**3GPP TSG-SA WG6 Meeting #49-e S6-221022**

**e-meeting, 16th – 25th May 2022 (revision of S6-22xxxx)**

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| *CR-Form-v12.1* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | | | | | | | | | | | | | | | | | | | |
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|  | **23.289** | **CR** | | **0064** | | | | | **rev** | | | **-** | | | **Current version:** | | | | | | | **18.1.0** | | |  | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *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)*.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| ***Proposed change affects:*** | | | | | | UICC apps | | | | |  | | ME | **X** | | Radio Access Network | | | | |  | | Core Network |  | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Title:*** | | | Architectural and functional model for 5G MBS mission critical UE | | | | | | | | | | | | | | | | | | | | | | |
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| ***Source to WG:*** | | | AT&T | | | | | | | | | | | | | | | | | | | | | | |
| ***Source to TSG:*** | | | S6 | | | | | | | | | | | | | | | | | | | | | | |
|  | | |  | | | | | | | | | | | | | | | | | | | | | | |
| ***Work item code:*** | | | MCOver5MBS | | | | | | | | | | | | |  | ***Date:*** | | | 6 May, 2022 | | | | | |
|  | | |  | | | | | | |  | | | | | | |  | | |  | | | | | |
| ***Category:*** | | | **F** | |  | | | | | | | | | | | | ***Release:*** | | | Rel-18 | | | | | |
|  | | | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | | | | | | |
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| ***Reason for change:*** | | | | | This CR provides a conceptual architectural and functional model for MCX clients within 5G capable UEs, when using 5G MBS without the User Service architecture (which requires signaling with deployed MBSF/MBSTF).  The design used in 23.479 for 4G eMBMS is adapted to 5G MBS.  One of the advantages of the functional model is that it enables the MCPTT client, MCVideo client and MCData client within a UE to take advantage of common functionality related to the reception of MBS data and information and avoid separate and tightly coupled interactions with lower layers, which are not optimal. | | | | | | | | | | | | | | | | | | | | |
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| ***Summary of change:*** | | | | | This CR treats the content of 23.479 similarly to the way the content of 23.280, 23.379, 23.281 and 23.282 are treated under the MCOver5MBS and MCOver5GS work items, namely by not re‑writing them to adapt them to 5G, but by showing their 5G adapted architecture in 23.289 and document the differences in nomenclature and functionality, where appropriate. | | | | | | | | | | | | | | | | | | | | |
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| ***Consequences if not approved:*** | | | | | Different MCX clients within a UE redundantly employing the same MBS related functions individually may cause inefficiencies.  It may not be possible to get all MBS UEs to work on mission critical deployments without MBSF. | | | | | | | | | | | | | | | | | | | | |
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| ***Clauses affected:*** | | | | | 2, 4.7.6 [new] | | | | | | | | | | | | | | | | | | | | |
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|  | | | | | **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 ... | | | | | | | |
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| ***Other comments:*** | | | | |  | | | | | | | | | | | | | | | | | | | | |
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| ***This CR's revision history:*** | | | | |  | | | | | | | | | | | | | | | | | | | | |

\* \* \* \* \* \* FIRST CHANGE \* \* \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[3] 3GPP TS 23.280: "Common functional architecture to support mission critical services; Stage 2".

[4] 3GPP TS 23.281: "Functional architecture and information flows to support Mission Critical Video (MCVideo); Stage 2".

[5] 3GPP TS 23.282: "Functional architecture and information flows to support Mission Critical Data (MCData); Stage 2".

[6] 3GPP TS 23.379: "Functional architecture and information flows to support Mission Critical Push To Talk (MCPTT); Stage 2".

[7] 3GPP TS 23.501: "System architecture for the 5G System (5GS)".

[8] 3GPP TS 23.002: "Network Architecture".

[9] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System (5GS); Stage 2".

[10] 3GPP TS 23.502: "Procedures for the 5G System (5GS)".

[11] 3GPP TS 22.179: "Mission Critical Push to Talk (MCPTT); Stage 1".

[12] 3GPP TS 22.280: "Mission Critical Services Common Requirements (MCCoRe); Stage 1".

[13] 3GPP TS 22.281: "Mission Critical (MC) Video".

[14] 3GPP TS 22.282: "Mission Critical (MC) Data".

[15] 3GPP TS 23.247: "Architectural enhancements for 5G multicast-broadcast services; Stage 2".

[16] 3GPP TS 23.468: "Group Communication System Enablers for LTE (GCSE\_LTE); Stage 2".

[17] 3GPP TS 23.304: "Proximity based Service (ProSe) in the 5G System (5GS); Stage 2".

[18] 3GPP TS 23.237: "IP Multimedia Subsystem (IMS) Service Continuity; Stage 2".

[XX] 3GPP TS 23.479: "UE MBMS APIs for Mission Critical Services".

\* \* \* \* \* \* NEXT CHANGE \* \* \* \* \* \*

### 4.7.6 General architecture showcasing use of MBS by UE for MC services

Figure 4.7.6-1 presents a high-level architectural view that shows how public safety UEs support the delivery of mission critical services through MBS. Figure 4.7.6-2 shows the functional model used by the UE, hilighting the conceptual MC MBS API used for information transfer within the UE. The shown architectural and functional models are similar with the models described in 3GPP TS 23.479 [XX] and consistent with 3GPP TS 23.501 [7] and 3GPP TS 23.247 [15].



Figure 4.7.6-1: System architecture for MC MBS systems

NOTE: N1 interface is to be shown in the figure, for alignment with 23.247.

The conceptual MC MBS API resides between the MC service client and the conceptual MC MBS user agent.



Figure 4.7.6-2: Functional model highlighting the MC MBS API

The MC service client uses information received from the MC service server through MC signalling (e.g., announcements) and through application level signinalling (e.g., mappings of MBS sessions and MBS subchannels to specific MC service groups) to communicate with the conceptual MC MBS user agent via the conceptual MC MBS API, in order to establish and update the proper communication context between the entities. Multiple MC service clients can be supported by the MC MBS user agent. The conceptual MC MBS user agent presents data and information received from the UE modem to each MC service client according to the most recently established communication context. The functionalities of the MC service client and of the MC MBS user agent are described in clauses 4.3.2 and 4.3.3 of 3GPP TS 23.479 [XX]. The information flows and procedures described in 3GPP TS 23.479 [XX] apply, with the following clarifications:

- References to 4G “MBMS” are understood to be references to 5G “MBS”;

- Unless used as in “multicast IP address”, the stand-alone term “multicast” is understood as “broadcast or multicast”; and

- References to “SAI” are understood to be references to “MBS service areas”, e.g., cell id, tracking area id, MBS frequency selection area id, as specified in 3GPP TS 23.274 [15].

\* \* \* \* \* \* END OF CHANGES \* \* \* \* \* \*