**3GPP TSG-CT WG1 Meeting #133e-bisC1-220015**

**E-meeting, 17-21 January 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.301** | **CR** | **CR3653** | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Handling of discontinuous coverage | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IoT\_SAT\_ARCH\_EPS | | | | |  | ***Date:*** | | | 2021-Dec-21 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 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:*** | | The objectives of the WID on NB-IoT/eMTC NON in EPS include the following:  Support for discontinuous coverage (DC) including  - Interaction with the AS layer to manage the awareness of DC at the NAS layer based on the DC awareness at the AS layer  When the network employs discontinous coverage (DC), there is long coverage gap between subsequent satellite flyovers, during which the AS layer is deactivated. During this time, the 5GMM state in the UE is not defined. It is also not defined how the NAS layer becomes aware of the coverage gaps. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | During coverage gaps in DC, the UE is in EMM-REGISTERED.NO-CELL-AVAILABLE state. The UE transitions in/out of this state based on the indications from the AS about the AS activation/dectivation due to DC.  While in EMM-REGISTERED.NO-CELL-AVAILABLE state due to DC, the UE cannot initiate any MO NAS procedures or data transfer and cannot attempt to activate the AS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | UE behavior in discontinuous coverage would be unpredictable.The user experience would suffer. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.1.3.2.4.7, 5.2.3.2.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*

###### 5.1.3.2.4.7 EMM-REGISTERED.NO-CELL-AVAILABLE

The UE can enter this state if:

- E-UTRAN coverage has been lost;

- the AS layer has been deactivated because PSM is active in the UE; or

- the AS layer has been deactivated due to discontinuous coverage.

If PSM is active, the UE can deactivate PSM at any time by activating the AS layer when the UE needs to send mobile originated signalling or user data. Otherwise, the UE shall not initiate any EMM procedure except for cell and PLMN reselection.

The UE shall enter appropriate new substate as soon as the lower layers indicate that:

- coverage has been re-acquired; or

- the AS has been re-activated.

\*\*\* next change \*\*\*

##### 5.2.3.2.6 NO-CELL-AVAILABLE

The UE shall perform cell selection/reselection according to 3GPP TS 36.304 [21]. If the UE is in this state due to discontinuous coverage, the UE may perform PLMN selection according to 3GPP TS 23.122 [6].

\*\*\* no more changes \*\*\*