

	UPDATE ACCEPT message without the list of equivalent PLMNs.		ACCEPT		
20	Check: Does the UE transmit a TRACKING AREA UPDATE COMPLETE message?	-->	TRACKING AREA UPDATE COMPLETE	1	P
21	The UE is switched back to automatic PLMN selection mode.	-	-	-	-
22	Set the cell type of cell B to the "Suitable cell" Set the cell type of cell G to the "Serving cell" Set the cell type of cell I to the " Non-Suitable off cell"	-	-	-	-
23	Check: Does the UE transmit a TRACKING AREA UPDATE REQUEST message on Cell G (PLMN2)?	-->	TRACKING AREA UPDATE REQUEST	2	P
24	The SS transmits a TRACKING AREA UPDATE REJECT message with EMM cause "No suitable cells in tracking area".	<--	TRACKING AREA UPDATE REJECT	-	-
25	Check: Does the UE transmit a TRACKING AREA UPDATE REQUEST message on Cell B (PLMN1)?	-->	TRACKING AREA UPDATE REQUEST	2	P
26	The SS transmits a TRACKING AREA UPDATE REJECT message with EMM cause "No suitable cells in tracking area".	<--	TRACKING AREA UPDATE REJECT	-	-

#### 9.2.3.1.4.3.3 Specific message contents

**Table 9.2.3.1.4.3.3-1: Message TRACKING AREA UPDATE ACCEPT (step 5, Table 9.2.3.1.4.3.2-1)**

Derivation path: 36.508 table 4.7.2-24			
Information Element	Value/Remark	Comment	Condition
Equivalent PLMNs	-	Includes MCC and MNC digits for PLMN2 and PLMN3.	

**Table 9.2.3.1.4.3.3-2: Message TRACKING AREA UPDATE ACCEPT (step 11, Table 9.2.3.1.4.3.2-1)**

Derivation path: 36.508 table 4.7.2-24			
Information Element	Value/Remark	Comment	Condition
Equivalent PLMNs	-	Includes MCC and MNC digits for PLMN1 and PLMN3.	

**Table 9.2.3.1.4.3.3-3: Message TRACKING AREA UPDATE REJECT (steps 24 and 26, Table 9.2.3.1.4.3.2-1)**

Derivation path: 36.508 table 4.7.2-26			
Information Element	Value/Remark	Comment	Condition
EMM cause	'00001111' B	No suitable cells in tracking area	

#### 9.2.3.1.5 Periodic tracking area update / Accepted

##### 9.2.3.1.5.1 Test Purpose (TP)

(1)

```

with { UE in state EMM-REGISTERED and EMM-IDLE mode}
ensure that {
  when { the periodic tracking area updating timer T3412 expires }
  then { UE sends TRACKING AREA UPDATE REQUEST message with EPS update type = 'Periodic updating' }
}

```

(2)

```

with { UE in 'out of E-UTRAN coverage' and the periodic tracking area updating timer T3412 expires }
ensure that {
  when { the UE enters E-UTRAN coverage }
  then { UE sends TRACKING AREA UPDATE REQUEST message with EPS update type = 'Periodic updating' }
}

```

### 9.2.3.1.5.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: 3GPP TS23.401 clause 4.3.5.2 and TS 24.301 clauses 5.3.5, 5.5.3.2.1, 5.5.3.2.2 and 5.5.3.2.4.

[TS23.401 clause 4.3.5.2]

...

An EMM-REGISTERED UE performs periodic Tracking Area Updates with the network after the expiry of the periodic TAU timer.

If the UE is out of E-UTRAN coverage (including the cases when the UE is camped on 2G/3G cells) when its periodic TAU update timer expires, and ISR is activated the UE shall start the E-UTRAN Deactivate ISR timer. After the E-UTRAN Deactivate ISR timer expires the UE shall deactivate ISR by setting its TIN to "P-TMSI". The EMM-REGISTERED UE shall remember it has to perform a Tracking Area Update when it next returns to E-UTRAN coverage.

[TS24.301 clause5.3.5]

Periodic tracking area updating is used to periodically notify the availability of the UE to the network. The procedure is controlled in the UE by the periodic tracking area update timer (timer T3412). The value of timer T3412 is sent by the network to the UE in the ATTACH ACCEPT message and can be sent in the TRACKING AREA UPDATE ACCEPT message. The UE shall apply this value in all tracking areas of the list of tracking areas assigned to the UE, until a new value is received.

The timer T3412 is reset and started with its initial value, when the UE goes from EMM-CONNECTED to EMM-IDLE mode. The timer T3412 is stopped when the UE enters EMM-CONNECTED mode or EMM-DEREGISTERED state.

When timer T3412 expires, the periodic tracking area updating procedure shall be started and the timer shall be set to its initial value for the next start.

If the UE is in another state than EMM-REGISTERED.NORMAL-SERVICE when the timer expires the periodic tracking area updating procedure is delayed until the UE returns to EMM-REGISTERED.NORMAL-SERVICE.

...

The mobile reachable timer shall be reset and started with its initial value, when the MME releases the NAS signalling connection for the UE. The mobile reachable timer shall be stopped when a NAS signalling connection is established for the UE.

....

[TS24.301 clause5.5.3.2.1]

The periodic tracking area updating procedure is controlled in the UE by timer T3412. When timer T3412 expires, the periodic tracking area updating procedure is started. Start and reset of timer T3412 is described in subclause 5.5.3.2.

[TS24.301 clause5.5.3.2.2]

The UE in state EMM-REGISTERED shall initiate the tracking area updating procedure by sending a TRACKING AREA UPDATE REQUEST message to the MME,

...

- b) when the periodic tracking area updating timer T3412 expires;

...

After sending the TRACKING AREA UPDATE REQUEST message to the MME, the UE shall start timer T3430 and enter state EMM-TRACKING-AREA-UPDATING-INITIATED (see example in figure 5.5.3.2.2). If timer T3402 is currently running, the UE shall stop timer T3402. If timer T3411 is currently running, the UE shall stop timer T3411. If timer T3442 is currently running, the UE shall stop timer T3442.

If the UE supports A/Gb mode or Iu mode, the UE shall handle the Old GUTI IE as follows:

- If the TIN indicates "P-TMSI" and the UE holds a valid P-TMSI and RAI, the UE shall map the P-TMSI and RAI into the Old GUTI IE. Additionally, if the UE holds a valid GUTI, the UE shall indicate the GUTI in the Additional GUTI IE.

NOTE: The mapping of the P-TMSI and RAI to the GUTI is specified in 3GPP TS 23.003 [2].

- If the TIN indicates "GUTI" or "RAT-related TMSI" and the UE holds a valid GUTI, the UE shall indicate the GUTI in the Old GUTI IE.

...

When the tracking area updating procedure is initiated in EMM-IDLE mode, the UE may also include an EPS bearer context status IE in the TRACKING AREA UPDATE REQUEST message, indicating which EPS bearer contexts are active in the UE.

[TS24.301 clause 5.5.3.2.4]

...

Upon receiving a TRACKING AREA UPDATE ACCEPT message, the UE shall stop timer T3430, reset the routing area updating attempt counter, enter state EMM-REGISTERED and set the EPS update status to EU1 UPDATED. If the message contains a GUTI, the UE shall use this GUTI as new temporary identity for EPS services and shall store the new GUTI. If no GUTI was included by the MME in the TRACKING AREA UPDATE ACCEPT message, the old GUTI shall be used. If the UE receives a new TAI list in the TRACKING AREA UPDATE ACCEPT message, the UE shall consider the new TAI list as valid and the old TAI list as invalid; otherwise, the UE shall consider the old TAI list as valid.

...

If the TRACKING AREA UPDATE ACCEPT message contained a GUTI, the UE shall return a TRACKING AREA UPDATE COMPLETE message to the MME to acknowledge the received GUTI.

#### 9.2.3.1.5.3 Test description

##### 9.2.3.1.5.3.1 Pre-test conditions

#### System Simulator:

- Cell A is configured according to Table 6.3.2.2-1 in [18].
- Cell A belongs to TAI-1. (home PLMN)

#### UE:

- The UE has no valid GUTI.

#### Preamble:

- The UE is in state Switched OFF (state 1) according to [18].

## 9.2.3.1.5.3.2 Test procedure sequence

Table 9.2.3.1.5.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE is powered up or switched on.	-		-	-
2	The UE transmits an ATTACH REQUEST message with a PDN CONNECTIVITY REQUEST message to request PDN connectivity to the default PDN	-->	ATTACH REQUEST	-	-
3	The SS starts an authentication procedure	<--	AUTHENTICATION REQUEST	-	-
4	The UE responds to the authentication procedure	-->	AUTHENTICATION RESPONSE	-	-
5	The SS starts a NAS security mode command procedure to perform NAS integrity protection.	<--	SECURITY MODE COMMAND	-	-
6	The UE responds to the NAS security mode command procedure	-->	SECURITY MODE COMPLETE	-	-
-	EXCEPTION: Steps 6Aa1 to 6Aa2 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that take place if the UE has ESM information which needs to be transferred.	-	-	-	-
6A a1	IF the UE sets the ESM information transfer flag in the last PDN CONNECTIVITY REQUEST message THEN the SS transmits an ESM INFORMATION REQUEST message to initiate exchange of protocol configuration options and/or APN.	<--	ESM INFORMATION REQUEST	-	-
6A a2	The UE transmits an ESM INFORMATION RESPONSE message to transfer protocol configuration options and/or APN.	-->	ESM INFORMATION RESPONSE	-	-
7	The SS transmits an ATTACH ACCEPT message with GUTI-1 and with the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message.	<--	ATTACH ACCEPT	-	-
8	The UE transmits an ATTACH COMPLETE message with the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message	-->	ATTACH COMPLETE	-	-
9	The SS releases the RRC connection.			-	-
10	The SS waits 6minutes. (Expire of T3412)	-			
11	Check: Does the UE send TRACKING AREA UPDATE REQUEST message.	-->	TRACKING AREA UPDATE REQUEST	1	P
12	The SS sends TRACKING AREA UPDATE ACCEPT.	<--	TRACKING AREA UPDATE ACCEPT	-	-
13	Check: Does the UE send TRACKING AREA UPDATE COMPLETE message?	-->	TRACKING AREA UPDATE COMPLETE	1	P
14	The SS releases the RRC connection.			-	-
15	Check: Does the test result of generic test procedure in TS 36.508 subclause 6.4.2.4 indicate that the UE is in EMM-REGISTERED state on cell A with PagingUE-Identity = S-TMSI2 and with CN domain indicator set to "PS"?	-		1	-
16	Set the cell type of cell A to the "non-Suitable cell".	-		-	-
17	The SS waits 8minutes.	-		-	-
18	Set the cell type of cell A to the "Serving cell".	-		-	-
19	Check: Does the UE send TRACKING AREA UPDATE REQUEST message?	-->	TRACKING AREA UPDATE REQUEST	2	P
20	The SS sends TRACKING AREA UPDATE ACCEPT.	<--	TRACKING AREA UPDATE ACCEPT	-	-
21	Check: Does the UE send TRACKING AREA UPDATE COMPLETE message?	-->	TRACKING AREA UPDATE COMPLETE	2	P
22	The SS releases the RRC connection.	-		-	-
23	Check: Does the test result of generic test	-		2	-

	procedure in TS 36.508 subclause 6.4.2.4 indicate that the UE is in EMM-REGISTERED state in cell A with PagingUE-Identity = S-TMSI3 and with CN domain indicator set to "PS"?				
--	---	--	--	--	--

## 9.2.3.1.5.3.3 Specific message contents

**Table 9.2.3.1.5.3.3-1: Message ATTACH ACCEPT (step 7, Table 9.2.3.1.5.3.2-1)**

Derivation path: 36.508 table 4.7.2-1			
Information Element	Value/Remark	Comment	Condition
T3412 value			
Unit	'010'	"value is incremented in multiples of decihours"	
Timer value	'00001'	"6 minutes"	
TAI list			
Length of tracking area identity list contents	'00001010'B		
Partial tracking area identity list			
Number of elements	'00001'B		
Type of list	'00'B	"list of TACs belonging to one PLMN, with non-consecutive TAC values"	
MCC MNC TAC 1	TAI-1		
GUTI	GUTI-1		

**Table 9.2.3.1.5.3.3-2: Message TRACKING AREA UPDATE REQUEST (step 11, Table 9.2.3.1.5.3.2-1)**

Derivation path: 36.508 table 4.7.2-27			
Information Element	Value/Remark	Comment	Condition
EPS update type EPS update type value	'011'B	"Periodic updating"	
Old GUTI	GUTI-1		

**Table 9.2.3.1.5.3.3-3: Message TRACKING AREA UPDATE ACCEPT (step 12, Table 9.2.3.1.5.3.2-1)**

Derivation path: 36.508 table 4.7.2-24			
Information Element	Value/Remark	Comment	Condition
T3412 value			
Unit	'010'	"value is incremented in multiples of decihours"	
Timer value	'00001'	"6 minutes"	
GUTI	GUTI-2		
TAI list			
Length of tracking area identity list contents	'00001000'B		
Partial tracking area identity list			
Number of elements	'00001'B		
Type of list	'00'B	"list of TACs belonging to one PLMN, with non-consecutive TAC values"	
MCC MNC TAC 1	TAI-1		

**Table 9.2.3.1.5.3.3-4: Message TRACKING AREA UPDATE REQUEST (step 19, Table 9.2.3.1.5.3.2-1)**

Derivation path: 36.508 table 4.7.2-27			
Information Element	Value/Remark	Comment	Condition
EPS update type			
EPS update type value	'011'B	"Periodic updating"	
Old GUTI	GUTI-2		

**Table 9.2.3.1.5.3.3-5: Message TRACKING AREA UPDATE ACCEPT (step 20, Table 9.2.3.1.5.3.2-1)**

Derivation path: 36.508 table 4.7.2-24			
Information Element	Value/Remark	Comment	Condition
GUTI	GUTI-3		
TAI list			
Length of tracking area identity list contents	'00001000'B		
Partial tracking area identity list			
Number of elements	'00001'B		
Type of list	'00'B	"list of TACs belonging to one PLMN, with non-consecutive TAC values"	
MCC MNC TAC 1	TAI-1		

### 9.2.3.1.6 Normal tracking area update / UE with ISR active moves to E-UTRAN

#### 9.2.3.1.6.1 Test Purpose (TP)

(1)

```

with { ISR activated UE in state EMM-REGISTERED and ECM_IDLE mode}
ensure that {
  when { ISR activated UE reselects from E-UTRAN to UTRAN/GERAN cell belonging to the RA where the
  UE is registered }
  then { UE does not send ROUTING AREA UPDATE REQUEST message }
}

```