

Table 9.2.1.1a.3.3-3: Message ATTACH ACCEPT (step 19, Table 9.2.1.1a.3.2-1)

Derivation path: 36.508 table 4.7.2-1			
Information Element	Value/Remark	Comment	Condition
TAI list		Contains 3 separate partial tracking area ID lists	
Length of tracking area identity list contents	32	The decimal value of the value in the length field	
Type of first partial tracking area identity list	010	More than one PLMN	
Number of elements	00010	3 elements	
First TAI	MCC = 004, MNC = 02, TAC = 0003		
Second TAI	MCC = 005, MNC = 002, TAC = 0003		
Third TAI	MCC = 004, MNC = 03, TAC = 0003		
Type of second partial tracking area identity list	001	Consecutive TACs on same PLMN	
Number of consecutive TACS	01001	10 elements	
TAI	MCC = 004 MNC = 07 TAC = fff0	TAI with lowest numbered TAC	
Type of third partial tracking area identity list	000	Individual TACs on same PLMN	
Number of elements	00010	3	
MCC	MCC = 001		
MNC	MNC = 01		
First TAC	TAC = 0001		
Second TAC	TAC = 0002		
Third TAC	TAC = 0027		
GUTI	MCC=001, MNC = 01, MMEGI = 64000, MMEC= 127, M-TMSI arbitrarily allocated but compliant to rules of TS 23.003 sub clause 2.8	Includes PLMN ID of cell B.	
Equivalent PLMNs	MCC=004, MNC=02; MCC=004, MNC=03; MCC=004, MNC=07; MCC=316, MNC=002;	4 equivalent PLMNs	

Table 9.2.1.1a.3.3-4: Message TRACKING AREA UPDATE REQUEST (step 37, Table 9.2.1.1a.3.2-1)

Derivation path: 36.508 table 4.7.2-27			
Information Element	Value/Remark	Comment	Condition
Old GUTI	GUTI allocated in step 19		
NAS key set identifier <small>ASME</small>	Same as allocated in step 3		
Last visited registered TAI	TAI of cell 8		

9.2.1.1.2 Attach Procedure / Success / With IMSI / GUTI reallocation

9.2.1.1.2.1 Test Purpose (TP)

(1)

**with** { UE in EMM-DEREGISTERED state }

```

ensure that {
  when { there is no valid GUTI available in UE }
  then { UE sends ATTACH REQUEST message, containing IMSI as the EPS mobile identity }
}

```

(2)

```

with { UE having received reallocated GUTI in the ATTACH ACCEPT message }
ensure that {
  when { UE detaches from the EPS services }
  then { UE sends DETACH REQUEST message, containing GUTI as the EPS mobile identity }
}

```

#### 9.2.1.1.2.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.301, clause 5.5.1.2.

[TS 24.301, clause 5.5.1.2.2]

In state EMM-DEREGISTERED, the UE initiates the attach procedure by sending an ATTACH REQUEST message to the MME, starting timer T3410 and entering state EMM-REGISTERED-INITIATED (see example in figure 5.5.1.2.2.1). 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 the UE supports neither A/Gb mode nor Iu mode, the UE shall handle the Old GUTI or IMSI IE in the ATTACH REQUEST message as follows:

- The UE shall include in the ATTACH REQUEST message a valid GUTI together with the last visited registered TAI, if available. If there is no valid GUTI available, the UE shall include the IMSI in the ATTACH REQUEST message.

[TS 24.301, clause 5.5.1.2.4]

If the attach request is accepted by the network, the MME shall send an ATTACH ACCEPT message to the UE and start timer T3450. The MME shall send the ATTACH ACCEPT message together with an ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message contained in the ESM message container information element to activate the default bearer (see subclause 6.4.1). The network may also initiate the activation of dedicated bearers towards the UE by invoking the dedicated EPS bearer context activation procedure (see subclause 6.4.2).

...

The MME shall assign and include the TAI list the UE is registered to in the ATTACH ACCEPT message. The UE, upon receiving an ATTACH ACCEPT message, shall delete its old TAI list and store the received TAI list.

Upon receiving the ATTACH ACCEPT message, the UE shall stop timer T3410.

The GUTI reallocation may be part of the attach procedure. When the ATTACH REQUEST message includes the IMSI, the MME considers the GUTI provided by the UE is invalid, or the GUTI provided by the UE was assigned by another MME, the MME shall allocate a new GUTI to the UE. The MME shall include in the ATTACH ACCEPT message the new assigned GUTI together with the assigned TAI list. In this case the MME shall enter state EMM-COMMON-PROCEDURE-INITIATED as described in subclause 5.4.1.

For a shared network, the TAIs included in the TAI list can contain different PLMN identities. The MME indicates the selected core network operator PLMN identity to the UE in the GUTI (see 3GPP TS 23.251). If the ATTACH ACCEPT message contains a GUTI, the UE shall use this GUTI as the new temporary identity. The UE shall delete its old GUTI and store the new assigned GUTI. If no GUTI has been included by the MME in the ATTACH ACCEPT message, the old GUTI, if any available, shall be kept.

If A/Gb mode or Iu mode is supported in the UE, the UE shall set its TIN to "GUTI" when receiving the ATTACH ACCEPT message.

#### 9.2.1.1.2.3 Test description

##### 9.2.1.1.2.3.1 Pre-test conditions

System Simulator:

- Cell A (HPLMN)

UE:

None.

Preamble:

- The UE is in state Registered, Idle Mode (State 2) according to [18].

#### 9.2.1.1.2.3.2 Test procedure sequence

**Table 9.2.1.1.2.3.2-1: Main behaviour**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits Paging on cell A with IMSI. Upon reception of paging with IMSI the UE shall locally deactivate any EPS bearer context(s), locally detach from EPS and delete the GUTI-1. After local detach the UE shall perform an EPS attach procedure.	-	-	-	-
2	Check: Does the UE transmit an ATTACH REQUEST message including IMSI in the EPS mobile identity IE including a PDN CONNECTIVITY REQUEST message?	-->	ATTACH REQUEST	1	P
3	The SS transmits an AUTHENTICATION REQUEST message to initiate the EPS authentication and AKA procedure.	<--	AUTHENTICATION REQUEST	-	-
4	The UE transmits an AUTHENTICATION RESPONSE message and establishes mutual authentication.	-->	AUTHENTICATION RESPONSE	-	-
5	The SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	SECURITY MODE COMMAND	-	-
6	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	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	SS responds with ATTACH ACCEPT message with a new GUTI-2 included in the EPS mobile identity IE. The ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message is piggybacked in ATTACH ACCEPT message.	<--	ATTACH ACCEPT	-	-
8	The UE transmits an ATTACH COMPLETE message including an ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message	-->	ATTACH COMPLETE	-	-
9	Cause UE to detach from the EPS services	-	-	-	-
10	Check: Does the UE transmit a DETACH REQUEST message including GUTI-2 in the EPS mobile identity IE?	-->	DETACH REQUEST	2	P
11	SS responds with DETACH ACCEPT message	<--	DETACH ACCEPT	-	-

## 9.2.1.1.2.3.3 Specific message contents

**Table 9.2.1.1.2.3.3-1: ATTACH REQUEST (step 2, Table 9.2.1.1.2.3.2-1)**

Derivation Path: 36.508, Table 4.7.2-4			
Information Element	Value/remark	Comment	Condition
Old GUTI or IMSI	IMSI		
Last visited registered TAI	Not present		

**Table 9.2.1.1.2.3.3-2: DETACH REQUEST (step 10, Table 9.2.1.1.2.3.2-1)**

Derivation Path: 36.508, Table 4.7.2-11			
Information Element	Value/remark	Comment	Condition
GUTI or IMSI	GUTI-2		

## 9.2.1.1.5 Void

## 9.2.1.1.7 Attach Procedure / Success / List of equivalent PLMNs in the ATTACH ACCEPT message

## 9.2.1.1.7.1 Test Purpose (TP)

(1)

```

with { UE in EMM-REGISTERED-INITIATED state }
ensure that {
  when { the UE receives ATTACH ACCEPT message including a list of equivalent PLMNs }
  then { the UE stores correctly the list and does not consider forbidden PLMNs as equivalent PLMNs }
}

```

(2)

```

with { UE in EMM-REGISTERED-INITIATED state }
ensure that {
  when { the UE receives ATTACH ACCEPT message without a list of equivalent PLMNs }
  then { the UE deletes the stored list and applies a normal PLMN selection process }
}

```

## 9.2.1.1.7.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.301, clause 5.5.1.2.4.

[TS 24.301, clause 5.5.1.2.4]

The MME may also include a list of equivalent PLMNs in the ATTACH ACCEPT message. Each entry in the list contains a PLMN code (MCC+MNC). The UE shall store the list as provided by the network, after having removed from the list any PLMN code that is already in the list of forbidden PLMNs. In addition, the UE shall add to the stored list the PLMN code of the registered PLMN that sent the list. The UE shall replace the stored list on each receipt of the ATTACH ACCEPT message. If the ATTACH ACCEPT message does not contain a list, then the UE shall delete the stored list.

## 9.2.1.1.7.3 Test description

## 9.2.1.1.7.3.1 Pre-test conditions

System Simulator:

- Cell A (PLMN1), Cell G (PLMN2), Cell I (PLMN3) and Cell J (PLMN4) are configured according to Table 6.3.2.2-1 in [18].
- Cell A (HPLMN)
- Cell G (visited PLMN)
- Cell I (another visited PLMN)