**3GPP TSG-WG SA2 Meeting #161 *S2-2403182***

**Athens, Greece, Feb 26 – Mar 1, 2024 (revision of S2-2312779, 2678)**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **23.501** | **CR** | **5032** | **rev** | **3** | **Current version:** | **18.4.0** |  |
|  |
| *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:***  | Updated description of UE Location verification for NTN |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | SA2 |
|  |  |
| ***Work item code:*** | 5GSAT\_ARCH |  | ***Date:*** | 2024-02-28 |
|  |  |  |  |  |
| ***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 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | If the network is not aware of accurate or reliable UE location, e.g. during the initial Registration procedure and UE/NW triggered Service Request procedure when the UE is in CM-IDLE, the network shall not allow service provision to UE until the UE location is verified. There exists some timers that may be used to prevent access to services while location verification is required. |
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| ***Summary of change:*** | A note is added to clarify that the AMF may use existing back-off timers can be used to prevent access to services |
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| ***Consequences if not approved:*** | Provision of services to a UE whose location is not verified may result in regulatory and security risks. |
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| ***Clauses affected:*** | 5.4.11.4 |
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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 \* \* \* \*

#### 5.4.11.4 Verification of UE location

In order to ensure that the regulatory requirements are met, the network may be configured to enforce that the selected PLMN is allowed to operate in the current UE location by verifying the UE location during Mobility Management and Session Management procedures. In this case, when the AMF receives a NGAP message containing User Location Information for a UE using NR satellite access, the AMF may decide to verify the UE location. If the AMF determines based on the Selected PLMN ID and ULI (including Cell ID) received from the gNB that it is not allowed to operate at the present UE location the AMF should reject any NAS request with a suitable cause value. If the UE is already registered to the network when the AMF determines that it is not allowed to operate at the present UE location, the AMF may initiate deregistration of the UE. The AMF should not reject the request or deregister the UE unless it has sufficiently accurate UE location information to determine that the UE is located in a geographical area where the PLMN is not allowed to operate.

NOTE: The area where the UE is allowed to operate can be determined based on the regulatory area where the PLMN is allowed to operate based on its licensing conditions.

If the AMF, based on the ULI, is not able to determine the UE's location with sufficient accuracy to make a final decision or if the received ULI is not sufficiently reliable, the AMF proceeds with the Mobility Management or Session Management procedure and may initiate UE location procedure after the Mobility Management or Session Management procedure is complete, as specified in clause 6.10.1 of TS 23.273 [87], to determine the UE location.

NOTE x: In order to ensure that the regulatory requirements are met, based on operator configuration, the AMF may prevent the UE from accessing certain services while location determination is ongoing. This may be done by, for example, an AMF providing a back-off time to the UE, such as those described in clause 5.17.7 NAS level congestion control for DNN-based, S-NSSAI based or Control Plane data congestion control.

The AMF shall be prepared to deregister the UE if the information received from LMF indicates that the UE is registered to a PLMN that is not allowed to operate in the UE location. In the case of a NAS procedure, the AMF should either reject any NAS request targeted towards a PLMN that is not allowed to operate in the known UE location and indicate a suitable cause value, or accept the NAS procedure and initiate deregistration procedure once the UE location is known. In the deregistration message to the UE, the AMF shall include a suitable cause value. For UE processing of the cause value indicating that the PLMN is not allowed to operate in the current UE location, see TS 23.122 [17] and TS 24.501 [47].

In the case of a handover procedure, if the (target) AMF determines that it is not allowed to operate at the current UE location, the AMF either rejects the handover, or accepts the handover and later deregisters the UE.

\* \* \* \* End of changes \* \* \* \*