**3GPP TSG-CT WG1 Meeting #126-eC1-206559**

**Electronic meeting, 15-23 October 2020 *was C1-206249***

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.008** | **CR** | **3243** | **rev** | **1** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Clarification on timer T3211 normal stop | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2020-10-21 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | According to TS 24.008 clause 11.2, when the MS receives LOCATION UPDATING REJECT with some cause values described in TS 24.008 clause 4.4.4.9 as abnormal cases, the timer T3211 is started and the MS can restart the location updating procedure after the expiry of timer T3211.  However, a request for MM connection establishment can stop T3211. And this might be triggered by a paging with IMSI and following procedures (e.g. Mobile terminating call establishment). Then timer T3211 is stopped without any machanism defined in the TS 24.008 to resume timer T3211 or to restart the location updating procedure. But the UE should restart the location updating procedure, as long as the trigger of the failed location updating procedure exsits (e.g. periodic updating), and the successful establishment of MM connection more or less indicates the network is ready to handle location updating procedure. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | A note is added to clarify the UE behaviour after timer T3211 is stopped. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Unspecified UE behavior when timer T3211 stops. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.4.4.5, 4.5.3.1, 11.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

#### 4.4.4.5 Location Update Attempt Counter

To limit the number of consecutive unsuccessful location updating attempts, an location update attempt counter is used. The location update attempt counter counts the number of consecutive unsuccessful location updating attempts.

The location update attempt counter shall be incremented as specified in subclause 4.4.4.9.

The location update attempt counter shall be reset when:

- the mobile station is powered on;

- a SIM/USIM is inserted;

- a location updating procedure is successfully completed;

- a location updating procedure is rejected with cause:

a) #11, #12, #13, #15 or #25 (see subclause 4.4.4.7);

b) #22 and T3346 value IE indicating neither zero nor deactivated (see subclause 4.4.4.7);

- a normal or periodic routing area updating procedure or combined routing updating is not accepted by the network with cause #11, #12, #13, #15 or #25 (see subclause 4.7.5.1.4 and 4.7.5.2.4);

- GPRS attach or combined GPRS attach procedure is not accepted by the network with cause #11, #12, #13, or #15 (see subclause 4.7.3.1.4 and 4.7.3.2.4);

- service request procedure is not accepted by the network with cause #12, #13, or #15 (see subclause 4.7.13.4);

- network initiated GPRS detach procedure is completed with cause #12, #13, or #15 (see subclause 4.7.4.2.2);

- combined GPRS attach or combined routing area updating procedure is successful for GPRS and non-GPRS services; or

- a new PLMN is selected.

and additionally when the mobile station is in the state MM IDLE sub-state ATTEMPTING to UPDATE:

- a new location area is entered;

- expiry of timer T3212;

- a location updating procedure is triggered upon entering MM IDLE after the release of the last MM connection, as defined in subclause 4.5.3.1;

- a location updating procedure is triggered by CM sublayer requests; or

- timer T3246 is started.

The location update attempt counter shall be used when deciding whether to re-attempt a location updating procedure after expiry of timer T3211 as specified in subclause 4.4.4.9.

\* \* \* Second Change \* \* \* \*

#### 4.5.3.1 Release of associated RR connection

If all MM connections are released by their CM entities, and no RRLP procedure (see 3GPP TS 44.031 [23b]) and no LCS procedure over RRC (see 3GPP TS 25.331 [23c]) is ongoing, the mobile station shall set timer T3240 and enter the state WAIT FOR NETWORK COMMAND, expecting the release of the RR connection.

If all MM connections are released by their CM entities and an RRLP procedure or LCS procedure over RRC is ongoing, the MS shall start the timer T3241 and enter the state RR CONNECTION RELEASE NOT ALLOWED.

If the MS is expecting the release of the RR connection in MM state WAIT FOR NETWORK COMMAND and an RRLP procedure or LCS procedure over RRC is started, the MS shall stop the timer T3240, start the timer T3241 and enter the state RR CONNECTION RELEASE NOT ALLOWED.

If the MS is in MM state RR CONNECTION RELEASE NOT ALLOWED and the ongoing RRLP procedure or LCS procedure over RRC is finished, the MS shall stop the timer T3241, reset and start the timer T3240 and shall enter the state WAIT FOR NETWORK COMMAND.

If the MS receives the "Extended wait time" for CS domain from the lower layers when no location updating or CM service request procedure is ongoing, the MS shall ignore the "Extended wait time".

In the network, if the last MM connection is released by its user, the MM sublayer may decide to release the RR connection. The RR connection may be maintained by the network, e.g. in order to establish another MM connection.

If the RR connection is not released within a given time controlled by the timer T3240 or T3241, the mobile station shall abort the RR connection. In both cases, either after a RR connection release triggered from the network side or after a RR connection abort requested by the MS-side, the MS shall return to MM IDLE state; the service state depending upon the current update status as specified in subclause 4.2.3. If the UE determines a service state in which a Location Update procedure is required, the UE shall reset the location update attempt counter and immediately start the Location Updating procedure as specified in subclause 4.4.4.

\* \* \* Third Change \* \* \* \*

## 11.2 Timers of mobility management

Table 11.1/3GPP TS 24.008: Mobility management timers - MS-side

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| TIMER  NUM. | MM STATE | TIME OUT VAL. | CAUSE FOR START | NORMAL STOP | AT THE EXPIRY |
| T3210 | LOCATION UPDATING INITIATED | 20s | - LOCATION UPDATING REQUEST sent | - LOCATION UPDATING ACCEPT  - LOCATIONG UPDATING\_REJECT  - AUTHTICATION \_REJECT  - Lower layer failure | Start T3211 |
| T3211 | MM IDLE, | 15s | - LOCATION UPDATING REJECT with other cause values as described in section 4.4.4.9  - lower layer failure or RR connection released after RR connection abort during location updating procedure | - cell change  - request for MM connection establishment  - change of LA  NOTE 7 | Restart the location updating procedure. |
| T3212 | MM IDLE | Note 1 | - termination of MM service or MM signalling | - initiation of MM service or MM signalling | initiate periodic updating |
| T3213 | LOCATION UPDATING INITIATED | 4s | - location updating failure | - change of BCCH parameter | new random attempt |
| T3214 | LOCATION UPDATING INITIATED  WAIT FOR OUTGOING MM CONNECTION  IMSI DETACH INITIATED | 20s | AUTHENTICATION FAILURE  Cause = ‘MAC failure’ or ‘GSM authentication unacceptable’ sent | - AUTHENTICATION REQUEST received  - AUTHENTICATION REJECT received  - Lower layer failure | Consider the network as ’false’ (see 4.3.2.6.1) |
| T3216 | LOCATION UPDATING INITIATED  WAIT FOR OUTGOING MM CONNECTION  IMSI DETACH INITIATED | 15s | AUTHENTICATION FAILURE  Cause = Synch failure sent | - AUTHENT REQUEST received  - AUTHENTICATION REJECT received  - Lower layer failure | Consider the network as ’false’ (see 4.3.2.6.1) |
| T3218 | LOCATION UPDATING INITIATED  WAIT FOR OUTGOING MM CONNECTION  IMSI DETACH INITIATED | 20s | - RAND and RES stored as a result of of a UMTS authentication challenge  - RAND and SRES stored as a result of of a GSM authentication challenge | - CIPHERING MODE COMMAND received (A/Gb mode only)   * SECURITY MODE COMMAND received (Iu mode only) * CM SERVICE ACCEPT received * CM SERVICE REJECT received   - LOCATION UPDATING ACCEPT received  - AUTHENTICATION REJECT received  - AUTHENTICATION FAILURE sent  - enter MM IDLE or NULL | Delete the stored RAND and either RES (if it was a UMTS authentication challenge) or SRES (if it was a GSM authentication challenge) |
| T3220 | IMSI DETACH INITIATED | 5s | - IMSI DETACH | - release from RM-sublayer | enter Null or Idle, ATTEMPTING TO UPDATE |
| T3230 | WAIT FOR OUTGOING MM CONNECTION  WAIT FOR ADDITIONAL OUTGOING MM CONNECTION  WAIT FOR REESTABLISH | 15s | - CM SERVICE REQUEST  CM RE-ESTABLISHMENT REQUEST | - Cipher mode setting  - CM SERVICE REJECT received  - CM SERVICE ACCEPT received  - CM SERVICE ABORT sent | provide release ind. |
| T3240 | WAIT FOR NETWORK COMMAND  LOCATION UPDATE REJECTED | 10s | see subclause 11.2.1 | see subclause 11.2.1 | abort the RR connection |
| T3241 | RR CONNECTION RELEASE NOT ALLOWED | 300s | see subclause 11.2.1 | see subclause 11.2.1 | abort the RR connection |
| T3242 | All except NULL | Note 5 | eCall only MS enters MM IDLE state after an emergency call  - eCall only MS capable of eCall over IMS performs intersystem change from S1 mode to Iu or A/Gb mode while timer T3444 (see 3GPP TS 24.301 [120]) is running | - Removal of eCall only restriction  - Intersystem change from Iu or A/Gb mode to S1 mode for MS capable of eCall over IMS | Perform eCall Inactivity procedure in subclause 4.4.7 or GMM eCall inactivity procedure in subclause 4.7.15 |
| T3243 | All except NULL | Note 6 | eCall only MS enters MM IDLE state after a test/reconfiguration call  - eCall only MS capable of eCall over IMS enters PMM-IDLE (Iu mode) state after a test/reconfiguration call  - return to packet idle mode at eCall only MS capable of eCall over IMS after a test/reconfiguration call (A/Gb mode)  - eCall only MS capabable of eCall over IMS performs intersystem change from S1 mode to Iu or A/Gb mode while timer T3445 (see 3GPP TS 24.301 [120]) is running | - Removal of eCall only restriction  - Intersystem change from Iu or A/Gb mode to S1 mode for MS capable of eCall over IMS | Perform eCall Inactivity procedure in subclause 4.4.7 or GMM eCall inactivity procedure in subclause 4.7.15 |
| T3245 | All except NULL | Note 2 | see subclause 4.1.1.6 (A/Gb or Iu mode only)  see subclause 5.3.7a in 3GPP TS 24.301[120] (S1 mode only) | - SIM/USIM is removed | see subclause 4.1.1.6 (A/Gb or Iu mode only)  see subclause 5.3.7a in 3GPP TS 24.301[120] (S1 mode only) |
| T3246 | LOCATION UPDATING INITIATED  WAIT FOR OUTGOING MM CONNECTION  WAIT FOR ADDITIONAL OUTGOING MM CONNECTION  WAIT FOR REESTABLISH | Note 3 | LOCATION UPDATING REJECT or CM SERVICE REJECT received with a timer value for T3246; "Extended wait time" for CS domain from the lower layers | - paging  - see subclause 4.1.1.7 | Restart the Location update procedure or CM service request procedure, dependent on MM state and update status |
| T3247 | All except NULL | Note 4 | see subclauses 4.1.1.6A, 4.3.2.5 and 4.7.7.5 (A/Gb or Iu mode only)  see subclauses 5.3.7B and 5.4.2.5 in 3GPP TS 24.301 [120] (S1 mode only)  see subclauses 5.3.20, 5.4.1.2.2.11 and 5.4.1.3.5 in 3GPP TS 24.501 [167] (N1 mode only) | - SIM/USIM is removed or the entry of the "list of subscriber data" with the SNPN identity of the current SNPN is updated (see 3GPP TS 23.122 [14] and 3GPP TS 24.501 [167]); or  - the MS is switched off | see subclause 4.1.1.6A (A/Gb or Iu mode only)  see subclause 5.3.7B in 3GPP TS 24.301 [120] (S1 mode only)  see subclauses 5.3.20, 5.4.1.2.2.11 and 5.4.1.3.5 in 3GPP TS 24.501 [167] (N1 mode only) |
| NOTE 1: The timeout value is broadcasted in a SYSTEM INFORMATION message or received in a LOCATION UPDATING ACCEPT message.  NOTE 2: The MS starts the timer with a random value, uniformly drawn from the range between 12h and 24h.  NOTE 3: The timer value is provided by the network in a LOCATION UPDATING REJECT or a CM SERVICE REJECT message or as an "Extended wait time" value by the lower layers, or chosen randomly from a default value range of 15 – 30 minutes.  NOTE 4: The MS starts the timer with a random value, uniformly drawn from the range between 30 minutes and 60 minutes.  NOTE 5: If the timer is started by an eCall only MS capable of eCall over IMS due to performing intersystem change from S1 mode to Iu or A/Gb mode while timer T3444 (see 3GPP TS 24.301 [120]) is running, the MS starts the timer with a value set to the time left on timer T3444. Otherwise the MS starts the timer with a value set to 12 hours.  NOTE 6: If the timer is started by an eCall only MS capable of eCall over IMS due to performing intersystem change from S1 mode to Iu or A/Gb mode while timer T3445 (see 3GPP TS 24.301 [120]) is running, the MS starts the timer with a value set to the time left on timer T3445. Otherwise the MS starts the timer with a value set to 12 hours.  NOTE 7: If the timer T3211 or T3212 is stopped due to request for MM connection establishment, the UE may restart the location updating procedure immediately once entering MM-IDLE after the last MM connection is released. | | | | | |

Table 11.2/3GPP TS 24.008: Mobility management timers - network-side

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| TIMER  NUM. | MM STATE | TIME OUT VAL. | CAUSE FOR START | NORMAL STOP | AT THE EXPIRY | AT THE SECOND EXPIRY |
| T3250 | TMSI REALLOCATION INITIATED | 12s | TMSI REALLOCATION COMMAND or LOCATION UPDATING ACCEPT with new TMSI sent | TMSI REALLOCATION COMPLETE received | Optionally Release RR connection |  |
| T3255 |  | Note 2 | LOCATION UPDATING ACCEPT sent with"Follow on Proceed" | CM SERVICE REQUEST | Release RR Connection or use for mobile station terminating call |  |
| T3260 | AUTHENTICATION INITIATED | 12s | AUTHENTICATION REQUEST sent | AUTHENTICATION RESPONSE received  AUTHENTICATION FAILURE received | Optionally Release RR connection |  |
| T3270 | IDENTIFICATION INITIATED | 12s | IDENTITY REQUEST sent | IDENTITY RESPONSE received | Optionally Release RR connection |  |

NOTE 2: The value of this timer is not specified by this recommendation.

\* \* \* End of Change \* \* \* \*