**3GPP TSG-SA WG6 Meeting #49-e S6-221279 Rev1**

**e-meeting, 16th – 25th May 2022 (revision of S6-221133)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | Update of Non-MSGin5G UE registration | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | China Mobile | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GMARCH\_Ph2 | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | D |  | | | | | ***Release:*** | | |  |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Update of the Non-MSGin5G UE registration including the following aspects:  1. Th e Non-MSGin5G UE cannot be responsible for initiating the registration and de-registration, so the initiator is changed to Message Gateway on behalf of the Non-MSGin5G UE.  2. A Failure Cause IE is added to the Non-MSGin5G UE registration response to indicate why the registration is failed.  3. Some editorial changes are also proposed. | | | | | | | | |
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| ***Summary of change:*** | | Update the procedure of Non-MSGin5G UE registration. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | If the registration failed, the Non-MSGin5G UE may be informed with the reason is not supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.3 and 8.2.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Rev1: the step 1 in clause 8.2.3 is change to “The Message Gateway determines to register the Non-MSGin5G UE with the MSGin5G Server.” | | | | | | | | |

### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 1\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 8.2.3 Non-MSGin5G UE Registration

Non-MSGin5G UEs (i.e., Legacy 3GPP UEs or Non-3GPP UEs) are connected to the MSGin5G Server through a Message Gateway. The Message Gateway performs registration with the MSGin5G Server on behalf of the Non-MSGin5G UEs, based on the registration request from the Non-3GPP UE, pre-provisioned information, or the knowledge of that Non-MSGin5G UE is ready for the MSGin5G service. After the procedure is complete, the Message Gateway may communicate the result to the Non-MSGin5G UE to enable MSGin5G Services at the Non-MSGin5G UEs.

NOTE: The communication procedure between Non-MSGin5G UE and Message Gateway is out of scope of this document.

The signalling flow is illustrated in figure 8.2.3-1.

Pre-conditions:

1. The Message Gateway has been pre-configured with the MSGin5G Server address and UE Service ID for a Non-3GPP UE.

2. The Message Gateway has been configured with Non-MSGin5G UE registration information (e.g. via non-MSGin5G registration) credentials to enable authentication and Non-3GPP UE registration at the Message Server.

3. A secured connection has been established between the Message Gateway and the MSGin5G Server.



Figure 8.2.3-1: Non-MSGin5G UE registration

1. The Message Gateway determines to register the Non-MSGin5G UE with the MSGin5G Server.

Table 8.2.3-1: Non-MSGin5G UE registration request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| UE Service ID | M | UE service identifier assigned to the requesting Non-MSGin5G UE. |
| MGW Service ID | M | The service identifier of the Message Gateway performing registration on behalf of a Non-MSGin5G UE |
| UE credential information | M | The information needed to authenticate the UE. The authentication and authorization between MSGin5G client and MSGin5G Server are specified in Annex Y.2 of 3GPP TS 33.501 [16]. |
| Non-MSGin5G UE Profile | O | Set of parameters describing the Non-MSGin5G UE |
| >Non-MSGin5G UE Communication Availability | O | Communication availability information for the Non-MSGin5G UE to receive messages. This IE informs the MSGin5G Server if the UE has a specific application-level schedule/periodicity to its MSGin5G communications, which may be used to determine whether and when MSGin5G communications are attempted. See Table 8.2.1-3. |

3. The MSGin5G Server authenticates the Message Gateway and authorises the Message Gateway on behalf of the Non-MSGin5G UE to receive the MSGin5G Service. If the registration is successful, the MSGin5G Server stores the UE Service ID and associated Non-MSGin5G UE Profile information.

4. The MSGin5G Server returns the result of the registration in the Non-MSGin5G UE registration response message, with the information detailed in table 8.2.1-4, to the Message Gateway.

### 8.2.4 Non-MSGin5G UE De-registration

The Message Gateway performs de-registration with the MSGin5G Server on behalf of the Non-MSGin5G UEs, in order to terminate services from the MSGin5G Server.

NOTE: After the procedure is complete, the Message Gateway may communicate the result to the requesting Non-MSGin5G UE and the procedure is out of scope of this document.

The procedure assumes that the Message Gateway is responsible for initiating the de-registration from the MSGin5G Server on behalf of the Non-MSGin5G UE. The signaling flow for Non-MSGin5G UE de-registration is illustrated in figure 8.2.4-1.

Pre-conditions:

1. The Message Gateway successfully performed registration with the MSGin5G Server on behalf of the Non-MSGin5G UE.



Figure 8.2.4-1 : Non-MSGin5G UE de-registration

1. The Message Gateway determines to de-register the Non-MSGin5G UE with the MSGin5G Server.

2. The Message Gateway sends a Non-MSGin5G UE de-registration request to the MSGin5G Server that includes the UE Service ID associated with the Non-MSGin5G UE, as shown in Table 8.2.4-1.

Table 8.2.4-1: Non-MSGin5G UE de-registration request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| UE Service ID | M | UE service identifier assigned to the Non-MSGin5G UE. |
| UE credential information | M | The information needed to authenticate the UE. The authentication and authorization between MSGin5G client and MSGin5G Server are specified in Annex Y.2 of 3GPP TS 33.501 [16]. |

3. The MSGin5G Server validates the Non-MSGin5G UE de-registration request and verifies the security credentials. The MSGin5G Server deletes any applicable UE Service ID and associated MSGin5G Client Profile information that it has stored.

4. The MSGin5G Server replies with a Non-MSGin5G UE de-registration response as shown in table 8.2.4-2.

Table 8.2.4-2: Non-MSGin5G UE De-registration response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| UE Service ID | M | UE service identifier assigned to the Non-MSGin5G UE. |
| De-registration result | M | Indication if the de-registration is success or failure |
| Failure Cause | O | The reason for failure |

Editor's note: Support for bulk registration and de-registration of Non-MSGin5G UE s (i.e., registering more than one UE Service ID at the same time) is FFS.