**3GPP TSG- Meeting #**

**, ,14-25 February 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **3687** | **rev** |  | **Current version:** | **17.3.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Clarification on handling of UE radio capability for paging when MME changes | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI-17, SAES | | | | |  | ***Date:*** | | | -01-25 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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). | | | | | | | | *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:*** | | It is not clear that, when the UE changes MME, the old MME provides to the new MME in the Context Response the UE radio capability for paging irrespective of the state of the UE. | | | | | | | | |
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| ***Summary of change:*** | | Clarifies that the UE radio capability for paging is transferred between MMEs in the MM context, taking into accout the RAT type indicated by the new MME in the Context Request, and that the trasfer is not limited to the case of connected mode only (already supported for WB-EUTRA). | | | | | | | | |
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| ***Consequences if not approved:*** | | Possible paging failure. | | | | | | | | |
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| ***Clauses affected:*** | | 5.11.4 | | | | | | | | |
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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:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

FIRST CHANGE

### 5.11.4 UE Radio Capability for Paging Information

Depending upon the features implemented in the E-UTRAN, this procedure may assist the E-UTRAN in optimising the radio paging procedures, or this procedure can be essential for mobile terminating services to succeed.

Using procedures specified in TS 36.413 [36] , the eNodeB shall upload the UE Radio Capability for Paging Information to the MME in the S1 interface UE CAPABILITY INFO INDICATION message (in a separate IE from the UE Radio Capability). As specified in TS 36.331 [37], the UE Radio Capability for Paging Information may contain UE Radio Paging Information provided by the UE to the eNodeB, and other information derived by the eNodeB (e.g. band support information) from the UE Radio Capability information.

The UE Radio Capability for Paging Information for NB-IoT and WB-E-UTRAN are separately stored in the MME. The RAT Type (derived from the UE's Tracking Area Code) is used to determine which RAT the information relates to.

The handling of the UE Radio Capability for Paging Information with RACS is described in clause 5.11.3a.

If a UE supports both NB-IoT and WB-E-UTRAN, the UE and eNodeB handle the UE Radio Capability for Paging Information as follows:

- when the UE is camping on NB-IoT the UE provides only NB-IoT information to the network;

- when the UE is camping on WB-E-UTRAN, the UE provides only WB-E-UTRAN information to the network.

Typically, this information is sent to the MME at the same time as the eNodeB uploads the UE Radio Capability information. The MME stores the UE Radio Capability for Paging Information in the MME context. When it needs to page, the MME provides the UE Radio Capability for Paging Information for that RAT to the eNodeB as part of the S1 paging message. The eNodeB may use the UE Radio Capability for Paging Information to enhance the paging towards the UE and/or to calculate when or how to broadcast paging information or the Wake Up Signal to the UE, see TS 36.304 [34].

If the UE is performing an Attach procedure or a Tracking Area Update procedure for the "first TAU following GERAN/UTRAN/ Attach" or for "UE radio capability update", the MME shall delete all UE Radio Capability for Paging Information that it has stored for that UE.

If the UE Radio Capability for Paging Information changes for either RAT, the UE shall follow the same procedures as if the UE Radio Capability changes.

During a change of MME, the old MME includes in the MM context in the Context Response message the UE Radio Capability for Paging of the UE if available. If the RAT type is indicated by the new MME, then the old MME includes the UE Radio Capability for Paging for the corresponding RAT type, if available.

In order to handle the situations of connected mode inter-MME change, the UE Radio Capability for Paging Information is sent to the target MME as part of the MM Context information.

The UE Radio Capability for Paging Information is only applicable for MMEs, i.e. it is not applicable for SGSNs. Therefore, it will not be included by MME during context transfers towards SGSNs.

END of CHANGES