**3GPP TSG CT WG3 Meeting #126 C3-230059**

**Athens, Greece, 27th Feb – 3rd March, 2023**

**3GPP TSG CT WG4 Meeting #114 C4-230121**

**Athens, Greece, 27th Feb – 3rd March, 2023**

**3GPP TSG CT WG1 Meeting #140 C1-230145**

**Athens, Greece, 27th Feb – 3rd March, 2023**

**Source: Huawei**

**Title: New WID on CT aspects for the architectural enhancements for 5G Multicast-Broadcast services Phase 2**

**Document for: Approval**

**Agenda Item: 18.1.1**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: New WID on CT aspects for the architectural enhancements for 5G Multicast-Broadcast services Phase 2

Acronym: 5MBS\_Ph2

Unique identifier: xxx

Potential target Release: Rel-18

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | X | X | X |  |
| No |  |  |  |  |  |
| Don't know | X |  |  |  | X |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a:

|  |  |
| --- | --- |
|  | Study  |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
| X | Normative – Stage 3 |
|  | Normative – Other\* |

## 2.2 Parent Work Item

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| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| 5MBS\_Ph2 | SA2 | 980013 | Architectural enhancements for 5G multicast-broadcast services Phase 2 |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 910002 | CT aspects of the architectural enhancements for 5G multicast-broadcast services (5MBS) | 5MBS WI addresses 3GPP Rel-17 feature set, while the new WID will address Rel-18 features.  |

# 3 Justification

SA#98 agreed New 3GPP Rel-18 WID on CT aspects for the 5MBS Phase 2 (5MBS\_Ph2, UI: 980013), see SP-221131. This is a consequence of completing the related stage 2 SID, FS\_5MBS\_Ph2 (UI: 940067), which produced 3GPP TR 23700-47 v18.0.0 (2022-12).

The new Rel-18 SA2 WID impacts specifications under CT WGs remit and therefore CT-wide Rel-18 WID is necessary.

# 4 Objective

The objective of this work item is to specify protocol enhancements and related APIs for the 5MBS Phase 2 based on the normative stage 2 technical specifications developed by SA2 WG, e.g. 3GPP Rel-18 3GPP TS 23.247.

The following impacts on 3GPP CT working groups are identified.

**CT1**

- Stage 3 support for the solution to KI#1 (Multicast MBS data reception in RRC Inactive state):

- Update of the 5GMM because of receiving multicast MBS session data in the RRC inactive state.

- Stage 3 support for the solution to KI#5 (Coexistence with existing power saving mechanisms for capability-limited devices):

- Update of the UE power saving functions (MICO, eDRX).

**CT3**

- Support multicast MBS data reception in RRC Inactive state:

- Impacts to the Nnef\_ParameterProvision API (i.e. via the Nnef\_MBSSession API) to enable an AF to provision "MBS session assistance information".

- Support 5MBS MOCN Network Sharing:

- Impacts to the NEF to enable an AF to provision the "Associated Session ID(s)" information in the case of MOCN with multiple broadcast MBS sessions transmitting the same content.

- Support group message delivery:

- Impacts to the NEF to define the new Nnef\_MBSGroupMsgDelivery API to support group message delivery for MBS via MBSF/MBSTF (i.e. "Full-Service Mode Solution") and the related handling (i.e. create/modify/cancel group message delivery request).

- Impacts to the NEF to support user plane MBS group message data delivery to the MBSTF.

- Potential impacts to the MBSF APIs (i.e. Nmbsf\_MBSUserService and Nmbsf\_MBSUserDataIngestSession APIs) to support group message delivery for MBS via MBSF/MBSTF (i.e. "Full-Service Mode Solution").

- Support the coexistence with existing power saving mechanisms for capability-limited devices:

- Potential impacts to the NEF (i.e. Nmbsf\_MBSUserDataIngestSession API) to update the MBS User Service Announcement (i.e. start time and/or a sequence of scheduled activation times (e.g. a first time and a periodicity, every day at 3 UTC) of the MBS session) to support MBS reception for UEs using power saving mechanisms.

**CT4**

- Stage 3 support for the solution to KI#1 (Multicast MBS data reception in RRC Inactive state), which possibly implies the following:

- Definition(s) of one or more IDs related to MBS Assistance Information.

- AF delivers MBS Assistance Information to UDM via NEF, which forwards the info to SMF and the SMF forwards it to AMF.

- MBS Assistance Information should be added to the 5MBSSubscriptionData data in UDM.

- Stage 3 support for the solution to KI#2 (5MBS MOCN Network Sharing)

- Definition of the Associated Session ID and its encoding.

- AF delivers MBS Assistance Information to MB-SMF, which forwards the info to the AMF.

- N4 interface may also be impacted.

Editor's note: KI#4 (Group message delivery) contains confusing statement: "The AF can invoke the Nmbsmf service operations offered by the MB-SMF (optionally via the NEF) for Transport Only Mode, as supported in Rel-17". SA2 needs to clarify the matter.

**CT6**

- TBD

# 5 Expected Output and Time scale

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| --- |
| New specifications |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
| N/A |  |  |  |  |  |

|  |
| --- |
| Impacted existing TS/TR |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 23.003 | Possibly impacted, e.g. to define Associated Session ID and also one or more IDs related to MBS assistance information. | TSG#103 (2024-03) | CT4 |
| 29.244 | Possibly impacted, e.g. N4mb Session Modification Request. | TSG#103 (2024-03) | CT4 |
| 29.502 | Possibly impacted, e.g. MBS Assistance Information should be added to Nsmf\_PDUSession\_UpdateSMContext service operations. | TSG#103 (2024-03) | CT4 |
| 29.503 | Possibly impacted, e.g. MBS Assistance Information should be added to Nudm\_ParameterProvision sevice operations. | TSG#103 (2024-03) | CT4 |
| 29.504 | Possibly impacted, e.g. MBS Assistance Information should be added to Nudr\_DataRepository API. | TSG#103 (2024-03) | CT4 |
| 29.505 | Possibly impacted, e.g. MBS Assistance Information should be added to the 5MBSSubscriptionData data in UDM. | TSG#103 (2024-03) | CT4 |
| 29.518 | Possibly impacted, e.g. MBS Assistance Information should be added to Namf\_Communication\_N1N2MessageTransferservice operations. Also, MBS Assistance Information should be added to Namf\_MBSBroadcast service operations. | TSG#103 (2024-03) | CT4 |
| 29.532 | Possibly impacted, e.g. MBS Assistance Information should be added to Nmbsmf\_MBSSession\_Create service operation. | TSG#103 (2024-03) | CT4 |
| 29.571 | Possibly impacted, e.g. to define Associated Session ID and also one or more IDs related to MBS assistance information. | TSG#103 (2024-03) | CT4 |
| 24.501 | Updates to provide multicast MBS data reception in the RRC inactive state and coexistence with existing power saving mechanisms for capability-limited devices. | TSG#103 (2024-03) | CT1 |
| 29.522 | * Impacts to support"MBS session assistance information" and the "Associated Session ID(s)" provisioning via the Nnef\_MBSSession API.
* Definition of a new API (i.e. Nnef\_MBSGroupMsgDelivery API) to support Group message delivery procedures.
 | TSG#103 (2024-03) | CT3 |
| 29.580 | Potential impacts to the MBSF APIs (i.e. Nmbsf\_MBSUserService and Nmbsf\_MBSUserDataIngestSession APIs) to support group message delivery and MBS session scheduling (via MBS User Service announcement).. | TSG#103 (2024-03) | CT3 |

# 6 Work item Rapporteur(s)

Gulbani, Giorgi, Huawei, giorgi.gulbani@huawei.com

# 7 Work item leadership

CT4.

# 8 Aspects that involve other WGs

SA3 (security), SA5 (charging), SA4 (possibly).

# 9 Supporting Individual Members

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| Supporting IM name |
| Huawei |
| HiSilicon |
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