

# NAS Timers

By Anuj Sethi [Anuj.Sethi@gmail.com]

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## Mobility Management Timers (MM)

### 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	- LOC_UPD_REQ sent	- LOC_UPD_ACC - LOC_UPD_REJ - AUTH_REJ - Lower layer failure	Start T3211
T3211	MM IDLE,	15s	- LOC_UPD_REJ with cause#17 netw. failure - lower layer failure or RR conn. released after RR conn. abort during loc. updating	- Time out - cell change - request for MM connection establishment - change of LA	Restart the Location update proc.
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	- expiry - change of BCCH parameter	new random attempt
T3214	LOCATION UPDATING INITIATED  WAIT FOR OUTGOING MM CONNECTION  IMSI DETACH INITIATED	20s	AUTHENT FAILURE Cause = 'MAC failure' or 'GSM authentication unacceptable' sent	AUTHENT REQ received	Consider the network as 'false' (see 4.3.2.6.1)
T3216	LOCATION UPDATING INITIATED  WAIT FOR OUTGOING MM CONNECTION  IMSI DETACH INITIATED	15s	AUTHENT FAILURE Cause = Synch failure sent	AUTHENT REQ received	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	- Cipher mode setting (A/Gb mode only) - Security mode setting (lu mode only) - CM_SERV_ACCEPT received - CM SERVICE REJECT received - LOCATION UPDATING ACCEPT received - AUTHENT REJ received - AUTHENT FAIL sent - enter MM IDLE or NULL	Delete the stored RAND and RES
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 SERV REQ  CM REEST REQ	- Cipher mode setting - CM SERV REJ - CM SERV ACC	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

NOTE 1: The timeout value is broadcasted in a SYSTEM INFORMATION message

**Mobility management timers - network-side**

<b>TIMER NUM.</b>	<b>MM STATE</b>	<b>TIME OUT VAL.</b>	<b>CAUSE FOR START</b>	<b>NORMAL STOP</b>	<b>AT THE EXPIRY</b>	<b>AT THE SECOND EXPIRY</b>
T3250	TMSI REALLOCATION INITIATED	12s	TMSI-REAL-CMD or LOC UPD ACC with new TMSI sent	TMSI-REALL-COM received	Optionally Release RR connection	
T3255		Note	LOC UPD ACC sent with "Follow on Proceed"	CM SERVICE REQUEST	Release RR Connection or use for mobile station terminating call	
T3260	AUTHENTICATION INITIATED	12s	AUTHENT-REQUEST sent	AUTHENT-RESPONSE received  AUTHENT-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.

## Timers of GPRS mobility management (GMM)

### GPRS Mobility management timers - MS side

TIMER NUM.	TIMER VALUE	STATE	CAUSE OF START	NORMAL STOP	ON THE 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> EXPIRY Note 3
T3310	15s	GMM-REG-INIT	ATTACH REQ sent	ATTACH ACCEPT received ATTACH REJECT received	Retransmission of ATTACH REQ
T3311	15s	GMM-DEREG ATTEMPTING TO ATTACH or GMM-REG ATTEMPTING TO UPDATE	ATTACH REJ with other cause values as described in chapter 'GPRS Attach' ROUTING AREA UPDATE REJ with other cause values as described in chapter 'Routing Area Update' Low layer failure	Change of the routing area	Restart of the Attach or the RAU procedure with updating of the relevant attempt counter
T3316	30s	GMM-REG-INIT GMM-REG GMM-DEREG-INIT GMM-RA-UPDATING-INT GMM-SERV-REQ-INIT (lu mode only)	RAND and RES stored as a result of a UMTS authentication challenge	Security mode setting (lu mode only) SERVICE ACCEPT received. (lu mode only) SERVICE REJECT received (lu mode only) ROUTING AREA UPDATE ACCEPT received AUTHENTICATION AND CIPHERING REJECT received AUTHENTICATION_AND_CIPHERING_FAILURE sent  Enter GMM-DEREG or GMM-NULL	Delete the stored RAND and RES
T3318	20s	GMM-REG-INIT GMM-REG GMM-DEREG-INIT GMM-RA-UPDATING-INT GMM-SERV-REQ-INIT (lu mode only)	AUTHENTICATION & CIPHERING FAILURE (cause='MAC failure' or 'GSM authentication unacceptable') sent	AUTHENTICATION & CIPHERING REQUEST received	On first expiry, the MS should consider the network as false (see 4.7.7.6.1)

T3320	15s	GMM-REG-INIT GMM-REG GMM-DEREG-INIT GMM-RA-UPDATING-INT GMM-SERV-REQ-INIT (Iu mode only)	AUTHENTICATION & CIPHERING FAILURE (cause=synch failure) sent	AUTHENTICATION & CIPHERING REQUEST received	On first expiry, the MS should consider the network as false (see 4.7.7.6.1)
T3321	15s	GMM-DEREG-INIT	DETACH REQ sent	DETACH ACCEPT received	Retransmission of the DETACH REQ
T3330	15s	GMM-ROUTING-UPDATING-INITIATED	ROUTING AREA UPDATE REQUEST sent	ROUTING AREA UPDATE ACC received  ROUTING AREA UPDATE REJ received	Retransmission of the ROUTING AREA UPDATE REQUEST message
T3340 (Iu mode only)	10s	GMM-REG-INIT GMM-DEREG-INIT GMM-RA-UPDATING-INT GMM-SERV-REQ-INIT (Iu mode only) GMM-ATTEMPTING-TO-UPDATE-MM GMM-REG-NORMAL-SERVICE	ATTACH REJ, DETACH REQ, ROUTING AREA UPDATE REJ or SERVICE REJ with any of the causes #11, #12, #13 or #15. ATTACH ACCEPT or ROUTING AREA UPDATE ACCEPT is received with "no follow-on proceed" indication.	PS signalling connection released	Release the PS signalling connection and proceed as described in subclause 4.7.1.9

### GPRS Mobility management timers – MS side

TIMER NUM.	TIMER VALUE	STATE	CAUSE OF START	NORMAL STOP	ON EXPIRY
T3302	Default 12 min Note 1 Note 5	GMM-DEREG or GMM-REG	At attach failure and the attempt counter is greater than or equal to 5. At routing area updating failure and the attempt counter is greater than or equal to 5.	At successful attach  At successful routing area updating	On every expiry, initiation of the GPRS attach procedure or RAU procedure
T3312	Default 54 min Note 1	GMM-REG	In A/Gb mode, when READY state is left. In Iu mode, when PMM-CONNECTED mode is left.	When entering state GMM-DEREG	Initiation of the Periodic RAU procedure
T3314 READY (A/Gb mode only)	Default 44 sec Note 2	All except GMM-DEREG	Transmission of a PTP PDU	Forced to Standby	No cell-updates are performed
T3317 (Iu mode only)	15s	GMM-SERVICE-REQUEST-INITIATED	SERVICE REQ sent	Security mode control procedure is completed, SERVICE ACCEPT received, or SERVICE REJECT received	Abort the procedure
T3319 (Iu mode only)	Default 30s Note 1 Note 4	GMM-REG	Completion of the Security Mode Control procedure after sending a SERVICE REQUEST with service type "data". Reception of a SERVICE ACCEPT message.	When entering PMM-IDLE mode. When the radio access bearer is released for any active PDP context. When entering state GMM-DEREG	SERVICE REQ with service type "data" may be invoked again, if required.

NOTE 1: The value of this timer is used if the network does not indicate another value in a GMM signalling procedure.

NOTE 2: The default value of this timer is used if neither the MS nor the Network send another value, or if the Network sends this value, in a signalling procedure.

NOTE 3: Typically, the procedures are aborted on the fifth expiry of the relevant timer. Exceptions are described in the corresponding procedure description.

NOTE 4: The purpose of this timer is to prevent the MS from repeating the SERVICE REQUEST message with service type "data" too early in case the request to setup the radio access bearer is queued by the radio access network.

NOTE 5: In Iu mode, the default value of this timer is used if the network provides a value for this timer in a non-integrity protected Iu mode GMM message.

### GPRS Mobility management timers - network side

TIMER NUM.	TIMER VALUE	STATE	CAUSE OF START	NORMAL STOP	ON THE 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> EXPIRY Note 3
T3322	6s	GMM- DEREG-INIT	DETACH REQ sent	DETACH ACCEPT received	Retransmission of DETACH REQUEST
T3350	6s	GMM- COMMON- PROC-INIT	ATTACH ACCEPT sent with P-TMSI and/or TMSI RAU ACCEPT sent with P-TMSI and/or TMSI P-TMSI REALLOC COMMAND sent	ATTACH COMPLETE received RAU COMPLETE received P-TMSI REALLOC COMPLETE received	Retransmission of the same message type, i.e. ATTACH ACCEPT, RAU ACCEPT or REALLOC COMMAND
T3360	6s	GMM- COMMON- PROC-INIT	AUTH AND CIPH REQUEST sent	AUTH AND CIPH RESPONSE received AUTHENT-AND CIPHER-FAILURE received	Retransmission of AUTH AND CIPH REQUEST
T3370	6s	GMM- COMMON- PROC-INIT	IDENTITY REQUEST sent	IDENTITY RESPONSE received	Retransmission of IDENTITY REQUEST

### GPRS Mobility management timers - network side

TIMER NUM.	TIMER VALUE	STATE	CAUSE OF START	NORMAL STOP	ON EXPIRY
T3313	Note1	GMM_REG	Paging procedure initiated	Paging procedure completed	Network dependent
T3314 READY (A/Gb mode only)	Default 44 sec Note 2	All except GMM- DEREG	Receipt of a PTP PDU	Forced to Standby	The network shall page the MS if a PTP PDU has to be sent to the MS
Mobile Reachable	Default 4 min greater than T3312	All except GMM- DEREG	In A/Gb mode, change from READY to STANDBY state In lu mode, change from PMM- CONNECTED mode to PMM-IDLE mode.	PTP PDU received	Network dependent but typically paging is halted on 1st expiry

NOTE 1: The value of this timer is network dependent.

NOTE 2: The default value of this timer is used if neither the MS nor the Network send another value, or if the Network sends this value, in a signalling procedure. The value of this timer should be slightly shorter in the network than in the MS, this is a network implementation issue.

NOTE 3: Typically, the procedures are aborted on the fifth expiry of the relevant timer. Exceptions are described in the corresponding procedure description.

## Timers of GPRS session management (SM)

### GPRS session management timers - MS side

TIMER NUM.	TIMER VALUE	STATE	CAUSE OF START	NORMAL STOP	ON THE 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> EXPIRY
T3380	30s	PDP-ACTIVE-PEND or MBMS-ACTIVE-PENDING	ACTIVATE PDP CONTEXT REQUEST, ACTIVATE SECONDARY PDP CONTEXT REQUEST or ACTIVATE MBMS CONTEXT REQUEST sent	ACTIVATE PDP CONTEXT ACCEPT, ACTIVATE SECONDARY PDP CONTEXT ACCEPT or ACTIVATE MBMS CONTEXT ACCEPT received ACTIVATE PDP CONTEXT REJECT, ACTIVATE SECONDARY PDP CONTEXT REJECT or ACTIVATE MBMS CONTEXT REJECT received	Retransmission of ACTIVATE PDP CONTEXT REQ, ACTIVATE SECONDARY PDP CONTEXT REQUEST or ACTIVATE MBMS CONTEXT REQUEST
T3381	8s	PDP-MODIFY-PENDING	MODIFY PDP CONTEXT REQUEST sent	MODIFY PDP CONTEXT ACCEPT received	Retransmission of MODIFY PDP CONTEXT REQUEST
T3390	8s	PDP-INACT-PEND	DEACTIVATE PDP CONTEXT REQUEST sent	DEACTIVATE PDP CONTEXT ACC received	Retransmission of DEACTIVATE PDP CONTEXT REQUEST

NOTE: Typically, the procedures are aborted on the fifth expiry of the relevant timer. Exceptions are described in the corresponding procedure description.



**GPRS session management timers - network side**

<b>TIMER NUM.</b>	<b>TIMER VALUE</b>	<b>STATE</b>	<b>CAUSE OF START</b>	<b>NORMAL STOP</b>	<b>ON THE 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> EXPIRY</b>
T3385	8s	PDP- ACT-PEND or MBMS ACTIVE- PENDING	REQUEST PDP CONTEXT ACTIVATION or REQUEST SECONDARY PDP CONTEXT ACTIVATION or REQUEST MBMS CONTEXT ACTIVATION sent	ACTIVATE PDP CONTEXT REQUEST or ACTIVATE SECONDARY PDP CONTEXT REQUEST or ACTIVATE MBMS CONTEXT REQUEST received	Retransmission of REQUEST PDP CONTEXT ACTIVATION or REQUEST SECONDARY PDP CONTEXT ACTIVATION or REQUEST MBMS CONTEXT ACTIVATION
T3386	8s	PDP- MOD-PEND	MODIFY PDP CONTEXT REQUEST sent	MODIFY PDP CONTEXT ACC received	Retransmission of MODIFY PDP CONTEXT REQ
T3395	8s	PDP- INACT-PEND or MBMS INACTIVE- PENDING	DEACTIVATE PDP CONTEXT REQUEST sent	DEACTIVATE PDP CONTEXT ACC received	Retransmission of DEACTIVATE PDP CONTEXT REQ

NOTE: Typically, the procedures are aborted on the fifth expiry of the relevant timer. Exceptions are described in the corresponding procedure description.

## Timers of circuit-switched call control (CC)

### Call control timers - MS side

Call control timers - MS side TIM NUM.	TIM VAL	STATE OF CALL	CAUSE OF START	NORMAL STOP	AT FIRST EXPIRY	AT SECOND EXPIRY
T303	30s	Call initiated	CM SER RQ sent	CALL PROC, or REL COMP received	Clear the call	Timer is not restarted
T305	30s	Disconnect Request	DISC sent	REL or DISC received	REL sent.	Timer is not restarted
T308	30s	Release request	REL sent	REL COMP or REL received	Retrans. RELEASE restart T308	Call ref. release
T310 Note 1	30s	Outgoing call Proceeding	CALL PROC received	ALERT,CONN, DISC or PROG rec.	Send DISC	Timer is not restarted
T313	30s	Connect Request	CONN sent	CONNect ACKnowledge received	Send DISC	Timer is not restarted
T323	30s	Modify Request	MOD sent	MOD COMP or MOD REJ received	Clear the call	Timer is not restarted
T324	15s	Modify request	MOD received	MOD COMP or MOD REJ sent	MOD REJ with old bearer capability	Timer is not restarted
T332	30s	Wait for network info	START_CC sent	CC-EST. received	Clear the call	Timer is not restarted
T335	30s	CC-Est. Confirmed	CC-EST CONF.sent	RECALL received	Clear the call	Timer is not restarted
T336	10s		START DTMF sent	START DTMF ACK or START DTMF REJECT received	The MS considers the DTMF Procedure (for the digit) to be terminated	Timer is not restarted
T337	10s		STOP DTMF sent	STOP DTMF ACK received	The MS considers the DTMF procedure (for the current digit) to be terminated	Timer is not restarted

NOTE 1: T310 is not started if progress indicator #1, #2, or #64 has been delivered in the CALL PROCEEDING message or in a previous PROGRESS message.

### Call control timers - network side

TIM NUM.	DFT TIM VAL	STATE OF CALL	CAUSE FOR START	NORMAL STOP	AT FIRST EXPIRY	AT SECOND EXPIRY
T301 Note 1	Min18 0s	Call received	ALERT received	CONN received	Clear the call	Timer is not restarted
T303	Note 2	Call present	SETUP sent	CALL CONF or REL COMP received	Clear the call	Timer is not restarted
T305	30s	Disconnect Indication	DISC without progress indic. #8 sent or CCBS Possible	REL or DISC received	Network sends RELEASE	Timer is not restarted
T306	30s	Disconnect Indication	DISC with progress indic. #8 sent but no CCBS possible	REL or DISC received	Stop the tone/ announc. Send REL	Timer is not restarted
T308	Note 2	Release request	REL sent	REL COMP or REL received	Retrans. RELEASE restart T308	Release call reference
T310	Note 2	Incoming call proceeding	CALL CONF received	ALERT, CONN or DISC received	Clear the call	Timer is not restarted
T313	Note 2	Connect Indication	CON sent	CON ACK received	Clear the call	Timer is not restarted
T323	30s	Modify request	MOD sent	MOD COMP or MOD REJ received	Clear the call	Timer is not restarted
T331	Note 2	CC Connec. Pending	CM-SERV PROMPT sent	START CC received	Clear the call	Timer is not restarted
T333	Note 2	CC-Est. Present	START CC received	CC-EST.CONF or REL COMP received	Clear the call	Timer is not restarted
T334 Note 3	Min 15s	CC-Est. Confirmed	RECALL sent	SETUP received	Clear the call	Timer is not restarted
T338	Note 2	Disconnect indication	DISC with CCBS possible	REL or DISC received	stop any tone/ announc. Send REL	Timer is not restarted

NOTE 1: The network may already have applied an internal alerting supervision function; e.g. incorporated within call control. If such a function is known to be operating on the call, then timer T301 is not used.

NOTE 2: These time values are set by the network operator.

NOTE 3: When applied to the supplementary service CCBS, the timer T334 can either represent the recall timer T4 or the notification timer T10 (see 3GPP TS 23.093). Thus the timer T334 can take two different values. 3GPP TS 23.093 defines the range of these values.

Reference :- 3GPP Specification TS 24.008