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Core Network and Interoperability Testing (INT); Diameter Conformance testing for Rf/Ro interface; (3GPP™ Release 10);

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

# Reference RTS/INT-00131-2 Keywords diameter, TSS&TP

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## Contents

Intellectual Property Rights5			
Forew	vord	5	
Moda	Modal verbs terminology5		
1	Scope	6	
2	References	6	
2.1	Normative references		
2.2	Informative references		
3	Definitions and abbreviations		
3.1	Definitions		
3.2	Abbreviations	/	
4	Test configurations	7	
4.1	Introduction		
4.2	Test configurations using Rf interface	8	
4.3	Test configurations using Ro interface	10	
5	Test Suite Structure (TSS) and Test Purposes (TP)	12	
5.1	Test Suite Structure (153) and Test Fulposes (11)		
5.1.1	TP naming convention		
5.1.1	Test strategy		
5.1.3	TP structure		
5.2	Test Purposes.		
5.2.1	PICS references		
5.2.2	Rf interface		
5.2.2.1			
5.2.2.1	1.1 Test selection	13	
5.2.2.1	1.2 Message Syntax	14	
5.2.2.1		15	
5.2.2.1			
5.2.2.2	2 CTF Role	18	
5.2.2.2			
5.2.2.2	$\mathcal{E}$		
5.2.2.2			
5.2.2.2			
5.2.3 5.2.3.1	Ro interface		
5.2.3.1 5.2.3.1			
5.2.3.1 5.2.3.1			
5.2.3.1 5.2.3.1			
5.2.3.1	71 6 6		
5.2.3.1			
5.2.3.1	· · · · · · · · · · · · · · · · · · ·		
5.2.3.1			
5.2.3.1			
5.2.3.1			
5.2.3.1	1.10 Other procedures	39	
5.2.3.2	2 CTF Role	47	
5.2.3.2			
5.2.3.2	$\varepsilon$ ,		
5.2.3.2			
5.2.3.2			
5.2.3.2	e e		
5.2.3.2			
5.2.3.2	· · · · · · · · · · · · · · · · · · ·		
5.2.3.2 5.2.3.2			
5.2.3.2	2.9 Credit Pooling	66	

5.2.3.2.10	Other procedures	67
History		85

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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 [4].

## 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 <u>ETSI Drafting Rules</u> (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 specifications for the Diameter protocol on the Rf/Ro interfaces as specified in ETSI TS 132 260 [1] and ETSI TS 132 299 [2] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [6] and ETSI ETS 300 406 [7].

## 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 132 260 (V10.14.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Telecommunication management; Charging management; IP Multimedia Subsystem (IMS) charging (3GPP TS 32.260 version 10.14.0 Release 10)".
[2]	ETSI TS 132 299 (V10.15.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Telecommunication management; Charging management; Diameter charging applications (3GPP TS 32.299 version 10.15.0 Release 10)".
[3]	ETSI TS 102 790-2: "Technical Committee for IMS Network Testing (INT); Network Integration Testing; IMS specific use of Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Conformance Testing; Part 2: Test Suite Structure (TSS) and Test Purposes (TP)".
[4]	ETSI TS 103 374-1: "Core Network and Interoperability Testing (INT); Diameter Conformance testing for Rf/Ro interface; (3GPP <sup>TM</sup> Release 10); Part 1: Protocol Implementation Conformance Statement (PICS)".
[5]	ISO/IEC 9646-1: "Information technology Open Systems Interconnection Conformance testing methodology and framework Part 1: General concepts".
[6]	ISO/IEC 9646-7: "Information technology Open Systems Interconnection Conformance testing methodology and framework Part 7: Implementation Conformance Statements".
[7]	ETSI ETS 300 406: "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
[8]	IETF RFC 3588: "Diameter Base Protocol".
[9]	IETF RFC 4005: "Diameter Network Access Server Application".
[10]	IETF RFC 4006: "Diameter Credit-Control Application".

### 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 132 260 [1], ETSI TS 132 299 [2] and the following apply:

Abstract Test Method (ATM): Refer to ISO/IEC 9646-1 [5].

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [5].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [5].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [5].

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TS 132 260 [1], ETSI TS 132 299 [2] and the following apply:

CDF Charging Data Function
CTF Charging Trigger Function

TP Test Purpose
TSS Test Suite Structure

## 4 Test configurations

### 4.1 Introduction

Test purposes of the present document address the IMS functional entities that are accessible via the following standardized DIAMETER interfaces: Ro and Rf.

NOTE: In a real operating network the different Diameter nodes would not connect directly to each other. The connection is usually proxied through one or more Diameter Agents. In the following test architecture figures the Diameter Agent is not explicitly depicted as it is seen as a transparent message handler for conformance testing purposes.

## 4.2 Test configurations using Rf interface

The Rf interface is located between a CTF equipment hosted by an x-CSCF or a SIP AS and the CDF.

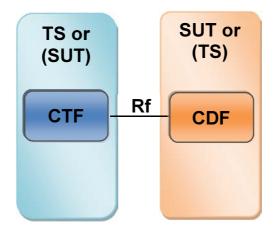


Figure 1: Test configuration CF\_1Rf

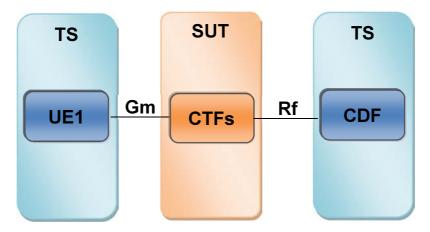


Figure 2: Test configuration CF\_1Rf1Gm

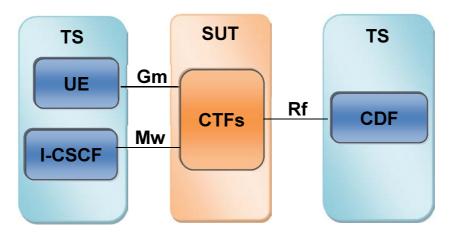


Figure 3: Test configuration CF\_1Rf1Gm1Mw

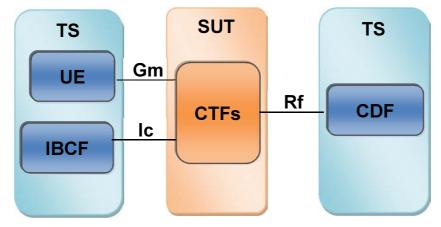


Figure 4: Test configuration CF\_1Rf1Gm1lc

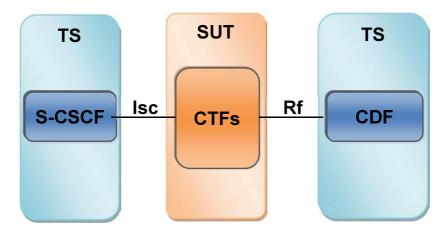


Figure 5: Test configuration CF\_1Rf1Isc

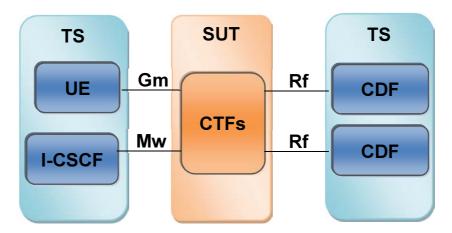


Figure 6: Test configuration CF\_2Rf1Gm1Mw

## 4.3 Test configurations using Ro interface

The Ro interface is located between a CTF equipment hosted by an MRFC or a SIP AS or an IMS GW and the OCF.

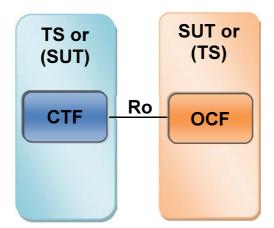


Figure 7: Test configuration CF\_1Ro

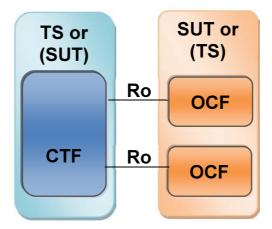


Figure 8: Test configuration CF\_2Ro

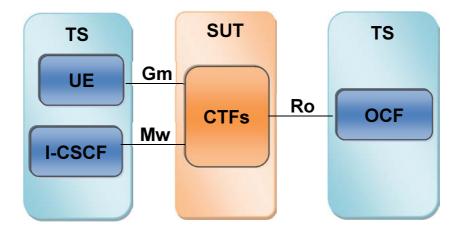


Figure 9: Test configuration CF\_1Ro1Gm1Mw

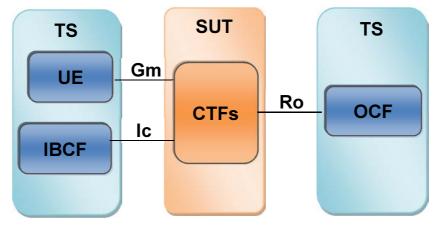


Figure 10: Test configuration CF\_1Ro1Gm1lc

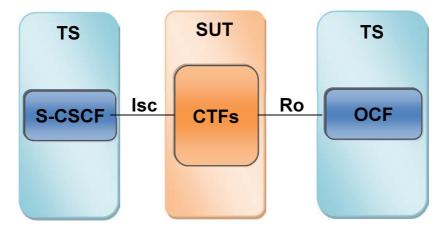


Figure 11: Test configuration CF\_1Ro1lsc

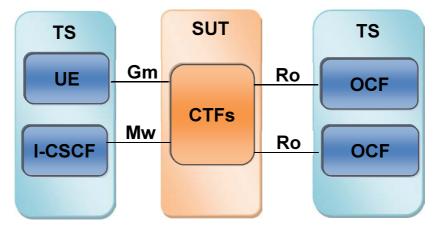


Figure 12: Test configuration CF\_2Ro1Gm1Mw

## 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>
                  Test Purpose:
                                          fixed to "TP"
   <tp>
                                          RF or RO
   <interface>
                  Interface:
                                          CDF, OCF or CTF
                  type of IUT:
   <iut>
                                          MS
                                                   Message syntax
   <scope>
                 = group
                                                   Type of Charging
                                          TC
                                          EC
                                                   Error Cases
                                          CH
                                                   Tariff Changes
                                          RE
                                                   Re-authorization
                                          FΗ
                                                   Failure Handling
                                          FΑ
                                                   Failover
                                          CP
                                                   Credit Pooling
                                          OP
                                                   Other procedures ([2], clause 6.5)
                  sequential number
                                          (01 to 99)
   <nn>
```

## 5.1.2 Test strategy

As the base standards in ETSI TS 132 260 [1] and ETSI TS 132 299 [2] contain 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 103 374-1 [4].

#### 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	<ld><ld><ld><ld><ld></ld></ld></ld></ld></ld>	see table 6.2.3	
	<clause 132="" 299="" [2]="" base="" etsi="" in="" number="" ts=""></clause>	clause 6.2.3	
	<pics reference=""></pics>	A.2/3	
Summary	Short free text description of the test objective	Verify that the IUT can successfully	
		process all mandatory AVPs in a	
		CC-Request received due to IP-CAN	
		session establishment	
Configuration	One of the test configurations as described in clauses 4.2 and	CF_1Rf	
	4.3		
Initial	Free text description of the condition that the IUT has reached	The IUT has received AF provisions	
condition	before the test purpose applies	information about the AF signalling	
(optional)		flows between UE and AF	
Start point	Ensure that the IUT in the		
	<state> see IETF RFC 3588 [8] clause 5.6</state>	Open state	
	and/or further actions before stimulus	having sent an AC-Request	
	if the action is sending/receiving		
Ctimerature	see below for message structure	an accept of a Constitution Freehouse	
Stimulus	<trigger>, see below for message structure</trigger>	on receipt of a Capabilities-Exchange-	
	or agoals	Request (see note 2)	
Reaction	or <goal> <action>.</action></goal>	to require PCC supervision	
Reaction	<action>. if the action is sending</action>	sends, saves, does, etc.	
	see below for message structure		
	<pre><next action="">, etc.</next></pre>		
Message	<pre><mest action="">, etc. <message type=""></message></mest></pre>	Capabilities-Exchange-Answer, etc.	
structure	Ciliessage type>	(see note 2)	
Structure	a) containing a(n) <avp name=""> AVP</avp>	Vendor-Id, etc.	
	b) indicating <coding field="" of="" the=""></coding>	Veridor-ia, etc.	
	and back to a) or b) (see note 3)		
	kt in italics will not appear in TPs and text between <> is filled in	for each TP and may differ from one	
	to the next.	io. casi. IT and may and from one	
	messages are considered as "valid and compatible" unless othe	erwise specified in the test purpose.	
	s includes the presence of all mandatory AVPs as specified in IE		
	SI TS 132 299 [2], clauses 6.2.2, 6.2.3, 6.4.2 and 6.4.3.		
	AVP can be embedded into another AVP. This is expressed by indentations, e.g. if Message1 contains		
	P1 and AVP2 where AVP1 has AVP3 embedded this will be exp		
	nds/receives Message 1		
	containing AVP1		
	containing AVP3		
	indicating		
	containing AVP2		
	indicating		

## 5.2 Test Purposes

## 5.2.1 PICS references

All PICS items referred to in this clause are as specified in ETSI TS 103 374-1 [4] 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 Rf interface

#### 5.2.2.1 CDF Role

#### 5.2.2.1.1 Test selection

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

## 5.2.2.1.2 Message Syntax

TP_RF_CDF_MS_01	Standards Reference: Clause 6.2.3 - Table 6.2.3 and IETF RFC 4005 [9], clause 3.9¶2 and	PICS item:	
	Clause 3.10¶3		
Summary:	Verify that the IUT can successfully process	all mandatory AVPs in an AC-Request	
	received due to Charging Data Transfer.		
Configuration:	CF_1Rf		
Test purpose:	Ensure that the IUT		
	on receipt of an AC-Request		
	containing a Session-ID AVP		
	containing an Origin-Host AVP		
	containing an Origin-Realm AVP		
	containing a Destination-Realm AVP		
	containing an Accounting-Record-Type AVP		
	containing an Accounting-Record-Number AVP		
	containing an Acct-Application-Id AVP		
	indicating the value 3		
	sends an AC-Answer		
	containing a Session-ID AVP		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Result AVP		
	containing an Origin-Host AVP		
	containing an Origin-Realm AVP		
	containing an Accounting-Record-Type AVP		
	containing an Accounting-Record-Nu		
	containing an Acct-Application-Id AVI	P	
	indicating the value 3.		
Comments:			

TP_RF_CDF_MS_02	Standards Reference:	PICS item:	
	IETF RFC 3588 [8], clause 3¶2 and ¶4		
Summary:	Verify that the IUT can successfully process all mandatory AVPs in an AC-Request		
	received due to Charging Data Transfer and	responds with a valid AC-Answer message.	
Configuration:	CF_1Rf		
Test purpose:	Ensure that the IUT		
	on receipt of an AC-Request		
	containing a Session-ID AVP		
	containing an Origin-Host AVP		
	containing an Origin-Realm AVP		
	containing a Destination-Realm AVP		
	containing an Accounting-Record-Type AVP		
	containing an Accounting-Record-Number AVP		
	containing an Acct-Application-Id AVP		
	indicating the value 3		
	sends an AC-Answer		
	containing a Diameter-Header		
	containing a Version		
	indicating value '1'		
	containing a Command-Flags		
	containing T bit		
	indicating value '0'		
	containing r bits		
	indicating value '0000'.		
Comments:			

## 5.2.2.1.3 Type of Charging

TP_RF_CDF_TC_01	Standards Reference:	PICS item:
	Clause 6.1.1/Steps1 to 4 - Table 6.2.2/3	A.3/1.1
Summary:	Verify that the IUT can successfully process an AC-Request [Event] where Event Based	
	Charging is used.	
Configuration:	CF_1Rf	
Test purpose:	Ensure that the IUT	
	on receipt of an AC-Request	
	containing an Accounting-Record-Typ	pe AVP
	indicating EVENT_RECORD	
	containing an Event-Timestamp AVP	
	optionally containing a Service-Infor	
	containing at least one Subscription-ID AVP	
	indicating the identification of the user	
	optionally containing an IMS-Information AVP	
	containing a Node-Functionality AVP	
	indicating the value 3	
	optionally containing a Service-Generic-Information AVP	
	indicating the service specific parameters	
	optionally containing a Service-Context-Id AVP	
	sends an AC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP	
	containing an Accounting-Record-Typ	pe AVP
	indicating EVENT_RECORD	
	containing an Accounting-Record-Number AVP.	
Comments:		

TP_RF_CDF_TC_02	Standards Reference:	PICS item:	
	Clause 6.1.2/Steps 2 to 4 - Table 6.2.2/3	A.3/1.2	
Summary:	Verify that the IUT can successfully process	an AC-Request [Start] where Session	
	Based Charging is used.		
Configuration:	CF_1Rf		
Test purpose:	Ensure that the IUT		
	on receipt of an AC-Request		
	containing an Accounting-Record-Typ	pe AVP	
	containing an Accounting-Record-	-Type AVP	
	indicating START_RECORD		
	containing an Accounting-Record-Number AVP		
	containing an Event-Timestamp AVP		
	containing a Service-Information AVP		
	indicating the service specific parameters		
	sends an AC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Result AVP		
	containing an Accounting-Record-Type AVP		
	indicating START_RECORD		
	optionally containing an Acct-Interim-Interval AVP		
	indicating the desired intermediate charging interval.		
Comments:	Postamble action: ACR [Stop] is sent.		

TP_RF_CDF_TC_03	Standards Reference:	PICS item:	
	Clause 6.2.2/Steps 5 to 7 - Table 6.2.2/3	A.3/1.2	
Summary:	Verify that the IUT can successfully process an AC-Request [Interim] where Session		
	Based Charging is used.		
Configuration:	CF_1Rf		
Test purpose:	Ensure that the IUT		
	on receipt of an AC-Request		
	containing an Accounting-Record-Typ	pe AVP	
	containing an Accounting-Record	-Type AVP	
	indicating INTERIM_RECORD		
	containing an Accounting-Record-Number AVP		
	containing an Event-Timestamp AVP		
	optionally containing a Service-Information AVP		
	indicating a Subscription-Id AVP		
	indicating an IMS-Information AVP		
	sends an AC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Result AVP		
	containing an Accounting-Record-Type AVP		
	indicating INTERIM_RECORD		
	containing an Accounting-Record-Number AVP		
	optionally containing an Acct-Interim-Interval AVP		
	indicating the desired intermediate charging interval.		
Comments:	Preamble action: ACR, ACA [Start] are exch	anged.	
	Postamble action: ACR [Stop] is sent.		

TP_RF_CDF_TC_04	Standards Reference:	PICS item:	
	Clause 6.2.2/Steps 9 to 11 - Table 6.2.2/3	A.3/1.2	
Summary:	Verify that the IUT can successfully process an A	C-Request [Stop] where Session Based	
·	Charging is used.		
Configuration:	CF_1Rf		
Test purpose:	Ensure that the IUT		
	on receipt of an AC-Request		
	containing an Accounting-Record-Type A\	/P	
	containing an Accounting-Record-Type AVP		
	indicating STOP_RECORD		
	containing an Accounting-Record-Number AVP		
	containing an Event-Timestamp AVP		
	optionally containing a Service-Information AVP		
	indicating a Subscription-Id AVP		
	indicating an IMS-Information AVP		
	sends an AC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Result AVP		
	containing an Accounting-Record-Type AVP		
	indicating STOP_RECORD.		
Comments:	Preamble action: ACR, ACA [Start] and ACR, AC	A [Interim] are exchanged.	

### 5.2.2.1.4 Error Cases

TP_RF_CDF_EC_01	Standards Reference:	PICS item:	
	Clause 6.1¶3 - Table 6.2.3	A.3/1.2	
	IETF RFC 3588 [8], clause 8.5		
Summary:	Verify that the IUT terminates the session in case of timer expiration when the Session		
	Based Charging procedure is not completed	properly.	
Configuration:	CF_1Rf		
Test purpose:	Ensure that the IUT		
	on timer expired		
	sends an AS-Request		
	containing a Session-ID AVP		
	containing an Origin-Host AVP		
	containing an Origin-Realm AVP		
	containing a Destination-Realm AVP		
	containing a Destination-Host AVP		
	containing an Auth-Application-Id AVP.		
Comments:	Preamble action: ACR, ACA [Start] are exchanged.		

TP_RF_CDF_EC_02	Standards Reference:	PICS item:
	Clause 6.1¶3 - Table 6.2.3	A.3/1.2
	IETF RFC 3588 [8], clause 8.5	
Summary:	Verify that the IUT terminates the session in	case of timer expiration when the Session
	Based Charging procedure is not completed	properly.
Configuration:	CF_1Rf	
Test purpose:	Ensure that the IUT	
	on timer expired	
	sends an AS-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing a Destination-Host AVP	
	containing an Auth-Application-Id AVP	
Comments:	Preamble action: ACR, ACA [Start] and ACR, ACA [Interim] are exchanged.	

TP_RF_CDF_EC_03	Standards Reference:	PICS item:
	Clause 6.1.3.3¶2	A.3/1.1
	IETF RFC 3588 [8], clause 5.7	
Summary:	Verify that the IUT can successfully process	Duplicate Detection AC-Request [Event]
	where Event Based Charging is used.	
Configuration:	CF_1Rf	
Test purpose:	Ensure that the IUT	
	on receipt of an AC-Request	
	containing a Diameter-Header	
	containing a Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing an Accounting-Record-Type AVP	
	indicating EVENT_RECORD	
	containing an Event-Timestamp AVP	
	sends an AC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	
	containing an Accounting-Record-Typ	pe AVP
	indicating EVENT_RECORD	
	containing an Accounting-Record-Nu	mber AVP
Comments:		

TP_RF_CDF_EC_04	Standards Reference:	PICS item:
	Clause 6.1.3.3¶2	A.3/1.2
	IETF RFC 3588 [8], clause 5.7	
Summary:	Verify that the IUT can successfully process	Duplicate Detection AC-Request [Interim]
	where Session Based Charging is used.	
Configuration:	CF_1Rf	
Test purpose:	Ensure that the IUT	
	on receipt of an AC-Request	
	containing a Diameter-Header	
	containing a Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing an Accounting-Record-Type AVP	
	indicating INTERIM_RECORD	
	containing an Event-Timestamp AVP	
	sends an AC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	
	containing an Accounting-Record-Ty	pe AVP
	indicating INTERIM _RECORD	
	containing an Accounting-Record-Nu	
Comments:	Preamble action: ACR, ACA [Start] are exch	anged.
	Postamble action: ACR [Stop] is sent.	

## 5.2.2.2 CTF Role

## 5.2.2.2.1 Test selection

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

## 5.2.2.2 Message Syntax

TP_RF_CTF_MS_01	Standards Reference: Clause 6.2.2 Table 6.2.2 and IETF RFC 4005 [9], clause 3.9¶2	PICS item:
Summary:	Verify that the IUT can send an AC-Request	t to indicate a Charging Data Transfer.
Configuration:	CF_1Rf	
Test purpose:	Ensure that the IUT  to indicate a request for Charging Data sends an AC-Request  containing a Session-ID AVP containing an Origin-Host AVP containing an Origin-Realm AVP containing a Destination-Realm AVP containing an Accounting-Record-Ty containing an Accounting-Record-Nu containing an Acct-Application-Id AV indicating the value 3.	pe AVP Imber AVP
Comments:		

TP_RF_CTF_MS_02	Standards Reference:	PICS item:
	IETF RFC 3588 [8], clause 3¶2 and ¶4	
Summary:	Verify that the IUT can send an AC-Request	with correct Diameter-Header parameters to
	indicate a Charging Data Transfer with valid	Diameter-Header parameters.
Configuration:	CF_1Rf	
Test purpose:	Ensure that the IUT	
	to indicate a request for Charging Data	Transfer,
	sends an AC-Request	
	containing a Diameter-Header	
	containing a Version	
	indicating value '1'	
	containing a Command-Flags	
	containing T bit	
	indicating value '0'	
	containing E bit	
	indicating value '0'	
	containing r bits	
	indicating value '0000'.	
Comments:		

## 5.2.2.2.3 Type of Charging

NOTE: Verify that IMS is able to trigger ACR events. (For initial condition check ETSI TS 132 260 [1] Table 5.2.1.1 and set correct Configuration which is related to ETSI TS 102 790-2 [3] (IMS Rel10 test purposes on Gm, Ic, Isc and Mw interfaces).

TP_RF_CTF_TC_01	Standards Reference:	PICS item:
	Clause 6.1.1/Steps 1 to 4 - Table 6.2.2/3	A.4/1.1
	ETSI TS 132 260 [1], Table 5.2.1.1 -	
	Clause 5.2.2.1.5	
Summary:	Verify that the IUT can successfully process	an AC-Request [Event].
Configuration:	CF_1Rf or CF_1Rf1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	
	VA_01: TP_IMST2_MW_GEN_03 (200 OK	•
	VA_02: TP_IMST2_MW_GEN_03 (200 OK	
	VA_03: TP_IMST2_MW_GEN_03 (200 OK	· · · · · · · · · · · · · · · · · · ·
_	VA_04: TP_IMST2_MW_SUB_03 (200 OK	PUBLISH)
Test purpose:	Ensure that the IUT	
	sends an AC-Request	
	containing an Accounting-Record-Type AVP	
	indicating EVENT_RECORD	
	containing an Accounting-Record-Number AVP	
	containing an Event-Timestamp AVP	
	containing a Service-Information AVP	
	containing at least one Subscription-ID AVP indicating the identification of the user	
	optionally containing an IMS-Information AVP	
	containing a Node-Functionality AVP	
	indicating the value 3	
	optionally containing a Service-Generic-Information AVP	
	indicating the service specific parameters	
	optionally containing a Service-Cont	
	on receipt of an AC-Answer	SACIO / CI
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	3
	not containing an Experimental-Resu	
	containing an Accounting-Record-Type	pe AVP
	indicating EVENT_RECORD	
	accepts the message.	
Comments:	Preamble action: UE initiates an initial REGI	STRATION procedure.

TP_RF_CTF_TC_02	Standards Reference:	PICS item:
	Clause 6.1.2/Step 2 - Table 6.2.2/3	A.4/1.2
	ETSI TS 132 260 [1], Table 5.2.1.1 -	
	Clause 5.2.2.1	
Summary:	Verify that the IUT can successfully process	an AC-Request [Start].
Configuration:	CF_1Rf or CF_1Rf1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_08 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of SIP 200 OK INVITE	
	sends an AC-Request	
	containing an Accounting-Record-Type AVP	
	indicating START_RECORD	
	containing an Accounting-Record-Number AVP	
	containing an Event-Timestamp AVP	
	containing a Service-Information AVP	
	indicating the service specific parameters	
	on receipt of an AC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	
	containing an Accounting-Record-Typ	pe AVP
	indicating START_RECORD	
	optionally containing an Acct-Interim	
	indicating the desired intermediate charging interval	
	accepts the message.	
Comments:	Preamble action: UE initiates an INVITE pro-	cedure.

TP_RF_CTF_TC_03	Standards Reference: Clause 6.1.2/Step 5 - Table 6.2.2/3	PICS item: A.4/1.2
Summary:	Verify that the time between several AC-Requests [Interim] received by the IUT is at	
Julilliary.	least equal to the desired intermediate charging interval.	
Configuration:	CF 1Rf1Gm1Mw	ing interval.
SIP Initial condition:	IUT receives SIP message and then sends [	NAMETER ACR massage to the CDE
on miliar condition.	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_08 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of SIP 200 OK (Invite)	
	sends an AC-Request	
	containing an Accounting-Record-Type	pe AVP
	indicating START_RECORD	
	containing an Accounting-Record-Number AVP	
	on receipt of an AC-Answer	
	containing an Accounting-Record-Type AVP	
	indicating START_RECORD	
	containing an Accounting-Record-Number AVP	
	containing an Acct-Interim-Interval AVP	
	containing the desired intermediate charging interval indicating a value INTERIM_INTERVAL not equal to 0	
	sends periodically an AC-Request [Interim]	
	containing an Accounting-Record-Type AVP	
	indicating INTERIM_RECORD	
	containing an Accounting-Record-Number AVP containing a Service-Information AVP	
	containing a Service-Information AVP	
	on receipt of an AC-Answer	
	containing an Accounting-Record-Typ	ne AVP
	indicating INTERIM_RECORD	
	containing an Accounting-Record-Nu	mber AVP
	stops sending AC-Requests.	
Comments:	Preamble action: UE establishes a call.	

TP_RF_CTF_TC_04	Standards Reference:	PICS item:	
	Clause 6.1.2/Step 5 - Table 6.2.2/3	A.4/1.2	
Summary:	Verify that the IUT can successfully process an AC-Request [Interim].		
Configuration:	CF_1Rf1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends [		
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:		
	TP_IMST2_MW_TAR_03 (200 OK reINVITE)		
Test purpose:	Ensure that the IUT		
	on receipt of SIP 200 OK (Invite)		
	sends an AC-Request		
	containing an Accounting-Record-Typ	pe AVP	
	indicating START_RECORD		
	containing an Accounting-Record-Nu	mber AVP	
	on receipt of an AC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Result AVP		
	containing an Accounting-Record-Type AVP		
	indicating START_RECORD		
	containing an Accounting-Record-Number AVP		
	on receipt of SIP 200 OK (relnvite)		
	sends an AC-Request [Interim] containing an Accounting-Record-Type AVP		
	5 51	DE AVP	
	indicating INTERIM_RECORD		
	containing an Accounting-Record-Number AVP		
	containing a Service-Information AVP		
	containing an Event-Timestamp AVP on receipt of an AC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS  not containing an Experimental-Result AVP		
	containing an Accounting-Record-Typ		
	indicating INTERIM_RECORD		
	containing an Accounting-Record-Nu	mber AVP	
	stops sending AC-Requests.		
Comments:	Preamble action: UE establishes a call.		

TP_RF_CTF_TC_05	Standards Reference:	PICS item:
	Clause 6.1.2/Step 9 - Table 6.2.2/3	A.4/1.2
	ETSI TS 132 260 [1], clause 5.2.1.1	
	IETF RFC 3588 [8], clause 6.9	
Summary:	Verify that the IUT can successfully process	an AC-Request [Stop].
Configuration:	CF_1Rf or CF_1Rf1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER ACR message to the CDF.
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_08 (BYE)	
Test purpose:	Ensure that the IUT	
	on receipt of SIP BYE	
	sends an AC-Request	
	containing an Accounting-Record-Type AVP	
	indicating STOP_RECORD	
	containing an Accounting-Record-Number AVP	
	containing an Acct-Application-Id AVP	
	indicating the value 3	
	on receipt of an AC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP	
	containing an Accounting-Record-Type AVP	
	indicating STOP_RECORD	
	accepts the message.	
Comments:	Preamble action: A call is established and the	e UE initiates a BYE procedure.

### 5.2.2.2.4 Error Cases

TP_RF_CTF_EC_01	Standards Reference:	PICS item:
	Clause 6.1.3 - Table 6.2.3	A.4/1.2
	IETF RFC 3588 [8], clause 5.5.1	
Summary:	Verify that the IUT sends periodically Device	-Watchdog-Request messages to the CDF.
Configuration:	CF_1Rf or CF_1Rf1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_08 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	sends a DW-Request	
	containing a Diameter-Header	
	containing a Hop-by-Hop AVP	
	containing an End-To-End AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	on receipt of a DW-Answer	
	containing a Diameter-Header	
	containing a Hop-by-Hop AVP	
	containing an End-To-End AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	8
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	accepts the message.	
Comments:	Preamble action: ACR, ACA [Start] are exch	anged.

TP_RF_CTF_EC_02	Standards Reference:	PICS item:
	Clause 6.1.3.1¶1 - Table 6.2.3	A.4/1.2 and A.4/5
	IETF RFC 3588 [8], clause 5.5	
Summary:	Verify that on connection failure with the prin	nary CDF, the IUT sends an AC-Request
	[Interim] to the secondary CDF.	
Configuration:	CF_2Rf or CF_2Rf1Gm1Mw	
Initial conditions:	A secondary CDF is available	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_08 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	to indicate the CDF stop	
	sends an AC-Request [Interim] to the secondary CDF	
	containing an Accounting-Record-Type AVP	
	indicating INTERIM_RECORD	
	containing an Accounting-Record-Number AVP	
	containing a Service-Information AVP	
	containing an Event-Timestamp AVP	
	indicating a time ordered sequence	
	on receipt of an AC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	
	containing an Accounting-Record-Typ	
	containing an Accounting-Record-Nu	mber AVP
	accepts the message.	
Comments:	Preamble action: ACR, ACA [Start] and ACR, ACA [Interim] are exchanged.	
NOTE: Communication failure is based on DWR/DWA detection.		

TP_RF_CTF_EC_03	Standards Reference:	PICS item:
	Clause 6.1.3.1¶1 - Table 6.2.3	A.4/1.2 and
	IETF RFC 3588 [8], clause 5.5	A.4/5
Summary:	Verify that on connection restored, the IUT s	ends an AC-Request [Interim] to the primary
	CDF.	
Configuration:	CF_2Rf or CF_2Rf1Gm1Mw	
Initial conditions:	A secondary CDF is available	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_INI_05 (INVITE)	
Test purpose:	Ensure that the IUT	
	to indicate the CDF restart	
	sends an AC-Request [Interim] to the primary CDF	
	containing an Accounting-Record-Type AVP	
	indicating INTERIM_RECORD	
	containing an Accounting-Record-Number AVP	
	containing a Service-Information AVP	
	containing an Event-Timestamp AVP	
	indicating a time ordered sequence	
	on receipt of an AC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	
	containing an Accounting-Record-Typ	
	containing an Accounting-Record-Nu	mber AVP
	accepts the message.	
Comments:	Preamble action: ACR, ACA [Start] and ACR, ACA [Interim] are exchanged.	
NOTE: Communicat	ion failure is based on DWR/DWA detection.	

TP_RF_CTF_EC_04	Standards Reference: Clause 6.1.3.1¶2 - Table 6.2.3	PICS item: A.4/1.2 and A.4/2.1 and not A.4/5	
	IETF RFC 3588 [8], clause 9.4		
Summary:		stores generated accounting data in a non-	
	volatile memory and, on communication rest	fored, sends them to the CDF, in the order	
	they were stored in the buffer.		
Configuration:	CF_1Rf or CF_1Rf1Gm1Mw		
Initial conditions:	Secondary CDF is not available		
SIP Initial condition:	IUT receives SIP message and then sends I		
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_08 (200 OK INVITE)		
Test purpose:	Ensure that the IUT		
	to indicate the CDF restart		
	sends the buffered AC-Request [Interim]		
		containing an Accounting-Record-Type AVP	
	indicating INTERIM_RECORD		
	containing an Accounting-Record-Number AVP		
	containing a Service-Information AVP		
	containing an Event-Timestamp AVP		
	indicating a time ordered sequence		
	on receipt of one AC-Answer for each buffered AC-Request [Interim]		
	containing a Session-ID AVP		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS not containing an Experimental-Resu		
	containing an Accounting-Record-Ty		
	containing an Accounting-Record-Number AVP accepts the messages.		
Comments:		R, ACA [Interim] are exchanged and the CDF	
John Million	stops communication with the IUT.	t, 710/1 [interim] are exchanged and the ODI	
NOTE: Communicat	ation failure is based on DWR/DWA detection.		

TP_RF_CTF_EC_05	Standards Reference:	PICS item:
	Clause 6.1.3.2¶1 - Table 6.2.3	A.4/1.2 and A.4/2.2
Summary:	Verify that the IUT retransmits an unacknow	ledged AC-Request [Interim] (T-flag).
Configuration:	CF_1Rf or CF_1Rf1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_08 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	to indicate not having received an AC	-Answer [Interim]
	send again an AC-Request [Interim]	
	containing a Diameter-Header	
	containing a Command-Flags	
	containing a T-flag	
	indicating value '1'	
	containing an Accounting-Record-Type AVP	
	indicating INTERIM_RECORD	
	containing an Accounting-Record-Number AVP containing a Service-Information AVP	
	containing a Service-Information AVP	
	indicating at time ordered sequence	
	on receipt of an AC-Answer	
	containing a Session-ID AVP	
	containing a Session-ID AVP	
	indicating DIAMETER SUCCESS	3
	not containing an Experimental-Result AVP	
	containing an Accounting-Record-Type	
	containing an Accounting-Record-Number AVP	
	accepts the message.	
Comments:		R, ACA [Interim] are exchanged and the CDF
	stops communication with the IUT.	

TP_RF_CTF_EC_06	Standards Reference:	PICS item:
	Clause 6.1.3.2¶1 - Table 6.2.3	A.4/1.2 and A.4/2.1
Summary:	Verify that on reaching the maximum of retransmissions of unacknowledged AC-	
	Requests [Interim] (T-flag), the IUT executes	the CDF connection failure procedure.
Configuration:	CF_1Rf or CF_1Rf1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_08 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	on maximum retransmission of AC-Re	equest [Interim]
	to indicate the CDF restart	
	sends the buffered AC-Request [Interi	
	containing an Accounting-Record-Type AVP	
	indicating INTERIM_RECORD	
	containing an Accounting-Record-Number AVP	
	containing a Service-Information AVP	
	containing an Event-Timestamp AVP	
	indicating a time ordered sequence	
	on receipt of one AC-Answer for each buffered AC-Request [Interim]	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	
	containing an Accounting-Record-Typ	
	containing an Accounting-Record-Number AVP	
	accepts the messages.	
Comments:		R, ACA [Interim] are exchanged and the CDF
	stops communication with the IUT.	

## 5.2.3 Ro interface

### 5.2.3.1 OCF Role

#### 5.2.3.1.1 Test selection

The IUT takes the role of the OCF; PICS A.5/1.

## 5.2.3.1.2 Message Syntax

TP_RO_OCF_MS_01	Standards Reference:	PICS item:
	Clause 6.4.3 Table 6.4.3	
Summary:	Verify that the IUT can successfully process all mandatory AVPs in a CC-Request	
	received due to Charging Data Transfer.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing an Auth-Application-Id AVP	
	indicating the value 4	
	containing a Service-Context-Id AVP	
	containing a CC-Request-Type AVP	
	containing a CC-Request-Number A\	/P
	sends a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	5
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	<b>n</b>
	containing an Auth-Application-Id AV	P
	containing a CC-Request-Type AVP	
	containing a CC-Request-Number AVP.	
Comments:		

TP_RO_OCF_MS_02	Standards Reference:	PICS item:
11 _KO_OOI _WO_02	IETF RFC 3588 [8], clauses 3¶2 and 3¶4	i ioo item.
Summor:		all mandatany AV/Da in a CC Daguaget
Summary:	Verify that the IUT can successfully process	
		responds with a valid CC-Answer message.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing an Auth-Application-Id AV	P
	indicating the value 4	
	containing a Service-Context-Id AVP	
	containing a CC-Request-Type AVP	
	containing a CC-Request-Number A\	/P
	sends a CC-Answer	
	containing a Diameter-Header	
	containing a Version	
	indicating value '1'	
	containing a Command-Flags	
	containing T bit	
	indicating value '0'	
	containing r bits	
	indicating value '0000'.	
Comments:		

## 5.2.3.1.3 Type of Charging

TP_RO_OCF_TC_01	Standards Reference: Clause 6.3.3/ Steps 2 and 5 and IETF RFC 4006 [10], clauses 6.3 and	PICS item: A.6/3.1
	8.41	
Summary:	Verify that the IUT can successfully process	a CC-Request [Event] with direct debiting
	due to Immediate Event Charging.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	
	containing a Multiple-Services-Credit-Control AVP	
	(containing a Requested-Service-Unit AVP and/or	
	containing a Service-Identifier AVP)	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	Octobrol AVD
	containing a Multiple-Services-Credit	
	containing a Granted-Service-Unit AVP	
Commenter	indicating debits units.	
Comments:		

TP_RO_OCF_TC_02	Standards Reference:	PICS item:
	Clause 6.3.3/Step 5, note and	A.6/3.1
	IETF RFC 4006 [10], clauses 6.1, 8.7	
	and 8.41	
Summary:	Verify that the IUT can successfully process	a CC-Request [Event] with price enquiry
	due to Immediate Event Charging.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested Action AVP	
	indicating PRICE_ENQUIRY	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Service-Identifier AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a Cost-Information AVP	
	containing a Unit-Value AVP	
	containing a Value-Digits AVP	
	containing a Currency-Code AVP.	
Comments:		

TP_RO_OCF_TC_03	Standards Reference:	PICS item:	
	Clause 6.3.3/Step 5, note and	A.6/3.1	
	clause 7.2.172 and		
	IETF RFC 4006 [10], clauses 6.2 and		
	8.41		
Summary:	Verify that the IUT can successfully process	a CC-Request [Event] with check balance	
	due to Immediate Event Charging.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing a CC-Request-Type AVP	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Requested Action AVP		
	indicating CHECK BALANCE		
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS	3	
	containing a CC-Request-Type AVP		
	indicating EVENT_REQUEST		
	containing a Remaining-Balance AVF	0	
	containing a Unit-Value AVP		
	containing aValue-Digits AVP		
	containing a Currency-Code AVP		
Comments:			

TP_RO_OCF_TC_04	Standards Reference: Clause 6.3.3/Steps 2 and 5 after Figure 6.3.3a and IETF RFC 4006 [10], clauses 6.4 and	PICS item: A.6/3.1	
	8.41	00.0	
Summary:	Verify that the IUT can successfully process	a CC-Request [Event] with refund account	
	due to Immediate Event Charging.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	I	on receipt of a CC-Request	
	containing a CC-Request-Type AVP		
	indicating EVENT_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Requested Action AVP		
	indicating REFUND_ACCOUNT		
	containing a Multiple-Services-Credit-Control AVP		
	(containing a Requested-Service-Unit AVP and/or		
	containing a Service-Identifier AVP)		
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating EVENT_REQUEST		
	containing a Multiple-Services-Credit	-Control AVP	
	containing a Granted-Service-Unit AVP		
	indicating refunded units.		
Comments:	Preamble action: CCR, CCA [Event] direct debiting action are exchanged.		

TP_RO_OCF_TC_05	Standards Reference:	PICS item:
	Clause 6.3.4/Step 2	A.6/3.2
Summary:	Verify that the IUT can successfully process a CC-Request [Initial] to reserve units due to	
	Event Charging with Unit Reservation.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-l	Jnit AVP
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Unit AVP	
	indicating reserved units optionally containing a Cost-Information AVP	
	containing Unit-Value AVP	
	containing Unit-Value AVP	
	containing Value-Digits AVP containing Currency-Code AVP	
	optionally containing a Remaining-Balance AVP	
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP.	
Comments:	, i	

TP_RO_OCF_TC_06	Standards Reference:	PICS item:	
	Clause 6.3.4/Steps 2, 4, 6 and 8	A.6/3.2	
Summary:	Verify that the IUT can successfully process	a CC-Request [Termination] to debit units	
-	due to Event Charging with Unit Reservation	i	
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQU	EST	
	containing a CC-Request-Number A\		
	containing a Multiple-Services-Credite	-Control AVP	
	containing a Used-Service-Unit AVP		
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQUEST		
	optionally containing a Cost-Information AVP		
	containing Unit-Value AVP		
	containing Value-Digits AVP		
		containing Currency-Code AVP	
	optionally containing a Remaining-Balance AVP		
	containing Unit-Value AVP		
	containing Value-Digits AVP		
	containing Currency-Code AVP.		
Comments:	Preamble action: CCR, CCA [Initial] are excl	hanged.	

TP_RO_OCF_TC_07	Standards Reference:	PICS item:
	Clause 6.3.5/Steps 2 and 4	A.6/3.3
Summary:	Verify that the IUT can successfully process a CC-Request [Initial] to reserve units due to	
	Session Charging with Unit Reservation.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-U	Jnit AVP
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Unit AVP	
	indicating reserved units	
	optionally containing a Cost-Information AVP	
	containing Unit-Value AVP containing Value-Digits AVP	
	containing Value-Digits AVP containing Currency-Code AVP	
	optionally containing a Remaining-Balance AVP	
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP.	
Comments:	, i	

TP_RO_OCF_TC_08	Standards Reference:	PICS item:
	Clause 6.3.5/Steps 2, 4, 6 and 8	A.6/3.3
Summary:	Verify that the IUT can successfully process a CC-Request [Update] to reserve units and	
	debit units due to Session Charging with Uni	t Reservation.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Used-Service-Unit A	VP
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	5
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit	
	containing a Granted-Service-Unit AVP	
	indicating reserved units	
	optionally containing a Cost-Informa	tion AVP
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP	
	optionally containing a Remaining-B	alance AVP
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP.	
Comments:	Preamble action: CCR, CCA [Initial] are excl	nanged.

TP_RO_OCF_TC_09	Standards Reference:	PICS item:
	Clause 6.3.5/Steps 2, 4, 6, 8, 10 and 12	A.6/3.3
Summary:	Verify that the IUT can successfully process a CC-Request [Termination] to debit units	
	due to Session Charging with Unit Reservati	on.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQU	
	containing a CC-Request-Number A\	/P
	containing a Multiple-Services-Credit	-Control AVP
	containing a Used-Service-Unit A	VP
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQUEST	
	containing a Multiple-Services-Credit	
	containing a Granted-Service-Unit AVP	
	indicating reserved units	
	optionally containing a Cost-Informa	tion AVP
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP	alanaa AVD
	optionally containing a Remaining-B	alance AVP
	containing Unit-Value AVP	
	containing Value-Digits AVP	
Comments:	containing Currency-Code AVP.	P. CCA [Undate] are exchanged
Comments.	Preamble action: CCR, CCA [Initial] and CC	K, COA [Opuale] are exchanged.

## 5.2.3.1.4 Error Cases

TP_RO_OCF_EC_01	Standards Reference:	PICS item:	
· · _ · · · · · · · · · · · · · · · ·	Clause 6.3.6.1¶2 and	A.6/3.1	
	IETF RFC 4006 [10], clause 6.5	7.10,011	
Summary:	:	Duplicate Detection due to Immediate Event	
	Charging with Direct Debiting.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing Diameter-Header		
	containing Command-Flags		
	containing T-flag		
	indicating value '1'		
	containing a CC-Request-Type AVP		
		indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP		
	containing a Requested-Action AVP		
	indicating DIRECT_DEBITING		
	containing a Multiple-Services-Credit-Control AVP		
	(containing a Requested-Service-Unit AVP and/or		
	containing a Service-Identifier AVP)		
	sends a CC-Answer		
	_	containing a Result-Code AVP	
	containing a CC-Request-Type AVP	indicating DIAMETER_SUCCESS	
	indicating EVENT_REQUEST		
	containing a Multiple-Services-Credit	-Control AVP	
	containing a widitiple-services-Gredit		
	indicating debits units.	.,	
Comments:	g downe dime.		

TP_RO_OCF_EC_02	Standards Reference:	PICS item:	
	Clause 6.3.6.1¶2 and	A.6/3.3	
•	IETF RFC 4006 [10], clause 6.5		
Summary:	Verify that the IUT can successfully process	Duplicate Detection due to Event Charging	
0 (1 1	with Unit Reservation.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing Diameter-Header		
	containing Command-Flags		
	containing T-flag		
	indicating value '1'		
	containing a CC-Request-Type AVP indicating INITIAL REQUEST		
	<b>5</b> =	/D	
		containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP		
	containing a Requested-Service-Unit AVP sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS	8	
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a Multiple-Services-Credit-	-Control AVP	
	containing a Granted-Service-Unit	t AVP	
	indicating reserved units		
	optionally containing a Cost-Informa	tion AVP	
	containing Unit-Value AVP		
	containing Value-Digits AVP		
	containing Currency-Code AVP		
	optionally containing a Remaining-B	alance AVP	
	containing Unit-Value AVP		
	containing Value-Digits AVP		
	containing Currency-Code AVP.		
Comments:			

TP_RO_OCF_EC_03	Standards Reference:	PICS item:
	Clause 6.3.6.1¶2 and	A.6/3.3
	IETF RFC 4006 [10], clause 6.5	
Summary:	Verify that the IUT can successfully process	Duplicate Detection due to Event Charging
	with Unit Reservation.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing Diameter-Header	
	containing Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQU	
	containing a CC-Request-Number AV	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	5
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Uni	t AVP
	indicating reserved units	
	optionally containing a Cost-Informa	tion AVP
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP	A 1/D
	optionally containing a Remaining-B	alance AVP
	containing Unit-Value AVP	
	containing Value-Digits AVP	
0	containing Currency-Code AVP.	
Comments:	Preamble action: CCR, CCA [Initial] are excl	nangea.

TP_RO_OCF_EC_04	Standards Reference: Clause 6.3.6.1¶2 and	PICS item: A.6/3.3	
	IETF RFC 4006 [10], clause 6.5		
Summary:	Verify that the IUT can successfully process Duplicate Detection due to Session		
	Charging with Unit Reservation.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing Diameter-Header		
	containing Command-Flags		
	containing T-flag		
	indicating value '1'		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST	<b>1</b> D	
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Requested-Service-Unit AVP sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating UPDATE _REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Granted-Service-Unit AVP		
	indicating reserved units		
	optionally containing a Cost-Information AVP		
	containing Unit-Value AVP		
	containing Value-Digits AVP		
	containing Currency-Code AVP		
	optionally containing a Remaining-B	alance AVP	
	containing Unit-Value AVP		
	containing Value-Digits AVP		
	containing Currency-Code AVP.		
Comments:	Preamble action: CCR, CCA [Initial] and CC	R, CCA [Update] are exchanged and the	
	OCF stops communication with the IUT.		

## 5.2.3.1.5 Tariff Changes

TP_RO_OCF_CH_01	Standards Reference:	PICS item:	
	Clause 6.3.7.1¶3, 4; 6.3.3/Step 5, NOTE	A.6/5 and A.6/3.1	
	and IETF RFC 4006 [10], clauses 6.2		
	and 8.41		
Summary:		sage AVP and that the IUT can successfully	
	process a CC-Request [Event] to perform ta		
	and then responds with a CC-Answer with re	elevant Result-Code AVP and Tariff-Time-	
	Change AVP.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing a CC-Request-Type AVP		
		indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP		
	containing a Requested Action AVP		
	indicating CHECK BALANCE		
	containing a Multiple-Services-Credit-Control AVP		
	containing an Used-Service-Unit AVP		
	containing a Tariff-Change-Usage AVP		
	indicating UNIT_BEFORE_TARIFF_CHANGE sends a CC-Answer		
	containing a Result-Code AVP	•	
	indicating DIAMETER_SUCCESS containing a CC-Request-Type AVP		
	indicating EVENT_REQUEST		
	containing a Multiple-Services-Credit	-Control AVP	
	containing a Manaple-Services-Orean		
	containing a Tariff-Time-Change AVP.		
Comments:		<b>∪</b> -	

TP_RO_OCF_CH_02	Standards Reference:	PICS item:
	Clause 6.3.7.1¶3, 4 and	A.6/5 and A.6/3.2
	IETF RFC 4006 [10], clause 8.2	
Summary:		Isage AVP and IUT can successfully process
	a CC-Request [Initial] to perform tariff switch	
	Reservation and then responds with a CC-A	nswer with relevant Result-Code AVP and
	Tariff-Time-Change AVP.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP	
	containing an Used-Service-Unit AVP	
	containing a Tariff-Change-Usage AVP	
	indicating UNIT_BEFORE_TARIFF_CHANGE	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	5
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit	
	containing a Granted-Service-Unit AVP	
	containing a Tariff-Time-Chan	ge AVP.
Comments:		

TP_RO_OCF_CH_03	Standards Reference:	PICS item:
	Clause 6.3.7.1¶3, 4; 6.3.5/Steps 2 and 4	A.6/5 and A.6/3.3
Summary:	Verify that the IUT supports Tariff-Change-Usage AVP and IUT can successfully process	
	a CC-Request [Initial] to perform tariff switch	
	Reservation and then responds with a CC-A	nswer with relevant Result-Code AVP and
	Tariff-Time-Change AVP.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP	
	containing an Used-Service-Unit AVP	
	containing a Tariff-Change-Usage AVP	
	indicating UNIT_BEFORE_TARIFF_CHANGE	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit	
	containing a Granted-Service-Uni	
	containing a Tariff-Time-Chan	ge AVP.
Comments:		

## 5.2.3.1.6 Re-authorization

TP_RO_OCF_RE_01	Standards Reference:	PICS item:	
	Clause 6.3.8 and 6.4.4 and	A.6/6 and A.6/3.3	
	IETF RFC 4006 [10], clause 5.5¶1		
Summary:	Verify that the IUT re-authorizes multiple act	ive quotas during Session Charging with	
	Unit Reservation.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT, when Session Charging	g with Unit Reservation is in progress	
	Indicate need for re-authorization		
	sends an RA-Request		
	containing a Session-ID AVP		
	containing an Origin-Host AVP		
	containing an Origin-Realm AVP		
	containing a Destination-Realm AVP		
	containing a Destination-Host AVP		
	containing an Auth-Application-Id AVP		
	indicating the value 4		
	containing a Re-Auth-Request-Type AVP		
	indicating AUTHORIZE_ONLY		
	on receipt of an RA-Answer		
	containing a Session-ID AVP		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS	5	
	containing an Origin-Host AVP		
	containing an Origin-Realm AVP		
	accepts the message.		
Comments:	Preamble action: CCR, CCA [Initial] and CC	R, CCA [Update] are exchanged.	

## 5.2.3.1.7 Failure Handling

TP_RO_OCF_FH_01	Standards Reference:	PICS item:	
	Clause 6.3.9 and	A.6/3.1 and A.6/16.2	
	IETF RFC 4006 [10], clause 5.7		
Summary:	Verify that the IUT can successfully transmit	Credit-Control-Failure-Handling AVP	
	(CCFH) with price enquiry.	-	
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing a CC-Request-Type AVP	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Requested Action AVP		
	indicating PRICE_ENQUIRY		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Service-Identifier AVP		
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating EVENT_REQUEST		
	containing Credit-Control-Failure-Handling AVP		
	indicating RETRY_AND_TERMINATE.		
Comments:			

TP_RO_OCF_FH_02	Standards Reference:	PICS item:	
	Clause 6.3.6 and	A.6/3.1 and A.6/17.1	
	IETF RFC 4006 [10], clause 6.5		
Summary:	Verify that the IUT can successfully transmit	Direct-Debiting-Failure-Handling AVP	
	(DDFH) with direct debiting.	-	
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing a CC-Request-Type AVP		
	indicating EVENT_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Requested-Action AVP		
	indicating DIRECT_DEBITING		
	containing a Multiple-Services-Credit-Control AVP		
	(containing a Requested-Service-Unit AVP and/or		
	containing a Service-Identifier AVP)		
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST		
	containing Direct-Debiting-Failure-Handling AVP		
	indicating TERMINATE_OR_BUF	FER.	
Comments:			

TP_RO_OCF_FH_03	Standards Reference:	PICS item:
	Clause 6.3.6 and	A.6/3.1 and A.6/17.2
	IETF RFC 4006 [10], clause 6.5	
Summary:	Verify that the IUT can successfully transmit	Direct-Debiting-Failure-Handling AVP
	(DDFH) with direct debiting.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	
	containing a Multiple-Services-Credit-Control AVP	
	(containing a Requested-Service-Unit AVP and/or	
	containing a Service-Identifier AVP)	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing Direct-Debiting-Failure-Handling AVP	
	indicating CONTINUE.	
Comments:		

#### 5.2.3.1.8 Failover

TP_RO_OCF_FA_01	Standards Reference:	PICS item:
	Clause 6.3.10¶1 - Table 6.4.3	A.6/3.2 and A.6/7
	IETF RFC 4006 [10], clause 5.7	
Summary:	Verify that the IUT can successfully transmit	CC-Session-Failover AVP.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL _REQUEST	
	containing CC-Session-Failover AVP	
	indicating FAILOVER_SUPPORT	ED.
Comments:		

TP_RO_OCF_FA_02	Standards Reference:	PICS item:
	Clause 6.3.10¶1 - Table 6.4.3	A.6/3.2 and A.6/7
	IETF RFC 4006 [10], clause 5.7	
Summary:	Verify that the IUT can successfully transmit	CC-Session-Failover AVP.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIALREQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	
	containing a Multiple-Services-Credit-Control AVP	
	(containing a Requested-Service-Unit AVP and/or	
	containing a Service-Identifier AVP)	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL _REQUEST	
	containing CC-Session-Failover AVP	
	indicating FAILOVER_NOT_SUP	PORTED.
Comments:		

## 5.2.3.1.9 Credit Pooling

TP_RO_OCF_CP_01	Standards Reference:	PICS item:
	Clause 6.3.4/Step 2 and	A.6/3.2 and A.6/8
	Clause 6.3.11 and	
	IETF RFC 4006 [10], clause 5.1.2	
Summary:	Verify that the IUT can successfully process a CC-Request [Initial] to perform credit	
	pooling due to Event Charging with Unit Reservation and then responds with a CC-	
	Answer with related AVPs.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Indicator AVP	
	indicating MULTIPLE_SERVICES_SUPPORTED	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a G-S-U-Pool-Reference AVP	
	containing a G-S-U-Pool-Identifier AVP	
	containing a CC-Unit-Type AV	/P
	containing a Unit-Value AVP	
	containing a Value-Digits A	AVP.
Comments:		

TP_RO_OCF_CP_02	Standards Reference:	PICS item:
	Clause 6.3.5/Steps 2 and 4 and	A.6/3.3 and A.6/8
	Clause 6.3.11 and	
	IETF RFC 4006 [10], clause 5.1.2	
Summary:		nd it can successfully process a CC-Request
	[Initial] to reserve units due to Session Char	ging with Unit Reservation.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Indicator AVP	
	indicating MULTIPLE_SERVICES_SUPPORTED	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a G-S-U-Pool-Reference AVP	
	containing a G-S-U-Pool-Iden	
	containing a CC-Unit-Type AV	/P
	containing a Unit-Value AVP	N. (D.
	containing a Value-Digits A	AVP.
Comments:		

## 5.2.3.1.10 Other procedures

TP_RO_OCF_OP_01	Standards Reference:	PICS item:
	Clause 6.5.1.1¶1 and 7.2.160	A.6/3.3 and A6/9.1
Summary:	Verify that the IUT can specify an idle timeou	ut associated with a granted quota
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL _REQUEST	
	containing a Multiple-Services-Credit-	-Control AVP
	containing a Quota-Holding-Time	AVP
	indicating a non 0 value	
Comments:		

TP_RO_OCF_OP_02	Standards Reference:	PICS item:
	Clause 6.5.1.2¶1, 3 and 7.2.235/236	A.6/3.3 and A6/9.2
Summary:	Verify that the IUT can successfully process a CC-Answer [Update] including various	
	Trigger-Type AVPs and generate a credit re-authorization.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\	/P
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Trigger AVP	_
	containing a Trigger-Type AVP	
	indicating one of the possible values (7.2.235/236)	
	and sends an RA-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing a Destination-Host AVP	6
	containing an Auth-Application-Id AV	r
	indicating the value 4	A) /D
	containing a Re-Auth-Request-Type	AVP
Commenter	indicating AUTHORIZE_ONLY.	han mad
Comments:	Preamble action: CCR, CCA [Initial] are excl	nangea.

TP_RO_OCF_OP_03	Standards Reference:	PICS item:
	Clause 6.5.1.2¶2 and 7.2.236	A.6/3.3 and A6/9.2
Summary:	Verify that the IUT can successfully reset trig	gers which were already set.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Trigger AVP	
	not containing a Trigger-Type	AVP.
Comments:	Preamble action: CCR, CCA [Initial] are excl	nanged.

TP_RO_OCF_OP_04	Standards Reference:	PICS item:
	Clause 6.5.2¶1 and 7.2.229	A.6/3.3 and A6/9 and A6/9.1
Summary:	Verify that the IUT can successfully indica	ate the remaining quota threshold by sending
	a CC-Answer with Time-Quota-Threshold	AVP and trigger quota re-authorization.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type A\	
	indicating UPDATE_REQUES	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-U	
	containing a CC-Time AVP	
	containing a Time-Quota-Thres	shold AVP
	and sends an RA-Request.	
Comments:	Preamble action: CCR, CCA [Initial] are e	exchanged.

TP_RO_OCF_OP_05	Standards Reference:	PICS item:
	Clause 6.5.2¶1 and 7.2.243	A.6/3.3 and A6/9 and A6/9.2
Summary:	Verify that the IUT can successfully indicate the remaining quota threshold by sending	
	a CC-Answer with Volume-Quota-Threshold AVP and trigger quota re-authorization.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type A\	/P
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Units AVP	
	containing a CC-Total-Octe	
	containing a CC-Input-Octe	
	containing a CC-Output-Oc	
	containing a Volume-Quota-Th	reshold AVP
	and sends an RA-Request.	
Comments:	Preamble action: CCR, CCA [Initial] are e	exchanged.

TP_RO_OCF_OP_06	Standards Reference:	PICS item:
	Clause 6.5.2¶1 and 7.2.240	A.6/3.3 and A6/9 and A6/9.2
Summary:	Verify that the IUT can successfully indica	ate the remaining quota threshold by sending
	a CC-Answer with Unit-Quota-Threshold AVP and trigger quota re-authorization.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type A\	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Cre	
	containing a Granted-Service-	
	containing a CC-Service-S	
	containing a Unit-Quota-Thres	hold AVP
	and sends an RA-Request.	
Comments:	Preamble action: CCR, CCA [Initial] are e	exchanged.

TP_RO_OCF_OP_07	Standards Reference:	PICS item:
	Clause 6.5.3(1st item)	A.6/3.3
	IETF RFC 4006 [10], clause 5.6.1	
Summary:	Verify that the IUT can process termination a	action.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on granted credits consumed	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AV	P
	sends a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	It AVP
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-	
	containing a Final-Unit-Indication	
	containing a Final-Unit-Action	AVP
	indicating TERMINATE.	
Comments:	Preamble action: CCR, CCA [Initial] are exch	nanged.

TP_RO_OCF_OP_08	Standards Reference:	PICS item:
	Clause 6.5.3 (2 <sup>nd</sup> item)	A.6/3.3
	IETF RFC 4006 [10], clause 5.6.1	
Summary:	Verify that, IUT can process redirection actio	n.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on granted credits consumed	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Final-Unit-Indication AVP	
	containing a Final-Unit-Action AVP	
	indicating REDIRECT	
	containing Redirect-Server AVP	
	containing Redirect-Address-Type AVP	
	containing Redirect-Server	
	optionally containing Restriction-Filter-Rule AVP	
	optionally containing Filter-Id	
Comments:	Preamble action: CCR, CCA [Initial] are exch	nanged.

TP_RO_OCF_OP_09	Standards Reference:	PICS item:
	Clauses 6.5.4 and 7.2.159	A.6/3.3 and A6/11
Summary:	Verify that, IUT can process quota consumpt	ion time.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Units AVP	
	containing a CC-Time AVP	
	containing a Quota-Consumption-Time AVP	
	indicating a period equal to the Quota Consumption Time.	
Comments:		

TP_RO_OCF_OP_10	Standards Reference:	PICS item:	
	Clause 6.5.5	A.6/3.3 and A.6/12 and A.6/12.1	
Summary:	Verify that the IUT can successfully terminat	e session after CCR, CCA [Update]	
	exchange.		
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on service termination request		
	on receipt of a CC-Request		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Used-Service-Unit AVP		
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-AUTHORIZATION-REJECTED		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQUEST.		
Comments:	Preamble action: CCR, CCA [Initial] and CC	R, CCA [Update] are exchanged.	

TP_RO_OCF_OP_11	Standards Reference:	PICS item:
	Clause 6.5.5	A.6/3.3 and A.6/12 and not A.6/12.1 and
		A.6/12.2
Summary:	Verify that the IUT can successfully terminat	e sessions with ASR,ASA exchange.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on service termination request	
	sends an AS-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing a Destination-Host AVP	
	containing an Auth-Application-Id AVP	
	on receipt of an AS-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	and on receipt of a CC-Request	
	containing a CC-Request-Type AVP	FOT
	indicating TERMINATION_REQUEST	
	containing a CC-Request-Number AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	ZATION DE IECTED
	indicating DIAMETER-AUTHORIZ	LATION-REJECTED
	containing a CC-Request-Type AVP	
Commonto	indicating TERMINATION_REQU	
Comments:	Preamble action: CCR, CCA [Initial] and CC	k, coa jopaatej are exchanged.

TP_RO_OCF_OP_12	Standards Reference:	PICS item:	
	Clause 6.5.6	A.6/3.3 and A.6/13	
Summary:	Verify that the IUT can successfully process	Envelope AVP.	
Configuration:	CF_1Ro		
Test purpose:	Ensure that the IUT		
	on receipt of a CC-Request		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit		
	containing a Requested-Service-l	Jnit AVP	
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-SUCCESS		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a Multiple-Services-Credit		
	containing an Envelope-Reporting AVP		
	indicating REPORT_ENVELOPES_WITH_VOLUME		
	on receipt of a CC-Request		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Granted-Service-Unit AVP		
	indicating reserved units containing an Envelope AVP containing an Envelope-Start-Time AVP		
		optionally containing an Envelope-Stop-Time AVP	
	containing a CC-Total-Octets		
	containing a CC-Input-Octets		
	containing a CC-Output-Octets AVP		
	optionally containing a CC-Service-Specific-Units AVP		
	sends a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-SUCCESS		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST.		
Comments:			

TP_RO_OCF_OP_13	Standards Reference:	PICS item:
	Clause 6.5.7¶1	A.6/3.3 and A.6/14
Summary:	Verify that the IUT can successfully process combinational quota.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-L	Jnit AVP
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER-SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST containing a Multiple-Services-Credit-Control AVP	
	containing a Time-Quota-Mechanism AVP	
	containing a Time Quota-Type AVP	
	indicating value Table 3	
	containing a Base-Time-Interval AVP	
	indicating the length of the base time interval	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Unit AVP	
	indicating reserved units	
	containing an Envelope AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER-SUCCESS	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST.	
Comments:		

Table 3: Time-Quota-Type AVP values:

Test purpose variants	Time Quota Type AVP values
VA_01	DISCRETE_TIME_PERIOD (0)
VA_02	CONTINUOUS_TIME_PERIOD (1)

TP_RO_OCF_OP_14	Standards Reference:	PICS item:
	Clause 6.5.8	A.6/3.3 and A.6/11 and A.6/13 and A.6/15
Summary:	Verify that the IUT can successfully process	control of offline charging information.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP	
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER-SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Service-Information AVP	
	containing a PS-Information AVP	
	containing an Offline-Charging AVP	
	containing a Quota-Consumption-Time AVP or,	
	containing a Time-Quota-Mechanism AVP	
	optionally containing an Envelope-Reporting AVP	
	indicating REPORT_EI	NVELOPES_WITH_VOLUME.
Comments:		

## 5.2.3.2 CTF Role

## 5.2.3.2.1 Test selection

The IUT takes the role of the CTF; PICS A.5/2.

## 5.2.3.2.2 Message Syntax

TP_RO_CTF_MS_01	Standards Reference:	PICS item:
	Clause 6.4.2, Table 6.4.2	
Summary:	Verify that the IUT can send a CC-Request t	o indicate a Charging Data Transfer.
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	to indicate a request for Charging Data Transfer,	
	sends a CC-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing an Auth-Application-Id AVP	
	indicating the value 4	
	containing a Service-Context-Id AVP	
	containing a CC-Request-Type AVP	
	containing a CC-Request-Number A\	/P.
Comments:	_	

TP_RO_CTF_MS_02	Standards Reference:	PICS item:
	IETF RFC 3588 [8], clauses 3¶2 and 3¶4	
Summary:	Verify that the IUT can send a CC-Request t	o indicate a Charging Data Transfer with
	valid Diameter-Header parameters.	
Configuration:	CF_1Ro	
Test purpose:	Ensure that the IUT	
	to indicate a request for Charging Data Transfer,	
	sends a CC-Request	
	containing a Diameter-Header	
	containing a Version	
	indicating value '1'	
	containing a Command-Flags	
	containing T bit	
	indicating value '0'	
	containing E bit	
	indicating value '0'	
	containing r bits	
	indicating value '0000'.	
Comments:		

## 5.2.3.2.3 Type of Charging

NOTE: Verify that IMS is able to trigger ACR event. (For initial condition check ETSI TS 132 260 [1], Table 5.3.1.1 and set correct Configuration which is related to ETSI TS 102 790-2 [3] (IMS Rel10 test purposes on Gm, Ic, Isc and Mw interfaces).

TP_RO_CTF_TC_01	Standards Reference:	PICS item:
	Clause 6.3.3	A.7/3.1
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.1	
Summary:	Verify that the IUT sends a CC-Request [Eve	ent] with direct debiting due to Immediate
	Event Charging.	-
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	
	containing a Multiple-Services-Credit-Control AVP	
	(containing a Requested-Service-	
	containing a Service-Identifier AV	P).
Comments:		

TP_RO_CTF_TC_02	Standards Reference:	PICS item:
	Clause 6.3.3	A.7/3.1
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.1 and	
	IETF RFC 4006 [10], clauses 6.1, 8.7	
	and 8.41	
Summary:	Verify that the IUT sends a CC-Request [Events of the content of t	ent] with price enquiry due to Immediate
	Event Charging.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested Action AVP	
	indicating PRICE_ENQUIRY	
	containing a Multiple-Services-Credit	
	containing a Service-Identifier AV	P
Comments:		

TP_RO_CTF_TC_03	Standards Reference:	PICS item: A.7/3.1
Summary:	8.41	antl with about halance due to Immediate
Summary.	Verify that the IUT sends a CC-Request [Event Charging.	entj with check balance due to infinediate
Configuration:	CF 1Ro or CF 1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF. Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering: TP_IMST2_MW_GEN_09_(MESSAGE)	
Test purpose:	Ensure that the IUT on receipt of a SIP message sends a CC-Request containing a CC-Request-Type AVP indicating EVENT_REQUEST containing a CC-Request-Number AV containing a Requested Action AVP indicating CHECK BALANCE.	/P
Comments:		·

TP_RO_CTF_TC_04	Standards Reference:	PICS item:
	Clause 6.3.3	A.7/3.1
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.1 and	
	IETF RFC 4006 [10], clauses, 6.4 and	
	8.41	
Summary:	Verify that the IUT sends a CC-Request [Ev	ent] with refund account due to Immediate
	Event Charging.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested Action AVP	
	indicating REFUND_ACCOUNT	
	containing a Multiple-Services-Credit	
	(containing a Requested-Service-	
	containing a Service-Identifier AV	
Comments:	Preamble action: CCR, CCA [Event] with dir	ect debiting are exchanged.

TP_RO_CTF_TC_05	Standards Reference:	PICS item:
	Clause 6.3.3/Step 2 after figure 6.3.3a	A.7/3.1
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.1	
Summary:	Verify that the IUT sends a second CC-Requ	
	Immediate Event Charging with Refund-Info	rmation AVP if it was received in the
	previous CC-Answer.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	
	on receipt of a CC-Answer	
	containing a Session-ID AVP containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing an Auth-Application-Id AVP	
	containing an Addit-Application of AVI	
	containing a CC-Request-Type AVP	
	containing a Multiple-Services-Credit	
	containing a Refund-Information A	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a Requested Action AVP	
	indicating REFUND_ACCOUNT	
	containing a Multiple-Services-Credit	
	containing a Refund-Information A	AVP.
Comments:		

TP_RO_CTF_TC_06	Standards Reference:	PICS item:
	Clause 6.3.4/Step 2 and	A.7/3.2
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2	
Summary:	Verify that the IUT sends a CC-Request [Init	ial] to reserve units due to Event Charging
	with Unit Reservation.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.	
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-I	Jnit AVP.
Comments:		

TP_RO_CTF_TC_07	Standards Reference:	PICS item:
	Clause 6.3.4/Steps 2 and 6 and	A.7/3.2
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2	
Summary:	Verify that the IUT sends a CC-Request [Ter	rmination] to debit units due to Event
	Charging with Unit Reservation.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the
	OCF.	
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_09 (200 OK MESS.	AGE)
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Used-Service-Unit A	
Comments:	Preamble action: CCR, CCA [Initial] are excl	hanged

TP_RO_CTF_TC_08	Standards Reference:	PICS item:
	Clause 6.3.5/Step 2 and	A.7/3.3
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.1	
Summary:	Verify that the IUT sends a CC-Request [Init	ial] to reserve units due to Session Charging
-	with Unit Reservation.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.	
	Following Test Purpose from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	/P
	containing a Multiple-Services-Credit	-Control AVP
	containing a Requested-Service-I	Jnit AVP.
Comments:		

TP_RO_CTF_TC_09	Standards Reference:	PICS item:
	Clause 6.3.5/Step 6 and	A.7/3.3
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.1-1	
Summary:	Verify that the IUT sends a CC-Request [Up	date] to reserve and debit units due to
	Session Charging with Unit Reservation.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP response message and then sends DIAMETER CCR message to the	
	OCF.	
	Following Test Purpose from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_07 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Used-Service-Unit A	VP.
Comments:	Preamble action: CCR, CCA [Initial] are excl	hanged

TP_RO_CTF_TC_10	Standards Reference:	PICS item:
	Clause 6.3.5/Step 11 and	A.7/3.3
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.1-4	
Summary:	Verify that the IUT sends a CC-Request [Ter	mination] to debit units due to Session
	Charging with Unit Reservation.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.	
	Following Test Purpose from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_07 (BYE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Used-Service-Unit A	VP.
Comments:		
NOTE: Preamble ac	tion: CCR, CCA [Initial] and CCR, CCA [Upda	ate] are exchanged.

#### 5.2.3.2.4 Error Cases

NOTE: Verify that IMS is able to trigger CCR event. (For initial condition check ETSI TS 132 260 [1], Table 5.2.1.1 and set correct Configuration which is related to standard ETSI TS 102 790-2 [3] (IMS Release 10 test purposes on Gm, Ic, Isc and Mw interfaces).

TP_RO_CTF_EC_01	Standards Reference:	PICS item:
	Clause 6.3.6.1¶2 and	A.7/3.1
	IETF RFC 4006 [10], clause 6.5	
Summary:	Verify that the IUT retransmits an unacknow	ledged CC-Request (T-flag) with direct
	debiting.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
Initial conditions:	Secondary OCF is not available	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate not having received a CC-A	Answer
	sends again the CC-Request	
	containing Diameter-Header	
	containing Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	
	containing a Multiple-Services-Credit-Control AVP	
	(containing a Requested-Service-	
	containing a Service-Identifier AV	P)
	on receipt of a CC-Answer	
	containing a Result-Code AVP indicating DIAMETER SUCCESS	,
	9 =	
	containing a CC-Request-Type AVP indicating EVENT_REQUEST	
	accepts the message.	
Comments:	accepts the message.	

TP_RO_CTF_EC_02	Standards Reference:	PICS item:
	Clause 6.3.6.1¶2 and	A.7/3.1
	IETF RFC 4006 [10], clause 6.5	
Summary:	Verify that the IUT retransmits an unacknow	ledged CC-Request (T-flag) with price
	enquiry.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
Initial conditions:	A secondary OCF is not available	
SIP Initial condition:	IUT receives SIP message and then sends I	DIAMETER CCR message to the OCF.
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate not having received a CC-Answer	
	sends again the CC-Request	
	containing Diameter-Header	
	containing Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating PRICE_ENQUIRY	
	containing a Multiple-Services-Credit-Control AVP	
	(containing a Requested-Service-Unit AVP and/or	
	containing a Service-Identifier AVP)	
	on receipt of a CC-Answer	
	containing a Result-Code AVP	<b>,</b>
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
Commonto	accepts the message.	
Comments:		

TP_RO_CTF_EC_03	Standards Reference:	PICS item:
	Clause 6.3.6.1¶2 and	A.7/3.2
	IETF RFC 4006 [10], clause 6.5	
Summary:	Verify that the IUT retransmits an unacknow	ledged CC-Request (T-flag).
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
Initial conditions:	Secondary OCF is not available	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate not having received a CC-Answer	
	sends again the CC-Request	
	containing Diameter-Header	
	containing Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP	
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	3
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	accepts the message.	
Comments:		

TP_RO_CTF_EC_04	Standards Reference:	PICS item:
	Clause 6.3.6.1¶2 and	A.7/3.2
	IETF RFC 4006 [10], clause 6.5	
Summary:	Verify that the IUT retransmits an unacknow	ledged CC-Request (T-flag).
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
Initial conditions:	Secondary OCF is not available	
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the
	OCF.	
	Following Test Purposes from ETSI TS 102	
	TP_IMST2_MW_GEN_09 (200 OK MESSA	AGE)
Test purpose:	Ensure that the IUT	
	to indicate not having received a CC-Answer	
	sends again the CC-Request	
	containing Diameter-Header	
	containing Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Used-Service-Unit AVP	
	on receipt of one CC-Answer for each buffered CC-Request containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	,
	indicating TERMINATION_REQU	EST
	accepts the messages.	
Comments:	Preamble action: CCR, CCA [Initial] are excl	hanged.

TP_RO_CTF_EC_05	Standards Reference:	PICS item:
	Clause 6.3.6.1¶2 and	A.7/3.3
	IETF RFC 4006 [10], clause 6.5	
Summary:	Verify that the IUT retransmits an unacknowledge.	ledged CC-Request (T-flag).
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
Initial conditions:	Secondary OCF is not available	
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the
	OCF.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	to indicate not having received a CC-Answer	
	sends again the CC-Request	
	containing Diameter-Header	
	containing Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Used-Service-Unit A	VP
	on receipt of one CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	8
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	accepts the messages.	004711141
Comments:	Preamble action: CCR, CCA [Initial] and CC	R, CCA [Update] are exchanged and the
	OCF stops communication with the IUT.	

TP_RO_CTF_EC_06	Standards Reference:	PICS item:
	IETF RFC 4006 [10],	A.7/3.1 and A.7/18.2 and
	clauses 5.7 and 6.5¶8	not A.7/8
Summary:		stores generated accounting data in a non-
	volatile memory and, on communication rest	ored, sends them to the OCF, in the order
	they were stored in the buffer.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
Initial conditions:	Secondary OCF is not available	
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the
	OCS.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate the OCF restart	
	sends the buffered CC-Request	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested Action AVP	
	indicating REFUND_ACCOUNT	
	containing a Multiple-Services-Credit-	-Control AVP
	(containing a Requested-Service-Unit AVP and/or	
	containing a Service-Identifier AVP)	
	on receipt of one CC-Answer for each buffered CC-Request	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	8
	not containing an Experimental-Resu	ılt AVP
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	accepts the messages.	
Comments:	Preamble action: The OCF stops communication with the IUT.	
NOTE: IUT is configu	: IUT is configured with DDFH/CONTINUE value.	

TP_RO_CTF_EC_07	Standards Reference:	PICS item:
	IETF RFC 4006 [10],	A.7/3.1 and A.7/18.2 and
•	clauses 5.7 and 6.5	not A.7/8
Summary:		stores generated accounting data in a non-
	volatile memory and, on communication rest	ored, sends them to the OCF, in the order
0 0 0	they were stored in the buffer.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
Initial conditions:	Secondary OCF is not available	
SIP Initial condition:	IUT receives SIP message and then sends I	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate the OCF restart	
	sends a CC-Request	
	containing Diameter-Header	
	containing Command-Flags	
	not containing T-flag	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	
	containing a Multiple-Services-Credit-Control AVP	
	(containing a Requested-Service-Unit AVP and/or	
	containing a Service-Identifier AV	P)
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	III AVP
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
0	accepts the message.	e so a tur
Comments:	Preamble action: The OCF stops communic	ation with the IUT.
NOTE: IUT is config	ured with DDFH/CONTINUE value.	

# 5.2.3.2.5 Tariff Changes

TP_RO_CTF_CH_01	Standards Reference:	PICS item:
	Clause 6.3.7.1¶4,5; 6.3.4/Step 2	A.7/3.2 and A.7/5
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2	
	IETF RFC 4006 [10], clause 8.27	
Summary:	Verify that the IUT sends a CC-Request [Init	
	with Unit Reservation and indicates tariff tim	e change.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends I	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate tariff time change	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit	
	not containing a Tariff-Change-U	•
	containing a Requested-Service-U	
	containing an Used-Service-Units	
	containing a Tariff-Change-Us	sage AVP.
Comments:		

TP_RO_CTF_CH_02	Standards Reference:	PICS item:	
	Clause 6.3.7.1; 6.3.4/Step 2	A.7/3.2 and A.7/5	
	ETSI TS 132 260 [1]		
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2		
	IETF RFC 4006 [10], clause 8.20		
Summary:	Verify that the IUT sends a CC-Request [Init		
	with Unit Reservation and when the IUT rece	eives a CC-Answer with Tariff-Time-Change	
	AVP the IUT accepts it and sends a CC-Rec	uest after the SIP session is released.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_09 (MESSAGE)		
Test purpose:	Ensure that the IUT		
	on receipt of a SIP message		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Requested-Service-Unit AVP		
	containing an Used-Service-Units AVP		
	containing a Tariff-Change-Usage AVP		
	on receipt of a CC-Answer		
	containing a Result-Code AVP	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST containing a Multiple-Services-Credit	Control AVP	
	containing a Multiple-Services-Credit		
	containing a Granted-Service-Oni		
	and on receipt of a SIP message	ge Avi	
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQU	EST	
	containing a CC-Request-Number A\		
	containing a Multiple-Services-Credit		
	containing a Used-Service-Unit A		
Comments:			

TP_RO_CTF_CH_03	Standards Reference:	PICS item:
	Clause 6.3.7.1; 6.3.4/Step 2	A.7/3.2 and NOT A.7/5
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2	
	IETF RFC 4006 [10], clause 8.20¶2	
Summary:	Verify that the IUT sends a CC-Request [Init	ial] to reserve units due to Event Charging
	with Unit Reservation and when the IUT rece	
	AVP the IUT rejects it and sends a CC-Requ	uest with Termination-Cause AVP.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends I	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST containing a CC-Request-Number AVP	
	containing a CC-Request-Number AVF containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP	
	containing an Used-Service-Units AVP	
	containing an osed-dervice-onits AVP	
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	8
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit	-Control AVP
	containing a Granted-Service-Uni	
	containing a Tariff-Time-Chan	ge AVP
	sends a CC-Request	
	containing a Termination-Cause AVP	
0	indicating DIAMETER_BAD_ANS	WEK.
Comments:		

TP_RO_CTF_CH_04	Standards Reference:	PICS item:
	Clause 6.3.7.1¶4,5; 6.3.4/Step 2	A.7/3.3 and A.7/5
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2	
	IETF RFC 4006 [10], clause 8.27	
Summary:		ial] to reserve units due to Session Charging
	with Unit Reservation and indicates tariff tim	e change.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purpose from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	to indicate tariff time change	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit	
	not containing a Tariff-Change-Us	•
	containing a Requested-Service-U	
	containing an Used-Service-Units	
	containing a Tariff-Change-Us	sage AVP.
Comments:		

TP_RO_CTF_CH_05	Standards Reference:	PICS item:
	Clause 6.3.7.1; 6.3.4/Step 2 ETSI TS 132 260 [1]	A.7/3.3 and A.7/5
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2	
	IETF RFC 4006 [10], clause 8.20	
Summary:		ial] to reserve units due to Session Charging
,	with Unit Reservation and when the IUT rece	eives a CC-Answer with Tariff-Time-Change
	AVP the IUT accepts it and sends a CC-Rec	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.
	Following Test Purpose from ETSI TS 102 7	90-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP containing a Requested-Service-Unit AVP	
	containing a Requested-Service-Unit AVP	
	containing an osed-service-onits AVP  containing a Tariff-Change-Usage AVP	
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	8
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Uni	
	containing a Tariff-Time-Chan	ge AVP
	and on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	FOT.
	indicating TERMINATION_REQU	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit- containing a Used-Service-Unit A	
Comments:	Containing a Osed-Service-Offic A	v1 .

TP_RO_CTF_CH_06	Standards Reference:	PICS item:
	Clause 6.3.7.1; 6.3.4/Step 2	A.7/3.3 and NOT A.7/5
	ETSI TS 132 260 [1]	
	Table 5.3.1.1 and clause 5.3.2.2.1.3.2	
	IETF RFC 4006 [10], clause 8.20¶2	
Summary:	Verify that the IUT sends a CC-Request [Init	ial] to reserve units due to Session Charging
	with Unit Reservation and when the IUT rece	eives a CC-Answer with Tariff-Time-Change
	AVP the IUT rejects it and sends a CC-Requ	uest with Termination-Cause AVP.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purpose from ETSI TS 102 7	90-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP containing a Multiple-Services-Credit-Control AVP	
	containing a Multiple-Services-Credit-Control AVP  containing a Requested-Service-Unit AVP	
	containing a Requested-Service-Unit AVP	
	containing an osed-dervice-onits AVI  containing a Tariff-Change-Usage AVP	
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	3
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit	-Control AVP
	containing a Granted-Service-Uni	t AVP
	containing a Tariff-Time-Chan	ge AVP
	sends a CC-Request	
	containing a Termination-Cause AVP	
	indicating DIAMETER_BAD_ANS	WER.
Comments:		

#### 5.2.3.2.6 Re-authorization

TP_RO_CTF_RE_01	Standards Reference:	PICS item:
	Clauses 6.3.8; 6.4.4; 6.4.5 and	A.7/6 and A.7/3.3
	IETF RFC 4006 [10], clause 5.5¶1	
Summary:	Verify that the IUT sends a CC-Request [Update] to reserve and debit units due to	
	Session Charging with Unit Reservation and when the re-authorization procedure starts	
	the IUT sends appropriate answer after an R	A-Request is received.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP response message and the OCF.	en sends DIAMETER CCR message to the
	Following Test Purpose from ETSI TS 102 7	90-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (200 OK INVITE)	50 <b>-</b> [5] 5655 .54654 .59959.
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Used-Service-Unit AVP	
	on receipt of a CC-Answer and	
	and on receipt of an RA-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing a Destination-Host AVP	
	containing an Auth-Application-Id AV	P
	indicating the value 4	
	containing a Re-Auth-Request-Type	AVP
	indicating AUTHORIZE_ONLY	
	sends an RA-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing an Origin-Host AVP	
Commenter	containing an Origin-Realm AVP.	- anged
Comments:	Preamble action: CCR, CCA [Initial] are excl	nangea

## 5.2.3.2.7 Failure Handling

TP_RO_CTF_FH_01	Standards Reference:	PICS item:
	Clause 6.3.9¶1 and	A.7/3.2 and A.7/17.3
	IETF RFC 4006 [10], clause 5.7	
Summary:	Verify that the IUT can successfully override local CCFH values due to Event Charging	
	with Unit Reservation.	
Configuration:	CF_2Ro or CF_2Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	sends a CC-Request to the primary O	CF
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-U	Jnit AVP
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Unit AVP	
	indicating reserved units containing Credit-Control-Failure-Handling AVP	
	indicating CONTINUE	
	when the primary OCF stops responding	
	sends a CC-Request to the secondary	
	containing a CC-Request-Type AVP	OCF
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	/D
	containing a CC-Request-Number AV	
	containing a Multiple-Services-Credit	
	and on not receiving a CC-Answer	
	sends a CC-Request to the secondary	OCF
	containing a CC-Request-Type AVP	00.
	indicating INITIAL_REQUEST	
	containing an Alternate-Charged-Par	tv-Address AVP
	indicating a different OCF server	y
	containing a CC-Request-Number A\	/P
	containing a Multiple-Services-Credit	
	containing a Requested-Service-Unit AVP.	
Comments:	-	
NOTE: IUT is config	ured with CCFH/CONTINUE value.	

TP_RO_CTF_FH_02	Standards Reference:	PICS item:
	Clause 6.3.9¶1 and	A.7/3.1 and A.7/18.1
	IETF RFC 4006 [10], clause 6.5¶4	
Summary:	Verify that the IUT can successfully override local DDFH value with Direct Debiting.	
Configuration:	CF_2Ro or CF_2Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	sends a CC-Request to the primary O	CF
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	_
	containing a CC-Request-Number A\	/P
	containing a Requested-Action AVP	
	indicating DIRECT_DEBITING	Control AVD
	containing a Multiple-Services-Credit	
	(containing a Requested-Service-Unit AVP and/or	
	containing a Service-Identifier AVP) on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number A\	/P
	containing a Multiple-Services-Credit-	
	containing a Requested-Service-L	Jnit AVP
	containing Direct-Debiting-Failure-Handling AVP	
	indicating TERMINATE_OR_BUFFER	
	when the primary OCF stops responding	
	sends a CC-Request the secondary OCF	
	containing Diameter-Header	
	containing Command-Flags	
	containing T-flag	
	indicating value '1'	
	containing a CC-Request-Type AVP indicating EVENT_REQUEST	
	containing a CC-Request-Number A\	/P
	containing a CC-Request-Number Av	
	containing a Neguested-Service-Unit AVP.	
Comments:		
	ured with DDFH/ TERMINATE_OR_BUFFER	value.

#### 5.2.3.2.8 Failover

TP_RO_CTF_FA_01	Standards Reference:	PICS item:
	Clause 6.3.10¶2	A.7/3.1 and A.7/8
	IETF RFC 4006 [10], clause 6.5¶3	
Summary:	Verify that on connection failure with the prin	nary OCF, the IUT sends a CC-Request
	[Event] to the secondary OCF.	
Configuration:	CF_2Ro or CF_2Ro1Gm1Mw	
Initial conditions:	A secondary OCF is available	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate the OCF stop	
	sends the CC-Request to the seconda	
	containing an CC-Request-Type AVF	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating PRICE_ENQUIRY	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Service-Identifier AVP	
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS  not containing an Experimental-Result AVP	
	containing a CC-Request-Type AVP	III / ( V )
	indicating EVENT_REQUEST	
	containing a Cost-Information AVP	
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP	
	accepts the message.	
Comments:		

TP_RO_CTF_FA_02	Standards Reference:	PICS item:
	Clause 6.3.10¶2	A.7/3.1 and A.7/8
	IETF RFC 4006 [10], clause 6.5¶3	
Summary:	Verify that on connection restored, the IUT s	ends a CC-Request [Event] to the primary
	OCF.	
Configuration:	CF_2Ro or CF_2Ro1Gm1Mw	
Initial conditions:	A secondary OCF is available	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate the OCF restart	
	sends a CC-Request to the primary Of	
	containing an CC-Request-Type AVF	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating PRICE_ENQUIRY	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Service-Identifier AVP	
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	IIt AVP
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a Cost-Information AVP	
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP	
	accepts the message.	
Comments:		

TP_RO_CTF_FA_03	Standards Reference:	PICS item:
	Clause 6.3.10¶2	A.7/3.2 and A.7/8
	IETF RFC 4006 [10], clause 6.5¶3	
Summary:	Verify that on connection failure with the prin	nary OCF, the IUT sends a CC-Request
	[Initial] to the secondary OCF.	
Configuration:	CF_2Ro or CF_2Ro1Gm1Mw	
Initial conditions:	The primary OCF is unavailable	
	A secondary OCF is available	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	sends a CC-Request to the secondary OCF	
	containing an CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	ilt AVP
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	_
	containing a Remaining-Balance AVF	)
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP	
	accepts the message.	
Comments:		

TP_RO_CTF_FA_04	Standards Reference: Clause 6.3.10¶2	PICS item: A.7/3.1 and A.7/8
	IETF RFC 4006 [10], clause 6.5¶3	
Summary:	Verify that, on connection restored, the IUT s	sends a CC-Request [Initial] to the primary
	OCF.	
Configuration:	CF_2Ro or CF_2Ro1Gm1Mw	
Initial conditions:	A secondary OCF is available	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	to indicate the OCF restart	
	sends a CC-Request to the primary OC	CF
	containing a CC-Request-Type AVP	
	indicating EVENT_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Requested-Action AVP	
	indicating CHECK_BALANCE	
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS not containing an Experimental-Resu	
	containing a CC-Request-Type AVP	III AVI
	indicating INITIAL_REQUEST	
	containing a Remaining-Balance AVF	
	containing Unit-Value AVP	
	containing Value-Digits AVP	
	containing Currency-Code AVP	
	accepts the message.	
Comments:		

## 5.2.3.2.9 Credit Pooling

TP_RO_CTF_CP_01	Standards Reference:	PICS item:
	Clause 6.3.4/Step 2 and	A.7/3.2 and A.7/19
	IETF RFC 4006 [10], clause 5.1.2¶5	
Summary:	Verify that the IUT supports independent cre	dit-control of multiple services within a (sub-)
	session and sends a CC-Request [Initial] to	reserve units due to Event Charging with
	Unit Reservation.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_09 (MESSAGE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Indica	
	indicating MULTIPLE_SERVICES	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-l	Jnit AVP.
Comments:	Postamble action: CCR, CCA [Termination]	are exchanged with the IUT.

TP_RO_CTF_CP_02	Standards Reference:	PICS item:
	Clause 6.3.5/Step 2 and	A.7/3.3 and A.7/19
	IETF RFC 4006 [10], clause 5.1.2¶5	
Summary:	Verify that the IUT supports independent cre	dit-control of multiple services within a (sub-)
	session and sends a CC-Request [Initial] to	reserve units due to Session Charging with
	Unit Reservation.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purpose from ETSI TS 102 7	90-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of a SIP message	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Indicat	tor AVP
	indicating MULTIPLE_SERVICES	S_SUPPORTED
	containing a Multiple-Services-Credite	-Control AVP
	containing a Requested-Service-L	Jnit AVP.
Comments:	Postamble action: CCR, CCA [Update] and (	CCR, CCA [Termination] are exchanged with
	the IUT.	

## 5.2.3.2.10 Other procedures

TP_RO_CTF_OP_01	Standards Reference:	PICS item:
	Clause 6.5.1.1	A.7/3.3
	Clauses 7.2.160 and 7.2.243	
Summary:	Verify that, IUT can return the quotas when t	the traffic ceases.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the
	OCF.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	when traffic stops	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Volume-Quota-Threshold AVP	
	containing a Granted-Service-Units AVP	
	containing a CC-Total-Octets AVP or,	
	containing a CC-Input-Octets AVP or,	
	containing a CC-Output-Octets AVP	
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	III AVP
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
Comments	accepts the message.	aitiallia abadia a Oceata Haldia a Tiar AVD
Comments:	Preamble action: The IUT receives a CCA [li	nitial] including Quota-Holding-Time AVP
	indicating a non 0.	

TP_RO_CTF_OP_02	Standards Reference:	PICS item:
	Clause 6.5.1.1	A.7/3.3
	Clause 7.2.160 and 7.2.243	
	IETF RFC 4006 [10], clause 6.5¶3	
Summary:	Verify that the IUT does not return the quota	s when the traffic ceases.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the
	OCF.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	when traffic stops	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	not containing a Volume-Quota-Threshold AVP	
	not containing a Granted-Service-Units AVP	
	on receipt of a CC-Answer	
	containing a Session-ID AVP containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	
	containing a CC-Request-Type AVP	(IL / (V)
	indicating UPDATE_REQUEST	
	accepts the message.	
Comments:	Preamble action: The IUT receives a CCA [I	nitiall including Quota-Holding-Time AVP
	indicating a 0 value and the IUT exchanges	

TP RO CTF OP 03	Standards Reference:	PICS item:
	Clause 6.5.1.1	A.7/3.3
	Clauses 7.2.160 and 7.2.243	
	IETF RFC 4006 [10], clause 6.5¶3	
Summary:	Verify that, IUT can return the quotas when t	the traffic ceases - Based on IUT local value.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP response message and the OCF.	en sends DIAMETER CCR message to the
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (200 OK INVITE)	730 Z [0] can be reased for triggering.
Test purpose:	Ensure that the IUT	
	when traffic stops	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Volume-Quota-Threshold AVP	
	containing a Granted-Service-Units AVP	
	containing a CC-Total-Octets AVP or,	
	containing a CC-Input-Octets AVP or,	
	containing a CC-Output-Octets AVP	
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	III AVP
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
Comments:	accepts the message.  Preamble action: The IUT receives a CCA [I	nitial not including Oueta Holding Time
Comments.	AVP.	initially flot including Quota-Holding-Time
NOTE: The IUT has	a non 0 local Quota-Holding-Time value.	
INCIL. IIIE IOT IIAS	a non o local Quota-i lolulity- i line value.	

TP_RO_CTF_OP_04	Standards Reference:	PICS item:
	Clause 6.5.1.2¶3 and 7.2.235/236	A.7/3.3 and A.7/9
	IETF RFC 4006 [10], clause 5.5	
Summary:	Verify that the IUT supports a credit re-authorization and returns an appropriate	
	RA-Answer.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the
	OCF.	700 0 [0] h d f tri i
	Following Test Purposes from ETSI TS 102 TP_IMST2_MW_GEN_07 (200 OK INVITE)	790-2 [3] can be reused for triggering:
Test purpose:	Ensure that the IUT	
rest purpose.	on change of charging conditions	
	on receipt of a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\	/P
	sends a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Trigger AVP	
	containing a Trigger-Type AVP	
	on receipt of an RA-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP containing a Destination-Realm AVP	
	containing a Destination-Realifi AVP	
	containing a Destination lost AVI	P
	indicating the value 4	•
	containing a Re-Auth-Request-Type	AVP
	indicating AUTHORIZE_ONLY	
	sends an RA-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	8
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP.	
Comments:	Preamble action: CCR, CCA [Initial] are excl	hanged.

TP_RO_CTF_OP_05	Standards Reference:	PICS item:
	Clause 6.5.1.3	A.7/3.3
	Clause 7.2.175	
	IETF RFC 4006 [10], clause 6.5¶3	
Summary:	Verify that the IUT can return the reporting of	uota usage in a Multiple-Services-Credit-
	Control AVP (Table 4).	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIPresponse message and the	n sends DIAMETER CCR message to the
	OCF.	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (200 OK INVITE)	
Test purpose:	Ensure that the IUT	
	on change of charging conditions	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Reporting-Reason AVP (Table 4)	
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resu	JIT AVP
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST accepts the message.	
Comments:		hanged
Comments:	Preamble action: CCR, CCA [Initial] are exc	hanged.

Table 4: Reporting-Reason AVP value

Test purpose variants	Reporting-Reason AVP values
VA_01	QHT (1)
VA_02	FINAL (2)
VA_03	VALIDITY_TIME (4)
VA_04	FORCED_REAUTHORISATION (7)

TP_RO_CTF_OP_06	Standards Reference:	PICS item:			
	Clause 6.5.1.3	A.7/3.3			
	Clause 7.2.175				
	IETF RFC 4006 [10], clause 6.5¶3				
Summary:	Verify that the IUT can return the reporting quota usage in a Multiple-Services-Credit-				
	Control AVP - RATING_CONDITION_CHANGE (6).				
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw				
SIP Initial condition:	IUT receives SIP response message and the	en sends DIAMETER CCR message to the			
	OCF.				
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:				
	TP_IMST2_MW_GEN_07 (200 OK INVITE)				
Test purpose:	Ensure that the IUT				
	on change of charging conditions				
	sends a CC-Request				
	containing a CC-Request-Type AVP				
	indicating UPDATE_REQUEST				
	containing a CC-Request-Number AVP				
	containing a Multiple-Services-Credit-Control AVP				
	containing a Reporting-Reason AVP				
	indicating RATING_CONDITION_CHANGE				
	containing a Trigger AVP				
	on receipt of a CC-Answer				
	containing a Session-ID AVP				
	containing a Result-Code AVP				
	indicating DIAMETER_SUCCESS				
	not containing an Experimental-Result AVP				
	containing a CC-Request-Type AVP				
	indicating UPDATE_REQUEST				
	accepts the message.				
Comments:	Preamble action: CCR, CCA [Initial] are excl	hanged.			

TP_RO_CTF_OP_07	Standards Reference:	PICS item:		
	Clause 6.5.1.3	A.7/3.3		
	Clause 7.2.175			
	IETF RFC 4006 [10], clause 6.5¶3			
Summary:	Verify that the IUT can return the reporting quota usage in a Used-Service-Unit AVP			
	(Table 5).			
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw			
SIP Initial condition:	IUT receives SIP response message and then sends DIAMETER CCR message to the			
	OCF.			
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:			
	TP_IMST2_MW_GEN_07 (200 OK INVITE)			
Test purpose:	Ensure that the IUT			
	on change of charging conditions			
	sends a CC-Request			
	containing a CC-Request-Type AVP			
	indicating UPDATE_REQUEST			
	containing a CC-Request-Number AVP			
	containing a Multiple-Services-Credit-Control AVP			
	containing a Used-Service-Unit AVP			
	containing a Reporting-Reason AVP (Table 5)			
	on receipt of a CC-Answer			
	containing a Session-ID AVP			
	containing a Result-Code AVP			
	indicating DIAMETER_SUCCESS			
	not containing an Experimental-Result AVP			
	containing a CC-Request-Type AVP			
	indicating UPDATE_REQUEST			
	accepts the message.			
Comments:	Preamble action: CCR, CCA [Initial] are exch	hanged.		

Table 5: Reporting-Reason AVP values

Test purpose variants	Reporting-Reason AVP values
VA_01	THRESHOLD (0)
VA_02	QUOTA_EXHAUSTED (3)
VA_03	OTHER_QUOTA_TYPE (5)
VA_04	POOL_EXHAUSTED (8)

TP_RO_CTF_OP_08	Standards Reference:	PICS item:	
	Clause 6.5.3(1st item)	A.7/3.3	
	IETF RFC 4006 [10], clause 5.6.1		
Summary:	Verify that the IUT can process termination action.		
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP response message and then sends DIAMETER CCR message to the		
	OCF.		
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:		
	TP_IMST2_MW_GEN_07 (200 OK INVITE)		
Test purpose:	Ensure that the IUT		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Used-Service-Unit AVP		
	on receipt a CC-Answer		
	containing a Session-ID AVP		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Resu	ılt AVP	
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Final-Unit-Indication AVP		
	containing a Final-Unit-Action AVP		
	indicating TERMINATE		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Used-Service-Unit AVP		
	and on receipt of a CC-Answer		
	containing a Session-ID AVP		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Result AVP		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQUEST		
•	accepts the message.		
Comments:	Preamble action: CCR, CCA [Initial] are excl	nanged.	

TP_RO_CTF_OP_09	Standards Reference:	PICS item:
	Clause 6.5.3(2 <sup>nd</sup> item)	A.7/3.3
	IETF RFC 4006 [10], clause 5.6.1	
Summary:	Verify that the IUT can process termination a	action after redirection.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.
Test purpose:	(See note) Ensure that the IUT	
rest purpose.	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\	/P
	containing a Multiple-Services-Credit	-Control AVP
	containing a Used-Service-Unit A	VP
	on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Resucentaining a CC-Request-Type AVP	III AVF
	indicating UPDATE_REQUEST	
	containing a Multiple-Services-Credit	-Control AVP
	containing a Final-Unit-Indication	
	containing a Final-Unit-Action	
	indicating REDIRECT	
	containing Redirect-Server AV	
	containing Redirect-Addres	
	containing Redirect-Server	
	optionally containing Restrict optionally containing Filter-Id	
	sends a CC-Request	AVI
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQU	EST
	containing a CC-Request-Number A\	/P
	indicating User B	
	and on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP containing a CC-Request-Type AVP	
	indicating TERMINATION_REQU	EST
	containing a CC-Request-Number A\	
	indicating User B	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	ID.
	containing a CC-Request-Number A\ indicating User C	/P
	and on receipt of a CC-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	8
	not containing an Experimental-Resu	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	<b>(</b> 5)
	containing a CC-Request-Number A\	/ <del>L</del>
	indicating User C accepts the message.	
Comments:	Preamble action: CCR, CCA [Initial] are excl	handed
	on with redirection need to be supported.	пануси
INOTE. OIL IIIGIACIIC	on with redirection need to be supported.	

TP_RO_CTF_OP_10	Standards Reference:	PICS item:
	Clause 6.5.4 Clause 7.2.159	A.7/3.3
Cummanu	5.000	
Summary: Configuration:	Verify that the IUT can process quota consu	mpuon ume.
SIP Initial condition:	CF_1Ro or CF_1Ro1Gm1Mw	NAMETER OOD ***** to the OOF
SIP initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:	
Took numbers	TP_IMST2_MW_GEN_07 (INVITE) Ensure that the IUT	
Test purpose:	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AV	/D
	containing a CC-Request-Number Av	
	containing a Multiple-Services-Credit	
	on receipt of a CC-Answer	STILL 7 CV I
	containing a Session-ID AVP	
	containing a Result-Code AVP	
	indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Granted-Service-Units AVP	
	containing a CC-Time AVP	
	containing a Quota-Consumption-Time AVP	
	indicating a period equal to the Quota Consumption Time	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit-Control AVP	
Comments	containing a Used-Service-Unit A	Vr.
Comments:		

TP_RO_CTF_OP_11	Standards Reference:	PICS item:	
	Clause 6.5.5	A.7/3.3	
Summary:	Verify that the IUT can successfully terminate sessions on a CCR, CCA [Update]		
	exchange.		
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends I	DIAMETER CCR message to the OCF.	
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:		
	TP_IMST2_MW_GEN_07 (INVITE)		
Test purpose:	Ensure that the IUT		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	containing a CC-Request-Number AV	/P	
	containing a Multiple-Services-Credit-	-Control AVP	
	containing a Used-Service-Unit A	VP	
	on receipt of a CC-Answer		
	containing a Result-Code AVP	containing a Result-Code AVP	
	indicating DIAMETER-AUTHORIZATION-REJECTED		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQUEST		
	containing a CC-Request-Number AVP		
	and on receipt of a CC-Answer		
	containing a Session-ID AVP		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	not containing an Experimental-Result AVP		
	containing a CC-Request-Type AVP		
	indicating TERMINATION_REQU		
	containing a CC-Request-Number AV	/P	
	accepts the message.		
Comments:	Preamble action: CCR, CCA [Initial] are exch	nanged.	

TP_RO_CTF_OP_12	Standards Reference:	PICS item:
	Clause 6.5.5	A.7/3.3
Summary:	Verify that the IUT can successfully terminate session on an ASR, ASA exchange.	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	DIAMETER CCR message to the OCF.
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	on receipt of an AS-Request	
	containing a Session-ID AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	containing a Destination-Realm AVP	
	containing a Destination-Host AVP	
	containing an Auth-Application-Id AVP	
	sends an AS-Answer	
	containing a Session-ID AVP	
	containing a Result-Code AVP indicating DIAMETER_SUCCESS	
	not containing an Experimental-Result AVP	
	containing an Origin-Host AVP	
	containing an Origin-Realm AVP	
	and sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQUEST	
	containing a CC-Request-Number AVP	
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER-AUTHORIZ	ZATION-REJECTED
	containing a CC-Request-Type AVP	
	indicating TERMINATION_REQUEST	
	accepts the message.	
Comments:	Preamble action: CCR, CCA [Initial] and CC	R, CCA [Update] are exchanged.

TP_RO_CTF_OP_13	Standards Reference:	PICS item:	
	Clause 6.5.6	A.7/3.3	
Summary:	Verify that the IUT can successfully process Envelope-Reporting AVP		
	[DO_NOT_REPORT_ENVELOPES].		
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends [		
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_07 (INVITE)		
Test purpose:	Ensure that the IUT		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a CC-Request-Number AV		
		containing a Multiple-Services-Credit-Control AVP	
	containing a Requested-Service-Unit AVP		
	on receipt of a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-SUCCESS		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing an Envelope-Reporting AVP		
	indicating DO_NOT_REPORT_ENVELOPES		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
		indicating UPDATE_REQUEST	
	containing a CC-Request-Number A\		
	containing a Multiple-Services-Credit		
	containing a Used-Service-Unit AVP		
Comments	not containing an Envelope AVP.		
Comments:			

TP_RO_CTF_OP_14	Standards Reference:	PICS item:
	Clause 6.5.6	A.7/3.3
Summary:	Verify that the IUT can successfully process Envelope-Reporting AVP	
	[REPORT_ENVELOPES].	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends I	DIAMETER CCR message to the OCF.
	Following Test Purposes from ETSI TS 102	
	TP_IMST2_MW_GEN_07 (INVITE)	[-]
Test purpose:	Ensure that the IUT	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	/P
	containing a Multiple-Services-Credit	
	containing a Requested-Service-U	Jnit AVP
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER-SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing an Envelope-Reporting AVP	
	indicating REPORT_ENVELOPES	
	sends a CC-Request containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP containing a Multiple-Services-Credit-Control AVP	
	containing a Wultiple-Services-Credit-Control AVP	
	containing a Osed-Oetvice-Offic A	VI
	containing an Envelope AVP  containing an Envelope-Start-Time AVP	
	optionally containing an Enve	
	optionally containing a CC-To	
	optionally containing a CC-In	
	optionally containing a CC-O	
	optionally containing a CC-Service-Specific-Units AVP.	
Comments:		

TP_RO_CTF_OP_15	Standards Reference:	PICS item:
	Clause 6.5.6	A.7/3.3
Summary:	Verify that the IUT can successfully process Envelope-Reporting AVP	
	[REPORT_ENVELOPES_WITH_VOLUME].	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends I	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number AV	
	containing a Multiple-Services-Credit-	
	containing a Requested-Service-L	Jnit AVP
	on receipt of a CC-Answer containing a Result-Code AVP	
	indicating DIAMETER-SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing an Envelope-Reporting AVP	
	indicating REPORT_ENVELOPES_WITH_VOLUME	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Used-Service-Unit AVP	
	containing an Envelope AVP	
	containing an Envelope-Start-	
	optionally containing an Enve	
	containing a CC-Total-Octets	
	containing a CC-Input-Octets	
	containing a CC-Output-Octets AVP	
•	not containing a CC-Service-S	Specific-Units AVP.
Comments:		

TP_RO_CTF_OP_16	Standards Reference:	PICS item:
	Clause 6.5.6	A.7/3.3
Summary:	Verify that the IUT can successfully process Envelope-Reporting AVP	
	[REPORT_ENVELOPES_WITH_EVENT].	
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends [	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	_
	containing a CC-Request-Number AV	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-L	JNIT AVP
	on receipt of a CC-Answer containing a Result-Code AVP	
	indicating DIAMETER-SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a Multiple-Services-Credit-Control AVP	
	containing an Envelope-Reporting AVP	
	indicating REPORT_ENVELOPES_WITH_EVENT	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Used-Service-Unit AVP	
	containing an Envelope AVP	
	containing an Envelope-Start-Time AVP	
	optionally containing an Enve	
	not containing a CC-Total-Oct	
	not containing a CC-Input-Oct	
	not containing a CC-Output-Octets AVP	
	containing a CC-Service-Spec	citic-Units AVP.
Comments:		

TP_RO_CTF_OP_17	Standards Reference:	PICS item:
	Clause 6.5.6	A.7/3.3
Summary:	Verify that the IUT can successfully process	
	[REPORT_ENVELOPES_WITH_VOLUME_	AND_EVENTJ.
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw	
SIP Initial condition:	IUT receives SIP message and then sends I	
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:
	TP_IMST2_MW_GEN_07 (INVITE)	
Test purpose:	Ensure that the IUT	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST	
	containing a CC-Request-Number A\	
	containing a Multiple-Services-Credit	
	containing a Requested-Service-l	JNIT AVP
	on receipt of a CC-Answer	
	containing a Result-Code AVP	
	indicating DIAMETER-SUCCESS	
	containing a CC-Request-Type AVP	
	indicating INITIAL_REQUEST containing a Multiple-Services-Credit-Control AVP	
	containing a Multiple-Services-Credit-Control AVP  containing an Envelope-Reporting AVP	
	indicating REPORT_ENVELOPES_WITH_VOLUME_AND_EVENT	
	sends a CC-Request	
	containing a CC-Request-Type AVP	
	indicating UPDATE_REQUEST	
	containing a CC-Request-Number AVP	
	containing a Multiple-Services-Credit-Control AVP	
	containing a Used-Service-Unit AVP	
	containing an Envelope AVP	
	containing an Envelope-Start-	Time AVP
	optionally containing an Enve	elope-Stop-Time AVP
	containing a CC-Total-Octets	AVP
	containing a CC-Input-Octets	
	containing a CC-Output-Octet	
	containing a CC-Service-Specific-Units AVP.	
Comments:		

TP_RO_CTF_OP_18	Standards Reference:	PICS item:	
	Clause 6.5.7¶1	A.7/3.3	
Summary:	Verify that the IUT can successfully process combinational quota.		
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends [		
	Following Test Purposes from ETSI TS 102	790-2 [3] can be reused for triggering:	
	TP_IMST2_MW_GEN_07 (INVITE)		
Test purpose:	Ensure that the IUT		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a CC-Request-Number AV		
	containing a Multiple-Services-Credit		
	containing a Requested-Service-L	Jnit AVP	
	on receipt of a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-SUCCESS		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST containing a Multiple-Services-Credit-Control AVP		
	containing a Multiple-Services-Credit		
	containing a Time-Quota-Wedianish AVP		
		indicating Table 6	
	containing a Base-Time-Interv	val Δ\/P	
	indicating the length of the base time interval		
	optionally containing a Multiple-Services-Credit-Control AVP		
	sends a CC-Request		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	containing a Multiple-Services-Credit-	-Control AVP	
	containing a Granted-Service-Uni	t AVP	
	indicating reserved units		
	containing an Envelope AVP.		
Comments:			

Table 6: Time-Quota-Type AVP values

Test purpose variants	Reporting-Reason AVP values
VA_01	DISCRETE_TIME_PERIOD (0)
VA_02	CONTINUOUS_TIME_PERIOD (1)

TP_RO_CTF_OP_19	Standards Reference: Clause 6.5.7¶19	PICS item: A.7/3.3	
Summary:	Verify that the IUT can successfully process		
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.		
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:		
	TP_IMST2_MW_GEN_07 (INVITE)		
Test purpose:	Ensure that the IUT		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a CC-Request-Number A\		
	containing a Multiple-Services-Credit		
	containing a Requested-Service-l	Jnit AVP	
	on receipt of a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-SUCCESS		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST	Control AV/P	
	containing a Multiple-Services-Credit-Control AVP		
	containing a Time-Quota-Mechanism AVP containing a Time-Quota-Type AVP		
	indicating DISCRETE_TIME_PERIOD		
	containing a Base-Time-Interval AVP		
	3	indicating the length of the base time interval	
	containing a Quota-Consumption-		
	indicating a period equal to the Quota Consumption Time		
	optionally containing a Multiple-Services-Credit-Control AVP		
	sends a CC-Request		
	containing a Result-Code AVP		
	indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Granted-Service-Uni	TAVP	
	indicating reserved units		
	containing an Envelope AVP containing an Envelope-Start-Time AVP		
	containing an Envelope-Start-Time AVP containing an Envelope-Stop-Time AVP		
	indicating a delta time equ		
	optionally containing a CC-To		
	optionally containing a CC-In		
	optionally containing a CC-Output-Octets AVP		
	optionally containing a CC-Service-Specific-Unit AVP.		
Comments:			

TP_RO_CTF_OP_20	Standards Reference: Clause 6.5.7¶5	PICS item: A.7/3.3	
Summary:			
Configuration:	Verify that the IUT can successfully process combinational quota - CTP algorithm.  CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.		
on miliar contaition.	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:		
	TP_IMST2_MW_GEN_07 (INVITE)		
Test purpose:	Ensure that the IUT		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Requested-Service-Unit AVP		
	on receipt of a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-SUCCESS		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Time-Quota-Mechanism AVP		
	containing a Time-Quota-Type AVP indicating CONTINUOUS_TIME_PERIOD		
	containing a Base-Time-Interval AVP		
	indicating the length of the base time interval		
	containing a Quota-Consumption-Time AVP		
	indicating a period equal to the Quota Consumption Time		
	optionally containing a Multiple-Services-Credit-Control AVP		
	sends a CC-Request		
	containing a Result-Code AVP indicating DIAMETER_SUCCESS containing a CC-Request-Type AVP indicating UPDATE_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Granted-Service-Unit AVP		
	indicating reserved units		
	containing an Envelope AVP		
	containing an Envelope-Start-Time AVP		
	containing an Envelope-Stop-Time AVP  not indicating a delta time equal to CTP_VALUE		
Comments:	not malcating a delta time	equal to OTI _VALUE	
Comments.			

TP_RO_CTF_OP_21	Standards Reference:	PICS item:	
	Clause 6.5.7¶6	A.7/3.3	
Summary:	Verify that the IUT can successfully process combinational quota when Quota-		
_	Consumption-Time AVP is present.		
Configuration:	CF_1Ro or CF_1Ro1Gm1Mw		
SIP Initial condition:	IUT receives SIP message and then sends DIAMETER CCR message to the OCF.		
	Following Test Purposes from ETSI TS 102 790-2 [3] can be reused for triggering:		
	TP_IMST2_MW_GEN_07 (INVITE)		
Test purpose:	Ensure that the IUT		
	sends a CC-Request		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a CC-Request-Number AVP		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Requested-Service-Unit AVP		
	on receipt of a CC-Answer		
	containing a Result-Code AVP		
	indicating DIAMETER-SUCCESS		
	containing a CC-Request-Type AVP		
	indicating INITIAL_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Time-Quota-Mechanism AVP		
	containing a Time-Quota-Type AVP		
	indicating Table 7		
	containing a Base-Time-Interval AVP		
	indicating the length of the base time interval		
	containing a Quota-Consumption-Time AVP		
	indicating a period equal to the Quota Consumption Time		
	optionally containing a Multiple-Services-Credit-Control AVP		
	sends a CC-Request		
	containing a Result-Code AVP indicating DIAMETER_SUCCESS		
	containing a CC-Request-Type AVP		
	indicating UPDATE_REQUEST		
	containing a Multiple-Services-Credit-Control AVP		
	containing a Multiple-Services-Credit-Goriffor AVY		
	indicating reserved units		
	containing an Envelope AVP.		
Comments:			

Table 7: Time-Quota-Type AVP values

test purpose variants	Reporting-Reason AVP values	
VA_01	DISCRETE_TIME_PERIOD (0)	
VA_02	CONTINUOUS_TIME_PERIOD (1)	

## History

Document history				
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