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TECHNICAL SPECIFICATION

**Core Network and Interoperability Testing (INT);
Diameter Conformance testing for S6a interface;
(3GPP Release 10);
Part 2: Test Suite Structure (TSS) and Test Purposes (TP)**

Reference

DTS/INT-00094-2

Keywords

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ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00   Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
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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 covering the test specifications for the Diameter protocol on the S6a interface, as identified below:

Part 1:   "Protocol Implementation Conformance Statement (PICS)";

Part 2:   "Test Suite Structure (TSS) and Test Purposes (TP)";

Part 3:   "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**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).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

1 Scope

The present document provides the Test Suite Structure (TSS) and Test Purposes (TP) for the test specifications for the Diameter protocol on the S6a interface as specified in TS 129 272 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETS 300 406 [5].

2 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 reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

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

2.1 Normative references

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

[1] ETSI TS 129 272 (V10.8.0): "Universal Mobile Telecommunications System (UMTS); LTE; Evolved Packet System (EPS); Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) related interfaces based on Diameter protocol (3GPP TS 29.272 version 10.8.0 Release 10)".

[2] ETSI TS 103 261-1: "Core Network and Interoperability Testing (INT); Diameter Conformance testing for S6a interface; (3GPP Release 10); 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] IETF RFC 3588: "Diameter Base Protocol".

2.2 Informative references

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 TS 129 272 [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 TS 129 272 [1] and the following apply:

TP   Test Purpose
TSS   Test Suite Structure

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

4.1 Test Suite Structure

4.1.1 TP naming convention

TPs are numbered, starting at 001, 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"
<iut>	=	type of IUT:	MME or HSS
<scope>	=	group	UL Update Location
			CL Cancel Location
			PUE Purge UE
			ISD Insert Subscriber Data
			DSD Delete Subscriber Data
			AIR Authentication Information Retrieval
			RES Reset
			NOT Notification
<nn>	=	sequential number	(01 to 99)

4.1.2 Test strategy

As the base standard TS 129 272 [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 TS 103 261-1 [2].

4.1.3 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. This table 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\>** **\<clause number in base TS 129 272 [1] \>** **\<PICS reference\>**	see table 1 **clause 5.2.1.1.2** **A.2/3**
Summary	*Short free text description of the test objective*	Verify that the IUT can successfully process all mandatory AVPs in a UL-Request received due to IP-CAN session establishment.
Initial condition (optional)	*Free text description of the condition that the IUT has reached before the test purpose applies.*	The IUT has received AF provisions information about the AF signalling flows between UE and AF.
Start point Stimulus	Ensure that the IUT in the \<state\> *see RFC 3588 [6] clause 5.6* *and/or further actions before stimulus* *if the action is sending/receiving* *see below for message structure* \<**trigger**\>, *see below for message structure* *or* \<goal\>	Open state having sent an AA-Request on receipt of a Capabilities-Exchange-Request (see note 2) to require PCC supervision ...
Reaction	\<**action**\>. *if the action is sending* *see below for message structure* \<next action\>, *etc.*	sends, saves, does, etc.
Message structure	\<message type\> *a) containing a(n) \<avp name\> AVP* *b) indicating \<coding of the field\>* and *back to a) or b) (see note 3)*	Capabilities-Exchange-Answer, etc. (see note 2) Vendor-Id, etc.
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.	
NOTE 2:	All messages shall be considered as "valid and compatible" unless otherwise specified in the test purpose. This includes the presence of all mandatory AVPs as specified in RFC 3588 [6] and in TS 129 272 [1], clause 7.	

NOTE 3:	An AVP can be embedded into another AVP. This is expressed by indentations, e.g. if Message1 contains AVP1 and AVP2 where AVP1 has AVP3 embedded this will be expressed like this:
	sends/receives Message 1
	   containing AVP1
	      containing AVP3
	         indicating ...
	   containing AVP2
	      indicating ...	

4.2   Test Purposes

All PICS items referred to in this clause are as specified in TS 103 261-1 [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.

4.2.1   MME Role

Test Selection: IUT takes the role of the MME; PICS A.2/1

4.2.1.1 Update Location

Test Selection: IUT supports location management procedures; PICS A.3/1.

TP_MME_UL_01	Standards Reference: 5.2.1.1.1 and 7.2.3	PICS item:
Summary:	Verify that the IUT can indicate request for update location information to inform HSS about the identity of the currently serving user.	

Test purpose:	Ensure that the IUT
	    to indicate a request for update location information,
	    sends a UL-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	          indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	        containing a RAT-Type AVP
	        containing a ULR-Flags AVP
	          with S6a-indicator bit set
	        containing a Visited-PLMN-ID AVP	

Comments:		

TP_MME_UL_02	Standards Reference: 5.2.1.1.2¶4	PICS item: A.2/1.2
Summary:	Verify that the IUT due to an inter node (SGSN to MME) update sends UL-Request where "Single-Registration-Indication" shall be set.	

Test purpose:	Ensure that the IUT
	    to indicate an inter node update,
	    sends a UL-Request
	        containing a ULR-Flags AVP
	          with S6a-indicator bit set
	          with Single-Registration-Indication bit set	

Comments:		

TP_MME_UL_03	Standards Reference: 5.2.1.1.2¶5	PICS item:
Summary:	Verify that the IUT can indicate request for update location information which is sent due to an initial attach.	

Test purpose:	Ensure that the IUT
	    to indicate a request for update location information due to an initial attach,
	    sends a UL-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	          indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	        containing a RAT-Type AVP
	        containing a ULR-Flags AVP
	          with S6a-indicator bit set
	          with Initial-Attach-Indicator bit set
	        containing a Visited-PLMN-ID AVP	

Comments:		

TP_MME_UL_04	Standards Reference: 5.2.1.1.2¶6	PICS item: A.2/1.1
Summary:	Verify that the IUT, when subscriber data are already available due to previous location update, shall successfully process additional request for update location information.	

Test purpose:	Ensure that the IUT
	    sends a UL-Request and
	    on receipt of a UL-Answer
	    to indicate additional request for update location information,
	    sends a UL-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	        containing a RAT-Type AVP
	        containing a ULR-Flags AVP
	            with S6a-indicator bit set
	            with Skip-Subscriber-Data bit set
	        containing a Visited-PLMN-ID AVP	

Comments:		

TP_MME_UL_05	Standards Reference: 5.2.1.1.2¶7	PICS item: A.2/1.1 and A.3/1.1
Summary:	Verify that the IUT, that has chosen the option to include the SSGN number within ULR request shall be prepared to receive a single subscription data update message IDR from HSS when the subscription data is modified.	

Test purpose:	Ensure that the IUT
	    sends a UL-Request
	        containing a SGSN-Number AVP
	    on receipt of a UL-Answer and
	    on receipt of an ID-Request
	    sends an ID-Answer	

Comments:		

TP_MME_UL_06	Standards Reference: 5.2.1.1.2¶7	PICS item: A.2/1.1 and A.3/1.1
Summary:	Verify that the IUT, that has chosen the option to include the SSGN number within ULR request shall be prepared to receive a single subscription data update message DSR from HSS when the subscription data is modified	

Test purpose:	Ensure that the IUT
	    sends a UL-Request
	        containing a SGSN-Number AVP
	    on receipt of a UL-Answer and
	    on receipt of an DS-Request
	    sends an DS-Answer	

Comments:		

TP_MME_UL_07	Standards Reference: 5.2.1.1.2¶10	PICS item: NOT A.2/1.1
Summary:	Verify that the standalone IUT, shall not indicate its support for any SGSN specific features and shall not request explicitly the download of GPRS data	

Test purpose:	Ensure that the IUT
	    sends a UL-Request
	        containing a ULR-Flags AVP
	            with S6a-indicator bit set
	            with GPRS-Subscription-Data-Indicator bit **not** set
	            with Node-Type-Indicator bit **not** set
	        containing a Supported-Features AVP
	            not containing any SGSN specific features	

Comments:		

4.2.1.2 Cancel Location

Test Selection: IUT supports cancel location procedures; PICS A.3/2.

TP_MME_CL_01	Standards Reference: Table 5.2.1.2.1/2 and 5.2.1.2.2¶2 and 7.2.8	PICS item:
Summary:	Verify that the IUT when receiving Cancel location request shall check whether the IMSI is known and if not the IUT shall return Cancel location response with all mandatory AVP's and with appropriate result code.	

Test purpose:	Ensure that the IUT
	    on receipt of a CL-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Host AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	            indicating not known IMSI
	        containing a Cancelation-Type AVP,
	    sends a CL-Answer
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Result-Code AVP
	            indicating DIAMETER_SUCCESS	

Comments:	NOTE: In case if new and old MMEs are present also ULR and ULA shall be handled on HSS as a TS component.	

TP_MME_CL_02	Standards Reference: Table 5.2.1.2.1/2 and 5.2.1.2.2¶3 and 7.2.8	PICS item:
Summary:	Verify that the IUT when receiving Cancel location request shall check whether the IMSI is known and if cancelation type of "Initial attach procedure" is received then the IUT shall return Cancel location response with appropriate result code.	

Test purpose:	Ensure that the IUT
	    on receipt of a CL-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Host AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	            indicating known IMSI
	        containing a Cancelation-Type AVP
	            indicating INITIAL_ATTACH_PROCEDURE,
	    sends a CL-Answer
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Result-Code AVP
	            indicating DIAMETER_SUCCESS	

Comments:	NOTE: In case if new and old MMEs are present also ULR and ULA shall be handled on HSS as a TS component.	

4.2.1.3   Purge UE

Test Selection: IUT supports Purge UE procedures; PICS A.3/3.

TP_MME_PUE_01	Standards Reference: Table 5.2.1.3.1/1 and 7.2.13	PICS item:
Summary:	Verify that the IUT can indicate request for purge UE procedure	

Test purpose:	Ensure that the IUT
	    to indicate a request for purge UE procedure,
	        sends a PU-Request
	            containing a Session-ID AVP
	            containing an Auth-Session-State AVP
	                indicating NO_STATE_MAINTAINED
	            containing an Origin-Host AVP
	            containing an Origin-Realm AVP
	            containing a Destination-Realm AVP
	            containing a User-Name AVP	

Comments:		

TP_MME_PUE_02	Standards Reference: 5.2.1.3.2¶1	PICS item:
Summary:	Verify that the IUT shall make use of UE Purge procedure and set appropriate flag when the subscription profile is deleted from database or after long UE inactivity.	

Test purpose:	Ensure that the IUT
	    to indicate a request for purge UE procedure,
	        sends a PU-Request
	            containing a PUR-Flags AVP
	                with "UE Purged in MME" bit set	

Comments:		

TP_MME_PUE_03	Standards Reference: 5.2.1.3.2¶3	PICS item: A.2/1.1
Summary:	Verify that the IUT shall make use of UE Purge procedure and set appropriate flags when the subscription profile is deleted from database or after long UE inactivity on all registered accesses.	

Test purpose:	Ensure that the IUT
	    to indicate a request for purge UE procedure,
	        sends a PU-Request
	            containing a PUR-Flags AVP
	                with "UE Purged in MME" bit set
	                with "UE Purged in SGSN" bit set	

Comments:		

TP_MME_PUE_04	Standards Reference: 5.2.1.3.2¶3	PICS item: A.2/1.1 and A.4/13
Summary:	Verify that in case when HSS indicates support for Partial Purge feature IUT may also indicate a Purge of the UE in only one of the serving nodes in the combined node (either in the MME or in the SGSN)	

Test purpose:	Ensure that the IUT
	    to indicate a request for update location information,
	        sends a UL-Request
	        on receipt of a UL-Answer
	            containing a Supported-Features AVP
	                containing a Vendor-Id AVP
	                containing a Feature-List-ID AVP
	                containing a Feature-List AVP
	                    indicating Partial Purge
	        sends a PU-Request
	            containing a PUR-Flags AVP
	                either
	                with "UE Purged in MME" bit set or
	                with "UE Purged in SGSN" bit set	

Comments:		

4.2.1.4   Insert Subscriber Data

Test Selection: IUT supports subscriber data handling procedures; PICS A.3/4.

TP_MME_ISD_01	Standards Reference: Table 5.2.2.1.1/2 and 5.2.2.1.2¶4 and 7.2.10	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request shall check whether the IMSI is known and it shall return Insert Subscriber Data response with all mandatory AVP's and with appropriate result code	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	     containing a Session-ID AVP
	     containing an Auth-Session-State AVP
	       indicating NO_STATE_MAINTAINED
	     containing an Origin-Host AVP
	     containing an Origin-Realm AVP
	     containing a Destination-Host AVP
	     containing a Destination-Realm AVP
	     containing a User-Name AVP
	       indicating known IMSI
	     containing a Subscription-Data AVP,
	   sends an ID-Answer
	     containing a Session-ID AVP
	     containing an Auth-Session-State AVP
	       indicating NO_STATE_MAINTAINED
	     containing an Origin-Host AVP
	     containing an Origin-Realm AVP
	     containing a Result-Code AVP
	       indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_ISD_02	Standards Reference: 5.2.2.1.2¶1,2 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request shall check whether the IMSI is known and if not the IUT shall return Insert Subscriber Data response with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	     containing a User-Name AVP
	       indicating not known IMSI,
	   sends an ID-Answer
	     not containing a Result-Code AVP
	     containing an Experimental-Result AVP
	       containing an Experimental-Result-Code AVP
	         indicating DIAMETER_ERROR_USER_UNKNOWN	

Comments:		

TP_MME_ISD_03	Standards Reference: 5.2.2.1.2¶18	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request with IDR-Flags with "T-ADS Data Request" bit set and when UE is in attached state the IUT shall return Insert Subscriber Data response with time stamp of UE's most recent radio contact, and the associated RAT Type, and an indication of whether or not IMS Voice over PS is supported.	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing an IDR-Flags AVP
	         with T-ADS Data Request bit set,
	   sends an ID-Answer
	      containing an IMS-Voice-Over-PS-Sessions-Supported AVP
	      containing a Last-UE-Activity-Time AVP
	      containing a RAT-Type AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_ISD_04	Standards Reference: 5.2.2.1.2¶18	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request with IDR-Flags with "T-ADS Data Request" bit set and when UE is in detached state the IUT shall return Insert Subscriber Data response not including any of T_ADS IEs.	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing an IDR-Flags AVP
	         with T-ADS Data Request bit set,
	   sends an ID-Answer
	      not containing an IMS-Voice-Over-PS-Sessions-Supported AVP
	      not containing a Last-UE-Activity-Time AVP
	      not containing a RAT-Type AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_ISD_05	Standards Reference: 5.2.2.1.2¶19	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request with IDR-Flags with "EPS User State Request" bit set the IUT shall return Insert Subscriber Data response including the corresponding user information.	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing an IDR-Flags AVP
	         with EPS User State Request bit set,
	   sends an ID-Answer
	      containing an EPS-User-State AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_ISD_06	Standards Reference: 5.2.2.1.2¶19	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request with IDR-Flags with "EPS Location Information Request" bit set the IUT shall return Insert Subscriber Data response including the corresponding user information.	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing an IDR-Flags AVP
	         with EPS Location Information Request bit set,
	   sends an ID-Answer
	      containing an EPS-Location-Information AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_ISD_07	Standards Reference: 5.2.2.1.2¶19	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request with IDR-Flags with "EPS User State Request" bit set and with "EPS Location Information Request" bit set the IUT shall return Insert Subscriber Data response including the corresponding user informations.	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing an IDR-Flags AVP
	         with EPS User State Request bit set and
	         with EPS Location Information Request bit set,
	   sends an ID-Answer
	      containing an EPS-User-State AVP
	      containing an EPS-Location-Information AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_ISD_08	Standards Reference: 5.2.2.1.2¶19	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request with IDR-Flags with "EPS User State Request" bit set and with "EPS Location Information Request" bit set and with "Current Location Request" bit set and UE is in idle mode the IUT shall return Insert Subscriber Data response including the most up-to-date corresponding user information.	

Test purpose:	Ensure that the IUT
	   on receipt of an ID-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing an IDR-Flags AVP
	         with EPS User State Request bit set and
	         with EPS Location Information Request bit set
	         with Current Location Request bit set,
	   to indicate most corresponding up-to-date user information
	   sends an ID-Answer
	      containing an EPS-User-State AVP
	      containing an EPS-Location-Information AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_ISD_09	Standards Reference: 5.2.2.1.2¶19 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving an ID-Request with IDR-Flags with only "Current Location Request" bit set the IUT shall return Insert Subscriber Data response including corresponding result code.	

Test purpose:	Ensure that the IUT
	    on receipt of an ID-Request
	        containing a User-Name AVP
	          indicating known IMSI
	        containing an IDR-Flags AVP
	          with Current Location Request bit set,
	    sends an ID-Answer
	        containing a Result-Code AVP
	          indicating DIAMETER_UNABLE_TO_COMPY	

Comments:		

TP_MME_ISD_10	Standards Reference: 5.2.2.1.2¶4,5 and 7.2.9	PICS item:
Summary:	Verify that the IUT can successfully process all mandatory and optional AVPs in an ID-Request.received due to subscriber data handling procedure where information is related to the user's subscribed APN configurations for EPS.	

Test purpose:	Ensure that the IUT
	    on receipt of an ID-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	          indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Host AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	          indicating known IMSI
	        containing a Subscription-Data AVP
	          containing an APN-Configuration-Profile AVP
	            containing a Context-Identifier AVP
	            containing an All-APN-Configurations-Included-Indicator AVP
	            containing an APN-Configuration AVP
	              containing a Context-Identifier AVP
	              containing a PDN-Type AVP
	              containing an Service-Selection AVP
	              containing an MIP6-Agent-Info AVP,
	    sends an ID-Answer
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	          indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Result-Code AVP
	          indicating DIAMETER_SUCCESS	

Comments:	NOTE: PDN GW address has been statically allocated and PDN-GW-Allocation-Type AVP is not present within an APN-Configuration AVP.	

TP_MME_ISD_11	Standards Reference: 5.2.2.1.2¶9 and 7.2.9		PICS item:
Summary:	Verify that the IUT can successfully process all mandatory and optional AVPs in an ID-Request.received due to subscriber data handling procedure where information is related to the user profile relevant for GPRS.		

Test purpose:	Ensure that the IUT
	    on receipt of an ID-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Host AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	            indicating known IMSI
	        containing a Subscription-Data AVP
	            containing a GPRS-Subscription-Data AVP
	                containing a Complete-Data-List-Included-Indicator AVP
	                containing a PDP-Context AVP
	                    containing a Context-Identifier AVP
	                    containing a PDN-Type AVP
	                    containing a QoS-Subscribed AVP
	                    containing a Service-Selection AVP,
	    sends an ID-Answer
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	             indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Result-Code AVP
	            indicating DIAMETER_SUCCESS		

Comments:			

TP_MME_ISD_12	**Standards Reference:** **5.2.2.1.2¶12-17 and 7.2.9**	**PICS item:**
Summary:	Verify that the IUT can successfully process all mandatory and optional AVPs in an ID-Request.received due to subscriber data handling.	

Test purpose:	Ensure that the IUT
	    on receipt of an ID-Request
	       containing a Session-ID AVP
	       containing an Auth-Session-State AVP
	          indicating NO_STATE_MAINTAINED
	       containing an Origin-Host AVP
	       containing an Origin-Realm AVP
	       containing a Destination-Host AVP
	       containing a Destination-Realm AVP
	       containing a User-Name AVP
	          indicating known IMSI
	       containing a Subscription-Data AVP
	          containing a Operator-Determined-Barring AVP
	          containing an Access-Restriction-Data AVP
	          containing an APN-OI-Replacement AVP
	          containing an Regional-Subscription-Zone-Code AVP
	          containing a CSG-Subscription-Data AVP
	             containing a CSG-Id AVP
	          containing a Teleservice-List AVP
	             containing a TS-Code AVP
	          containing a Call-Barring-Info AVP
	             containing an SS-Code AVP
	             containing an SS-Status AVP
	          containing a LCS-Info AVP,
	    sends an ID-Answer
	       containing a Session-ID AVP
	       containing an Auth-Session-State AVP
	          indicating NO_STATE_MAINTAINED
	       containing an Origin-Host AVP
	       containing an Origin-Realm AVP
	       containing a Result-Code AVP
	          indicating DIAMETER_SUCCESS

Comments:	

4.2.1.5 Delete Subscriber Data

Test Selection: IUT supports delete subscriber data procedures; PICS A.3/5.

TP_MME_DSD_01	Standards Reference: Table 5.2.2.2.1/2 and 5.2.2.2¶5 and 7.2.12	PICS item:
Summary:	Verify that the IUT when receiving a DS-Request shall check whether the IMSI is known and if it is the IUT shall return Delete Subscriber Data response with all mandatory AVP's and with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of a DS-Request
	      containing a Session-ID AVP
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a Destination-Host AVP
	      containing a Destination-Realm AVP
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a DSR-Flags AVP,
	   sends an DS-Answer
	      containing a Session-ID AVP
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS	

Comments:		

TP_MME_DSD_02	Standards Reference: 5.2.2.2¶2 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving a DS-Request shall check whether the IMSI is known and if not the IUT shall return Delete Subscriber Data response with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of a DS-Request
	      containing a User-Name AVP
	         indicating not known IMSI,
	   sends a DS-Answer
	      not containing a Result-Code AVP
	      containing an Experimental-Result AVP
	         containing an Experimental-Result-Code AVP
	            indicating DIAMETER_ERROR_USER_UNKNOWN	

Comments:		

TP_MME_DSD_03	Standards Reference: 5.2.2.2.¶3 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving a DS-Request shall check whether the IMSI is known and if it is and Context-Identifier is associated with the default APN configuration the IUT shall return Delete Subscriber Data response with appropriate result code.	

Test purpose:	Ensure that the IUT
	    on receipt of a DS-Request
	        containing a User-Name AVP
	            indicating not known IMSI
	        containing a Context-Identifier AVP
	            indicating default APN configuration
	        containing a DSR-Flags AVP
	            with PDN-subscription-context-Withdrawal bit set,,
	    sends a DS-Answer
	        containing a Result-Code AVP
	            indicating DIAMETER_UNABLE_TO_COMPLY	

Comments:		

TP_MME_DSD_04	Standards Reference: 5.2.2.2.¶4 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving a DS-Request shall check whether the IMSI is known and in case if Complete-APN-Configuration-Profile-Withdrawal bit is set within DSR-flags then the IUT shall return Delete Subscriber Data response with appropriate result code.	

Test purpose:	Ensure that the IUT
	    on receipt of a DS-Request
	        containing a User-Name AVP
	            indicating known IMSI
	        containing a DSR-Flags AVP
	            with Complete-APN-Configuration-Profile-Withdrawal bit set,
	    sends a DS-Answer
	        containing a Result-Code AVP
	            indicating DIAMETER_UNABLE_TO_COMPLY	

Comments:		

4.2.1.6   Authentication Information Retrieval

Test Selection: IUT supports Authentication Information Retrieval procedures; PICS A.3/6.

TP_MME_AIR_01	Standards Reference: 5.2.3.1.2¶3,5 and 7.2.5	PICS item:
Summary:	Verify that the IUT can indicate request for Authentication Information Retrieval Procedure triggered by a synchronization failure during E-UTRAN authentication.	

Test purpose:	Ensure that the IUT
	    to indicate a request for Authentication Information Retrieval Procedure,
	    sends an AI-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	        containing a Visited-PLMN-ID AVP
	        containing a Requested-EUTRAN-Authentication-Info AVP
	            containing a Re-Synchronization-Info AVP
	    ifpresent containing a Requested-UTRAN-GERAN-Authentication-Info AVP
	        not containing a Re-Synchronization-Info AVP.	

Comments:		

TP_MME_AIR_02	Standards Reference: 5.2.3.1.2¶4,5 and 7.2.5	PICS item: A.2/1.1
Summary:	Verify that the IUT can indicate request for Authentication Information Retrieval Procedure triggered by a synchronization failure during UTRAN or GERAN authentication.	
Test purpose:	Ensure that the IUT 　　**to indicate** a request for Authentication Information Retrieval Procedure, 　　**sends an AI-Request** 　　　　containing a Session-ID AVP 　　　　containing an Auth-Session-State AVP 　　　　　　indicating NO_STATE_MAINTAINED 　　　　containing an Origin-Host AVP 　　　　containing an Origin-Realm AVP 　　　　containing a Destination-Realm AVP 　　　　containing a User-Name AVP 　　　　containing a Visited-PLMN-ID AVP 　　　　containing a Requested-UTRAN-GERAN-Authentication-Info AVP 　　　　　　containing a Re-Synchronization-Info AVP 　　　　**ifpresent** containing a Requested-EUTRAN-Authentication-Info AVP 　　　　　　**not** containing a Re-Synchronization-Info AVP.	
Comments:		

TP_MME_AIR_03	Standards Reference: 5.2.3.1.2¶8 and 7.2.5	PICS item: A.2/1.1 and A.3/6.2
Summary:	Verify that the IUT may indicate request for Authentication Information Retrieval Procedure with the Requested-UTRAN-GERAN-Authentication-Info AVP and the Requested-EUTRAN-Authentication-Info then the Immediate-Response-Preferred AVP shall not be present in both.	
Test purpose:	Ensure that the IUT 　　**to indicate** a request for Authentication Information Retrieval Procedure, 　　**sends an AI-Request** 　　　　containing a Session-ID AVP 　　　　containing an Auth-Session-State AVP 　　　　　　indicating NO_STATE_MAINTAINED 　　　　containing an Origin-Host AVP 　　　　containing an Origin-Realm AVP 　　　　containing a Destination-Realm AVP 　　　　containing a User-Name AVP 　　　　containing a Visited-PLMN-ID AVP 　　　　((containing a Requested-UTRAN-GERAN-Authentication-Info AVP and 　　　　containing a Requested-EUTRAN-Authentication-Info AVP) 　　　　　　containing an Immediate-Response-Preferred AVP **only in one of above AVPs**).	
Comments:		

4.2.1.7   Reset

Test Selection: IUT supports Reset procedures; PICS A.3/7.

TP_MME_RES_01	Standards Reference: Table 5.2.4.1.1/2 and 5.2.4.1.2 and 7.2.16	PICS item:
Summary:	Verify that the IUT when receiving a RS-Request shall return RS-Answer with all mandatory AVP's and with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of an RS-Request
	     containing a Session-ID AVP
	     containing an Auth-Session-State AVP
	       indicating NO_STATE_MAINTAINED
	     containing an Origin-Host AVP
	     containing an Origin-Realm AVP
	     containing a Destination-Host AVP
	     containing a Destination-Realm AVP,
	   sends an RS-Answer
	     containing a Session-ID AVP
	     containing an Auth-Session-State AVP
	       indicating NO_STATE_MAINTAINED
	     containing an Origin-Host AVP
	     containing an Origin-Realm AVP
	     containing a Result-Code AVP
	       indicating DIAMETER_SUCCESS	

Comments:		

4.2.1.8   Notification

Test Selection: IUT supports Notification procedures; PICS A.3/8.

TP_MME_NOT_01	Standards Reference: Table 5.2.5.1.1/1 and 5.2.5.1.2 and 7.2.17	PICS item:
Summary:	Verify that the IUT shall not support Emergency services and therefore can indicate request for Notification Procedure.	

Test purpose:	Ensure that the IUT
	   to indicate a request for Notification Procedure,
	   sends an NO-Request
	     containing a Session-ID AVP
	     containing an Auth-Session-State AVP
	       indicating NO_STATE_MAINTAINED
	     containing an Origin-Host AVP
	     containing an Origin-Realm AVP
	     containing a Destination-Realm AVP
	     containing a User-Name AVP.	

Comments:		

4.2.2   HSS Role

Test Selection: IUT takes the role of the HSS; PICS A.2.2.

4.2.2.1   Update Location

Test Selection: IUT supports Management Location procedures; PICS A.5/1.

TP_HSS_UL_01	Standards Reference: **Table 5.2.1.1.1/2 and 5.2.1.1.3¶26 and 7.2.4**	PICS item:
Summary:	Verify that the IUT can successfully process all mandatory AVPs in a UL-Request.received due to Update Location procedure.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	        containing a RAT-Type AVP
	        containing a ULR-Flags AVP
	            with S6a-indicator bit set
	        containing a Visited-PLMN-ID AVP,
	    sends a UL-Answer
	        containing a Session-ID AVP
	        containing a Result-Code AVP
	            indicating DIAMETER_SUCCESS
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a ULA-Flags AVP
	            with Separation-indicator bit set
	        containing a Subscription-Data AVP.	

Comments:		

TP_HSS_UL_02	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.2¶8,9 and 5.2.1.1.3¶26 and 7.2.4	PICS item:
Summary:	Verify that the IUT can successfully process all mandatory and optional AVPs in a UL-Request.received due to Update Location procedure.	

Test purpose:	Ensure that the IUT
	   on receipt of a UL-Request
	      containing a Session-ID AVP
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a Destination-Realm AVP
	      containing a User-Name AVP
	      containing a RAT-Type AVP
	      containing a ULR-Flags AVP
	         with S6a-indicator bit set
	      containing a Visited-PLMN-ID AVP
	      containing a Homogeneous-Support-of-IMS-Voice-Over-PS-Sessions AVP
	      containing an Active-APN AVP
	         containing a Context-Identifier AVP
	         containing Service-Selection AVP
	         containing MIP6-Agent-Info AVP
	         containing Visited-Network-Identifier AVP,
	   sends a UL-Answer
	      containing a Session-ID AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a ULA-Flags AVP
	         with Separation-indicator bit set
	      containing a Subscription-Data AVP.	

Comments:		

TP_HSS_UL_03	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶1,2 and 7.4.3	PICS item:
Summary:	Verify that the IUT shall check whether subscription data exists for IMSI and if not IUT shall return appropriate Result-Code AVP.	

Test purpose:	Ensure that the IUT
	   on receipt of a UL-Request
	      containing a User-Name AVP
	         indicating not existing IMSI,
	   sends a UL-Answer
	      not containing a Result-Code AVP
	      containing an Experimental-Result AVP
	         containing an Experimental-Result-Code AVP
	            indicating DIAMETER_ERROR_USER_UNKNOWN
	      not containing a ULA-Flags AVP
	      not containing a Subscription-Data AVP.	

Comments:		

TP_HSS_UL_04	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶3 and 7.4.3	PICS item:
Summary:	Verify that the IUT in case if subscriber has not any APN configuration shall return appropriate Result-Code AVP.	

Test purpose:	Ensure that the IUT
	   on receipt of a UL-Request,
	   sends a UL-Answer
	     not containing a Result-Code AVP
	     containing an Experimental-Result AVP
	       containing an Experimental-Result-Code AVP
	         indicating DIAMETER_ERROR_UNKNOWN_EPS_SUBSCRIPTION
	     not containing a ULA-Flags AVP
	     not containing a Subscription-Data AVP.	

Comments:		

TP_HSS_UL_05	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶5 and 7.4.3	PICS item: A.5/1.1
Summary:	Verify that the IUT in case if subscriber has not any APN configuration shall return appropriate Result-Code AVP.	

Test purpose:	Ensure that the IUT
	   on receipt of a UL-Request,
	   sends a UL-Answer
	     not containing a Result-Code AVP
	     containing an Experimental-Result AVP
	       containing an Experimental-Result-Code AVP
	         indicating DIAMETER_ERROR_UNKNOWN_EPS_SUBSCRIPTION
	     containing an Error-Diagnostic AVP
	     not containing a ULA-Flags AVP
	     not containing a Subscription-Data AVP.	

Comments:		

TP_HSS_UL_06	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶6 and 7.4.3	PICS item:
Summary:	Verify that the IUT in case if the RAT Type the UE is using is not allowed shall return appropriate Result-Code AVP.	

Test purpose:	Ensure that the IUT
	   on receipt of a UL-Request,
	     containing a RAT-Type AVP
	       indicating different value then UE using it
	   sends a UL-Answer
	     not containing a Result-Code AVP
	     containing an Experimental-Result AVP
	       containing an Experimental-Result-Code AVP
	         indicating DIAMETER_ERROR_RAT_NOT_ALLOWED
	     not containing a ULA-Flags AVP
	     not containing a Subscription-Data AVP.	

Comments:		

TP_HSS_UL_07	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶7 and 7.4.3	PICS item: A.5/1.2
Summary:	Verify that the IUT in case if roaming is not allowed in the VPLMN due to ODB shall return appropriate Result-Code AVP.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request,
	    sends a UL-Answer
	        not containing a Result-Code AVP
	        containing an Experimental-Result AVP
	            containing an Experimental-Result-Code AVP
	                indicating DIAMETER_ERROR_ROAMING_NOT_ALLOWED
	        not containing a ULA-Flags AVP
	        not containing a Subscription-Data AVP.	

Comments:		

TP_HSS_UL_08	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶8	PICS item:
Summary:	Verify that the IUT when UL Request is received over S6a shall send CL Request to the previous old MME.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request from new MME,
	    sends a CL-Request to previous MME
	        containing a Cancellation-Type AVP
	            indicating MME_UPDATE_PROCEDURE
	    on receipt of a CL-Answer from previous MME
	    sends a UL-Answer to new MME	

Comments:	NOTE: 2 MME will be involved as test components.	

TP_HSS_UL_09	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶8	PICS item:
Summary:	Verify that the IUT when UL Request is received over S6a shall send CL Request to the previous old SGSN	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request from new MME
	        containing a ULR-Flags AVP
	            with Single-Registration-Indication bit set,
	    sends a CL-Request to previous SGSN
	        containing a Cancellation-Type AVP
	            indicating SGSN_UPDATE_PROCEDURE
	    on receipt of a CL-Answer from previous SGSN
	    sends a UL-Answer to new MME	

Comments:	NOTE: MME and old SGSN will be involved as test components.	

TP_HSS_UL_10	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶8	PICS item:
Summary:	Verify that the IUT when UL Request is received over S6a shall send CL Request to the previous old SGSN.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request from new MME
	        containing a ULR-Flags AVP
	            with Initial-Attach-Indicator bit set,
	    sends a CL-Request to previous SGSN
	        containing a Cancellation-Type AVP
	            indicating INITIAL_ATTACH_PROCEDURE
	    on receipt of a CL-Answer from previous SGSN
	    sends a UL-Answer to new MME	

Comments:	NOTE: MME and old SGSN will be involved as test components.	

TP_HSS_UL_11	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶8	PICS item:
Summary:	Verify that the IUT when UL Request is received over S6a shall send CL Request to the previous old SGSN.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request from new MME
	        containing a ULR-Flags AVP
	            with Single-Registration-Indication bit set
	            with Initial-Attach-Indicator bit set,
	    sends a CL-Request to previous SGSN
	        containing a Cancellation-Type AVP
	            indicating INITIAL_ATTACH_PROCEDURE
	    on receipt of a CL-Answer from previous SGSN
	    sends a UL-Answer to new MME	

Comments:	NOTE: MME and old SGSN will be involved as test components.	

TP_HSS_UL_12	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶15,23,24 and 7.3.34 and 7.3.35	PICS item:
Summary:	Verify that the IUT can successfully process all required AVPs in a UL-Answer when the APN-Configuration-Profile AVP is present in the Subscription-Data AVP.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request,
	    sends a UL-Answer
	        containing a Subscription-Data AVP
	            containing an APN-Configuration-Profile AVP
	                containing a Context-Identifier AVP
	                containing an All-APN-Configurations-Included-Indicator AVP
	                containing an APN-Configuration AVP
	                    containing a Context-Identifier AVP
	                    containing a PDN-Type AVP
	                    containing a Service-Selection AVP
	                    containing EPS-Subscribed-QoS Profile AVP
	                    containing an AMBR AVP
	                    not containing a Specific-APN-Info AVP
	            containing an AMBR AVP.	

Comments:		

TP_HSS_UL_13	Standards Reference: Table 5.2.1.1.1/2 and 5.2.1.1.3¶21	PICS item:
Summary:	Verify that the IUT can successfully process all required AVPs in a UL-Answer when the Subscription-Status AVP is present in the Subscription-Data AVP.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request,
	    sends a UL-Answer
	        containing a Subscription-Data AVP
	            containing a Subscription-Status AVP
	                indicating OPERATOR_DETERMINED_BARRING
	            (containing an Operator-Determined-Barring AVP or
	            containing an HPLMN-ODB AVP)	

Comments:		

4.2.2.2   Cancel Location

Test Selection: IUT supports Cancel Location procedures; PICS A.5/2.

NOTE: ULR should be sent from MME before Cancel procedure is required.

TP_HSS_CL_01	Standards Reference: 5.2.1.2.1¶1(1st dashed line) and Table 5.2.1.2.1/1 and 5.2.1.2.3¶2 and 7.2.7	PICS item: A.5/2
Summary:	Verify that the IUT can successfully initiate all mandatory AVPs in a CL-Request due to Cancel Location procedure to inform MME about subscriber's subscription withdrawal.	

Test purpose:	Ensure that the IUT
	    to indicate a request for cancel location procedure to inform MME about subscriber's subscription withdrawal,
	        sends a CL-Request
	            containing a Session-ID AVP
	            containing an Auth-Session-State AVP
	                indicating NO_STATE_MAINTAINED
	            containing an Origin-Host AVP
	            containing an Origin-Realm AVP
	            containing a Destination-Realm AVP
	            containing a User-Name AVP
	            containing a Cancelation-Type AVP
	                indicating SUBSCRIPTION_WITHDRAWAL.	

Comments:	NOTE: 2 MME could be involved as test components.	

TP_HSS_CL_02	Standards Reference: 5.2.1.2.1¶1(2nd dashed line) and Table 5.2.1.2.1/1 and 5.2.1.2.3¶2 and 7.2.7	PICS item: A.5/2
Summary:	Verify that the IUT can successfully initiate all mandatory AVPs in a CL-Request due to Cancel Location procedure to inform MME about an ongoing update procedure.	

Test purpose:	Ensure that the IUT
	    to indicate a request for cancel location procedure to inform MME about an ongoing update procedure,
	        sends a CL-Request
	            containing a Session-ID AVP
	            containing an Auth-Session-State AVP
	                indicating NO_STATE_MAINTAINED
	            containing an Origin-Host AVP
	            containing an Origin-Realm AVP
	            containing a Destination-Realm AVP
	            containing a User-Name AVP
	            containing a Cancelation-Type AVP
	                indicating MME_UPDATE_PROCEDURE.	

Comments:	NOTE: 2 MME could be involved as test components.	

TP_HSS_CL_03	**Standards Reference:** **5.2.1.2.1¶1(3rd dashed line) and Table** **5.2.1.2.1/1 and 5.2.1.2.3¶2 and 7.2.7**	**PICS item:** **A.5/2**
Summary:	Verify that the IUT can successfully initiate all mandatory AVPs in a CL-Request due to Cancel Location procedure to inform MME about an initial attach procedure.	

Test purpose:	Ensure that the IUT
	   to indicate a request for cancel location procedure to inform MME about an initial attach procedure,
	   sends a CL-Request
	      containing a Session-ID AVP
	      containing an Auth-Session-State AVP
	        indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a Destination-Realm AVP
	      containing a User-Name AVP
	      containing a Cancelation-Type AVP
	        indicating INITIAL_ATTACH_PROCEDURE.	

Comments:	NOTE: 2 MME could be involved as test components.	

TP_HSS_CL_04	**Standards Reference:** **5.2.1.2.1¶1 and Table 5.2.1.2.1/1 and** **5.2.1.2.3¶2 and 7.2.7**	**PICS item:** **A.5/2**
Summary:	Verify that the IUT can successfully initiate all mandatory AVPs in a CL-Request due to Cancel Location procedure and IUT sends CLR to combined MME/SGSN during initial attach procedure.	

Test purpose:	Ensure that the IUT
	   to indicate a request for cancel location procedure which has to be sent to combined MME/SGSN during initial attach procedure,
	   sends a CL-Request
	      containing a Session-ID AVP
	      containing an Auth-Session-State AVP
	        indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a Destination-Realm AVP
	      containing a User-Name AVP
	      containing a Cancelation-Type AVP
	        indicating INITIAL_ATTACH_PROCEDURE
	      containing a CLR-Flags AVP
	        with S6a-indicator bit set.	

Comments:	NOTE: One combined MME/SGSN involved as test components.	

4.2.2.3   Purge UE

Test Selection: IUT supports Purge UE procedures; PICS A.5/3.

TP_HSS_PUE_01	Standards Reference: Table 5.2.1.3.1/2 and 7.2.14	PICS item:
Summary:	Verify that the IUT can successfully process all mandatory and optional AVPs in a PU-Request.received due to purge UE procedure.	

Test purpose:	Ensure that the IUT
	on receipt of a PU-Request
	    containing a Session-ID AVP
	    containing an Auth-Session-State AVP
	        indicating NO_STATE_MAINTAINED
	    containing an Origin-Host AVP
	    containing an Origin-Realm AVP
	    containing a Destination-Realm AVP
	    containing a User-Name AVP,
	sends a PU-Answer
	    containing a Session-ID AVP
	    containing a Result-Code AVP
	        indicating DIAMETER_SUCCESS
	    containing an Auth-Session-State AVP
	        indicating NO_STATE_MAINTAINED
	    containing an Origin-Host AVP
	    containing an Origin-Realm AVP.	

Comments:		

TP_HSS_PUE_02	Standards Reference: 5.2.1.3.3¶1,2 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving PU-Request shall check whether the IMSI is known and if not the IUT shall return PU-Answer with appropriate result code.	

Test purpose:	Ensure that the IUT
	on receipt of a PU-Request
	    containing a User-Name AVP
	        indicating not known IMSI,
	sends a PU-Answer
	    not containing a Result-Code AVP
	    containing an Experimental-Result AVP
	        containing an Experimental-Result-Code AVP
	            indicating DIAMETER_ERROR_USER_UNKNOWN.	

Comments:		

TP_HSS_PUE_03	Standards Reference: 5.2.1.3.3¶1,3 first dash line	PICS item: A.5/3.1
Summary:	Verify that the IUT when receiving PU-Request shall check if the IMSI is known and received identity matches the stored MME-identity and stored SGSN-identity and when the Partial Purge is supported IUT shall set PUA flags according to the serving node where the purge was done(MME).	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request,
	    sends a UL-Answer
	        containing a Supported-Features AVP
	            containing a Vendor-Id AVP
	            containing a Feature-List-ID AVP
	            containing a Feature-List AVP
	                indicating Partial Purge
	    on receipt of a PU-Request
	        containing an Origin-Host AVP
	            indicating stored MME identity and stored SGSN identity
	        containing a User-Name AVP
	            indicating known IMSI
	        containing a PUR-Flags AVP
	            with "UE Purged in MME" bit set
	    sends a PU-Answer
	        containing a Result-Code AVP
	            indicating DIAMETER_SUCCESS
	        containing a PUA-Flags AVP
	            with "freeze M-TMSI" bit set	

Comments:	NOTE: UE Purged in MME.	

TP_HSS_PUE_04	Standards Reference: 5.2.1.3.3¶1,3 first dash line	PICS item: A.5/3.1
Summary:	Verify that the IUT when receiving PU-Request shall check if the IMSI is known and received identity matches the stored MME-identity and stored SGSN-identity and when the Partial Purge is supported IUT shall set PUA flags according to the serving node where the purge was done(SGSN).	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request,
	    sends a UL-Answer
	        containing a Supported-Features AVP
	            containing a Vendor-Id AVP
	             containing a Feature-List-ID AVP
	            containing a Feature-List AVP
	                indicating Partial Purge
	    on receipt of a PU-Request
	        containing an Origin-Host AVP
	            indicating stored MME identity and stored SGSN identity
	         containing a User-Name AVP
	            indicating known IMSI
	        containing a PUR-Flags AVP
	            with "UE Purged in SGSN" bit set,
	    sends a PU-Answer
	        containing a Result-Code AVP
	            indicating DIAMETER_SUCCESS
	        containing a PUA-Flags AVP
	            with "freeze P-TMSI" bit set.	

Comments:		

TP_HSS_PUE_05	Standards Reference: 5.2.1.3.3¶1,3 second dash line	PICS item: A.5/3.1
Summary:	Verify that the IUT when receiving PU-Request shall check if the IMSI is known and received identity matches the stored MME-identity and stored SGSN-identity and when the Partial Purge is not supported IUT shall set PUA flags "freeze M-TMSI" and "freeze P-TMSI".	

Test purpose:	Ensure that the IUT
	   on receipt of a PU-Request
	      containing an Origin-Host AVP
	         indicating stored MME identity and stored SGSN identity
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a PUR-Flags AVP
	         with "UE Purged in MME" bit set and
	         with "UE Purged in SGSN" bit set,
	   sends a PU-Answer
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing a PUA-Flags AVP
	         with "freeze M-TMSI" bit set and
	         with "freeze P-TMSI" bit set.

Comments:	

TP_HSS_PUE_06	Standards Reference: 5.2.1.3.3¶4	PICS item:
Summary:	Verify that the IUT when receiving PU-Request shall check if the IMSI is known and received identity matches the stored MME-identity but not the stored SGSN-identity IUT shall set PUA flag "freeze M-TMSI" and clear PUA flag "freeze P-TMSI".	

Test purpose:	Ensure that the IUT
	   on receipt of a PU-Request
	      containing an Origin-Host AVP
	         indicating stored MME-identity and not stored SGSN-identity
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a PUR-Flags AVP
	         with "UE Purged in MME" bit set
	   sends a PU-Answer
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing a PUA-Flags AVP
	         with "freeze M-TMSI" bit set and
	         with "freeze P-TMSI" bit **not** set.

Comments:	

TP_HSS_PUE_07	Standards Reference: 5.2.1.3.3¶5	PICS item:
Summary:	Verify that the IUT when receiving PU-Request shall check if the IMSI is known and received identity matches the stored SGSN-identity but not the stored MME-identity IUT shall set PUA flag "freeze P-TMSI" and clear PUA flag "freeze M-TMSI".	

Test purpose:	Ensure that the IUT
	   on receipt of a PU-Request
	      containing an Origin-Host AVP
	         indicating stored SGSN-identity and not stored MME-identity
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a PUR-Flags AVP
	         with "UE Purged in SGSN" bit set
	   sends a PU-Answer
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing a PUA-Flags AVP
	         with "freeze P-TMSI" bit set and
	         with "freeze M-TMSI" bit **not** set.

Comments:	

TP_HSS_PUE_08	**Standards Reference:** **5.2.1.3.3¶5**	**PICS item:**
Summary:	Verify that the IUT when receiving PU-Request shall check if the IMSI is known and received identity not matches the stored MME-identity and not matches the stored SGSN-identity IUT shall clear PUA flags "freeze P-TMSI" and "freeze M-TMSI".	

Test purpose:	Ensure that the IUT
	     on receipt of a PU-Request
	         containing an Origin-Host AVP
	             indicating not stored SGSN-identity and not stored MME-identity
	         containing a User-Name AVP
	             indicating known IMSI
	     sends a PU-Answer
	         containing a Result-Code AVP
	             indicating DIAMETER_SUCCESS
	         containing a PUA-Flags AVP
	             with "freeze P-TMSI" bit **not** set and
	             with "freeze M-TMSI" bit **not** set.	

Comments:		

4.2.2.4 Insert Subscriber Data

Test Selection: IUT supports subscriber data handling procedures; PICS A.5/4.

TP_HSS_ISD_01	**Standards Reference:** **Table 5.2.2.1.1/1 and 5.2.2.1.3¶2 and** **7.2.9**	**PICS item:**
Summary:	Verify that the IUT can successfully initiate an ID-Request including all mandatory AVP's and Subscriber-Status AVP within Subscription-Data AVP to remove all Operator Determined Barring Categories.	

Test purpose:	Ensure that the IUT
	     to indicate a request to remove all Operator Determined Barring Categories
	     sends an ID-Request
	         containing a Session-ID AVP
	         containing an Auth-Session-State AVP
	             indicating NO_STATE_MAINTAINED
	         containing an Origin-Host AVP
	         containing an Origin-Realm AVP
	         containing a Destination-Host AVP
	         containing a Destination-Realm AVP
	         containing a User-Name AVP
	         containing a Subscription-Data AVP
	             containing a Subscriber-Status AVP
	                 indicating SERVICE_GRANTED	

Comments:		

TP_HSS_ISD_02	**Standards Reference:** **Table 5.2.2.1.1/1 and 5.2.2.1.3¶2 and** **7.2.9**	**PICS item:**
Summary:	Verify that the IUT can successfully initiate an ID-Request including Access-Restriction-Data AVP within Subscription-Data AVP if the current value for Operator Determined Barring in MME needs to be changed.	

Test purpose:	Ensure that the IUT
	     to indicate a request to change the current value for Operator Determined Barring
	     sends an ID-Request
	         containing a Subscription-Data AVP
	             containing a Subscriber-Status AVP
	                 indicating OPERATOR_DETERMINED_BARRING
	             (containing an Operator-Determined-Barring AVP or
	             containing an HPLMN-ODB AVP)	

Comments:		

TP_HSS_ISD_03	Standards Reference: **Table 5.2.2.1.1/1 and 5.2.2.1.3¶3 and 7.2.9**	PICS item:
Summary:	Verify that the IUT can successfully initiate an ID-Request including Access-Restriction-Data AVP within Subscription-Data AVP to modify stored information in MME.	

Test purpose:	Ensure that the IUT
	    to indicate a request to modify stored information in MME about Access-Restriction-Data
	      sends an ID-Request
	        containing a Subscription-Data AVP
	          containing an Access-Restriction-Data AVP	

Comments:		

TP_HSS_ISD_04	Standards Reference: **Table 5.2.2.1.1/1 and 5.2.2.1.3¶4 and 7.2.9**	PICS item:
Summary:	Verify that the IUT can successfully initiate an ID-Request including APN-OI-Replacement AVP within Subscription-Data AVP if the UE level APN-OIReplacement has been added or modified.	

Test purpose:	Ensure that the IUT
	    to indicate a request when the UE level APN-OIReplacement has been added or modified
	      sends an ID-Request
	        containing a Subscription-Data AVP
	          containing an APN-OI-Replacement AVP	

Comments:		

TP_HSS_ISD_05	Standards Reference: **Table 5.2.2.1.1/1 and 5.2.2.1.3¶5,6 and 7.2.9 and 7.3.34 and 7.3.35**	PICS item:
Summary:	Verify that the IUT can successfully initiate an ID-Request including APN-Configuration-Profile AVP within Subscription-Data AVP if the default APN has changed.	

Test purpose:	Ensure that the IUT
	    to indicate a request when the UE level APN-OIReplacement has been added or modified
	      sends an ID-Request
	        containing a Subscription-Data AVP
	          containing an APN-Configuration-Profile AVP
	            containing a Context-Identifier AVP
	            containing an All-APN-Configurations-Included-Indicator AVP
	            containing an APN-Configuration AVP
	               containing a Context-Identifier AVP
	               containing a PDN-Type AVP
	               containing a Service-Selection AVP
	               containing an EPS-Subscribed-QoS Profile AVP
	               containing an AMBR AVP
	               not containing a Specific-APN-Info AVP.	

Comments:		

TP_HSS_ISD_06	Standards Reference: **Table 5.2.2.1.1/1 and 5.2.2.1.3¶7 and 7.2.9**	PICS item:
Summary:	Verify that the IUT can successfully initiate an ID-Request including a GPRS-Subscription-Data AVP within Subscription-Data AVP if the GPRS-Subscription-Data-Indicator information was previously received as set in the ULR-Flags during update location procedure.	

Test purpose:	Ensure that the IUT
	    on receipt of a UL-Request
	        containing a ULR-Flags AVP
	            with S6a-indicator bit set
	            with GPRS-Subscription-Data-Indicator bit set
	    sends a UL-Answer
	    sends an ID-Request
	        containing a Subscription-Data AVP
	            containing a GPRS-Subscription-Data AVP
	                containing a Complete-Data-List-Included-Indicator AVP
	                containing a PDP-Context AVP
	                    containing a Context-Identifier AVP
	                    containing a PDN-Type AVP
	                    containing a QoS-Subscribed AVP
	                    containing a Service-Selection AVP.	

Comments:	NOTE: TS as combined MME/SGSN component.	

TP_HSS_ISD_07	Standards Reference: **Table 5.2.2.1.1/1 and 5.2.2.1.3¶13 and 7.2.9**	PICS item:
Summary:	Verify that the IUT can successfully initiate an ID-Request including empty Subscription-Data AVP for the only purpose to request the MME about the UE reachability status notification.	

Test purpose:	Ensure that the IUT
	    to indicate a request for the only purpose to request the MME about the UE reachability status notification
	    sends an ID-Request
	        containing an **empty** Subscription-Data AVP	

Comments:	NOTE: Could be that at least some not related AVP should be present within Subscriber Data AVP and correction within TP if needed, will be done due to validation results.	

TP_HSS_ISD_08	Standards Reference: **Table 5.2.2.1.1/1 and 5.2.2.1.3¶14 and 7.2.9**	PICS item:
Summary:	Verify that the IUT in case when receives message from a service related entity requesting EPS User State or EPS Location Information than IUT successfully initiate an ID-Request including empty Subscription-Data AVP for the only purpose to request the MME User State or Location Information.	

Test purpose:	Ensure that the IUT
	    to indicate a request for the only purpose to request the MME about the User State or Location Information
	    sends an ID-Request
	        containing an **empty** Subscription-Data AVP
	        containing an IDR-Flags AVP
	            with EPS User State Request bit set **or**
	            with EPS Location Information Request bit set	

Comments:	NOTE: Could be that at least some not related AVP should be present within Subscriber Data AVP and correction within TP if needed, will be done due to validation results.	

TP_HSS_ISD_09	Standards Reference: Table 5.2.2.1.1/1 and 5.2.2.1.3¶15 and 7.2.9	PICS item:
Summary:	Verify that the IUT in case when receives message from an AS requesting the current access network's support status of IMS Voice over PS Session than IUT successfully initiate an ID-Request including empty Subscription-Data AVP for the only purpose to retrieve IMS Voice over PS Session Supported indication from MME.	

Test purpose:	Ensure that the IUT
	    to indicate a request for the only purpose to retrieve IMS Voice over PS Session Supported indication from MME.
	        sends an ID-Request
	            containing an **empty** Subscription-Data AVP
	            containing an IDR-Flags AVP
	                with T-ADS Data Request bit set.	

Comments:	NOTE: Could be that at least some not related AVP should be present within Subscriber Data AVP and correction within TP if needed, will be done due to validation results.	

4.2.2.5   Delete Subscriber Data

Test Selection: IUT supports delete subscriber data procedures; PICS A.5/5.

TP_HSS_DSD_01	Standards Reference: Table 5.2.2.2.1/1 and 5.2.2.2.3¶1 and 7.2.11	PICS item:
Summary:	Verify that the IUT can successfully initiate a DS-Request including all mandatory AVP's to remove deleted subscription data from the MME.	

Test purpose:	Ensure that the IUT
	    to indicate a request to remove deleted subscription data from the MME
	    sends a DS-Request
	        containing a Session-ID AVP
	        containing an Auth-Session-State AVP
	            indicating NO_STATE_MAINTAINED
	        containing an Origin-Host AVP
	        containing an Origin-Realm AVP
	        containing a Destination-Host AVP
	        containing a Destination-Realm AVP
	        containing a User-Name AVP
	        containing a DSR-Flags AVP	

Comments:		

TP_HSS_DSD_02	Standards Reference: Table 5.2.2.2.1/1 and 5.2.2.2.3¶2	PICS item:
Summary:	Verify that the IUT can successfully initiate a DS-Request to remove deleted GPRS subscription data at the combined MME/SGSN.	

Test purpose:	Ensure that the IUT
	    to indicate a request to remove deleted GPRS subscription data at the combined MME/SGSN
	    sends a DS-Request
	        containing a DSR-Flags AVP
	            with PDP-Context-Withdrawal bit set
	        containing a Context-Identifier AVP	

Comments:	NOTE 1: TS as combined MME/SGSN component. NOTE 2: Continuation of TP_HSS_ISD_06.	

TP_HSS_DSD_03	**Standards Reference:** **5.2.2.2.3¶3 and 7.3.25/Bit1**	**PICS item:**
Summary:	Verify that the IUT can successfully initiate a DS-Request with DSR-Flags AVP where Complete-APN-Configuration-Profile-Withdrawal shall not be set.	

Test purpose:	Ensure that the IUT
	   to indicate a request to remove any subscription data from the MME
	   sends a DS-Request
	      containing a DSR-Flags AVP
	         with Complete-APN-Configuration-Profile-Withdrawal bit **not** set.	

Comments:		

4.2.2.6   Authentication Information Retrieval

Test Selection: IUT supports Authentication Information Retrieval procedures; PICS A.5/6.

TP_HSS_AIR_01	**Standards Reference:** **5.2.3.1.3¶1,13 and 7.2.6**	**PICS item:**
Summary:	Verify that the IUT can successfully process all mandatory AVPs in an AI-Request.received due to Authentication Information Retrieval Procedure.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	      containing a Session-ID AVP
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a Destination-Realm AVP
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a Visited-PLMN-ID AVP
	      containing a Requested-EUTRAN-Authentication-Info AVP
	         containing a Re-Synchronization-Info AVP
	   sends an AI-Answer
	      containing a Session-ID AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP.	

Comments:		

TP_HSS_AIR_02	Standards Reference: 5.2.3.1.3¶1,13 and 7.2.6	PICS item: A.2/1.1
Summary:	Verify that the IUT can successfully process all mandatory AVPs in an AI-Request.received due to Authentication Information Retrieval Procedure.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	      containing a Session-ID AVP
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP
	      containing a Destination-Realm AVP
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a Visited-PLMN-ID AVP
	      containing a Requested-UTRAN-GERAN-Authentication-Info AVP
	         containing a Re-Synchronization-Info AVP
	   sends an AI-Answer
	      containing a Session-ID AVP
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing an Auth-Session-State AVP
	         indicating NO_STATE_MAINTAINED
	      containing an Origin-Host AVP
	      containing an Origin-Realm AVP.	

Comments:	NOTE: TS as combined MME/SGSN component.	

TP_HSS_AIR_03	Standards Reference: 5.2.3.1.3¶1,2 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is not any type of subscription for the IMSI and then the IUT shall return AI-Answer with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	      containing a User-Name AVP
	         indicating not known IMSI
	      containing a Requested-EUTRAN-Authentication-Info AVP
	         containing a Re-Synchronization-Info AVP
	   sends an AI-Answer
	      not containing a Result-Code AVP
	      containing an Experimental-Result AVP
	         containing an Experimental-Result-Code AVP
	            indicating DIAMETER_ERROR_USER_UNKNOWN.	

Comments:		

TP_HSS_AIR_04	Standards Reference: 5.2.3.1.3¶3 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether subscriber has neither EPS subscription nor GPRS subscription data and then the IUT shall return AI-Answer with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	      containing a User-Name AVP
	         indicating IMSI without EPS nor GPRS subscription data
	   sends an AI-Answer
	      not containing a Result-Code AVP
	      containing an Experimental-Result AVP
	         containing an Experimental-Result-Code AVP
	            indicating DIAMETER_ERROR_UNKNOWN_EPS_SUBSCRIPTION.	

Comments:		

TP_HSS_AIR_05	Standards Reference: 5.2.3.1.3¶3,4 and 7.4.3 and 7.3.128	PICS item: A.5/6.1
Summary:	Verify that the IUT when receiving AI-Request shall check whether subscriber has neither EPS subscription nor GPRS subscription data and then the IUT shall return AI-Answer with appropriate result code and Error-Diagnostic AVP.	

Test purpose:	Ensure that the IUT
	    on receipt of an AI-Request
	        containing a User-Name AVP
	            indicating IMSI without EPS nor GPRS subscription data
	    sends an AI-Answer
	        not containing a Result-Code AVP
	        containing an Experimental-Result AVP
	            containing an Experimental-Result-Code AVP
	                indicating DIAMETER_ERROR_UNKNOWN_EPS_SUBSCRIPTION
	        containing an Error-Diagnostic AVP
	            indicating GPRS_DATA_SUBSCRIBED or
	            indicating NO_GPRS_DATA_SUBSCRIBED	

Comments:		

TP_HSS_AIR_06	Standards Reference: 5.2.3.1.3¶1,6 and 7.3.18	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when EUTRAN-Authentication-Info is requested the IUT shall return AI-Answer with KASME-AVP within E-UTRAN-Vector.	

Test purpose:	Ensure that the IUT
	    on receipt of an AI-Request
	        containing a User-Name AVP
	            indicating known IMSI
	        containing a Requested-EUTRAN-Authentication-Info AVP
	            containing a Re-Synchronization-Info AVP
	    sends an AI-Answer
	        containing a Result-Code AVP
	            indicating DIAMETER_SUCCESS
	        containing an E-UTRAN-Vector AVP
	            containing RAND AVP
	            containing XRES AVP
	            containing AUTN AVP
	            containing KASME AVP.	

Comments:		

TP_HSS_AIR_07	Standards Reference: 5.2.3.1.3¶1,7	PICS item:
Summary:	Verify that the IUT when receiving AI-Request and in case if the AuC is unable to calculate any corresponding AVs due to unallowed attachment for UE the IUT shall return AI-Answer with appropriate result code.	

Test purpose:	Ensure that the IUT
	    on receipt of an AI-Request
	        containing a User-Name AVP
	            indicating known IMSI
	        containing a Requested-EUTRAN-Authentication-Info AVP
	            containing a Re-Synchronization-Info AVP
	    sends an AI-Answer
	        containing a Result-Code AVP
	            indicating DIAMETER_AUTHORIZATION_REJECTED
	        not containing an Authentication-Info AVP.	

Comments:	NOTE: The AuC is unable to calculate any corresponding AVs.	

TP_HSS_AIR_08	Standards Reference: 5.2.3.1.3¶1,7	PICS item:
Summary:	Verify that the IUT when receiving AI-Request and in case if no corresponding pre-computed AV is available and the AuC is unable to calculate any corresponding AVs due to unknown failures, such as the internal database error, the IUT shall return AI-Answer with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a Requested-EUTRAN-Authentication-Info AVP
	         containing a Re-Synchronization-Info AVP
	   sends an AI-Answer
	      not containing a Result-Code AVP
	      containing an Experimental-Result AVP
	         containing an Experimental-Result-Code AVP
	            indicating DIAMETER_AUTHENTICATION_DATA_UNAVAILABLE.	

Comments:	NOTE: No corresponding pre-computed AV is available and the AuC is unable to calculate any corresponding AVs due to unknown failures, such as the internal database error.	

TP_HSS_AIR_09	Standards Reference: 5.2.3.1.3¶1,9,13	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when EUTRAN-Authentication-Info is requested the IUT shall return AI-Answer with E-UTRAN authentication vectors.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a Requested-EUTRAN-Authentication-Info AVP
	         containing a Number-Of-Requested-Vectors AVP
	   sends an AI-Answer
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing an Authentication-Info AVP
	         containing an E-UTRAN-Vector AVP.	

Comments:		

TP_HSS_AIR_10	Standards Reference: 5.2.3.1.3¶1,9,13	PICS item: A.2/1.1
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when UTRAN-GERAN-Authentication-Info is requested the IUT shall return AI-Answer with UTRAN or GERAN authentication vectors to combined MME/SGSN.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	      containing a User-Name AVP
	         indicating known IMSI
	      containing a Requested-UTRAN-GERAN-Authentication-Info AVP
	         containing a Number-Of-Requested-Vectors AVP
	   sends an AI-Answer
	      containing a Result-Code AVP
	         indicating DIAMETER_SUCCESS
	      containing an Authentication-Info AVP
	         containing an UTRAN-Vector AVP or
	         containing a GERAN-Vector AVP.	

Comments:	NOTE: TS as combined MME/SGSN component.	

TP_HSS_AIR_11	Standards Reference: 5.2.3.1.3¶1,10,13	PICS item: A.5/6.2
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when Immediate-Response-Preferred parameter is requested the IUT shall return AI-Answer with less returned vectors than requested.	

Test purpose:	Ensure that the IUT
	    on receipt of an AI-Request
	        containing a User-Name AVP
	          indicating known IMSI
	        containing a Requested-EUTRAN-Authentication-Info AVP
	          containing a Immediate-Response-Preferred AVP
	    sends an AI-Answer
	        containing a Result-Code AVP
	          indicating DIAMETER_SUCCESS
	        containing an Authentication-Info AVP
	          containing an E-UTRAN-Vector AVP.	

Comments:		

TP_HSS_AIR_12	Standards Reference: 5.2.3.1.3¶1,10,13	PICS item: A.5/6.2
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when Immediate-Response-Preferred parameter is requested and Number-Of-Requested-Vectors AVP is present the IUT shall return AI-Answer with less returned vectors than requested.	

Test purpose:	Ensure that the IUT
	    on receipt of an AI-Request
	        containing a User-Name AVP
	          indicating known IMSI
	        containing a Requested-EUTRAN-Authentication-Info AVP
	          containing a Number-Of-Requested-Vectors AVP
	          containing an Immediate-Response-Preferred AVP
	    sends an AI-Answer
	        containing a Result-Code AVP
	          indicating DIAMETER_SUCCESS
	        containing an Authentication-Info AVP
	          containing an E-UTRAN-Vector AVP.	

Comments:		

TP_HSS_AIR_13	Standards Reference: 5.2.3.1.3¶1,10,13	PICS item: A.2/1.1 and A.5/6.2
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when UTRAN-GERAN-Authentication-Info and EUTRAN-Authentication-Info is requested and one of them include the Immediate Response Preferred parameter the IUT shall return AI-Answer with KASME including E-UTRAN authentication vectors to combined MME/SGSN.	

Test purpose:	Ensure that the IUT
	    on receipt of an AI-Request
	        containing a User-Name AVP
	          indicating known IMSI
	        containing a Requested-EUTRAN-Authentication-Info AVP
	          containing an Immediate-Response-Preferred AVP
	        containing a Requested-UTRAN-GERAN-Authentication-Info AVP
	          containing a Number-Of-Requested-Vectors AVP
	    sends an AI-Answer
	        containing a Result-Code AVP
	          indicating DIAMETER_SUCCESS
	        containing an Authentication-Info AVP
	          containing an E-UTRAN-Vector AVP
	            containing a KASME AVP.	

Comments:	NOTE 1: TS as combined MME/SGSN component. NOTE 2: Immediate-Response-Preferred AVP within Requested-EUTRAN-Authentication-Info AVP.	

TP_HSS_AIR_14	Standards Reference: 5.2.3.1.3¶1,10,13	PICS item: A.2/1.1 and A.5/6.2
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when UTRAN-GERAN-Authentication-Info and EUTRAN-Authentication-Info is requested and one of them include the Immediate Response Preferred parameter the IUT shall return AI-Answer with KASME including E-UTRAN authentication vectors to combined MME/SGSN.	
Test purpose:	Ensure that the IUT **on receipt of an AI-Request** containing a User-Name AVP indicating known IMSI containing a Requested-EUTRAN-Authentication-Info AVP containing a Number-Of-Requested-Vectors AVP containing a Requested-UTRAN-GERAN-Authentication-Info AVP containing an Immediate-Response-Preferred AVP **sends an AI-Answer** containing a Result-Code AVP indicating DIAMETER_SUCCESS containing an Authentication-Info AVP containing an E-UTRAN-Vector AVP or containing a KASME AVP.	
Comments:	NOTE 1: TS as combined MME/SGSN component. NOTE 2: Immediate-Response-Preferred AVP within Requested-UTRAN-GERAN-Authentication-Info AVP.	

TP_HSS_AIR_15	Standards Reference: 5.2.3.1.3¶1,11	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when EUTRAN-Authentication-Info is requested and the Re-Synchronization-Info AVP is present the IUT shall return AI-Answer including authentication vectors to MME.	
Test purpose:	Ensure that the IUT **on receipt of an AI-Request** containing a User-Name AVP indicating known IMSI containing a Requested-EUTRAN-Authentication-Info AVP containing a Re-Synchronization-Info AVP **sends an AI-Answer** containing a Result-Code AVP indicating DIAMETER_SUCCESS containing an Authentication-Info AVP containing an E-UTRAN-Vector AVP.	
Comments:		

TP_HSS_AIR_16	Standards Reference: 5.2.3.1.3¶1,11	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when UTRAN-GERAN-Authentication-Info and EUTRAN-Authentication-Info is requested and both of them include the Re-Synchronization-Info AVP the IUT shall return AI-Answer with appropriate result code and any authentication vectors shall not be present.	
Test purpose:	Ensure that the IUT **on receipt of an AI-Request** containing a User-Name AVP indicating known IMSI containing a Requested-EUTRAN-Authentication-Info AVP containing a Re-Synchronization-Info AVP containing a Requested-UTRAN-GERAN-Authentication-Info AVP containing a Re-Synchronization-Info AVP **sends an AI-Answer** containing a Result-Code AVP indicating DIAMETER_UNABLE_TO_COMPLY **not** containing an Authentication-Info AVP.	
Comments:		

TP_HSS_AIR_17	Standards Reference: 5.2.3.1.3¶1,12	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when more than one EPS or UTRAN or GERAN Vector is to be included within one Authorization-Info AVP the IUT shall return AI-Answer with appropriate result code and the Item-Number AVP shall be present within each Vector.	
Test purpose:	Ensure that the IUT **on receipt of an AI-Request** containing a User-Name AVP indicating known IMSI containing a Requested-EUTRAN-Authentication-Info AVP **sends an AI-Answer** containing a Result-Code AVP indicating DIAMETER_SUCCESS containing an Authentication-Info AVP. containing an E-UTRAN-Vector AVP containing an Item-Number AVP for each Vector	
Comments:	NOTE: More than one EPS Vector to be included in one Authentication-Info AVP.	

TP_HSS_AIR_18	Standards Reference: 5.2.3.1.3¶1,12	PICS item:
Summary:	Verify that the IUT when receiving AI-Request shall check whether there is subscription for the IMSI and in case when more than one EPS or UTRAN or GERAN Vector is to be included within one Authorization-Info AVP the IUT shall return AI-Answer with appropriate result code and the Item-Number AVP shall be present within each Vector.	
Test purpose:	Ensure that the IUT **on receipt of an AI-Request** containing a User-Name AVP indicating known IMSI containing a Requested-UTRAN-GERAN-Authentication-Info AVP **sends an AI-Answer** containing a Result-Code AVP indicating DIAMETER_SUCCESS containing an Authentication-Info AVP. (containing a UTRAN-Vector AVP or containing a GERAN-Vector AVP) containing an Item-Number AVP for each Vector	
Comments:	NOTE 1: TS as combined MME/SGSN component. NOTE 2: more than one UTRAN or GERAN Vector to be included in one Authentication-Info AVP.	

4.2.2.7   Reset

Test Selection: IUT supports Reset procedures; PICS A.5/7.

TP_HSS_RES_01	Standards Reference: Table 5.2.4.1.1/1 and 5.2.4.1.3 and 7.2.15	PICS item:
Summary:	Verify that the IUT can successfully initiate an RS-Request including all mandatory AVP's to indicate to all relevant MMEs and combined MME/SGSNs that IUT has restarted.	
Test purpose:	Ensure that the IUT **to indicate** to the MME that IUT has restarted **sends an RS-Request** containing a Session-ID AVP containing an Auth-Session-State AVP indicating NO_STATE_MAINTAINED containing an Origin-Host AVP containing an Origin-Realm AVP containing a Destination-Host AVP containing a Destination-Realm AVP	
Comments:		

4.2.2.8 Notification

Test Selection: IUT supports Notification procedures; PICS A.5/8.

TP_HSS_NOT_01	Standards Reference: Table 5.2.5.1.1/2 and 5.2.5.1.3¶4 and 7.2.18	PICS item:
Summary:	Verify that the IUT can successfully process all mandatory AVPs in an NO-Request.received due to Notification Procedure.	

Test purpose:	Ensure that the IUT
	   on receipt of an NO-Request
	     containing a Session-ID AVP
	     containing an Auth-Session-State AVP
	       indicating NO_STATE_MAINTAINED
	     containing an Origin-Host AVP
	     containing an Origin-Realm AVP
	     containing a Destination-Realm AVP
	     containing a User-Name AVP
	       indicating known IMSI
	   sends an NO-Answer
	     containing a Session-ID AVP
	     containing a Result-Code AVP
	       indicating DIAMETER_SUCCESS
	     containing an Auth-Session-State AVP
	       indicating NO_STATE_MAINTAINED
	     containing an Origin-Host AVP
	     containing an Origin-Realm AVP.	

Comments:		

TP_HSS_NOT_02	Standards Reference: 5.2.5.1.3¶1,2 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving an NO-Request shall check whether the IMSI is known and if not then the IUT shall return NO-Answer with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	     containing a User-Name AVP
	       indicating not known IMSI
	   sends an AI-Answer
	     not containing a Result-Code AVP
	     containing an Experimental-Result AVP
	       containing an Experimental-Result-Code AVP
	         indicating DIAMETER_ERROR_USER_UNKNOWN.	

Comments:		

TP_HSS_NOT_03	Standards Reference: 5.2.5.1.3¶1,3 and 7.4.3	PICS item:
Summary:	Verify that the IUT when receiving an NO-Request shall check whether the IMSI is known and source MME originating is not currently registered within IUT for that UE then the IUT shall return NO-Answer with appropriate result code.	

Test purpose:	Ensure that the IUT
	   on receipt of an AI-Request
	     containing a User-Name AVP
	       indicating known IMSI
	   sends an AI-Answer
	     not containing a Result-Code AVP
	     containing an Experimental-Result AVP
	       containing an Experimental-Result-Code AVP
	         indicating DIAMETER_ERROR_UNKNOWN_SERVING_NODE.	

Comments:		

History

Document history		
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