**3GPP TSG-CT WG1 Meeting #134-eC1-221549**

**E-Meeting, 17th – 25th February 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.301** | **CR** | **3716** | **rev** | **-** | **Current version:** | **17.5.0** |  |
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| *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:*** | Starting timer T3440 with cause value #42 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2022-02-10 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Various cause values in the reject message specified in TS24.301 will trigger T3440, which allow the network to release the N1 NAS signalling connections as a way of protection. Similar behaviour for the cause value #42 (Severe network failure) seems missing to be specified. The UE is not expected to repeat the request in near future when the cause value #42 is in the receiving reject message, so it’s better to follow the similar behaviour (starting timer T3440) as that of other cause values such as #11, #12, #13, #14, #25, #35, Otherwise, when the UE receiving the cause value #42, the UE will release the NAS connection immediately, or wait for the release from the network. The former method is not friendly and the latter one may take a long time.  The UE shall start the timer T3440 after receiving the #22 according to the sub-clause 5.3.1.2.1, see below. The timer table needs to be kept aligned.  *i) shall start the timer T3440 if the UE receives the EMM cause value #22 along with a T3346 value, and the value indicates that the timer T3346 is neither zero nor deactivated; or* | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the cause value#42 as a trigger for starting T3440. And the cause value #22 to start T3440 in the timer table. | | | | | | | | |
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| ***Consequences if not approved:*** | | The UE will release the NAS connection immediately, or wait for the release from the network. Both may lead bad user experience. Or the timer table about T3440 is incomplete. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.1.2.1, 10.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*\*\*

##### 5.3.1.2.1 General

The signalling procedure for the release of the NAS signalling connection is initiated by the network.

In S1 mode, when the RRC connection has been released, the UE shall enter EMM-IDLE mode and consider the NAS signalling connection released.

If the UE is configured for eCall only mode as specified in 3GPP TS 31.102 [17] then:

- if the NAS signalling connection that was released had been established for eCall over IMS, the UE shall start timer T3444; and

- if the NAS signalling connection that was released had been established for a call to an HPLMN designated non-emergency MSISDN or URI for test or terminal reconfiguration service, the UE shall start timer T3445.

The UE shall start the SGC timer T3447 with the service gap time value available in the UE when the NAS signalling connection is released if:

- the UE supports SGC feature, and the service gap timer value is available in the UE and does not indicate zero; and

- the NAS signalling connection that was released had been established for mobile originated request for transfer of uplink data.

If the UE receives the "Extended wait time" from the lower layers when no attach, tracking area updating or service request procedure is ongoing, the UE shall ignore the "Extended wait time".

To allow the network to release the NAS signalling connection, the UE:

a) shall start the timer T3440 if the UE receives any of the EMM cause values #11, #12, #13, #14 (not applicable to the service request procedure), #15, #25, #31, #35 or #42;

b) shall start the timer T3440 if:

- the UE receives a TRACKING AREA UPDATE ACCEPT message which does not include a UE radio capability ID deletion indication IE;

- the UE has not set the "active" flag in the TRACKING AREA UPDATE REQUEST message;

- the UE has not set the "signalling active" flag in the TRACKING AREA UPDATE REQUEST message;

- the tracking area updating or combined tracking area updating procedure has been initiated in EMM-IDLE mode, or the UE has set Request type to "NAS signalling connection release" in the UE request type IE in the TRACKING AREA UPDATE REQUEST message; and

- the user plane radio bearers have not been set up;

c) shall start the timer T3440 if the UE receives a DETACH ACCEPT message and the UE has set the detach type to "IMSI detach" in the DETACH REQUEST message and user plane radio bearers have not been set up;

d) shall start the timer T3440 if the UE receives a TRACKING AREA UPDATE REJECT message indicating:

- any of the EMM cause values #9 or #10 and the UE has no CS fallback emergency call, CS fallback call, 1xCS fallback emergency call, or 1xCS fallback call pending; or

- the EMM cause values #40, the TRACKING AREA UPDATE message was not triggered due to receiving a paging for CS fallback or a paging for 1xCS fallback, and the UE has no CS fallback emergency call, CS fallback call, 1xCS fallback emergency call, or 1xCS fallback call pending;

e) shall start the timer T3440 if the UE receives a SERVICE REJECT message indicating any of the EMM cause values #9, #10 or #40 as a response to a SERVICE REQUEST message CONTROL PLANE SERVICE REQUEST message, or an EXTENDED SERVICE REQUEST message with service type set to "packet services via S1";

f) may start the timer T3440 if the UE receives any of the EMM cause values #3, #6, #7 or #8 or if it receives an AUTHENTICATION REJECT message;

g) shall start the timer T3440 if the UE receives a SERVICE REJECT message indicating the EMM cause value #39 and the UE has initiated EXTENDED SERVICE REQUEST in EMM-IDLE and the user plane radio bearers have not been set up;

h) shall start the timer T3440 if the UE receives a SERVICE REJECT, SERVICE ACCEPT, ATTACH ACCEPT or TRACKING AREA UPDATE ACCEPT message with control plane data back-off timer;

i) shall start the timer T3440 if the UE receives the EMM cause value #22 along with a T3346 value, and the value indicates that the timer T3346 is neither zero nor deactivated; or

j) shall start the timer T3440 if the UE receives a SERVICE ACCEPT message and the UE has set Request type to "NAS signalling connection release" or to "Rejection of paging" in the UE request type IE in the EXTENDED SERVICE REQUEST or CONTROL PLANE SERVICE REQUEST message;

Upon expiry of T3440,

- in cases a, b, c, f, h i and j, the UE shall locally release the established NAS signalling connection; or

- in cases d and e, the UE shall locally release the established NAS signalling connection and the UE shall initiate the attach procedure as described in clause 5.5.3.2.5, 5.5.3.3.5 or 5.6.1.5.

In cases b, c and g,

- upon an indication from the lower layers that the user plane radio bearers are set up, the UE shall stop timer T3440 and may send uplink signalling via the existing NAS signalling connection or user data via the user plane bearers. If the uplink signalling is for CS fallback for emergency call, or for establishing a PDN connection for emergency bearer services, the UE shall send the uplink signalling via the existing NAS signalling connection; or

In cases b, c, g and j,

- upon receipt of a DETACH REQUEST message, the UE shall stop timer T3440 and respond to the network initiated detach as specified in clause 5.5.2.3.

In case b and j,

- upon receiving a request from upper layers to send NAS signalling not associated with establishing either a CS emergency call or a PDN connection for emergency bearer services, the UE shall wait for the local release of the established NAS signalling connection upon expiry of timer T3440 or T3440 being stopped before proceeding;

- upon receiving a request from upper layers to establish either a CS emergency call or a PDN connection for emergency bearer services, the UE shall stop timer T3440 and shall locally release the NAS signalling connection, before proceeding as specified in clause 5.6.1;

- upon receipt of ESM DATA TRANSPORT message, as an implementation option, the UE may reset and restart timer T3440;

- upon receipt of a DOWNLINK NAS TRANSPORT or DOWNLINK GENERIC NAS TRANSPORT message, the UE which is in EMM-REGISTERED without PDN connections shall stop timer T3440 and may send uplink signalling via the existing NAS signalling connection;

- upon receipt of an ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST, MODIFY EPS BEARER CONTEXT REQUEST, DEACTIVATE EPS BEARER CONTEXT REQUEST, DOWNLINK NAS TRANSPORT or DOWNLINK GENERIC NAS TRANSPORT message, if the UE is using control plane CIoT EPS optimization, the UE shall stop timer T3440 and may send uplink signalling via the existing NAS signalling connection; or

- upon initiation of tracking area updating procedure or combined tracking area updating procedure due to cell change into new tracking area not in the TAI list as specified in clause 5.5.3.2.6 for cases e, i, j, clause 5.5.3.2.2 for case a or clause 5.5.3.3.2 for case a, the UE shall stop timer T3440.

In case c,

- upon receiving a request from upper layers to send NAS signalling not associated with establishing a PDN connection for emergency bearer services, the UE shall wait for the local release of the established NAS signalling connection upon expiry of timer T3440 or T3440 being stopped before proceeding; or

- upon receiving a request from upper layers to establish a PDN connection for emergency bearer services, the UE shall stop timer T3440 and shall locally release the NAS signalling connection, before proceeding as specified in clause 5.6.1.

In cases d and e,

- upon an indication from the lower layers that the RRC connection has been released, the UE shall stop timer T3440 and perform a new attach procedure as specified in clause 5.5.3.2.5, 5.5.3.3.5 or 5.6.1.5; or

- upon receiving a request from upper layers to establish a PDN connection for emergency bearer services, the UE shall stop timer T3440 and shall locally release the NAS signalling connection, before proceeding as specified in clause 5.5.1.

In cases a and f,

- upon receiving a request from upper layers to establish a PDN connection for emergency bearer services, the UE shall stop timer T3440 and shall locally release the NAS signalling connection, before proceeding as specified in clause 5.5.1.

In case g,

- upon receiving a request from upper layers to send NAS signalling not associated with establishing either a CS emergency call or a PDN connection for emergency bearer services, the UE shall wait for the local release of the established NAS signalling connection upon expiry of timer T3440 or T3440 being stopped before proceeding; or

- upon receiving a request from upper layers to establish either a CS emergency call or a PDN connection for emergency bearer services, the UE shall stop timer T3440 and shall locally release the NAS signalling connection, before proceeding as specified in clause 5.6.1.

In case h,

- upon an indication from the lower layers that the user plane radio bearers are set up or upon receiving a request from upper layers to send NAS signalling not associated with ESM DATA TRANSPORT, the UE shall stop timer T3440; or

- the UE shall not send ESM DATA TRANSPORT message until expiry of timer T3440 or times T3440 being stopped.

In EMM-CONNECTED mode, if the UE moves to EMM-SERVICE-REQUEST-INITIATED state upon receipt of a CS SERVICE NOTIFICATION message, the UE shall stop timer T3440.

In S101 mode, when the cdma2000® HRPD radio access connection has been released, the UE shall enter EMM-IDLE mode and consider the S101 mode NAS signalling connection released.

\*\*\*\*\* End of changes \*\*\*\*\*

\*\*\*\*\*Next change \*\*\*\*\*

## 10.2 Timers of EPS mobility management

Table 10.2.1: EPS mobility management timers – UE side

| TIMER NUM. | TIMER VALUE | STATE | CAUSE OF START | NORMAL STOP | ON  EXPIRY |
| --- | --- | --- | --- | --- | --- |
| T3402 | Default 12 min.  NOTE 1 | EMM-DEREGISTERED  EMM-REGISTERED | At attach failure and the attempt counter is equal to 5.  At tracking area updating failure and the attempt counter is equal to 5.  ATTACH ACCEPT with EMM cause #16 or #17 and the attempt counter is equal to 5 for CS/PS mode 2 UE, or ATTACH ACCEPT with EMM cause #22, as described in clause 5.5.1.3.4.3.  TRACKING AREA UPDATE ACCEPT with EMM cause #16 or #17 and the attempt counter is equal to 5 for CS/PS mode 2 UE, TRACKING AREA UPDATE ACCEPT with EMM cause #16 or #17 and the attempt counter is equal to 5 for CS/PS mode 1 UE with "IMS voice not available" and with a persistent EPS bearer context, or TRACKING AREA UPDATE ACCEPT with EMM cause #22, as described in clause 5.5.3.3.4.3.  ATTACH ACCEPT and the attempt counter is equal to 5 as described in clause 5.5.1.2.4A and 5.5.1.2.6A.  TRACKING AREA UPDATE ACCEPT and the attempt counter is equal to 5 as described in clause 5.5.3.2.4A and 5.5.3.2.6A.  DETACH REQUEST with other EMM cause values than those treated in clause 5.5.2.3.2 or no EMM cause IE and Detach type IE indicates "re-attach not required" as described in clause 5.5.2.3.4. | ATTACH REQUEST sent  TRACKING AREA UPDATE REQUEST sent  NAS signalling connection released | Initiation of the attach procedure, if still required or TAU procedure |
| T3410 | 15s NOTE 7 NOTE 8  In WB-S1/CE mode, 85s | EMM-REGISTERED-INITIATED | ATTACH REQUEST sent | ATTACH ACCEPT received  ATTACH REJECT received | Start T3411 or T3402 as described in clause 5.5.1.2.6 |
| T3411 | 10s | EMM-DEREGISTERED. ATTEMPTING-TO-ATTACH  EMM-REGISTERED. ATTEMPTING-TO-UPDATE  EMM-REGISTERED. NORMAL-SERVICE | At attach failure due to lower layer failure, T3410 timeout or attach rejected with other EMM cause values than those treated in clause 5.5.1.2.5.  At tracking area updating failure due to lower layer failure, T3430 timeout or TAU rejected with other EMM cause values than those treated in clause 5.5.3.2.5.  ATTACH ACCEPT and the attempt counter is less than 5 as described in clause 5.5.1.2.4A and 5.5.1.2.6A.  TRACKING AREA UPDATE ACCEPT and the attempt counter is less than 5 as described in clause 5.5.3.2.4A and 5.5.3.2.6A. | ATTACH REQUEST sent  TRACKING AREA UPDATE REQUEST sent  EMM-CONNECTED mode entered (NOTE 6) | Retransmission of the ATTACH REQUEST, if still required as described in clause 5.5.1.2.6 or retransmission of TRACKING AREA UPDATE REQUEST |
| T3412 | Default 54 min.  NOTE 2  NOTE 5 | EMM-REGISTERED | In EMM-REGISTERED, when EMM-CONNECTED mode is left. | When entering state EMM-DEREGISTERED or when entering EMM-CONNECTED mode. | Initiation of the periodic TAU procedure if the UE is not attached for emergency bearer services or T3423 started under the conditions as specified in clause 5.3.5.  Implicit detach from network if the UE is attached for emergency bearer services. |
| T3416 | 30s NOTE 7 NOTE 8  In WB-S1/CE mode, 48s | EMM-REGISTERED-INITIATED  EMM-REGISTERED  EMM-DEREGISTERED-INITIATED  EMM-TRACKING-AREA-UPDATING-INITIATED  EMM-SERVICE-REQUEST-INITIATED | RAND and RES stored as a result of an EPS authentication challenge | SECURITY MODE COMMAND received  SERVICE REJECT received  SERVICE ACCEPT received  TRACKING AREA UPDATE ACCEPT received  AUTHENTICATION REJECT received  AUTHENTICATION FAILURE sent  EMM-DEREGISTERED, EMM-NULL or  EMM-IDLE mode entered | Delete the stored RAND and RES |
| T3417 | 5s  NOTE 7 NOTE 8  NOTE 13  In WB-S1/CE mode, 51s | EMM-SERVICE-REQUEST-INITIATED | SERVICE REQUEST sent  EXTENDED SERVICE REQUEST sent in case f, g, i and j in clause 5.6.1.1  EXTENDED SERVICE REQUEST sent with service type set to "packet services via S1" in case a, b, c, h and k in clause 5.6.1.1  CONTROL PLANE SERVICE REQUEST sent as specified in clause 5.6.1.2.2 | Bearers have been set up  SERVICE REJECT received  SERVICE ACCEPT received  Indication of system change from lower layer received  cdma2000® 1xCS fallback rejection received  see clause 5.6.1.4.2 | Abort the procedure |
| T3417ext | 10s | EMM-SERVICE-REQUEST-INITIATED | EXTENDED SERVICE REQUEST sent in case d in clause 5.6.1.1 | Inter-system change from S1 mode to A/Gb mode or Iu mode is completed  Inter-system change from S1 mode to A/Gb mode or Iu mode is failed  SERVICE REJECT received | Select GERAN or UTRAN |
| T3417ext-mt | 4s | EMM-SERVICE-REQUEST-INITIATED | EXTENDED SERVICE REQUEST sent in case e in clause 5.6.1.1 and the CSFB response was set to "CS fallback accepted by the UE" | Inter-system change from S1 mode to A/Gb mode or Iu mode is completed  Inter-system change from S1 mode to A/Gb mode or Iu mode is failed  SERVICE REJECT received | Select GERAN or UTRAN |
| T3418 | 20s NOTE 7 NOTE 8  In WB-S1/CE mode, 38s | EMM-REGISTERED-INITIATED  EMM-REGISTERED  EMM-TRACKING-AREA-UPDATING-INITIATED  EMM-DEREGISTERED-INITIATED  EMM-SERVICE-REQUEST-INITIATED | AUTHENTICATION FAILURE (EMM cause = #20 "MAC failure" or #26 "non-EPS authentication unacceptable") sent | AUTHENTICATION REQUEST received or AUTHENTICATION REJECT received  or  SECURITY MODE COMMAND received  when entering EMM-IDLE mode  indication of transmission failure of AUTHENTICATION FAILURE message from lower layers | On first expiry, the UE should consider the network as false and follow item f of clause 5.4.2.7, if the UE is not attached for emergency bearer services or access to RLOS.  On first expiry, the UE will follow clause 5.4.2.7 under "For items c, d, and e:", if the UE is attached for emergency bearer services or if the UE is attached for access to RLOS. |
| T3420 | 15s NOTE 7 NOTE 8  In WB-S1/CE mode, 33s | EMM-REGISTERED-INITIATED  EMM-REGISTERED  EMM-DEREGISTERED-INITIATED  EMM-TRACKING-AREA-UPDATING-INITIATED  EMM-SERVICE-REQUEST-INITIATED | AUTHENTICATION FAILURE (cause = #21 "synch failure") sent | AUTHENTICATION REQUEST received or AUTHENTICATION REJECT received  or  SECURITY MODE COMMAND received  when entering EMM-IDLE mode  indication of transmission failure of AUTHENTICATION FAILURE message from lower layers | On first expiry, the UE should consider the network as false and follow item f of clause 5.4.2.7, if the UE is not attached for emergency bearer services or access to RLOS.  On first expiry, the UE will follow clause 5.4.2.7 under "For items c, d, and e:", if the UE is attached for emergency bearer services or if the UE is attached for access to RLOS. |
| T3421 | 15s  NOTE 7  NOTE 8  In WB-S1/CE mode, 45s | EMM-DEREGISTERED-INITIATED  EMM- REGISTERED. IMSI-DETACH- INITIATED | DETACH REQUEST sent with  the Detach type IE not indicating "switch off" | DETACH ACCEPT received | Retransmission of DETACH REQUEST |
| T3423 | NOTE 3 | EMM-REGISTERED | T3412 expires while ISR is activated and either T3346 is running or the UE is in one of the following states:  - EMM-REGISTERED.NO-CELL-AVAILABLE;  - EMM-REGISTERED.PLMN-SEARCH;  -EMM-REGISTERED.UPDATE-NEEDED; or  -EMM-REGISTERED.LIMITED-SERVICE. | When entering state EMM-DEREGISTERED or when entering EMM-CONNECTED mode. | Set TIN to "P‑TMSI".  For A/Gb mode or Iu mode, see 3GPP TS 24.008 [13] |
| T3430 | 15s NOTE 7 NOTE 8  In WB-S1/CE mode, 77s | EMM-TRACKING-AREA-UPDATING-INITIATED | TRACKING AREA UPDATE REQUEST sent | TRACKING AREA UPDATE ACCEPT received  TRACKING AREA UPDATE REJECT received | Start T3411 or T3402 as described in clause 5.5.3.2.6 |
| T3440 | 10s NOTE 14 | EMM-DEREGISTERED EMM-REGISTERED | ATTACH REJECT, DETACH REQUEST, TRACKING AREA UPDATE REJECT with any of the EMM cause #3, #6, #7, #8, #11, #12, #13, #14, #15, #22, #25, #31, #35 or #42  SERVICE REJECT received with any of the EMM cause #3, #6, #7, #8, #11, #12, #13, #15, #22, #25, #31, #35, #39 or #42  TRACKING AREA UPDATE ACCEPT described in subclause 5.3.1.2.1 case b)DETACH ACCEPT received after the UE sent DETACH REQUEST with detach type to "IMSI detach"  Upon receipt of ESM DATA TRANSPORT message as described in clause 5.3.1.2.1 (NOTE 9)  AUTHENTICATION REJECT received  SERVICE ACCEPT received as described in subclause 5.3.1.2.1 case j) | NAS signalling connection released  Bearers have been set up or a request for PDN connection for emergency bearer services or a CS emergency call is started  Upon receipt of ESM DATA TRANSPORT message as described in clause 5.3.1.2.1 (NOTE 9) | Release the NAS signalling connection for the cases a), b) and c) as described in clause 5.3.1.2 |
| EMM-DEREGISTERED  EMM-DEREGISTERED.NORMAL-SERVICE | TRACKING AREA UPDATE REJECT, SERVICE REJECT with any of the EMM cause #9, #10 or #40 | NAS signalling connection released | Release the NAS signalling connection for the cases d) and e) as described in clause 5.3.1.2 and initiation of the attach procedure as specified in clause 5.5.3.2.5, 5.5.3.3.5 or 5.6.1.5 |
| T3442 | NOTE 4 | EMM-REGISTERED | SERVICE REJECT received with EMM cause #39 "CS service temporarily not available" with a non-zero T3442 value | TRACKING AREA UPDATE REQUEST sent | None |
| T3444 | NOTE 11 | All except EMM-NULL and 5GMM-NULL (defined in 3GPP TS 24.501 [54]) | - UE configured for eCall only mode enters EMM-IDLE mode after an eCall over IMS  - UE configured for eCall only mode moves from GERAN/UTRAN to E-UTRAN with timer T3242 (see 3GPP TS 24.008 [13]) running  - UE configured for eCall only mode enters 5GMM-IDLE mode (defined in 3GPP TS 24.501 [54]) after an eCall over IMS | - Removal of eCall only restriction  - Intersystem change from S1 mode to A/Gb or Iu mode | Perform eCall inactivity procedure in EPS as described in clause 5.5.4.  Perform eCall inactivity procedure in 5GS as described in 3GPP TS 24.501 [54]. |
| T3445 | NOTE 12 | All except EMM-NULL and 5GMM-NULL (defined in 3GPP TS 24.501 [54]) | - UE configured for eCall only mode enters EMM-IDLE mode after a call to a non-emergency MSISDN or URI for test or terminal reconfiguration service  - UE configured for eCall only mode moves from GERAN/UTRAN to E-UTRAN with timer T3243 (see 3GPP TS 24.008 [13]) running  - UE configured for eCall only mode enters 5GMM-IDLE mode (defined in 3GPP TS 24.501 [54]) after a call to a non-emergency MSISDN or URI for test or terminal reconfiguration service | Removal of eCall only restriction  - Intersystem change from S1 mode to A/Gb or Iu mode | Perform eCall inactivity procedure in EPS as described in clause 5.5.4.  Perform eCall inactivity procedure in 5GS as described in 3GPP TS 24.501 [54]. |
| T3447 | NOTE 2 | All except EMM-NULL | NAS signalling connection release that was not established for paging, attach without PDN connection or tracking area update request without "active" or "signalling active" flag set.  N1 NAS signalling connection release that was not established due to paging, or REGISTRATION REQUEST for initial registration with Follow-on request indicator set to "No follow-on request pending", or REGISTRATION REQUEST for mobility and periodic registration update with Follow-on request indicator set to "No follow-on request pending" and without Uplink data status IE included (defined in 3GPP TS 24.501 [54]). | ATTACH ACCEPT or TRACKING AREA UPDATE ACCEPT without the T3447 value IE.  Inter-system change from S1 mode to A/Gb mode or Iu mode is completed  REGISTRATION ACCEPT without the T3447 value IE (defined in 3GPP TS 24.501 [54]). CONFIGURATION UPDATE COMMAND with the T3447 value IE set to zero or deactivated (defined in 3GPP TS 24.501 [54]). | Allowed to initiate transfer of uplink user data |
| T3448 | NOTE 10 | All except EMM-NULL and 5GMM-NULL (defined in 3GPP TS 24.501 [54]) | ATTACH ACCEPT message or TRACKING AREA UPDATE ACCEPT message or SERVICE ACCEPT message received with a non-zero T3448 value.  SERVICE REJECT message received with EMM cause #22 "Congestion" and a non-zero T3448 value.  REGISTRATION ACCEPT message or SERVICE ACCEPT message received with a non-zero T3448 value (defined in 3GPP TS 24.501 [54])  SERVICE REJECT message received with 5GMM cause #22 "Congestion" and a non-zero T3448 value(defined in 3GPP TS 24.501 [54]) | SERVICE ACCEPT message or TRACKING AREA UPDATE ACCEPT message received without T3448 value  SERVICE ACCEPT message or REGISTRATION ACCEPT message received without T3448 value(defined in 3GPP TS 24.501 [54]) | Allowed to initiate transfer of user data via the control plane |
| T3449 | 5s  NOTE 7 NOTE 8  In WB-S1/CE mode, 51s | EMM-REGISTERED | Bearers have been set up  SECURITY MODE COMMAND message received | SERVICE ACCEPT message received  Security protected ESM message or a security protected EMM message not related to an EMM common procedure received | SERVICE ACCEPT message considered as a protocol error and EMM STATUS returned |
| NOTE 1: The cases in which the default value of this timer is used are described in clause 5.3.6.  NOTE 2: The value of this timer is provided by the network operator during the attach and tracking area updating procedures.  NOTE 3: The value of this timer may be provided by the network in the ATTACH ACCEPT message and TRACKING AREA UPDATE ACCEPT message. The default value of this timer is identical to the value of T3412.  NOTE 4: The value of this timer is provided by the network operator when a service request for CS fallback is rejected by the network with EMM cause #39 "CS service temporarily not available".  NOTE 5: The default value of this timer is used if the network does not indicate a value in the TRACKING AREA UPDATE ACCEPT message and the UE does not have a stored value for this timer.  NOTE 6: The conditions for which this applies are described in clause 5.5.3.2.6.  NOTE 7: In NB-S1 mode, the timer value shall be calculated as described in clause 4.7.  NOTE 8: In WB-S1 mode, if the UE supports CE mode B and operates in either CE mode A or CE mode B, then the timer value is as described in this table for the case of WB-S1/CE mode (see clause 4.8).  NOTE 9: It is possible that the UE does not stop or start timer T3440 upon receipt of ESM DATA TRANSPORT message as described in clause 5.3.1.2.1.  NOTE 10: The timer value is provided by the network in the ATTACH ACCEPT, TRACKING AREA UPDATE ACCEPT, SERVICE ACCEPT, SERVICE REJECT or REGISTRATION ACCEPT message, or chosen randomly from a default value range of 15 – 30 minutes.  NOTE 11: If the timer is started due to a UE configured for eCall only mode moving from GERAN/UTRAN to E-UTRAN with timer T3242 (see 3GPP TS 24.008 [13]) running, the UE starts the timer with a value set to the time left on timer T3242. Otherwise the UE starts the timer with a value set to 12 hours.  NOTE 12: If the timer is started due to a UE configured for eCall only mode moving from GERAN/UTRAN to E-UTRAN with timer T3243 (see 3GPP TS 24.008 [13]) running, the UE starts the timer with a value set to the time left on timer T3243. Otherwise the UE starts the timer with a value set to 12 hours.  NOTE 13: Based on implementation, the timer may be set to a value between 250ms and 5s when the MUSIM-capable UE indicates "NAS signalling connection release" in the UE request type IE of the EXTENDED SERVICE REQUEST message or CONTROL PLANE SERVICE REQUEST message.  NOTE 14: Based on implementation, the timer may be set to a value between 250ms and 10s when the MUSIM capable UE indicated "NAS signalling connection release" or "Rejection of paging" in the UE request type IE of the EXTENDED SERVICE REQUEST message or CONTROL PLANE SERVICE REQUEST message; or indicated "NAS signalling connection release" in the UE request type IE of the TRACKING AREA UPDATE REQUEST message. | | | | | |

Table 10.2.2: EPS mobility management timers – network side

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| TIMER NUM. | TIMER VALUE | STATE | CAUSE OF START | NORMAL STOP | ON THE 1st, 2nd, 3rd, 4th EXPIRY (NOTE 1) |
| T3413 NOTE 8  NOTE 10 | NOTE 2 | EMM-REGISTERED | Paging procedure for EPS services initiated | Paging procedure for EPS services completed  Paging procedure is aborted | Network dependent |
| T3415  NOTE 8 NOTE 10 | NOTE 6 | EMM-REGISTERED | Paging procedure for EPS services initiated for a UE which the network accepted the request to use eDRX and the UE does not have a PDN connection for emergency bearer services | Paging procedure for EPS services completed  Paging procedure is aborted | Paging procedure is aborted and the network proceeds as specified in 3GPP TS 23.401 [10] |
| T3422 NOTE 7 NOTE 9 | 6s  In WB-S1/CE mode, 24s | EMM-DEREGISTERED-INITIATED | DETACH REQUEST sent | DETACH ACCEPT received | Retransmission of DETACH REQUEST |
| T3447 | NOTE 2 | All | UE transitions from EMM-CONNECTED mode to EMM-IDLE mode except when UE was in EMM-CONNECTED mode due to paging, attach without PDN connection or tracking area update request without "active" or "signalling active" flag set  UE transitions from 5GMM-CONNECTED mode to 5GMM-IDLE mode except when UE was in 5GMM-CONNECTED mode due to paging, REGISTRATION REQUEST for initial registration with Follow-on request indicator set to "No follow-on request pending", or REGISTRATION REQUEST for mobility and periodic registration update with Follow-on request indicator set to "No follow-on request pending" and without Uplink data status IE included. | ATTACH ACCEPT or TRACKING AREA UPDATE ACCEPT without the T3447 value IE. At MME during inter-system change from S1 mode to N1 mode.  REGISTRATION ACCEPT without the T3447 value IE (defined in 3GPP TS 24.501 [54]). CONFIGURATION UPDATE COMMAND with the T3447 value IE set to zero or deactivated (defined in 3GPP TS 24.501 [54]). At AMF during inter-system change from N1 mode to S1 mode defined in 3GPP TS 24.501 [54]). | Allow the UE to initiate a connection for transfer of uplink user data. |
| T3450 NOTE 7 NOTE 9 | 6s  In WB-S1/CE mode, 18s | EMM-COMMON-PROC-INIT | ATTACH ACCEPT sent  TRACKING AREA UPDATE ACCEPT sent with GUTI  TRACKING AREA UPDATE ACCEPT sent with TMSI  GUTI REALLOCATION COMMAND sent | ATTACH COMPLETE received  TRACKING AREA UPDATE COMPLETE received  GUTI REALLOCATION COMPLETE received | Retransmission of the same message type, i.e. ATTACH ACCEPT, TRACKING AREA UPDATE ACCEPT or GUTI REALLOCATION COMMAND |
| T3460 NOTE 7 NOTE 9 | 6s  In WB-S1/CE mode, 24s | EMM-COMMON-PROC-INIT | AUTHENTICATION REQUEST sent  SECURITY MODE COMMAND sent | AUTHENTICATION RESPONSE received  AUTHENTICATION FAILURE received  SECURITY MODE COMPLETE received  SECURITY MODE REJECT received | Retransmission of the same message type, i.e. AUTHENTICATION REQUEST  or SECURITY MODE COMMAND |
| T3470 NOTE 7 NOTE 9 | 6s  In WB-S1 mode, 24s | EMM-COMMON-PROC-INIT | IDENTITY REQUEST sent | IDENTITY RESPONSE received | Retransmission of IDENTITY REQUEST |
| Mobile reachable | NOTE 4 | All except EMM-DEREGISTERED | Entering EMM-IDLE mode | NAS signalling connection established | Network dependent, but typically paging is halted on 1st expiry if the UE is not attached for emergency bearer services.  Implicitly detach the UE which is attached for emergency bearer services. |
| Implicit detach timer | NOTE 3 | All except EMM-DEREGISTERED | The mobile reachable timer expires while the network is in EMM-IDLE mode | NAS signalling connection established | Implicitly detach the UE on 1st expiry |
| active timer | NOTE 5 | All except EMM-DEREGISTERED | Entering EMM-IDLE mode | NAS signalling connection established | Network dependent, but typically paging is halted on 1st expiry |
| NOTE 1: Typically, the procedures are aborted on the fifth expiry of the relevant timer. Exceptions are described in the corresponding procedure description.  NOTE 2: The value of this timer is network dependent.  NOTE 3: The value of this timer is network dependent. If ISR is activated, the default value of this timer is 4 minutes greater than T3423.  NOTE 4: The default value of this timer is 4 minutes greater than T3412. If T3346 is larger than T3412 and the MME includes timer T3346 in the TRACKING AREA UPDATE REJECT message or SERVICE REJECT message, the value of the mobile reachable timer and implicit detach timer is set such that the sum of the timer values is greater than T3346. If the UE is attached for emergency bearer services, the value of this timer is set equal to T3412.  NOTE 5: If the MME includes timer T3324 in the ATTACH ACCEPT message or TRACKING AREA UPDATE ACCEPT message and if the UE is not attached for emergency bearer services and has no PDN connection for emergency bearer services, the value of this timer is equal to the value of timer T3324.  NOTE 6: The value of this timer is smaller than the value of timer T3-RESPONSE (see 3GPP TS 29.274 [16D]).  NOTE 7: In NB-S1 mode, then the timer value shall be calculated as described in clause 4.7.  NOTE 8: In NB-S1 mode, then the timer value shall be calculated by using an NAS timer value which is network dependent.  NOTE 9: In WB-S1 mode, if the UE supports CE mode B and operates in either CE mode A or CE mode B, then the timer value is as described in this table for the case of WB-S1/CE mode (see clause 4.8).  NOTE 10: In WB-S1 mode, if the UE supports CE mode B, then the timer value shall be calculated by using an NAS timer value which value is network dependent. | | | | | |

\*\*\*\*\* End of changes \*\*\*\*\*