**3GPP TSG-CT WG1 Meeting #141eC1-23XXXX**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **5301** | **rev** | **1** | **Current version:** | **18.2.1** |  |
|  | | | | | | | | |
| *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:*** | UE handling upon CAG validity state change | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | MediaTek Inc., Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNPN\_Ph2 | | | | |  | ***Date:*** | | | 2023-04-18 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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:*** | | When CAG authorization state is changed and notified by the network via DL NAS signalling, the UE handling behaviours are well defined. However, after the validity information for CAG is introduced in Rel-18, the CAG authorization state can also be changed without any occurrence of DL NAS signalling, e.g., a UE campon on a CAG cell supporting CAG#1 cell and the CAG#1’s has time validity information which is valid for “today”, when the time passes 23:59:59.xxx the current CAG cell is no longer a “suitable cell”, so UE handling of such kind of scenario needs to be defined. See the definition of “authorized” CAG-ID: | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Define: UE handling of CAG authorization state been changed without any occurrence of DL NAS signalling | | | | | | | | |
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| ***Consequences if not approved:*** | | UE handling of CAG authorization state been changed without any occurrence of DL NAS signalling is not defined | | | | | | | | |
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| ***Clauses affected:*** | | 4.14.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\*\*\*change\*\*\*

### 4.14.3 Public network integrated non-public network (PNI-NPN)

A PNI-NPN is made available by means of e.g. dedicated DNNs or by one or more S-NSSAIs allocated for it. A CAG can be optionally used in order to prevent UEs not allowed to access a PNI-NPN from accessing the PNI-NPN. The key enablers for the CAG in the NAS layer are as follows:

a) CAG selection (see 3GPP TS 23.122 [5]); and

b) provisioning of a "CAG information list" as specified in 3GPP TS 23.122 [5], from network to UE via the generic UE configuration update procedure, the registration procedure, the service request procedure, and the network-initiated de-registration procedure.

The "CAG information list" provisioned by the network, if available, is stored in the non-volatile memory in the ME as specified in annex C. The "CAG information list" stored in the ME is kept when the UE enters 5GMM-DEREGISTERED state. Annex C specifies condition under which the "CAG information list" stored in the ME is deleted. Additionally, when a USIM is inserted, if:

- no "CAG information list" is stored in the non-volatile memory of the ME; or

- the SUPI from the USIM does not match the SUPI stored together with the "CAG information list" in the non-volatile memory of the ME;

and the UE has a "CAG information list" stored in the USIM (see 3GPP TS 31.102 [22]), the UE shall store the "CAG information list" from the USIM into the ME, as specified in annex C. The "Allowed CAG list" included in the entry for the HPLMN or EHPLMN in "CAG information list" stored in the USIM can contain a range of CAG-IDs.

The UE supporting CAG may perform the initial registration for emergency services via a non-CAG cell in a PLMN for which the UE has an "indication that the UE is only allowed to access 5GS via CAG cells" or via a CAG cell for which none of CAG-ID(s) is authorized based on the "Allowed CAG list" (see 3GPP TS 23.122 [5]) for the selected PLMN. If a UE supporting CAG having an emergency PDU session is camping on:

a) a CAG cell and none of the CAG-ID(s) of the CAG cell is authorized based on the "Allowed CAG list" for the current PLMN in the UE's subscription; or

b) a non-CAG cell in a PLMN for which the UE's subscription contains an "indication that the UE is only allowed to access 5GS via CAG cells";

the AMF shall behave as specified in subclause 5.4.4.2, 5.5.1.3.4 or 5.6.1.4.1.

NOTE: The emergency services in a PLMN for which the UE's subscription contains an "indication that the UE is only allowed to access 5GS via CAG cells" can be subject to local regulation.

Proximity based services (5G ProSe as specified in 3GPP TS 24.554 [19E]) are not supported in this release of the specification when a UE is camping on a CAG cell.

If a UE supporting enhanced CAG information is in a CAG cell with a CAG-ID which:

a) was authorized based on the "Allowed CAG list" associated with the current PLMN in the "CAG information list" stored in the ME; and

b) becomes not authorized based on the "Allowed CAG list" (e.g., time validity information no longer matches UE's current time); and

none of the CAG-ID(s) supported by the current CAG cell is currently authorized based on the "Allowed CAG list" of the entry for the current PLMN in the stored "CAG information list", and:

a) the entry for the current PLMN in the "CAG information list" does not include an "indication that the UE is only allowed to access 5GS via CAG cells", then the UE shall enter the state 5GMM-REGISTERED.LIMITED-SERVICE and shall search for a suitable cell according to 3GPP TS 38.304 [28] or 3GPP TS 36.304 [25C] with the stored "CAG information list"; or

b) the entry for the current PLMN in the stored "CAG information list" includes an "indication that the UE is only allowed to access 5GS via CAG cells" and:

1) one or more CAG-ID(s) are authorized based on the "Allowed CAG list" of the entry for the current PLMN in the stored "CAG information list", the UE shall enter the state 5GMM-REGISTERED.LIMITED-SERVICE and shall search for a suitable cell according to 3GPP TS 38.304 [28] or 3GPP TS 36.304 [25C] with the updated "CAG information list"; or

2) no CAG-ID is authorized based on the "Allowed CAG list" of the entry for the current PLMN in the stored "CAG information list" and:

i) the UE does not have an emergency PDU session, then the UE shall enter the state 5GMM-REGISTERED.PLMN-SEARCH and shall apply the PLMN selection process defined in 3GPP TS 23.122 [5] with the stored "CAG information list"; or

ii) the UE has an emergency PDU session, then the UE shall perform a local release of all PDU sessions associated with 3GPP access except for the emergency PDU session and enter the state 5GMM-REGISTERED.LIMITED-SERVICE;

\*\*\*end of change\*\*\*