**3GPP TSG-CT WG1 Meeting #133e-bisC1-22xxxx**

**E-meeting, 17-21 January 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **3588** | **rev** | **4** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | Multiple TACs from the lower layers | | | | | | | | | |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GSAT\_ARCH-CT | | | | |  | ***Date:*** | | | 2022-01-17 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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:*** | | In R2-2108888, RAN2 confirms that “*Option 2 (AS indicates all received TAC(s) for one PLMN to NAS layer) has been adopted by RAN2*.” In light of this, CT1 needs to specify the NAS layer behaviour on TAC selection.  In addition, SA2 sent an LS in [S2-2109337](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_148E_Electronic_2021-11/Docs/S2-2109337.zip) including CRs on the issue. Stage 3 implementation is required. | | | | | | | | |
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| ***Summary of change:*** | | How the NAS layer handles multiple TACs is specified. | | | | | | | | |
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| ***Consequences if not approved:*** | | How the NAS layer handles multiple TACs remains unspecified. | | | | | | | | |
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| ***Clauses affected:*** | | 4.23.x (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

### 4.23.x Handling multiple tracking area codes from the lower layers

When a UE camps on a satellite NG-RAN cell, the UE may receive multiple TACs from the lower layers. The UE shall construct TAIs from the multiple TACs (i.e. concatenate the identity of the current PLMN and each of the TACs) and select a TAI as follows:

a) if at least one TAI belongs to the current registration area of the UE, the UE shall select a TAI which belongs to the current registration area of the UE.

If there are multiple TAIs which belong to the current registration area of the UE, the UE shall attempt to select a TAI which belongs to a list of "allowed tracking area" (if any) and does not belong to a list of "non-allowed tracking areas" (if any). In this case, if:

1) the UE cannot find a TAI which belongs to a list of "allowed tracking area" (if any) and does not belong to a list of "non-allowed tracking areas" (if any); or

2) there are multiple TAIs which belong to a list of "allowed tracking area" (if any) and does not belong to a list of "non-allowed tracking areas" (if any);

then the UE shall select a TAI in an implementation-specific way (e.g. taking into account LADN service area information).

b) if no TAI belongs to the current registration area of the UE, the UE shall attempt to select a TAI which belongs to neither a list of "5GS forbidden tracking areas for roaming" nor a list of "5GS forbidden tracking areas for regional provision of service". In this case, if:

1) the UE cannot find a TAI which belongs to neither a list of "5GS forbidden tracking areas for roaming" nor a list of "5GS forbidden tracking areas for regional provision of service"; or

2) there are multiple TAIs which belong to neither a list of "5GS forbidden tracking areas for roaming" nor a list of "5GS forbidden tracking areas for regional provision of service";

then the UE shall select a TAI in an implementation-specific way.

The UE shall consider the selected TAI as the current TAI.

If the UE adds the current TAI in a list of "5GS forbidden tracking areas for roaming" or a list of "5GS forbidden tracking areas for regional provision of service" due to receipt of 5GMM cause value #12 "tracking area not allowed", #13 "roaming not allowed in this tracking area", or #15 "no suitable cells in tracking area" and the UE has received multiple TACs from the current cell, the UE shall add, in the list, all TAIs constructed from the multiple TACs (i.e. constructed by concatenating the identity of the current PLMN and each of the TACs).