**3GPP TSG-CT WG1 Meeting #133-eC1-21aabb**

**E-meeting, 11-19 November 2021 was C1-216639**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.301** | **CR** | **3616** | **rev** | **2** | **Current version:** | **17.4.1** |  |
|  | | | | | | | | |
| *For* [***HELP***](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:*** | General subclause for NTN IoT in EPS | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | MediaTek Inc., OPPO | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IoT\_SAT\_ARCH\_EPS | | | | |  | ***Date:*** | | | 2021-11-17 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | Satellite access to EPS needs to be introduced in TS 24.301. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Subclause added to introduce NTN IoT in EPS. | | | | | | | | |
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| ***Consequences if not approved:*** | | Incomplete specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.xx (new), 4.xx.1 (new), 4.xx.2 (new), 4.xx.2.1 (new), 4.xx.3 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

## 4.xx Satellite access for CIoT

### 4.xx.1 General

UE and network may support satellite access in WB-S1 mode or NB-S1 mode with control plane CIoT EPS optimization. Support for E-UTRAN and NB-IoT satellite access is specified in TS 36.300 [20].

Editor’s Note: Definitions and abbreviations to be used for satellite access in WB-S1 mode and NB-S1 mode are FFS.

### 4.xx.2 Access determination and restrictions

The MME can determine the UE is accessing the network using a satellite access and the network can enforce mobility restriction for the UE using the satellite access in NB-S1 mode or WB-S1 mode as specified in 3GPP TS 23.401 [cc].

#### 4.xx.2.1 Handling of EMM cause #78 and network's indication of country of UE location

The UE may receive the EMM cause #78 from the network in ATTACH REJECT message, TRACKING AREA UPDATE REJECT message or DETACH REQUEST message.

The EMM cause #78 is only applicable for a UE accessing a PLMN using a satellite access.

When the UE receives EMM cause #78 "PLMN not allowed to operate at the present UE location", in addition to the steps specified in subclauses 5.5.1.2.5, 5.5.3.2.5 and 5.6.1.5, the UE should:

1) if the UE geographic location is available with acceptable accuracy, store the current UE geographical location for the PLMN;

2) start an implementation-specific timer for the PLMN.

Editor's note: Further UE actions are FFS.

#### 4.xx.3 Extended NAS timers for satellite access

Editor's note: Extended NAS timers for satellite access are FFS.