**3GPP TSG-S2 Meeting #147-e *S2-21xxxxx***

**Online, , 18–22 October 2021**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
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| ***Work item code:*** |  | | | | |  | ***Date:*** | | | 2021-09-XX |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***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 can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | |  | |
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| ***Reason for change:*** | | Clearer depiction of the 5MBS architecutre such that the same diagram can be used in TS 23.247 and TS 26.502.  Support for Application Functions supporting xMB and MB2 interfaces are proposed to be captured as a normative annex, similar approach as in TS 23.503 to capture the support of Rx interface. | | | | | | | | |
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| ***Summary of change:*** | | Editorial update:   * Change of typeface. * More white space between functions. * Alignment of functions into two horizontal planes. * Depiction of AF/AS spanning both planes.   Move the support of legacy AF/AS from clause 5.1 to normative Annex.  Move the MB2/xMB related description from clause 7.1.1.1 to Annex | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistent specification handling within SA2 regarding support of legacy interfaces | | | | | | | | |
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| ***Clauses affected:*** | | 5.1, 7.1.1.1, Annex C (new) | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***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 22.146: "Multimedia Broadcast/Multicast Service (MBMS); Stage 1".

[3] 3GPP TS 22.246: "Multimedia Broadcast/Multicast Service (MBMS) user services; Stage 1".

[4] 3GPP TS 22.261: "Service requirements for the 5G system".

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

[6] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[7] 3GPP TS 23.503: "Policy and charging control framework for the 5G System (5GS); Stage 2".

[8] 3GPP TS 23.246: "Multimedia Broadcast/Multicast Service (MBMS); Architecture and functional description".

[9] 3GPP TS 38.300: "NR; Overall description; Stage-2".

[10] 3GPP TS 23.468: "Group Communication System Enablers for LTE (GCSE\_LTE)".

[11] 3GPP TS 26.348: "Northbound Application Programming Interface (API) for Multimedia Broadcast/Multicast Service (MBMS) at the xMB reference point".

[12] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[13] 3GPP TS 26.346: "MBMS: Protocols and Codecs".

[14] 3GPP TR 23.757: "Study on architectural enhancements for 5G multicast-broadcast services".

[15] 3GPP TS 38.413: "NG Application Protocol (NGAP)".

[16] 3GPP TS 38.401: "NG-RAN; Architecture description".

[17] 3GPP TS 29.244: "Interface between the Control Plane and the User Plane Nodes; Stage 3".

[18] 3GPP TS 26.502: "5G Multicast-Broadcast User Service Architecture".

NEXT CHANGE

5.1 General architecture

Figure 5.1-1 depicts the 5G MBS reference architecture. Service-based interfaces are used within the Control Plane. Support for legacy Application Functions using xMB and MB2 interfaces is described in Annex C.



Figure 5.1-1: 5G System architecture for Multicast and Broadcast Service.

NOTE 1: The MBSF is optional and may be collocated with the NEF or AF/AS, and the MBSTF is an optional network function.

NOTE 2: The existing service based interfaces of Nnrf, Nudm, and Nsmf are enhanced to support 5G MBS. The existing service based interfaces of Npcf and Nnef are enhanced to support 5G MBS.

NOTE 3: A 5G MBS enabled AF uses either Nmbsf or Nnef to interact with the MBSF.

Editor's note: Which NF is used to store service parameters, including serving MB-SMF information will be updated in future versions.

Figure 5.1-2 depicts the 5G system architecture for MBS using the reference point representation.



Figure 5.1-2: 5G System architecture for Multicast and Broadcast Service in reference point representation.

NOTE 4: The existing reference points of N1, N2, N4, N10, N11, N30 and N33 are enhanced to support 5G MBS.

NEXT CHANGE

#### 7.1.1.1 General

The call flows in Clause 7.1.1 and clause 7.3 show a "NEF/MBSF", but as detailed in Annex A, there can be different related configurations involving either only NEF, or MBSF, or both.

The interactions between "NEF/MBSF" and MB-SMF, PCF, BSF and NRF depicted in the call flows apply for NEF, MBSF or a combined NEF and MBSF, depending on configuration. They may also apply for AF in trusted domain where NEF is not mandated.

However, the interactions between AF and "NEF/MBSF" depicted in the call flows only apply for the NEF.

Services offered by the MBSF and related interactions based on that service between MBSF and AF or NEF (if MBSF and NEF are split as shown in configuration 2) are specified in TS 26.502 [18].

NEXT CHANGE

Annex C (normative): Support for Application Functions supporting xMB and MB2 reference points

To allow the 5G system for MBS to interwork with AFs/ASes supporting xMB or MB2 interfaces,

- in addition to supporting the Nmbsf service-based API at Nmb10, the MBSF shall support interfaces xMB‑C and MB2‑C at this reference point for use by a AS.

- In addition to supporting content ingest interfaces defined in TS 26.502 [18] at Nmb8, the MBSTF shall support interfaces xMB‑U and MB2‑U at this reference point for use by a AS.



Figure C-1: Interworking between 5G MBS system and AFs supporting MB2 and xMB interface

END OF CHANGES