**3GPP SA WG2 Meeting #164S2-2407631**

**Maastricht, Netherlands, 19 – 23 August, 2024 (revision of S2-240xxxx)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.501** | **CR** | 5434 | **rev** |  | **Current version:** | **18.6.0** |  |
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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 | **X** |

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| ***Title:*** | Support of a UE registered over both 3GPP and Non-3GPP access | | | | | | | | | |
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| ***Source to WG:*** | NEC | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_Ph1, TEI18 | | | | |  | ***Date:*** | | | 2024-08-05 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | According to the following specifications from 5.3.1.1 Establishment of the N1 NAS signalling connection in TS24.501:  *if the initial NAS message other than the SERVICE REQUEST or CONTROL PLANE SERVICE REQUEST message was initiated over trusted non-3GPP access, the UE NAS shall provide the lower layers with the 5G-GUTI, if available, otherwise shall provide the lower layers with the SUCI;*  When the UE is registered first via 3GPP access, if the UE registers to the same PLMN via trusted Non-3GPP access, the UE sends the 5G-GUTI obtained via 3GPP access to the TNGF, which derive the GUAMI from the 5G-GUTI as:  <5G-GUTI> := <GUAMI> <5G-TMSI>. | | | | | | | | |
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| ***Summary of change:*** | | It’s proposed to correct UE and TNGF behaviors about GUAMI and 5G-GUTI. | | | | | | | | |
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| ***Consequences if not approved:*** | | It may cause incorrect implementations. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.2.4 | | | | | | | | |
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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:*** | | No Stage 3 impacts. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* \* First change \* \* \* \*

#### 5.3.2.4 Support of a UE registered over both 3GPP and Non-3GPP access

This clause applies to Non-3GPP access network corresponding to the Untrusted Non-3GPP access network, to the Trusted Non-3GPP and to the W-5GAN. In the case of W-5GAN the UE mentioned in this clause corresponds to the 5G-RG.

For a given serving PLMN there is one RM context for a UE for each access, e.g. when the UE is consecutively or simultaneously served by a 3GPP access and by a non-3GPP access (i.e. via an N3IWF, TNGF and W-AGF) of the same PLMN. UDM manages separate/independent UE Registration procedures for each access.

When served by the same PLMN for 3GPP and non-3GPP accesses, an UE is served by the same AMF except in the temporary situation described in clause 5.17 i.e. after a mobility from EPS while the UE has PDU Sessions associated with non-3GPP access.

The 5G NSWO authentication as defined in Annex S of TS 33.501 [29] does not impact the RM state.

An AMF associates multiple access-specific RM contexts for an UE with:

- a 5G-GUTI that is common to both 3GPP and Non-3GPP accesses. This 5G-GUTI is globally unique.

- a Registration state per access type (3GPP / Non-3GPP)

- a Registration Area per access type: one Registration Area for 3GPP access and another Registration Area for non 3GPP access. Registration Areas for the 3GPP access and the Non-3GPP access are independent.

- timers for 3GPP access:

- a Periodic Registration timer; and

- a Mobile Reachable timer and an Implicit Deregistration timer.

- timers for non-3GPP access:

- a UE Non-3GPP Deregistration timer; and

- a Network Non-3GPP Implicit Deregistration timer.

The AMF shall not provide a Periodic Registration Timer for the UE over a Non-3GPP access. Consequently, the UE need not perform Periodic Registration Update procedure over Non-3GPP access. Instead, during the Initial Registration procedure and Re-registration, the UE is provided by the network with a UE Non-3GPP Deregistration timer that starts when the UE enters non-3GPP CM-IDLE state.

When the 3GPP access and the non-3GPP access for the same UE are served by the same PLMN, the AMF assigns the same 5G-GUTI for use over both accesses. Such a 5G-GUTI may be assigned or re-assigned over any of the 3GPP and Non-3GPP accesses. The 5G-GUTI is assigned upon a successful registration of the UE, and is valid over both 3GPP and Non-3GPP access to the same PLMN for the UE. Upon performing an initial access over the Non-3GPP access or over the 3GPP access while the UE is already registered with the 5G System over another access of the same PLMN, the UE provides the native 5G-GUTI for the other access. This enables the AN to select an AMF that maintains the UE context created at the previous Registration procedure via the GUAMI derived from the 5G-GUTI, and enables the AMF to correlate the UE request to the existing UE context via the 5G-GUTI.

If the UE is performing registration over one access and intends to perform registration over the other access in the same PLMN (e.g. the 3GPP access and the selected N3IWF, TNGF or W-AGF are located in the same PLMN), the UE shall not initiate the registration over the other access until the Registration procedure over first access is completed.

NOTE: To which access the UE performs registration first is up to UE implementation.

When the UE is successfully registered to an access (3GPP access or Non-3GPP access respectively) and the UE registers via the other access:

- if the second access is located in the same PLMN (e.g. the UE is registered via a 3GPP access and selects a N3IWF, TNGF or W-AGF located in the same PLMN), the UE shall use for the registration to the PLMN associated with the new access the 5G-GUTI that the UE has been provided with at the previous registration or UE configuration update procedure for the first access in the same PLMN. Upon successful completion of the registration to the second access, if the network included a 5G-GUTI in the Registration Accept, the UE shall use the 5G-GUTI received in the Registration Accept for both registrations. If no 5G-GUTI is included in the Registration Accept, then the UE uses the 5G-GUTI assigned for the existing registration also for the new registration.

- if the second access is located in a PLMN different from the registered PLMN of the first access (i.e. not the registered PLMN), (e.g. the UE is registered to a 3GPP access and selects a N3IWF, TNGF or W-AGF located in a PLMN different from the PLMN of the 3GPP access, or the UE is registered over Non-3GPP and registers to a 3GPP access in a PLMN different from the PLMN of the N3IWF, TNGF or W-AGF), the UE shall use for the registration to the PLMN associated with the new access a 5G-GUTI only if it has got one previously received from a PLMN that is not the same as the PLMN the UE is already registered with. If the UE does not include a 5G-GUTI, the SUCI shall be used for the new registration. Upon successful completion of the registration to the second access, the UE has the two 5G-GUTIs (one per PLMN).

A UE supporting registration over both 3GPP and Non-3GPP access to two PLMNs shall be able to handle two separate registrations, including two 5G-GUTIs, one per PLMN, and two associated equivalent PLMN lists.

When a UE 5G-GUTI assigned during a Registration procedure over 3GPP (e.g. the UE registers first over a 3GPP access) is location-dependent, the same UE 5G-GUTI can be re-used over the Non-3GPP access when the selected N3IWF, TNGF or W-AGF function is in the same PLMN as the 3GPP access. When an UE 5G-GUTI is assigned during a Registration procedure performed over a Non 3GPP access (e.g. the UE registers first over a non-3GPP access), the UE 5G-GUTI may not be location-dependent, so that the UE 5G-GUTI may not be valid for NAS procedures over the 3GPP access and, in this case, a new AMF is allocated during the Registration procedure over the 3GPP access.

When the UE is registered first via 3GPP access, if the UE registers to the same PLMN via Non-3GPP access, the UE shall send the GUAMI obtained via 3GPP access to the N3IWF or W-AGF, or send the 5G-GUTI obtained via 3GPP access to TNGF, which uses the received GUAMI or the GUAMI derived from the received 5G-GUTI to select the same AMF as the 3GPP access.

The Deregistration Request message indicates whether it applies to the 3GPP access the Non-3GPP access, or both.

If the UE is registered on both 3GPP and Non-3GPP accesses and it is in CM-IDLE over Non-3GPP access, then the UE or AMF may initiate a Deregistration procedure over the 3GPP access to deregister the UE only on the Non-3GPP access, in which case all the PDU Sessions which are associated with the Non-3GPP access shall be released.

If the UE is registered on both 3GPP and non-3GPP accesses and it is in CM-IDLE over 3GPP access and in CM-CONNECTED over non-3GPP access, then the UE may initiate a Deregistration procedure over the non-3GPP access to deregister the UE only on the 3GPP access, in which case all the PDU Sessions which are associated with the 3GPP access shall be released.

Registration Management over Non-3GPP access is further defined in clause 5.5.1.

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