**3GPP TSG-CT WG1 Meeting #137-eC1-22xxxx**

**E-Meeting, 18th – 26th August 2022 Revision of C1-224649**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
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| *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:***  | The consideration of avoiding unnecessary TAI change |
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| ***Source to WG:*** | China Mobile, Ericsson, China Southern Power Grid Co. |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GSAT\_ARCH-CT |  | ***Date:*** | 2022-08-10 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | -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 canbe 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:*** | TS 24.501 specifies how to select a TAI as the current TAI in the case there are multiple TAIs which belong to the current registration area of the UE in subclause 4.23.5. It requires “the UE shall consider each of these TAIs equal and select a TAI in an implementation-specific way (e.g. taking into account LADN service area information).”Considering the TAI is related to LADN, UE policy etc., TAI change could have different service experiences and make location criterias unmatched. It is suggested to keep the stored current TAI selected in multiple TAIs scenario to avoid unnecessary TAI change.  |
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| ***Summary of change:*** | Propose an optimization for TAI selection in 4.23.5. |
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| ***Consequences if not approved:*** | Equal treatment of multiple TAIs could result in unnecessary TAI change. |
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| ***Clauses affected:*** | 4.23.5 |
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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 \* \* \* \*

### 4.23.5 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 according to the followings.

 If there are multiple TAIs which belong to the current registration area of the UE, the UE shall select a TAI as follows:

1) if there is a TAI which belongs to the list of "allowed tracking area" (if any) and does not belong to the list of "non-allowed tracking areas" (if any), the UE shall select a TAI which belongs to the list of "allowed tracking area" (if any) and does not belong to the list of "non-allowed tracking areas" (if any). In this case, if there are multiple TAIs which belong to the list of "allowed tracking area" (if any) and does not belong to the list of "non-allowed tracking areas" (if any), then the UE shall consider each of these TAIs equal and select a TAI in an implementation-specific way (e.g. taking into account LADN service area information). If these multiple TAIs contain the previous current TAI, the current TAI can be left unchanged.

2) if there is no TAI which belongs to the list of "allowed tracking area" (if any) and does not belong to the list of "non-allowed tracking areas" (if any) or neither the list of "allowed tracking area" nor the list of "non-allowed tracking areas" is available, then the UE shall consider each of these TAIs equal and select a TAI in an implementation-specific way (e.g. taking into account LADN service area information). If these multiple TAIs contain the previous current TAI, the curren TAI can be left unchanged.

b) if no TAI belongs to the current registration area of the UE and:

1) there is a TAI which belongs to neither the list of "5GS forbidden tracking areas for roaming" nor the list of "5GS forbidden tracking areas for regional provision of service", the UE shall select a TAI which belongs to neither the list of "5GS forbidden tracking areas for roaming" nor the list of "5GS forbidden tracking areas for regional provision of service". In this case, if there are multiple TAIs which belong to neither the list of "5GS forbidden tracking areas for roaming" nor the list of "5GS forbidden tracking areas for regional provision of service", then the UE shall select a TAI according to a)-1) and a)-2) above.

2) all TAIs belong to the list of "5GS forbidden tracking areas for roaming" or the list of "5GS forbidden tracking areas for regional provision of service", then the UE shall consider each of these TAIs equal and select a TAI in an implementation-specific way.

The UE shall consider the selected TAI as the current TAI. The UE shall select a TAI when:

a) the UE receives multiple TACs from the lower layers; or

b) the UE has received multiple TACs from the lower layers upon starting to camping on the current cell and the registration area, the list of "allowed tracking areas", the list of "non-allowed tracking areas", the list of "5GS forbidden tracking areas for roaming", or the list of "5GS forbidden tracking areas for regional provision of service" is updated.

Handling of the list of "5GS forbidden tracking areas for roaming" and the list of "5GS forbidden tracking areas for regional provision of service" is specified in clause 5.3.13.

\* \* \* End of Changes \* \* \* \*