**3GPP TSG SA WG4 Meeting #131-bis-e S4-250468**

**online, 11-17 April 2025 revision of S4-250281**

**Agenda Item:**  **8.7**

**Source: Qualcomm Incorporated (Rapporteur)**

**Title:** **Summary for WI "Stage 2 for Advanced Media Delivery (AMD-ARCH-MED)"**

**WI code(s): 1060069**

**leading WG: SA4**

**Release: Rel-19**

Note: This updated document was submitted to SA plenary SA#107 and agreed. It is provided to 3GPP SA4 for information only to see the difference to the endorsed document provide for SA4#131 in S4-250281. No further actions are needed.

This document provides a summary of the Work Item Summary for WI "Stage 2 for Advanced Media Delivery (AMD-ARCH-MED)".

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| **Unique ID** | **Name** | **Acronym** | **WG** | **WID** | **WI Rapporteur name** |
| 1060069 | Stage 2 for Advanced Media Delivery | AMD-ARCH-MED | S4 | [SP-241963](https://www.3gpp.org/ftp/Meetings_3GPP_Sync/SA/Inbox/SP-241963.zip) | Thomas Stockhammer, Qualcomm Incorporated |

# Summary

TS 26.501 [1] defines the 5GMS architecture, call flows, and procedures. TS 26.502 [2] defines the MBS User Service architecture with related call flows and procedures. Mobile media delivery is important as never before with everlasting growth of video streaming traffic and new functionalities and services provided by mobile network operators and third-party service providers. It is also worth noting that 5G-MAG has created reference implementations of both 5G Media Streaming and MBS.

Based on an extensive feasibility study on Advanced Media Delivery (FS\_AMD), several potential improvement areas were identified to initiate normative work in the context of 5GMS and MBS. The work item addressed the stage-2 aspects of Advanced Media Delivery based on the conclusions in TR 26.802 (for MBS) and in TR 26.804 (for 5GMS).

In particular, TS 26.502 on MBS User Services has been updated to address the following features

- In-session unicast repair for MBS Object Distribution: This functionality addresses all stage-2 procedures for unicast repair, and in particular adds the feature to use unicast for repairing potentially lost data in objects (for example for DASH/HLS over MBS) during an ongoing MBS Distribution Session.

- Time Synchronization for MBS: The MBS Client in the UE needs to be synchronised with the network functions. Based on exchange with SA2 and RAN2, two options are defined: (1) usage of SIB9, and (2) a user plane time service.

- Deployment Guidelines for MBS User Service and Delivery Protocols for eMBMS: A new informative annex documents deployment scenarios to operate MBS User Services over eMBMS, in particular to harmonize northbound reference point and client APIs, as well as to deploy MBS User Service over eMBMS/LTE-based 5G Broadcast. Before making this normative, further validation is required to determine whether modifications in the MBS service architecture in TS 23.247 are needed to address all interoperability aspects of these deployment options.

In particular, TS 26.501 has been updated to address the following features

- In-band reporting for Common Client Metadata: This feature permits the reporting to the 5GMS System of client data (buffer status, current bit rates, codecs, and so on) collected by modern media players including DASH and HLS, as well as the aggregation and exposure of this information to subscribing event consumers such as the NWDAF. Doing so offers opportunities for MNOs for more data information.

- Multi-access media delivery: This feature adds an informative annex with description of multi-access media delivery, and a mapping of ATSSS architecture into the 5GMS architecture

- Media delivery from multiple service endpoints/locations: This feature enables the provisioning and distribution of content from different service locations, for example CDNs. It may, for example, permit that a media player accesses content from a 5GMS AS and from an external application server concurrently or switches according to client or network decisions. It may also allow to provision multiple service locations in a 5GMS AS. A new reference point M13 is added to enable content retrieval by the 5GMS Client from non-5GMS sources. The feature supports functionalities such as Content Steering or CMMF.

- Distributing encrypted and high-value content: This feature supports packaging and transcoding of DRM-protected content by network functions. While defined for 5GMS, it is sufficiently generic to also be combined with MBS and MBMS, and hence provides a workflow for distributing DRM-protected content more broadly in 3GPP services.

- Improved QoS support for Media Streaming services: This feature supports ECN marking for L4S in the 5GMS System. If enabled in a Policy Template, the 5GMS Client is directed to select and activate ECN marking for L4S when it instantiates the Policy Template. It also supports QoS monitoring in the 5GMS System (as described in clause 5.45 of TS 23.501) for measurement and reporting of QoS parameters when this Policy Template is instantiated. Feature applies to both, uplink and downlink streaming.

- Media Streaming aspects of Network Slicing: This feature provides Dynamic Policies procedures for uplink and downlink to support policy provisioning for a plurality of Network Slices and/or Data Networks and provides bootstrapping of application invocation on a Network Slice.

The work item and the respective CRs address the updates recommended above.

# 2 References

1. 3GPP TS 26.501, 5G Media Streaming (5GMS); General description and architecture
2. 3GPP TS 26.502, 5G multicast-broadcast services; User service architecture