3GPP TSG SA WG2#164 S2-240xxxx

Maastricht, 19-23 August 2024 (revision of)

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.501** | **CR** | **<CR#>** | **rev** | **-** | **Current version:** | **19.0.0** |  |
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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 |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Support of UE served by a MWAB: mobility aspects | | | | | | | | | |
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| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | VMR\_Ph2 | | | | |  | ***Date:*** | | | REl-19 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | 2024-07-15 |
|  | *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:*** | | This CR introduces text to describe how mobility is supported when a MWAB is deployed to serve UEs in a PLMN/SNPN as the MWAB or UE move. | | | | | | | | |
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| ***Summary of change:*** | | New clause added to describe how the UE mobility is supported as the MWAB moves or the UE moves. | | | | | | | | |
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| ***Consequences if not approved:*** | | Incomplete specification | | | | | | | | |
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| ***Clauses affected:*** | | 5.X.Y (new) | | | | | | | | |
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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.X.Y Support of Mobility when a UE is served by a MWAB

When a UE is served by a MWAB-gNB, the existing mobility procedures without enhancements can be reused to handle UE's mobility to and from a MWAB-gNB, irrespective of whether the MWAB is static or the MWAB is moving, which means:

- In CM-IDLE mode the UE shall perform a Mobility Registration Update if the TAI advertised by a MWAB-gNB cell is a TAI that is not in the UE Registration area.

- The MWAB-gNB is in charge of triggering handovers for the UEs in CM-CONNECTED mode it serves.

- any other gNB can trigger any handover to a suitable MWAB-gNBs which has a neighbour relationship established for the MWAB-gNB.

The MWAB-gNB can be provided by the OAM of the Broadcasted PLMN/SNPN a new Cell ID and/or TAC value(s) for its cell(s) to broadcast depending on its location. How this is implemented by the OAM of the Broadcasted PLMN/SNPN is not in scope of this specification. When it is required to change AMF for the UEs served by the MWAB-gNB upon mobility of a MWAB into a region of the Broadcasted PLMN/SNPN, the TAC(s) and Cell ID(s) the MWAB-gNB announces also change.

NOTE: The change of TAC when AMF needs to change is required to triggers a Mobility Registration Update by the CM-IDLE UE(s) served by the MWAB-gNB. OAM of the Broadcasted PLMN/SNPN is expected to be aware of when change of AMF is required.

Editor's Note: this clause needs update once RAN3 concludes on mobility aspects for connected mode UEs upon MWAB mobility.

As a MWAB-UE moves in the Backhaul PLMN/SNPN, its BH PDU session(s) may need to be changed to be handled by different UPF(s) (e.g. to be more topologically optimal with the current MWAB-UE location). If so, the MWAB-gNB updates the TNL association of the existing NG, Xn Interfaces to use the new TNL information associated with the new BH PDU session(s).

*End of CHANGES*