



**Core Network and Interoperability Testing (INT);
NAS Conformance Testing for the S1-MME interface;
(3GPP™ Release 13);
Part 2: Test Suite Structure (TSS) and Test Purposes (TP)**

Reference

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Contents

Intellectual Property Rights	4
Foreword.....	4
Modal verbs terminology.....	4
1 Scope	5
2 References	5
2.1 Normative references	5
2.2 Informative references.....	5
3 Definitions and abbreviations.....	6
3.1 Definitions	6
3.2 Abbreviations	6
4 Test configurations	6
4.1 Introduction	6
4.2 Test configuration using the S1-MME interface	6
5 Test Suite Structure (TSS) and Test Purposes (TP)	7
5.1 Test Suite Structure	7
5.1.1 TP naming convention	7
5.1.2 Test strategy.....	8
5.1.3 TP structure.....	8
5.2 Test Purposes.....	9
5.2.1 PICS references	9
5.2.2 S1_MME interface NAS – MME Role.....	9
5.2.2.1 Test selection.....	9
5.2.2.2 Elementary procedures for EPS mobility management.....	9
5.2.2.2.1 GUTI reallocation group	9
5.2.2.2.2 Authentication group	9
5.2.2.2.3 Security mode control group	15
5.2.2.2.4 Identification group	16
5.2.2.2.5 EMM information group	16
5.2.2.2.6 Attach group	17
5.2.2.2.7 Detach group	24
5.2.2.2.8 Tracking area updating group.....	26
5.2.2.2.9 Service request group	27
5.2.2.2.10 Paging group.....	29
5.2.2.2.11 Transport of NAS messages group	29
5.2.2.2.12 Generic transport of NAS messages group.....	30
5.2.2.2.13 EMM STATUS	30
5.2.2.3 Elementary procedures for EPS session management.....	31
5.2.2.3.1 Default EPS bearer context activation procedure	31
5.2.2.3.2 Dedicated EPS bearer context activation procedure.....	31
5.2.2.3.3 EPS bearer context modification procedure	32
5.2.2.3.4 EPS bearer context deactivation procedure	32
5.2.2.3.5 UE requested PDN connectivity procedure.....	33
5.2.2.3.6 UE requested PDN disconnect procedure.....	34
5.2.2.3.7 UE requested bearer resource allocation procedure.....	35
5.2.2.3.8 UE requested bearer resource modification procedure	37
5.2.2.3.9 ESM information request procedure.....	38
5.2.2.3.10 Notification procedure	39
5.2.2.3.11 Remote UE Report procedure.....	39
5.2.2.3.12 Transport of user data via the control plane procedure.....	40
5.2.3 S1-MME Messages.....	40
5.2.3.1 General overview	40
5.2.3.2 E-RAB procedure.....	40
5.2.3.3 Initial context procedure	41
5.2.3.4 NAS transport procedure.....	41
History	43

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Core Network and Interoperability Testing (INT).

The present document is part 2 of a multi-part deliverable. Full details of the entire series can be found in part 1 [2].

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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1 Scope

The present document provides the Test Suite Structure (TSS) and Test Purposes (TP) for the test specification for the NAS protocol on the S1-MME interface as specified in ETSI TS 124 301 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETSI ETS 300 406 [5].

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 124 301 (V13.9.0): "Universal Mobile Telecommunications System (UMTS); LTE; Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3 (3GPP TS 24.301 version 13.9.0 Release 13)".
- [2] ETSI TS 103 530-1: "Core Network and Interoperability Testing (INT); NAS Conformance Testing for the S1-MME interface; (3GPP™ Release 13); Part 1: Protocol Implementation Conformance Statement (PICS).
- [3] ISO/IEC 9646-1: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".
- [4] ISO/IEC 9646-7: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".
- [5] ETSI ETS 300 406: "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [6] ETSI TS 136 413 (V13.4.0): "LTE; Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP) (3GPP TS 36.413 version 13.4.0 Release 13)".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI TS 124 301 [1] and the following apply:

Abstract Test Method (ATM): Refer to ISO/IEC 9646-1 [3].

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [3].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [3].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [3].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TS 124 301 [1] and the following apply:

MI	Message Information
NAS	Non-Access Stratum
S1AP	S1 Application Protocol
TP	Test Purpose
TSS	Test Suite Structure

4 Test configurations

4.1 Introduction

Test purposes of the present document address the VoLTE functional entity MME that is accessible via the standardized S1-MME interface.

4.2 Test configuration using the S1-MME interface

The S1-MME interface is located between the eNB and the MME. The NAS messages are transparent for the eNB, therefore only the MME is considered a System Under test (SUT).

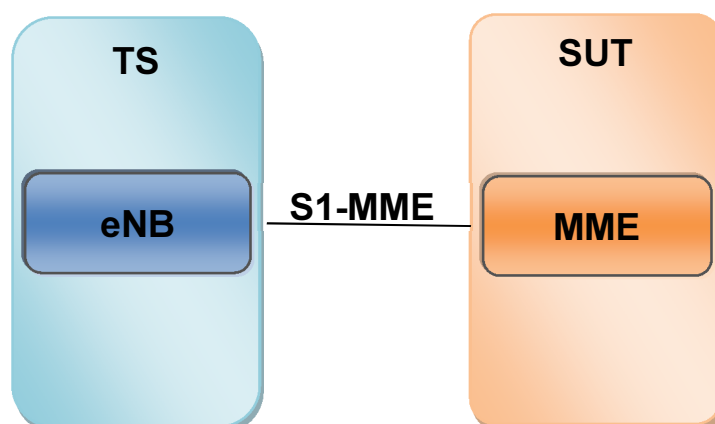


Figure 1: Test configuration CF_S1-MME

5 Test Suite Structure (TSS) and Test Purposes (TP)

5.1 Test Suite Structure

5.1.1 TP naming convention

TPs are numbered, starting at 01, within each group. Groups are organized according to the TSS.

Table 1: TP identifier naming convention scheme

Identifier: <TP>_<iut>_<scope>_<nn>	
<tp> = Test Purpose:	fixed to "TP"
<interface or protocol>	Interface or protocol: NAS
<iut> = type of IUT:	MME
<scope> = group	MGR EMM / GUTI relocation procedure
	MAU EMM / Authentication procedure
	MSM EMM / Security mode control procedure
	MID EMM / Identification procedure
	MEI EMM / EMM information procedure
	MAT EMM / Attach procedure
	MDE EMM / Detach procedure
	MTA EMM / Tracking area updating procedure (S1 mode only)
	MSR EMM / Service request procedure
	MPA EMM / Paging procedure
	MTR EMM / Transport of NAS messages procedure
	MGT EMM / Generic transport of NAS messages procedure
	MES EMM / EMM Status
	SDF ESM / Default EPS bearer context activation procedure
	SDE ESM / Dedicated EPS bearer context activation procedure
	SCM ESM / EPS bearer context modification procedure
	SCD ESM / EPS bearer context deactivation procedure
	SPC ESM / UE requested PDN connectivity procedure
	SPD ESM / UE requested PDN disconnect procedure
	SRA ESM / UE requested bearer resource allocation procedure
	SRM ESM / UE requested bearer resource modification procedure
	SEI ESM / ESM information request procedure
	SNO ESM / Notification procedure
	SRR ESM / Remote UE Report procedure
	STU ESM / Transport of user data via the control plane procedure
<nn> = sequential number	(01 to 99)

5.1.2 Test strategy

As the base specification in ETSI TS 124 301 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification ETSI TS 103 530-1 [2].

5.1.3 TP structure

Each TP has been written in a manner which is consistent with all other TPs. The intention of this is to make the TPs more readable and checkable. A particular structure has been used which is illustrated in table 2. Table 2 should be read in conjunction with any TP, i.e. please use a TP as an example to facilitate the full comprehension of table 2.

Table 2: Structure of a single TP

TP part	Text	Example
Header	<Identifier>	see table 1
	<clause number in base ETSI TS 124 301 [1] >	clause 8.2.1
	<PICS reference>	A.4/3
Summary	<i>Short free text description of the test objective</i>	Verify that the IUT can successfully process all mandatory IEs in an ATTACH REQUEST received due to attach procedure
Configuration	<i>Test configuration as described in clause 4.2</i>	CF_S1-MME
Initial condition (optional)	<i>Free text description of the condition that the IUT has reached before the test purpose applies</i>	
Start point	Ensure that the IUT in the	
	<i><state> see ETSI TS 124 301 [1] clause 8.1 and/or further actions before stimulus if the action is sending/receiving see below for message structure</i>	Network initiated detach procedure Having sent a DETACH REQUEST
Stimulus	<trigger> , see below for message structure	On receipt of an ATTACH REQUEST (see note 2)
	or <goal>	
Reaction	<action>	Sends, saves, does, etc.
	<i>if the action is sending see below for message structure <next action>, etc.</i>	
Message structure	<message type>	Message exchange, etc. (see note 2)
	a) containing a(n) <IE name> IE b) indicating <coding of the field> and back to a) or b) (see note 3)	
<p>NOTE 1: Text in italics will not appear in TPs and text between <> is filled in for each TP and may differ from one TP to the next.</p> <p>NOTE 2: All messages are considered as "valid and compatible" unless otherwise specified in the test purpose. This includes the presence of all NAS mandatory IEs as specified in ETSI TS 124 301 [1]. For better overview of the document there are S1AP messages (ex. DOWNLINK_NAS_TRANSPORT) written with underscore character and NAS messages (ex. ATTACH REQUESTS) with space character.</p> <p>NOTE 3: An IE can be embedded into another IE. This is expressed by indentations, e.g. if Message1 contains IE1 and IE2 where IE1 has IE3 embedded this will be expressed like this:</p> <pre> sends/receives Message 1 containing IE1 containing IE3 indicating containing IE2 indicating.</pre>		

5.2 Test Purposes

5.2.1 PICS references

All PICS items referred in this clause are as specified in ETSI TS 103 530-1 [2] unless indicated otherwise by another numbered reference. PICS items are only meant for test selection, therefore only PICS items with status optional or conditional are explicitly mentioned.

5.2.2 S1_MME interface NAS – MME Role

5.2.2.1 Test selection

The IUT takes the role of the MME; PICS A.2/1.

Test purposes contains S1AP message with NAS-PDU content. S1AP message content with required IEs is present within clause 5.2.3.

5.2.2.2 Elementary procedures for EPS mobility management

5.2.2.2.1 GUTI reallocation group

TP_NAS_MME_MGR_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.1 and 8.2.16	PICS item: PICS A.4/1
Summary:	Verify that the IUT can send a GUTI REALLOCATION COMMAND message with all mandatory IEs to indicate GUTI reallocation procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate a GUTI reallocation procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating GUTI REALLOCATION COMMAND containing an EPS_mobile_identity.	
Comments:		

5.2.2.2.2 Authentication group

TP_NAS_MME_MAU_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.2 and 8.2.7	PICS item: PICS A.4/2
Summary:	Verify that the IUT can send an AUTHENTICATION REQUEST message with all mandatory IEs to indicate authentication procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate an authentication procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN.	
Comments:	Preamble action: Attached procedure is exchanged.	

TP_NAS_MME_MAU_02	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.2.2, 5.4.2.5 and 8.2.6	PICS item: PICS A.4/2.1
Summary:	Verify that the IUT can send an AUTHENTICATION REQUEST message to indicate authentication procedure and in case if authentication response is not valid and the IMSI was used for identification in the initial NAS message the IUT sends AUTHENTICATION REJECT message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>to indicate an authentication procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION RESPONSE containing an Authentication_response_parameter indicating wrong response</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REJECT.</p>	
Comments:	Preamble action: Attached procedure is exchanged.	

TP_NAS_MME_MAU_03	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.2.6 ¶ 3, 5.4.2.7 (item c), 8.2.7 and 8.2.18	PICS item: PICS A.4/2.2 and A.4/2.2.1
Summary:	Verify that the IUT can send an AUTHENTICATION REQUEST indicating invalid MAC code (in the AUTN parameter) and when receives AUTHENTICATION FAILURE the IUT sends IDENTITY REQUEST to obtain the IMSI from the UE. In case the identification procedure shows an incorrect GUTI/IMSI mapping the IUT sends new AUTHENTICATION REQUEST.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate an authentication procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN indicating invalid AUTN code on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION FAILURE containing an EMM_cause indicating cause #20 "MAC failure" sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY REQUEST containing an Identity_type 2 indicating an IMSI containing a Spare_half_octet on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY RESPONSE containing a Mobile_identity indicating an incorrect IMSI sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN.	
Comments:	Preamble action: Attached procedure is exchanged.	

TP_NAS_MME_MAU_04	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.2.6 ¶ 3, 5.4.2.7 (item c), 8.2.6 and 8.2.18	PICS item: PICS A.4/2.2 and A.4/2.2.2
Summary:	Verify that the IUT can send an AUTHENTICATION REQUEST indicating invalid MAC code (in the AUTN parameter) and when receives AUTHENTICATION FAILURE the IUT sends IDENTITY REQUEST to obtain the IMSI from the UE. In case the identification procedure shows a correct GUTI/IMSI mapping the IUT sends AUTHENTICATION REJECT.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate an authentication procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN indicating invalid AUTN code on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION FAILURE containing an EMM_cause indicating cause #20 "MAC failure" sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY REQUEST containing an Identity_type 2 indicating an IMSI containing a Spare_half_octet on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY RESPONSE containing a Mobile_identity indicating an correct IMSI sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REJECT .	
Comments:	Preamble action: Attached procedure is exchanged.	

TP_NAS_MME_MAU_05	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.2.6 ¶ 5, 5.4.2.7 (item d), 8.2.7 and 8.2.18	PICS item: PICS A.4/2.3 and A.4/2.3.1
Summary:	Verify that the IUT can send an AUTHENTICATION REQUEST indicating non-EPS authentication unacceptable ("separation bit" in the AMF field of AUTN supplied by the core network is 0) and when receives AUTHENTICATION FAILURE the IUT sends IDENTITY REQUEST to obtain the IMSI from the UE. In case the identification procedure shows an incorrect GUTI/IMSI mapping the IUT sends new AUTHENTICATION REQUEST.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate an authentication procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN indicating "separation bit" in the AMF field of AUTN supplied by the core network is 0 on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION FAILURE containing an EMM_cause indicating cause #26 "non-EPS authentication unacceptable" sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY REQUEST containing an Identity_type 2 indicating an IMSI containing a Spare_half_octet on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY RESPONSE containing a Mobile_identity indicating an incorrect IMSI sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN.	
Comments:	Preamble action: Attached procedure is exchanged.	

TP_NAS_MME_MAU_06	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.2.6 ¶ 3, 5.4.2.7 (item d), 8.2.6 and 8.2.18	PICS item: PICS A.4/2.3 and A.4/2.3.2
Summary:	Verify that the IUT can send an AUTHENTICATION REQUEST indicating non-EPS authentication unacceptable ("separation bit" in the AMF field of AUTN supplied by the core network is 0) and when receives AUTHENTICATION FAILURE the IUT sends IDENTITY REQUEST to obtain the IMSI from the UE. In case the identification procedure shows a correct GUTI/IMSI mapping the IUT sends AUTHENTICATION REJECT.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate an authentication procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN indicating "separation bit" in the AMF field of AUTN supplied by the core network is 0 on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION FAILURE containing an EMM_cause indicating cause #26 "non-EPS authentication unacceptable" sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY REQUEST containing an Identity_type 2 indicating an IMSI containing a Spare_half_octet on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY RESPONSE containing a Mobile_identity indicating an correct IMSI sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REJECT .	
Comments:	Preamble action: Attached procedure is exchanged.	

TP_NAS_MME_MAU_07	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.2.6 ¶ 7, 5.4.2.7 (item e), 8.2.7 and 8.2.18	PICS item: PICS A.4/2.4
Summary:	Verify that the IUT can send an AUTHENTICATION REQUEST indicating invalid SQN failure (if the UE finds the SQN to be out of range in the AUTN parameter) and when receives AUTHENTICATION FAILURE the IUT obtain new vectors from HSS and sends new AUTHENTICATION REQUEST.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>to indicate an authentication procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN indicating SQN out of range</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION FAILURE containing an EMM_cause indicating cause #21 "synch failure"</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an AUTHENTICATION REQUEST containing a NAS_key_set_identifier containing a Spare_half_octet containing an Authentication_parameter_RAND containing an Authentication_parameter_AUTN.</p>	
Comments:	Preamble action: Attached procedure is exchanged.	

5.2.2.2.3 Security mode control group

TP_NAS_MME_MSM_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.3 and 8.2.20	PICS item: PICS A.4/3
Summary:	Verify that the IUT can send a SECURITY MODE CONTROL message with all mandatory IEs to indicate NAS security mode procedure.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>to indicate a NAS security mode procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a SECURITY MODE COMMAND containing a NAS_security algorithms containing a NAS_key_set_identifier containing a Spare_half_octet containing a UE_security_capability.</p>	
Comments:		

5.2.2.2.4 Identification group

TP_NAS_MME_MID_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.4 and 8.2.18	PICS item: PICS A.4/4
Summary:	Verify that the IUT can send an IDENTITY REQUEST message with all mandatory IEs to indicate identification procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate identification procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an IDENTITY REQUEST containing an Identity_type_2 containing a Spare_half_octet.	
Comments:		

5.2.2.2.5 EMM information group

TP_NAS_MME_MEI_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.4.5 and 8.2.13	PICS item: PICS A.4/5
Summary:	Verify that the IUT can send an EMM INFORMATION message with all mandatory IEs to indicate EMM information procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate EMM information procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an EMM INFORMATION .	
Comments:		

5.2.2.2.6 Attach group

TP_NAS_MME_MAT_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.1 ¶ 8, 5.5.1.2.5A ¶ 1, 8.2.1 and 8.2.3	PICS item: NOT PICS A.4/6.1
Summary:	Verify that the IUT rejects a NAS ATTACH REQUEST containing an attach type set to "EPS emergency attach" if an attach for emergency bearer services is not supported by the IUT.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT <ul style="list-style-type: none"> on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) <ul style="list-style-type: none"> containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REQUEST containing an EPS_attach_type <ul style="list-style-type: none"> indicating an EPS emergency attach containing a NAS_key_set_identifier containing an EPS_mobile_identity containing a UE_network_capability containing an ESM_message_container sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) <ul style="list-style-type: none"> containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REJECT containing an EMM_cause <ul style="list-style-type: none"> indicating cause #5 'IMEI not accepted' or indicating other appropriate cause value. 	
Comments:		

TP_NAS_MME_MAT_02	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.1.2.4 ¶ 4 (1 st dashed line), 8.2.1 and 8.2.2	PICS item: PICS A.3/3.1 and A.4/6
Summary:	Verify that the IUT accepts a NAS ATTACH REQUEST containing PDN CONNECTIVITY REQUEST message in the ESM message container information element to request PDN connectivity and the UE indicated support of EMM-REGISTERED without PDN connection in the UE network capability IE and the IUT supports EMM-REGISTERED without PDN connection and PDN connection is restricted according to the user's subscription data then the IUT sends the ATTACH ACCEPT message together with an ESM DUMMY MESSAGE contained in the ESM message container information element.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <ul style="list-style-type: none"> on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REQUEST containing an EPS_attach_type <ul style="list-style-type: none"> indicating an EPS attach containing a NAS_key_set_identifier containing an EPS_mobile_identity containing a UE_network_capability <ul style="list-style-type: none"> indicating EMM-REGISTERED without PDN connection supported containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a PDN CONNECTIVITY REQUEST containing a Request_type <ul style="list-style-type: none"> indicating appropriate value (initial request) containing a PDN_type <ul style="list-style-type: none"> indicating appropriate value (IPv4) sends an INITIAL_CONTEXT_SETUP_REQUEST (see MI_S1AP_CTX_01) <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH ACCEPT containing an EPS_attach_result containing a Spare_half_octet containing a GPRS_timer containing a TAI_list containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating an ESM DUMMY MESSAGE. 	
Comments:		

TP_NAS_MME_MAT_03	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.1.2.4 ¶ 4 (2 nd dashed line), 8.2.1 and 8.2.2	PICS item: PICS A.3/3.1 and A.4/6
Summary:	Verify that the IUT accepts a NAS ATTACH_REQUEST containing PDN CONNECTIVITY REQUEST message in the ESM message container information element to request PDN connectivity and the UE indicated support of EMM-REGISTERED without PDN connection in the UE network capability IE the IUT sends 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.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an ATTACH REQUEST containing an EPS_attach_type indicating an EPS attach containing a NAS_key_set_identifier containing an EPS_mobile_identity containing a UE_network_capability containing an ESM_message_container containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a PDN CONNECTIVITY REQUEST containing a Request_type indicating appropriate value (initial request) containing a PDN_type indicating appropriate value (IPv4)</p> <p>sends an INITIAL_CONTEXT_SETUP_REQUEST (see MI_S1AP_CTX_01) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an ATTACH ACCEPT containing an EPS_attach_result containing a Spare_half_octet containing a GPRS_timer containing a TAI_list containing an ESM_message_container containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating an ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST.</p>	
Comments:		

TP_NAS_MME_MAT_04	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.1.2.4 ¶ 5, 8.2.1 and 8.2.2	PICS item: PICS A.3/3.1 and A.4/6
Summary:	Verify that the IUT accepts a NAS ATTACH_REQUEST containing ESM DUMMY MESSAGE in the ESM message container information element to request PDN connectivity and the UE indicated support of EMM-REGISTERED without PDN connection in the UE network capability IE the IUT sends the ATTACH ACCEPT message together with an ESM DUMMY MESSAGE contained in the ESM message container information element to activate the default bearer.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT <ul style="list-style-type: none"> on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REQUEST containing an EPS_attach_type <ul style="list-style-type: none"> indicating an EPS attach containing a NAS_key_set_identifier containing an EPS_mobile_identity containing a UE_network_capability <ul style="list-style-type: none"> indicating EMM-REGISTERED without PDN connection supported containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a ESM DUMMY MESSAGE sends an INITIAL_CONTEXT_SETUP_REQUEST (see MI_S1AP_CTX_01) <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH ACCEPT containing an EPS_attach_result containing a Spare_half_octet containing a GPRS_timer containing a TAI_list containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating an ESM DUMMY MESSAGE. 	
Comments:		

TP_NAS_MME_MAT_05	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.1.2.4 (2 nd paragraph after note 4), 8.2.1 and 8.2.2	PICS item: PICS A.4/6
Summary:	Verify that the IUT accepts a NAS ATTACH_REQUEST containing Additional update type IE containing 'control plane CloT EPS optimization' then the IUT sends the ATTACH ACCEPT message with EPS network feature support IE indicating 'control plane CloT EPS optimization supported'.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01)</p> <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REQUEST containing an EPS_attach_type <ul style="list-style-type: none"> indicating an EPS attach containing a NAS_key_set_identifier containing an EPS_mobile_identity containing a UE_network_capability containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a ESM DUMMY MESSAGE containing an Additional_update_type <ul style="list-style-type: none"> indicating 'control plane CloT EPS optimization' <p>sends an INITIAL_CONTEXT_SETUP_REQUEST (see MI_S1AP_CTX_01)</p> <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH ACCEPT containing an EPS_attach_result containing a Spare_half_octet containing a GPRS_timer containing a TAI_list containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating an ESM DUMMY MESSAGE containing an EPS_network_feature_support <ul style="list-style-type: none"> indicating 'control plane CloT EPS optimization supported'. 	
Comments:		

TP_NAS_MME_MAT_06	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.1.2.4A ¶ 2, 8.2.1 and 8.2.2	PICS item: PICS A.4/6.6
Summary:	Verify that the IUT accepts the attach request for EPS services only in NB-S1 mode and after receipt of a NAS ATTACH_REQUEST containing Additional update type IE containing 'SMS only' sends the ATTACH ACCEPT message containing EPS attach result IE with value 'EPS only' and containing the Additional update result IE with value 'SMS only' and containing appropriate SMS service status value.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT <p>on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01)</p> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REQUEST containing an EPS_attach_type <ul style="list-style-type: none"> indicating an EPS attach containing a NAS_key_set_identifier containing an EPS_mobile_identity containing a UE_network_capability containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a ESM DUMMY MESSAGE containing an Additional_update_type <ul style="list-style-type: none"> indicating 'SMS only' <p>sends an INITIAL_CONTEXT_SETUP_REQUEST (see MI_S1AP_CTX_01)</p> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH ACCEPT containing an EPS_attach_result <ul style="list-style-type: none"> indicating 'EPS only' containing a Spare_half_octet containing a GPRS_timer containing a TAI_list containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating an ESM DUMMY MESSAGE containing an Additional_update_result <ul style="list-style-type: none"> indicating 'SMS only' containing a SMS_service_status. 	
Comments:		

TP_NAS_MME_MAT_07	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.1.2.5 ¶ 7 (2nd dashed list), 8.2.1, 8.2.3, 8.3.19 and 8.3.20	PICS item: PICS A.3/3.1 and A.4/6
Summary:	Verify that the IUT rejects a NAS ATTACH REQUEST in case if EMM-REGISTERED without PDN connection is not supported by the UE or the IUT and PDN CONNECTIVITY REQUEST is included in the request then the IUT sends a NAS ATTACH REJECT message with a PDN CONNECTIVITY REJECT message contained in the ESM message container IE. EMM cause IE is set to 'ESM failure' or 'No suitable cells in tracking area'.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT <ul style="list-style-type: none"> on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REQUEST containing an EPS_attach_type <ul style="list-style-type: none"> indicating an EPS attach containing a NAS_key_set_identifier containing an EPS_mobile_identity containing a UE_network_capability <ul style="list-style-type: none"> indicating EMM-REGISTERED without PDN connection not supported containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a PDN CONNECTIVITY REQUEST containing a Request_type <ul style="list-style-type: none"> indicating appropriate value (initial request) containing a PDN_type <ul style="list-style-type: none"> indicating appropriate value (IPv4) sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing a Security_header_type containing a Message_type <ul style="list-style-type: none"> indicating an ATTACH REJECT containing an EMM_cause <ul style="list-style-type: none"> indicating cause #19 'ESM failure' or indicating cause #15 'No suitable cells in tracking area' containing an ESM_message_container <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a PDN CONNECTIVITY REJECT containing an ESM_cause <ul style="list-style-type: none"> indicating appropriate value. 	
Comments:		

5.2.2.2.7 Detach group

TP_NAS_MME_MDE_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.2.2.2 ¶ 1, 5.5.2.2.3 ¶ 1 and 8.2.11.1	PICS item: PICS A.4/7.1
Summary:	Verify that the IUT accepts a NAS DETACH_REQUEST with Switch off bit set to 'normal detach' and sends the DETACH ACCEPT message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an DETACH REQUEST containing a Detach_type containing a Switch_off bit indicating 'normal detach' containing a Type_of_detach indicating value from the Table 3 containing a NAS_key_set_identifier containing a EPS_mobile_identity</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a DETACH ACCEPT.</p>	
Comments:		

Table 3: Type_of_detach

Test purpose variants	Type_of_detach:
VA_01	EPS detach
VA_02	IMSI detach
VA_03	Combined EPS/IMSI detach

TP_NAS_MME_MDE_02	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.2.2.2 ¶ 1, 5.5.2.2.3 ¶ 1 and 8.2.11.1	PICS item: PICS A.4/7.1
Summary:	Verify that the IUT accepts a NAS DETACH_REQUEST with Switch_off bit set to 'switch off' and does not send the DETACH ACCEPT message.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an DETACH REQUEST containing a Detach_type containing a Switch_off bit indicating 'switch off' containing a Type_of_detach indicating value from the Table 3 containing a NAS_key_set_identifier containing a EPS_mobile_identity does not send a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a DETACH ACCEPT .	
Comments:		

TP_NAS_MME_MDE_03	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.2.3 and 8.2.11.2	PICS item: PICS A.4/7.2
Summary:	Verify that the IUT can send a DETACH REQUEST message with all mandatory IEs to indicate network initiated detach procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate network initiated detach procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a DETACH REQUEST containing a Detach_type containing a Spare_half_octet.	
Comments:		

5.2.2.2.8 Tracking area updating group

TP_NAS_MME_MTA_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.3.2.4 ¶ 1 and 8.2.26	PICS item: PICS A.4/8
Summary:	Verify that the IUT accepts a NAS TRACKING AREA UPDATE REQUEST and sends the TRACKING AREA UPDATE ACCEPT message.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a TRACKING AREA UPDATE REQUEST containing an EPS_update_type containing a NAS_key_set_identifier containing an EPS_mobile_identity sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a TRACKING AREA UPDATE ACCEPT containing an EPS_update_result containing a Spare_half_octet.	
Comments:		

TP_NAS_MME_MTA_02	Standards Reference: ETSI TS 124 301 [1], clauses 5.5.3.2.5 and 8.2.28	PICS item: PICS A.4/8
Summary:	Verify that the IUT does not accept a NAS TRACKING AREA UPDATE REQUEST and sends the TRACKING AREA UPDATE REJECT message.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a TRACKING AREA UPDATE REQUEST containing an EPS_update_type containing a NAS_key_set_identifier containing an EPS_mobile_identity sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a TRACKING AREA UPDATE REJECT containing an EMM_cause.	
Comments:		

5.2.2.2.9 Service request group

TP_NAS_MME_MSR_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.1.5, 8.2.24 and 8.2.25	PICS item: PICS A.4/9.1.1
Summary:	Verify that the IUT does not accept a SERVICE REQUEST and sends the SERVICE REJECT message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01)</p> <ul style="list-style-type: none"> containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type indicating a SERVICE REQUEST containing a KSI_and_sequence_number containing a Short_MAC <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02)</p> <ul style="list-style-type: none"> containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a SERVICE REJECT containing an EMM_cause. 	
Comments:	Preamble action: Attached procedure is exchanged.	

TP_NAS_MME_MSR_02	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.1.5, 8.2.24 and 8.2.15	PICS item: PICS A.4/9.1.2
Summary:	Verify that the IUT does not accept an EXTENDED SERVICE REQUEST and sends the SERVICE REJECT message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03)</p> <ul style="list-style-type: none"> containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an EXTENDED SERVICE REQUEST containing a Service_type containing a NAS_key_set_identifier containing a Mobile_identity <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02)</p> <ul style="list-style-type: none"> containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a SERVICE REJECT containing an EMM_cause. 	
Comments:	Preamble action: Attached procedure is exchanged and EXTENDED SERVICE REQUEST is enabled.	

TP_NAS_MME_MSR_03	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.1.5, 8.2.24 and 8.2.33	PICS item: PICS A.4/9.1.3
Summary:	Verify that the IUT does not accept a CONTROL PLANE SERVICE REQUEST and sends the SERVICE REJECT message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a CONTROL PLANE SERVICE REQUEST containing a Control_plane_service_type containing a NAS_key_set_identifier</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a SERVICE REJECT containing an EMM_cause.</p>	
Comments:		

TP_NAS_MME_MSR_04	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.1.4.2, 8.2.33 and 8.2.34	PICS item: PICS A.4/9.1.3
Summary:	Verify that the IUT accepts a CONTROL PLANE SERVICE REQUEST with Control plane service type indicating 'mobile terminating request' and sends the SERVICE ACCEPT message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a CONTROL PLANE SERVICE REQUEST containing a Control_plane_service_type indicating 'mobile terminating request' containing a NAS_key_set_identifier</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a SERVICE ACCEPT.</p>	
Comments:		

TP_NAS_MME_MSR_05	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.1.4.2, 8.2.33 and 8.2.34	PICS item: PICS A.4/9.1.3
Summary:	Verify that the IUT accepts a CONTROL PLANE SERVICE REQUEST with Control plane service type indicating 'mobile originating request' and sends the SERVICE ACCEPT message.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT on receipt of an INITIAL_UE_MESSAGE (see MI_S1AP_NAS_01) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a CONTROL PLANE SERVICE REQUEST containing a Control_plane_service_type indicating 'mobile originating request' containing a NAS_key_set_identifier sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a SERVICE ACCEPT .	
Comments:		

5.2.2.2.10 Paging group

TP_NAS_MME_MPA_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.2.3.1 and 8.2.9	PICS item: PICS A.4/10.2
Summary:	Verify that the IUT can send a CS SERVICE NOTIFICATION message with all mandatory IEs to indicate a paging for CS fallback procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate paging procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a CS SERVICE NOTIFICATION containing a Paging_identity.	
Comments:		

5.2.2.2.11 Transport of NAS messages group

TP_NAS_MME_MTR_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.3 and 8.2.12	PICS item: PICS A.4/11
Summary:	Verify that the IUT can send a DOWNLINK NAS TRANSPORT message with all mandatory IEs to indicate transport of NAS message procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate transport of NAS message procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a DOWNLINK NAS TRANSPORT containing a NAS_message_container.	
Comments:		

5.2.2.2.12 Generic transport of NAS messages group

TP_NAS_MME_MGT_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.6.4 and 8.2.31	PICS item: PICS A.4/12
Summary:	Verify that the IUT can send a DOWNLINK GENERIC NAS TRANSPORT message with all mandatory IEs to indicate generic transport of NAS message procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate generic transport of NAS message procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating a DOWNLINK GENERIC NAS TRANSPORT containing a Generic_message_container_type containing a Generic_message_container.	
Comments:		

5.2.2.2.13 EMM STATUS

TP_NAS_MME_MES_01	Standards Reference: ETSI TS 124 301 [1], clauses 5.7 and 8.2.14	PICS item: PICS A.4/13
Summary:	Verify that the IUT can send an EMM STATUS message with all mandatory IEs to indicate error condition detected upon receipt of EMM protocol data.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate generic transport of NAS message procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing a Security_header_type containing a Message_type indicating an EMM STATUS containing an EMM_cause.	
Comments:		

5.2.2.3 Elementary procedures for EPS session management

5.2.2.3.1 Default EPS bearer context activation procedure

TP_NAS_MME_SDF_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.4.1 and 8.3.6	PICS item: PICS A.5/1
Summary:	Verify that the IUT can send an ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message with all mandatory IEs to indicate the default bearer context activation procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate the default bearer context activation procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating an ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST containing an EPS_quality_of_service containing an Access_point_name containing a PDN_address.	
Comments:		

5.2.2.3.2 Dedicated EPS bearer context activation procedure

TP_NAS_MME_SDE_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.4.2 and 8.3.3	PICS item: PICS A.5/2
Summary:	Verify that the IUT can send an ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST message with all mandatory IEs to indicate the dedicated bearer context activation procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate the dedicated bearer context activation procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating an ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST containing a Linked_EPS_bearer_identity containing a Spare_half_octet containing an EPS_quality_of_service containing a Traffic_flow_template.	
Comments:		

5.2.2.3.3 EPS bearer context modification procedure

TP_NAS_MME_SCM_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.4.3 and 8.3.18	PICS item: PICS A.5/3
Summary:	Verify that the IUT can send a MODIFY EPS BEARER CONTEXT REQUEST message with all mandatory IEs to indicate the EPS bearer context modification procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate the EPS bearer context modification procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a MODIFY EPS BEARER CONTEXT REQUEST .	
Comments:		

5.2.2.3.4 EPS bearer context deactivation procedure

TP_NAS_MME_SCD_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.4.4 and 8.3.12	PICS item: PICS A.5/4
Summary:	Verify that the IUT can send a DEACTIVATE EPS BEARER CONTEXT REQUEST message with all mandatory IEs to indicate the EPS bearer context deactivation procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate the EPS bearer context deactivation procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a DEACTIVATE EPS BEARER CONTEXT REQUEST containing an ESM_cause.	
Comments:		

5.2.2.3.5 UE requested PDN connectivity procedure

TP_NAS_MME_SPC_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.1, 6.5.1.3, 8.3.20 and 8.3.6	PICS item: PICS A.5/5
Summary:	Verify that the IUT accepts a PDN CONNECTIVITY REQUEST and sends the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a PDN CONNECTIVITY REQUEST containing a PDN_type</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating an ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST containing an EPS_quality_of_service containing an Access_point_name containing a PDN_address.</p>	
Comments:		

TP_NAS_MME_SPC_02	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.1, 6.5.1.4, 8.3.19 and 8.3.20	PICS item: PICS A.5/5
Summary:	Verify that the IUT cannot accept a PDN CONNECTIVITY REQUEST due to unknown PDN type value and sends the PDN CONNECTIVITY REJECT message with appropriate ESM cause value.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a PDN CONNECTIVITY REQUEST containing a PDN_type indicating unknown value</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a PDN CONNECTIVITY REJECT containing an ESM_cause indicating 'unknown PDN type' with #28.</p>	
Comments:		

5.2.2.3.6 UE requested PDN disconnect procedure

TP_NAS_MME_SPD_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.2, 6.5.2.3, 8.3.22 and 8.3.12	PICS item: PICS A.5/6
Summary:	Verify that the IUT accepts a PDN DISCONNECT REQUEST and sends the DEACTIVATE EPS BEARER CONTEXT REQUEST message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a PDN DISCONNECT REQUEST containing a Linked_EPS_bearer_identity indicating linked value containing a Spare_half_octet</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a DEACTIVATE EPS BEARER CONTEXT REQUEST containing an ESM_cause indicating appropriate ESM cause value.</p>	
Comments:		

TP_NAS_MME_SPD_02	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.2, 6.5.2.4, 8.3.21 and 8.3.22	PICS item: PICS A.5/6
Summary:	Verify that the IUT cannot accept a PDN DISCONNECT REQUEST due to unknown PDN type value and sends the PDN DISCONNECT REJECT message with appropriate ESM cause value.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a PDN DISCONNECT REQUEST containing a Linked_EPS_bearer_identity indicating invalid value containing a Spare_half_octet</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a PDN DISCONNECT REJECT containing an ESM_cause indicating 'invalid EPS bearer identity' with #43.</p>	
Comments:		

5.2.2.3.7 UE requested bearer resource allocation procedure

TP_NAS_MME_SRA_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.3, 6.5.3.3, 8.3.8, 8.3.3 and 8.3.18	PICS item: PICS A.5/7
Summary:	Verify that the IUT accepts a BEARER RESOURCE ALLOCATION REQUEST and sends the ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST or MODIFY EPS BEARER CONTEXT REQUEST message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03)</p> <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a BEARER RESOURCE ALLOCATION REQUEST containing a Linked_EPS_bearer_identity <ul style="list-style-type: none"> indicating linked value containing a Spare_half_octet containing a Traffic_flow_aggregate_description <ul style="list-style-type: none"> containing a length_indicator <ul style="list-style-type: none"> indicating value '1' containing a TFT_operation_code <ul style="list-style-type: none"> indicating value '000' containing a E_bit <ul style="list-style-type: none"> indicating value '0' containing a number_of_packet_filters <ul style="list-style-type: none"> indicating zero containing an EPS_quality_of_service <ul style="list-style-type: none"> containing a length_indicator <ul style="list-style-type: none"> indicating value '1' containing a QCI <ul style="list-style-type: none"> indicating zero <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02)</p> <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating an ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST containing a Linked_EPS_bearer_identity containing a Spare_half_octet containing an EPS_quality_of_service containing a Traffic_flow_template <p>or</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02)</p> <ul style="list-style-type: none"> containing a NAS-PDU <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a MODIFY EPS BEARER CONTEXT REQUEST. 	
Comments:		

TP_NAS_MME_SRA_02	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.3, 6.5.3.4, 8.3.7 and 8.3.8	PICS item: PICS A.5/7
Summary:	Verify that the IUT cannot accept a BEARER RESOURCE ALLOCATION REQUEST due to unknown PDN type value and sends the BEARER RESOURCE ALLOCATION REJECT message with appropriate ESM cause value.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a BEARER RESOURCE ALLOCATION REQUEST containing a Linked_EPS_bearer_identity indicating invalid value containing a Spare_half_octet containing a Traffic_flow_aggregate_description containing a length_indicator indicating value '1' containing a TFT_operation_code indicating value '000' containing a E_bit indicating value '0' containing a number_of_packet_filters indicating zero containing an EPS_quality_of_service containing a length_indicator indicating value '1' containing a QCI indicating zero sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a BEARER RESOURCE ALLOCATION REJECT containing an ESM_cause indicating 'invalid EPS bearer identity' with #43.	
Comments:		

5.2.2.3.8 UE requested bearer resource modification procedure

TP_NAS_MME_SRM_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.4, 6.5.4.3, 8.3.10, 8.3.12, 8.3.3 and 8.3.18	PICS item: PICS A.5/8
Summary:	Verify that the IUT accepts a BEARER RESOURCE MODIFICATION REQUEST and sends the ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST or MODIFY EPS BEARER CONTEXT REQUEST or DEACTIVATE EPS BEARER CONTEXT REQUEST message.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU</p> <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a BEARER RESOURCE MODIFICATION REQUEST containing a Linked_EPS_bearer_identity <ul style="list-style-type: none"> indicating linked value containing a Spare_half_octet containing a Traffic_flow_aggregate_description <ul style="list-style-type: none"> containing a length_indicator <ul style="list-style-type: none"> indicating value '1' containing a TFT_operation_code <ul style="list-style-type: none"> indicating value '000' containing a E_bit <ul style="list-style-type: none"> indicating value '0' containing a number_of_packet_filters <ul style="list-style-type: none"> indicating zero <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) or containing a NAS-PDU</p> <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating an ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST containing a Linked_EPS_bearer_identity containing a Spare_half_octet containing an EPS_quality_of_service containing a Traffic_flow_template <p>or</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) or containing a NAS-PDU</p> <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a MODIFY EPS BEARER CONTEXT REQUEST <p>or</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) or containing a NAS-PDU</p> <ul style="list-style-type: none"> containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type <ul style="list-style-type: none"> indicating a DEACTIVATE EPS BEARER CONTEXT REQUEST containing an ESM_cause <ul style="list-style-type: none"> indicating appropriate ESM cause value. 	
Comments:		

TP_NAS_MME_SRM_02	Standards Reference: ETSI TS 124 301 [1], clauses 6.5.4, 6.5.4.4, 8.3.9 and 8.3.10	PICS item: PICS A.5/8
Summary:	Verify that the IUT cannot accept a BEARER RESOURCE MODIFICATION REQUEST due to unknown PDN type value and sends the BEARER RESOURCE MODIFICATION REJECT message with appropriate ESM cause value.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a BEARER RESOURCE MODIFICATION REQUEST containing a Linked_EPS_bearer_identity indicating invalid value containing a Spare_half_octet containing a Traffic_flow_aggregate_description containing a length_indicator indicating value '1' containing a TFT_operation_code indicating value '000' containing a E_bit indicating value '0' containing a number_of_packet_filters indicating zero</p> <p>sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a BEARER RESOURCE MODIFICATION REJECT containing an ESM_cause indicating 'invalid EPS bearer identity' with #43.</p>	
Comments:		

5.2.2.3.9 ESM information request procedure

TP_NAS_MME_SEI_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.6.1, 6.6.1.2 and 8.3.13	PICS item: PICS A.5/9
Summary:	Verify that the IUT can send an ESM INFORMATION REQUEST message with all mandatory IEs to indicate an ESM information request procedure.	
Configuration:	CF_S1-MME	
Test purpose:	<p>Ensure that the IUT</p> <p>to indicate ESM information request procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating an ESM INFORMATION REQUEST.</p>	
Comments:		

5.2.2.3.10 Notification procedure

TP_NAS_MME_SNO_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.6.2, 6.6.2.2 and 8.3.18A	PICS item: PICS A.5/10
Summary:	Verify that the IUT can send a NOTIFICATION message with all mandatory IEs to indicate a notification procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate notification procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a NOTIFICATION containing a Notification_indicator.	
Comments:		

5.2.2.3.11 Remote UE Report procedure

TP_NAS_MME_SRR_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.6.3, 6.6.3.2, 8.3.23 and 6.3.24	PICS item: PICS A.5/11
Summary:	Verify that the IUT accepts a REMOTE UE REPORT and sends the REMOTE UE REPORT RESPONSE message.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT on receipt of an UPLINK_NAS_TRANSPORT (see MI_S1AP_NAS_03) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a REMOTE UE REPORT sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) or containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a REMOTE UE REPORT RESPONSE .	
Comments:		

5.2.2.3.12 Transport of user data via the control plane procedure

TP_NAS_MME_STU_01	Standards Reference: ETSI TS 124 301 [1], clauses 6.6.4, 6.6.4.2 and 8.3.25	PICS item: PICS A.5/12
Summary:	Verify that the IUT can send an ESM DATA TRANSPORT message with all mandatory IEs to indicate a transport of user data via the control plane procedure.	
Configuration:	CF_S1-MME	
Test purpose:	Ensure that the IUT to indicate transport of user data via the control plane procedure, sends a DOWNLINK_NAS_TRANSPORT (see MI_S1AP_NAS_02) containing a NAS-PDU containing a Protocol_discriminator containing an EPS_bearer_identity containing a Procedure_transaction_identity containing a Message_type indicating a ESM DATA TRANSPORT containing a User_data_container.	
Comments:		

5.2.3 S1-MME Messages

5.2.3.1 General overview

S1AP messages carry NAS message content between eNB and MME. Following S1AP messages are used within clause 5.2.2.

NOTE: NAS-PDU content of the S1AP messages is described in detail in clause 5.2.2. This note is common for all following S1AP Messages.

5.2.3.2 E-RAB procedure

MI_S1AP_RAB_01	Standards Reference: ETSI TS 136 413 [6], clauses 8.2.1 and 9.1.3.1	
Summary:	The IUT is able to send an E-RAB_SETUP_REQUEST to indicate an E-RAB Setup procedure.	
Configuration:	CF_S1-MME	
S1AP message:	Ensure that the IUT sends an E-RAB_SETUP_REQUEST containing an MME_UE_S1AP_ID containing an eNB_UE_S1AP_ID containing an E-RAB_to_be_Setup_List containing an E-RAB_to_be_Setup Item 1 containing an E-RAB_ID containing an E-RAB_Level_QoS_Parameters containing QCI indicating value 5 containing a Transport_Layer_Address containing a GTP-TEID containing a NAS-PDU (see note).	
Comments:		

5.2.3.3 Initial context procedure

MI_S1AP_CTX_01	Standards Reference: ETSI TS 136 413 [6], clauses 8.3.1 and 9.1.4.1	
Summary:	The IUT is able to send an INITIAL_CONTEXT_SETUP_REQUEST to indicate an Initial context setup procedure.	
Configuration:	CF_S1-MME	
S1AP message:	Ensure that the IUT sends an INITIAL_CONTEXT_SETUP_REQUEST containing an MME_UE_S1AP_ID containing an eNB_UE_S1AP_ID containing a UE_Aggregate_Maximum_Bit_Rate containing an E-RAB_to_be_Setup_List containing an E-RAB_to_be_Setup Item 1 containing an E-RAB_ID containing an E-RAB_Level_QoS_Parameters containing QCI indicating value 5 containing a Transport_Layer_Address containing a GTP-TEID containing a NAS-PDU (see note) containing a UE_Security_Capabilities containing a Security_Key.	
Comments:		

MI_S1AP_CTX_02	Standards Reference: ETSI TS 136 413 [6], clauses 8.3.1 and 9.1.4.2	
Summary:	The IUT is able to receive an INITIAL_CONTEXT_SETUP_RESPONSE to indicate an Initial context setup procedure.	
Configuration:	CF_S1-MME	
S1AP message:	Ensure that the IUT receives an INITIAL_CONTEXT_SETUP_RESPONSE containing an MME_UE_S1AP_ID containing an eNB_UE_S1AP_ID containing an E-RAB_Failed_to_Setup_List containing an E-RAB_List Item 1 containing an E-RAB_ID containing a Cause indicating an appropriate cause value.	
Comments:	This S1AP message does not contain NAS content.	

5.2.3.4 NAS transport procedure

MI_S1AP_NAS_01	Standards Reference: ETSI TS 136 413 [6], clauses 8.6.2.1 and 9.1.7.1	
Summary:	The IUT is able to receive an INITIAL_UE_MESSAGE to indicate a NAS transport procedure.	
Configuration:	CF_S1-MME	
S1AP message:	Ensure that the IUT receives an INITIAL_UE_MESSAGE containing an eNB_UE_S1AP_ID containing a NAS-PDU (see note) containing a TAI containing a PLMN_Identity containing a TAC containing an E-UTRAN_CGI containing a PLMN_Identity containing a Cell_Identity containing an RRC_Establishment_Cause.	
Comments:		

MI_S1AP_NAS_02	Standards Reference: ETSI TS 136 413 [6], clauses 8.6.2.2 and 9.1.7.2	
Summary:	The IUT is able to send a DOWNLINK_NAS_TRANSPORT to indicate a NAS transport procedure.	
Configuration:	CF_S1-MME	
S1AP message:	Ensure that the IUT sends a DOWNLINK_NAS_TRANSPORT containing an MME UE S1AP ID containing an eNB_UE_S1AP_ID containing a NAS-PDU (see note).	
Comments:		

MI_S1AP_NAS_03	Standards Reference: ETSI TS 136 413 [6], clauses 8.6.2.3 and 9.1.7.3	
Summary:	The IUT is able to receive an UPLINK_NAS_TRANSPORT to indicate a NAS transport procedure.	
Configuration:	CF_S1-MME	
S1AP message:	Ensure that the IUT receives an UPLINK_NAS_TRANSPORT containing an MME UE S1AP ID containing an eNB_UE_S1AP_ID containing a NAS-PDU (see note) containing a TAI containing a PLMN_Identity containing a TAC containing an E-UTRAN_CGI containing a PLMN_Identity containing a Cell_Identity containing an RRC_Establishment_Cause.	
Comments:		

MI_S1AP_NAS_04	Standards Reference: ETSI TS 136 413 [6], clauses 8.6.2.4 and 9.1.7.4	
Summary:	The IUT is able to receive a NAS_NON_DELIVERY_INDICATION to indicate a NAS transport procedure.	
Configuration:	CF_S1-MME	
S1AP message:	Ensure that the IUT receives a NAS_NON_DELIVERY_INDICATION containing an MME UE S1AP ID containing an eNB_UE_S1AP_ID containing a NAS-PDU (see note) containing a Cause.	
Comments:		

History

Document history		
V1.1.1	February 2018	Publication