TS 26.346, clause 8B, 8A and 8 respectively.
   2. For the packet delivery method, it is proposed to only support the Transparent Delivery Method as defined in clause 8B, both the proxy and the forward-only mode. This includes RTP-based delivery as a special case.
   3. The following functions are expected to be included:
      1. Packet sequencing.
      2. FEC.
      3. QoS, bit rates.
      4. Multiple flows?
      5. Specific protocol support such as RTP/AVP.

## 7.1 General

The Packet Distribution Method reuses different delivery concepts from TS 26.346.

## 7.2 Re-using MBMS Delivery Method as Packet Distribution Method

### 7.2.1 General

The Packet Distribution Method combines three different delivery methods of TS 26.346 [7], namely the MBMS Streaming Delivery Method, Group Communication Delivery Method and Transparent Delivery Method, with a set of modifications into a single distribution method. The selection depends on the selection of the ingest mode.

For Packet Distribution, the MBSTF may handle the ingested content on three different protocol layers:

- RTP Mode: The MBSTF handles RTP packets and (typically) generate new RTP headers suitable for MBS Distribution. The MBSTF reuses the MBMS Streaming Delivery Method as defined in clause 8 of [7] for RTP-Level processing.

- Proxy Mode: The MBSTF handles UDP packet payloads and forwards UDP packet payloads from ingest into the MBS Distribution Session. The MBSTF may use different UDP ports for the MBS Distribution Session. The MBSTF re-uses the Proxy Mode of the Transparent Delivery Method as defined in clause 8B of [7].

- Forward-only Mode: The MBS receives complete IP packets and forwards the ingested packets as MBS PDUs. The MBSTF re-uses the Group Communication Delivery Method as defined in clause 8A of [7] and the Forward-Only Mode of the Transparent Delivery Method as defined in clause 8B of [7].

### 7.2.3 Session Description

#### 7.2.3.1 General

The Session Description metadata unit contains the needed information to activate the reception of a Packet Distribution Method. The Session Description metadata unit is formatted according to the Session Description Protocol [8]. The Session Description metadata unit for the Packet Distribution Method is based on the Session Description parameters as defined in clauses 8.3, 8A.3 and 8B.3 of TS 26.346 [7] with the following restrictions and extensions.

Restrictions:

- The *Mode of MBMS bearer per media* parameter (clauses 8.3.1.5 and 8B.3.2 of [7]) shall not be used.

- The *QoE Metrics* (as defined in clauses 8.3.2.1 and 8.4 of [7]) shall not be used.

- ROHC header compression (as defined in clauses 8A.4 and 8B.4 of [7]) shall not be used.

NOTE: ROHC is handled by RAN in 5MBS.

- The *Alternative TMGI* (clause 7.3.2.12 of [7]) shall not be used.

- The *Start time* and *End time* of the session (SDP t line) should be set to zero.

Extensions:

- When the MBS Session is of MBS Service Type *Broadcast* or when the Multicast MBS Session Type uses a TMGI as MBS Session ID, the *MBS service type of MBS Session* declaration attribute as defined in clause 6.2.3.2 shall be present in the Session Description.

#### 7.2.3.2 SDP Examples for a Packet Distribution

Below is a full example of SDP description describing the media streams part of an MBS Packet Distribution session for RTP streaming:

Listing 7.2.3.2‑1: Session description for RTP streaming

|  |
| --- |
| v=0 o=ghost 2890844526 2890842807 IN IP4 192.168.10.10 s=3GPP MBS Packet Distribution SDP Example i=Example of MBS Packet Distribution SDP file u=http://www.infoserver.example.com/ae600 e=ghost@mailserver.example.com c=IN IP6 FF1E:03AD::7F2E:172A:1E24 t=0 0  b=AS:77  a=mbs-mode:broadcast 123869108302929  a=source-filter: incl IN IP6 \* 2001:210:1:2:240:96FF:FE25:8EC9  m=video 4002 RTP/AVP 96  b=TIAS:62000  b=RR:0  b=RS:600  a=maxprate:17  a=rtpmap:96 H264/90000 a=fmtp:96 profile-level-id=42A01E; packetization-mode=1; sprop-parameter-sets=Z0IACpZTBYmI,aMljiA== |

The following is a full example of SDP description for transparent streaming with 2 MPEG-2 Transport Stream:

Listing 7.2.3.2‑2: Session description for MPEG‑2 Transport Stream

|  |
| --- |
| v=0 o=ghost 2890844526 2890842807 IN IP4 192.168.10.10 s=3GPP MBS Transport-only SDP Example i=Example of MBS transport-only SDP file u=http://www.infoserver.example.com/ae600 e=ghost@mailserver.example.com *c=IN IP6 FF1E:03AD::7F2E:172A:1E24* t=0 0  b=AS:8000000  a=mbs-mode:broadcast 123869108302929  a=source-filter: incl IN IP6 \* 2001:210:1:2:240:96FF:FE25:8EC9  m=video 4002 UDP/RTP/AVP 96  b=TIAS:4000000  a=mms-framing-header:0 2  a=rtpmap:100 MP2T/90000  m=video 4002 RTP/AVP 98  b=TIAS:4000000  a=rtpmap:100 MP2T/90000  a=MBS-framing-trailer:0 2 |

\*\*\*\* Last Change \*\*\*\*