**3GPP TSG-CT WG1 Meeting #133-eC1-21TBD**

**E-meeting, 11-19 November 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** | **3729** | **rev** | **1** | **Current version:** | **17.4.1** |  |
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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:***  | Clarification on when a 5GSM procedure can be initiated for LADN |
|  |  |
| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc17 |  | ***Date:*** | 02-11-2021 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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 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:*** | The following note was added in section 5.6.5 of TS 23.501 (see S2-2106564):“NOTE 6: The evaluation of Service Area Restrictions will be performed before the evaluation of LADN service area, if the UE has overlapping areas between Service Area Restrictions and LADN service area.”The above means that the UE can have overlapping areas and the so the UE should only initiate a 5GSM procedure for LADN if the UE is in the LADN area which does not overlap with a restricted service area e.g. a non-allowed area. This needs to be clarified and aligned with SA2 agreement. |
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| ***Summary of change:*** | Clarify that the UE can only initiate a 5GSM procedure for LADN if the UE is in substate 5GMM-REGISTERED.NORMAL-SERVICE. |
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| ***Consequences if not approved:*** | When the UE is in an overlapping area, between restricted service area and LADN area, the UE will be in substate 5GMM-REGISTERED.NON-ALLOWED-SERVICE (per the note from TS 23.501) yet the UE will end up sending a 5GSM message which is not allowed, and hence the UE behaves contrary to the requirements of the restricted service area. |
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| ***Clauses affected:*** | 6.2.6 |
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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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\*\* START CHANGE \*\*\*\*\*\*

### 6.2.6 Local area data network (LADN)

The UE can receive the local area data network (LADN) information consisting of LADN DNNs and LADN service area information (a set of tracking areas that belong to the current registration area) during the registration procedure or the generic UE configuration update procedure (see subclause 5.5.1 and subclause 5.4.4).

If the UE is not operating in SNPN access operation mode, the UE considers the received LADN information to be valid only in the TAIs of the registered PLMN that are in the LADN service area information, and in the TAIs of the equivalent PLMNs if the LADN service area information includes TAIs for the equivalent PLMNs. When the AMF provides the UE with LADN service area information containing TAIs for the equivalent PLMNs, the AMF shall include these TAIs of the equivalent PLMNs in the UE's registration area.

If the UE is operating in SNPN access operation mode, the UE considers the received LADN information to be valid only in the TAIs of the registered SNPN that are in the LADN service area information.

The LADN DNN(s) received by the UE is also considered as LADN DNN(s) in the equivalent PLMNs.

The UE shall consider itself to be located inside the LADN service area based on the LADN service area information. If the UE does not have a LADN service area information for the LADN DNN, the UE shall consider itself to be located outside the LADN service area.

When the UE is located in the LADN service area and the UE is in substate 5GMM-REGISTERED.NORMAL-SERVICE, the UE may initiate:

- the UE-requested PDU session establishment procedure with a LADN DNN to establish a PDU session for LADN;

- the UE-requested PDU session modification procedure to modify the PDU session for LADN; and

- the service request procedure to re-establish the user-plane resources for the PDU session for LADN.

NOTE 1: If both the Service area list IE and the LADN information IE were received by the UE, the Service area list IE is evaluated first.

When the UE is located outside the LADN service area, the UE is allowed:

- to initiate the UE-requested PDU session release procedure to release a PDU session for LADN; or

- to initiate the UE-requested PDU session modification procedure to indicate a change of 3GPP PS data off UE status.

If the UE has moved out of the LADN service area, the SMF shall:

a) release the PDU session for LADN; or

b) release the user-plane resources for the PDU session for LADN and maintain the PDU session for LADN;

according to operator's policy.

In case b):

- if the UE has returned to the LADN service area, and the network has downlink user data pending, the network re-establishes the user-plane resources for the PDU session for LADN; and.

- if the UE has not returned to the LADN service area after a period of time according to operator's policy, the SMF may release the PDU session for LADN.

When the UE moves to 5GMM-DEREGISTERED state, the UE shall delete the stored LADN information, if any.

NOTE 2: In this release, LADNs apply only to 3GPP access.

Upon inter-system change from N1 mode to S1 mode in EMM-IDLE mode, the UE shall not transfer a PDU session for LADN to EPS.

\*\*\*\*\*\* END CHANGES \*\*\*\*\*\*