**3GPP TSG-CT WG1 Meeting #141eC1-232540**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **5332** | **rev** | **1** | **Current version:** | **1** |  |
|  | | | | | | | | |
| *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 |  |

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| ***Title:*** | TAIs belonging to different PLMNs which are equivalent PLMNs in "forbidden tracking areas for regional provision of service" or "forbidden tracking areas for roaming" | | | | | | | | | |
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| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc18 | | | | |  | ***Date:*** | | | 2023-04-04 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| **Reason for change:** | | UE in satellite coverage, can receive "forbidden tracking areas for roaming" and/or "forbidden tracking areas for regional provision of service" in REGISTRATION REJECT, SERVICE REJECT, DEREGISTRATION REQUEST, REGISTRATION ACCEPT or SERVICE ACCEPT message.  It is not restricted that TAI(s) in the Forbidden TAI(s) for the list of "forbidden tracking areas for roaming" IE or the Forbidden TAI(s) for the list of "forbidden tracking areas for regional provision of service" IE can be from the serving PLMN or its equivalent PLMNs, if any  Network may keep the Forbidden TAI(s) for the list of "forbidden tracking areas for roaming" IE or the Forbidden TAI(s) for the list of "forbidden tracking areas for regional provision of service" IE from the different network which is not equivalent PLMN to not allow UE to select those network  For other case, it is specified that, Network include TAI of the registered PLMN or its equivalent. For an example,  *The service area restrictions consist of tracking areas forming either an allowed area, or a non-allowed area. The tracking areas belong tothe registered PLMN, its equivalent PLMNs in the registration area, or the registered SNPN. The allowed area can contain up to 16 tracking areas or include all tracking areas in the registered PLMN and its equivalent PLMN(s) in the registration area, or in the registered SNPN*  Editorial correction: 1) ", or a REGISTRATION ACCEPT or SERVICE ACCEPT message is received with the forbidden TAI(s) is corrected as theer is no forbidden TAI(s) IE for the satellite 2) 5GS was missing in the "5GS forbidden tracking areas for regional provision of service" | | | | | | | | |
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| ***Summary of change:*** | | It is clarified that,TAI(s) "forbidden tracking areas for roaming" and/or "forbidden tracking areas for regional provision of service" may belongs to different PLMNs which are equivalent PLMNs UE consider forbidden TAI for the serving PLMN or its equivalent PLMN (if any) | | | | | | | | |
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| ***Consequences if not approved:*** | | Network may give TAI(s) for the different PLMN(s) which is not equivalent of the serving PLMN which may cause the UE to block the allowed network, if the serving network wants to block it | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.13 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **N** |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **N** |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | | **N** |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

### 5.3.13 Lists of 5GS forbidden tracking areas

If the UE is not operating in SNPN access operation mode, the UE shall store a list of "5GS forbidden tracking areas for roaming", as well as a list of "5GS forbidden tracking areas for regional provision of service". Otherwise the UE shall store a list of "5GS forbidden tracking areas for roaming":

- per SNPN; and

- if the UE supports access to an SNPN using credentials from a credentials holder, equivalent SNPNs or both, per entry of the "list of subscriber data" or, if the UE supports access to an SNPN using credentials from a credentials holder, PLMN subscription;

and store a list of "5GS forbidden tracking areas for regional provision of service":

- per SNPN; and

- if the UE supports access to an SNPN using credentials from a credentials holder, equivalent SNPNs or both, per entry of the "list of subscriber data" or, if the UE supports access to an SNPN using credentials from a credentials holder, PLMN subscription.

Within the 5GS, these lists are managed independently per access type, i.e., 3GPP access or wireline access. These lists shall be erased when:

a) the UE is switched off, the UICC containing the USIM is removed, an entry of the "list of subscriber data" with the subscribed SNPN identity identifying the current SNPN is updated or, if the UE supports access to an SNPN using credentials from a credentials holder, the entry of the "list of subscriber data" associated with the lists is updated; and

b) periodically (with a period in the range 12 to 24 hours).

Over 3GPP access, when the lists are erased, the UE performs cell selection according to 3GPP TS 38.304 [28] or 3GPP TS 36.304 [25C]. A tracking area shall be removed from the list of "5GS forbidden tracking areas for roaming", as well as the list of "5GS forbidden tracking areas for regional provision of service", if the UE receives the tracking area in the TAI list or the Service area list of "allowed tracking areas" in REGISTRATION ACCEPT message or a CONFIGURATION UPDATE COMMAND message. The UE shall not remove the tracking area from "5GS forbidden tracking areas for roaming" or "5GS forbidden tracking areas for regional provision of service" if the UE is registered for emergency services.

In N1 mode over 3GPP access, the UE shall update the suitable list with the TAI(s) belonging to serving PLMN or equivalent PLMN and ignore the TAI(s) which does not belong to serving PLMN or list of equivalent PLMN(s) whenever a REGISTRATION REJECT, SERVICE REJECT or DEREGISTRATION REQUEST message is received with the Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" IE or the Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" IE, or is received with the 5GMM cause #12 "tracking area not allowed", #13 "roaming not allowed in this tracking area", #15 "no suitable cells in tracking area", or #62 "no network slices available", or a REGISTRATION ACCEPT or SERVICE ACCEPT message is received with the forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" IE or the Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" IE.

If the UE receives ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message provided with S-NSSAI and the PLMN ID in the Protocol configuration options IE or Extended protocol configuration options IE (see subclause 6.5.1.3 of 3GPP TS 24.301 [15]), the UE may remove the corresponding tracking area from the "5GS forbidden tracking areas for roaming".

Over wireline access, the 5G-RG, the W-AGF acting on behalf of an FN-RG or the W-AGF acting on behalf of an N5GC device shall update the suitable list whenever a REGISTRATION REJECT, SERVICE REJECT or DEREGISTRATION REQUEST message is received with the 5GMM cause #12 "tracking area not allowed" or #13 "roaming not allowed in this tracking area".

NOTE 2: In this release of the specification, for untrusted non-3GPP access and trusted non-3GPP access, neither the list of "5GS forbidden tracking areas for roaming" nor the list of "5GS forbidden tracking areas for regional provision of service" is maintained by the UE since the UE is not able to determine the corresponding TAI.

Each list shall accommodate 40 or more TAIs. When the list is full and a new entry has to be inserted, the oldest entry shall be deleted.

\* \* \* End Change \* \* \* \*