3GPP TSG SA WG2#165 S2-2411118

Hyderabad, India, October 14-18 2024 (revision of S2-2410823)

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.501** | **CR** | **5688** | **rev** | **2** | **Current version:** | **19.1.0** |  |
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| *For* [***HELP***](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 | **x** | Core Network | **x** |

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| ***Title:*** | Support of UE served by a MWAB: authorization aspects | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, LG Electronics, Huawei, ZTE | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | VMR\_Ph2 | | | | |  | ***Date:*** | | | 2024-09-25 |
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| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
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| ***Reason for change:*** | | The approved VMR\_Ph2 work item (SP-240632) is set to specify the architecture enhancements, functionalities and procedures to support MWAB based on conclusions of TR 23.700-06 (clause 8).  This CR introduces the descriptions on how the MWAB is authorized to operate. | | | | | | | | |
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| ***Summary of change:*** | | New clause added to describe how the MWAB is auuthorized to operate. | | | | | | | | |
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| ***Consequences if not approved:*** | | MWAB feature cannot be supported. | | | | | | | | |
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| ***Clauses affected:*** | | 5.49.3 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

*FIRST CHANGE*

### 5.49.3 Authorization aspects

#### 5.49.3.1 General

There are two aspects related to the authorization of an MWAB. One aspect is the authorization of the MWAB-UE to establish a BH PDU Session. The other aspect is related to the authorization of the MWAB-gNB to operate as a gNB logically belonging to a MWAB Broadcasted PLMN/SNPN which the MWAB-gNB announces in the SIB.

#### 5.49.3.2 MWAB-UE authorization

The BH PLMN/SNPN authorizes the MWAB-UE based on its subscription information which includes dedicated S-NSSAI(s) and DNN for MWAB operation. Such dedicated network slices S-NSSAI(s) and DNN(s) shall be part of the subscription information for the MWAB-UE.

The authorization of the MWAB-UE to establish connectivity in a BH PLMN/SNPN is based on whether it is allowed to register with network slice(s) dedicated to MWAB operation in the BH PLMN/SNPN (i.e. the S-NSSAI(s) of the network slice(s) for MWAB operation are in the Allowed NSSAI), and whether it can establish BH PDU session(s) in the BH PLMN/SNPN using the dedicated S-NSSAI(s) and DNN(s).

The MWAB-UE authorization supports time-based or location-based control. For time-based control, existing time-based network slice subscription control can be reused (including the enhancements in clause 5.15.16). For location-based control, existing mechanism, e.g. service area restriction, LADN based control (see e.g. clauses 5.6.5.and 5.6.5a) can be reused.

NOTE 1: When the MWAB-UE can no longer use S-NSSAI(s) dedicated to MWAB operation,, e.g. the dedicated S-NSSAIs and DNNs for MWAB operation are removed from the subscription (i.e. the MWAB becomes unauthorized) and a UE subscription update (including a UE configuration update) step happens, or the MWAB-UE moves to an area where the S-NSSAI is not available, if the AMF is configured to do so for the dedicated S-NSSAI and DNN for MWAB operation, the AMF delays the corresponding PDU session release based on an operator configuration (e.g. a local configured timer to allow time for the MWAB-gNB to handover the UE(s) it serves to other cells).

The MWAB-UE may be connected to the BH PLMN/SNPN for other services, if allowed by the subscription data, even if the S-NSSAIs and DNNs for Backhaul PDU sessions are no longer authorized.

NOTE 2: If a dedicated S-NSSAI for BH PDU sessions is not used for MWAB-UEs, it is not possible e.g. to configure the behaviour of AMF as in NOTE 1 for MWAB-UEs only. Additionally, it may also not be possible to configure specific treatment for MWAB-UEs (different from other UEs) in the NG-RAN.

#### 5.49.3.3 MWAB-gNB authorization

The authorization and configuration of the MWAB-gNB is managed by the OAM system of the MWAB-Broadcasted PLMN/SNPN as specified in TS 38.401 [42]. The MWAB-gNB establishes a secure and trusted connection to the OAM server using the IP connectivity provided by the MWAB-UE via the Backhaul PDU Session(s) as specified in clause 5.49.1.

The OAM of the MWAB Broadcasted PLMN/SNPN determines when/where the MWAB-gNB can operate or when/where it needs to shut down. The OAM of the MWAB Broadcasted PLMN/SNPN may pre-configure the MWAB-gNB to turn on/shut down accordingly. When the MWAB-gNB is no longer authorized to operate by OAM of the MWAB Broadcasted PLMN/SNPN, the MWAB-gNB should handover the UE(s) it serves to other cells.

NOTE: It is expected the HPLMN/Subscribed SNPN network ensures that the BH PDU sessions authorization for MWAB UE does not interfere with the ability of the OAM of the MWAB Broadcasted PLMN/SNPN to manage the MWAB-gNB , e.g. the S-NSSAI(s) for the BH PDU session(s) of the MWAB-UE is(are) maintained long enough in the MWAB-UE subscription and are available for the MWAB-UE for a location and time that is sufficient for the MWAB-UE, so that the BH PDU sessions are available for the MWAB-gNB to be able to perform OAM-controlled shut down, which may include handing over the UEs it serves.

When the MWAB-gNB stops operating under OAM control, the MWAB-gNB can also trigger the MWAB-UE to release the BH PDU sessions.

*End of CHANGES*