**3GPP TSG-S4 Meeting #114-e *S4-210722***

**Online, , 19th–28th May 2021**

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| *CR-Form-v12.0* |
| **PSEUDO CHANGE REQUEST** |
|  |
|  | **TR 26.802** | **CR** | **—** | **rev** | **—** | **Current version:** | **1.2.8** |  |
|  |
| *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 |  | Radio Access Network |  | Core Network |  |

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|  |
| ***Title:***  | Conclusions and next steps for Key Issue #1 |
|  |  |
| ***Source to WG:*** | BBC |
| ***Source to TSG:*** | S4 |
|  |  |
| ***Work item code:*** | FS\_5GMS\_Multicast |  | ***Date:*** | 2021-05-10 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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 canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). |  |
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| ***Reason for change:*** | Gaps, conclusions and next steps for Key Issue #1. |
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| ***Summary of change:*** | * Gaps identified.
* Conclusions.
* Next steps.
* Replacement figure 7.2.2.3‑1 showing the Content playback function as external to the 5MBS-Aware Application.
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| ***Consequences if not approved:*** | Failure to complete this Key Issue. |
|  |  |
| ***Clauses affected:*** | 5.2, 7.2.2.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  |  |  Other core specifications  |  |
| ***affected:*** |  |  |  Test specifications |  |
| ***(show related CRs)*** |  |  |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

FIRST CHANGE

## 5.2 Key Issue#1: Support of multicast ABR in 5G Media Streaming Architecture

(SNIPPED)

### 5.2.6 Identified gaps

#### 5.2.6.1 Scenario #1: MABR operation of 5MBS-enhanced 5GMS System

In connection with the mapping to Collaboration B0, the following gaps are identified in clause 7.2.1:

1. A named reference point between the MBSF and 5MBS AS to enable the former to publish 5BMS User Services session descriptions to the latter so that they can be retrieved via unicast in cases where they are not conveyed in a service announcement channel.

2. The procedures for a 5MBS Client to retrieve these session descriptions via MBS‑4‑UC.

3. The means to announce these unicast-hosted session descriptions to the 5MBS Client at MBS‑5.

4. The means to describe multiple object delivery sessions corresponding to different representations of the same media adaptation set within a 5MBS User Services session description consumed by the 5MBS Client.

NOTE 1: Clause 5.2.2.2 of TS 26.346 permits one FLUTE Download session to be described by each session description instamce. It permits multiple session description instances to be contained in one session description object, but this is not further specified. Alternatively, the constraint on the number of FLUTE channels per FLUTE Download session specified in clause 7.3.2.2 of TS 26.346 could be relaxed.

NOTE 2: In the Scenario #1 mapping presented in clause 7.2.1 it is assumed that dynamic adaptation is performed by the 5MBS Client, but alternative implementations are also possible.

#### 5.2.6.2 Scenario #2: External DVB‑MABR System interworking with 5MBS-enhanced 5GMS System

For interworking between an external Application Function and the 5MBS System according to Collaboration C, the following gaps are identified in clause 7.2.2.2:

1. Configuration of a transparent multicast delivery session at Nmbsmf such that it can be advertised in a 5MBS User Services session description and consumed by a 5MBS Client.

2. The means to describe multiple transparent object delivery sessions within a 5MBS User Services session description provided via Nmbsmf, and the means to deliver this session description to the 5BMS Client via MBS‑5.

3. Client-side injection of a synthetic 5MBS User Services session description from the 5MBS-Aware Application to the 5MBS Client at MBS‑6.

For interworking between an external Application Function and the 5MBS System according to Collaboration D, the following gaps are identified in clause 7.2.2.3:

4. Configuration of a transport-only multicast delivery session at Nmbsmf such that it can be advertised in a 5MBS User Services session description and consumed by a 5MBS Client.

5. The means to describe multiple transport-only object delivery sessions within a 5MBS User Services session description provided via Nmbsmf, and the means to deliver this session description to the 5MBS Client via MBS‑5.

6. Exposure of 5MBS User Services session descriptions to the 5MBS‑Aware Application at MBS‑6.

7. Control over multicast session delivery selection by the 5MBS‑Aware Application at MBS‑6.

### 5.2.7 Conclusions and next steps

Through the exercise of mapping the relevant MABR logical functions into 5G Multicast/Broadcast Service architecture, it is agreed that Multicast ABR is a useful service layer feature that can be realised on top of the generic 5MBS architecture proposed in TR 23.757 [7] and specified in TS 23.247 [26].

- The potential solution for Scenario #1 documented in clause 7.2.1 describes how the multicast ABR feature could be directly integrated into a 5MBS System.

- The potential solutions for Scenario #2 documented in clause 7.2.2 demonstrate two different ways in which an external Application Function can use a 5MBS System to realise multicast ABR operation by means of interworking. This level of analysis is helpful in identifying potential gaps. To support Scenario #2, however, the gaps are not only in the 5G System: the DVB-MABR System additionally needs to support required interfaces such as Nmbsmf, N33 and N6. Specifying how to achieve this interworking lies beyond the scope of 3GPP.

As agreed in clause 7.3.1, 5MBS-delivered ABR media streaming could be realised as a 5MBS User Service that allows streaming of DASH content as defined in TS 26.501 [1], using a 5MBS Session to deliver the DASH segments in multicast. When delivering content to a 5MBS Client, the MBSTF uses one or more 5MBS Delivery Methods.

In order to support Scenario #1, it is proposed that normative work includes the following objectives:

1. Provide a general description and architecture for delivering media services over 3GPP multicast/‌broadcast in TS 26.501 [1], with reference to the Collaboration B0 mapping in clause 7.2.1.4.

2. Define a logical reference point between the MBSF and the 5MBS AS that allows 5BMS User Services session descriptions to be published by the former to the latter.

3. Define a procedure that allows the 5MBS Client to retrieve 5MBS User Services session descriptions via logical reference point MBS‑4‑UC.

4. Define a procedure at logical reference point MBS‑5 for announcing to the 5MBS Client a set of 5MBS User Services session descriptions that are hosted on the 5MBS AS.

5. Define the means to describe multiple object delivery sessions in a 5MBS User Services session description.

6. Define procedures for discovering and establishing a Multicast ABR session, for dynamically (de)selecting multicast transport sessions, for recovering from multicast packet loss and for reporting usage statistics and Quality of Experience metrics for the purpose of optimal service management.

NEXT CHANGE

#### 7.2.2.3 Interworking architecture for Collaboration D

Figure 7.2.2.3‑1 below shows how the DVB‑MABR reference model (blue functions and reference points) integrates with the 5MBS reference model proposed in the present document (green functions and reference points) and the 5MBS reference model for 5GC (grey functions and reference points) in the case of Collaboration D.



NOTE: Because use of the unicast path is uncoordinated with 5MBS functions in this collaboration, reference point MB‑N9 between the MB-UPF and UPF is omitted.

Figure 7.2.2.3‑1: Interworking between the DVB‑MABR reference model and the 5MBS reference model (Collaboration D)

END OF CHANGES