**3GPP TSG SA WG4#117e S4-220019**

**E-meeting, 14th – 23rd February 2022**

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| *CR-Form-v12.0* |
| **DRAFT CHANGE REQUEST** |
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|  | **26**.**501** | **CR** | draft | **rev** |  | **Current version:** | **16.9.0** |  |
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| *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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | **[5MBUSA] 5GMS via eMBMS - Broadcast on Demand** |
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| ***Source to WG:*** | Qualcomm Incorporated |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | 5MBUSA |  | ***Date:*** | 07/02/2022 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |   |
|  | *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 canbe 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | See work item  |
|  |  |
| ***Summary of change:*** | Add 5GMS via eMBMS |
|  |  |
| ***Consequences if not approved:*** | Work Item objectives not complete |
|  |  |
| ***Clauses affected:*** | 5.10.6 (new) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR ... CR  |
| ***affected:*** |  |  |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** | This document assumes that the dCRs in S4-220018 and S4-220020 are agreed. |
|  |  |
| ***This CR's revision history:*** |  |

**===== CHANGE =====**

### 5.10.6 Procedures for dynamic on-demand network selection for 5GMS content delivery

#### 5.10.6.1 General

In this scenario the same content is distributed via eMBMS (for example using a broadcast network in receive-only mode) and via a 5GMS System. The resources of the broadcast system are statically configured. eMBMS-based distribution may, for example, be used only for services in high demand, and the resources and quality of the service distributed through broadcast may be adjusted according to demand.

The call flow in Figures 5.10.6‑1 and 5.10.6‑2 extends that defined in clause 5.6.1 to address generic use cases for broadcast-on-demand. Specific additional use cases are presented in the remainder of clause 5.10.6.



**Figure 5.10.6.1-1: High-level procedure for DASH content delivered via eMBMS broadcast-on-demand**

Steps:

1: The 5GMS Application Provider provisions one or more MBMS services and permits broadcast distribution of the media content.

2: As a consequence, the 5GMSd AF provisions MBMS delivery and the BM‑SC informs the 5GMS AF about the resources it will use to ingest media content.

3: The media content is announced to the 5GMSd-Aware Application and the application request the entry points for the service.

4: The 5GMSd AS starts to ingest content from the 5GMSd Application Provider.

5: Consumption Reporting is applied for the 5GMSd session.

Media playback initially uses unicast 5G Media Streaming:

6: The media content is selected by the 5GMSd-Aware Application.

7: The 5GMSd-Aware Application triggers the start of media playback by the Media Player.

8: The media presentation manifest (e.g. DASH MPD) is requested by the Media Player from the 5GMSd AS.

9: The Media Player processes the media presentation manifest and identifies that the media content is available on the 5GMS AS

10: The Media Player, under the control of the application, selects the media content and different content options.

11: Media content is received from the 5GMSd AS via reference point M4d.

12: The Media Player informs the Media Session Handler about the consumed media content.

13: The Media Session Handler sends consumption reports to the 5GMSd AF.



**Figure 5.10.6.1-2: High-level procedure for DASH content delivered via eMBMS broadcast-on-demand (continued)**

Subsequently, media playback switches to eMBMS:

14: By analysing the consumption reports submitted to it in the previous step, the 5GMSd AF identifies a high level of demand for the service.

15: Additional MBMS delivery sessions are provisioned to add delivery of the service via eMBMS.

16: The BM‑SC starts ingesting media content from the 5GMSd AS.

17: MBMS delivery starts.

**18: The 5GMSd AF informs the Media Session Handler that MBMS delivery is initiated and provides the Service Sccess Information.**

19: MBMS content reception is initiated by the Media Session Handler.

20: Once the service is ready, the content delivered on MBMS is used by the Media Player. Consumption reporting continues. Specific cases may use different policies, similar to the hybrid case in clause 5.10.5.

#### 5.10.6.2 Operation modes

Different operation modes may be considered in the above use case:

1. Every 5GMS media service is mapped to exactly one MBMS User Service. Whether the MBMS User Service is announced and delivered or not depends on service demand. The MBMS Delivery Session is adjusted dynamically – for example the Delivery Session is disabled, or the bit rate is changed – depending on service demand and/or content requirements.

2. A set of MBMS User Services and MBMS Delivery Sessions is defined in the initial provisioning. 5GMS media services are dynamically mapped to MBMS User Services based on demand and content requirements.

3. Components of the 5GMS User Service, for example audio service components for different languages, are assigned dynamically to MBMS delivery depending on demand.