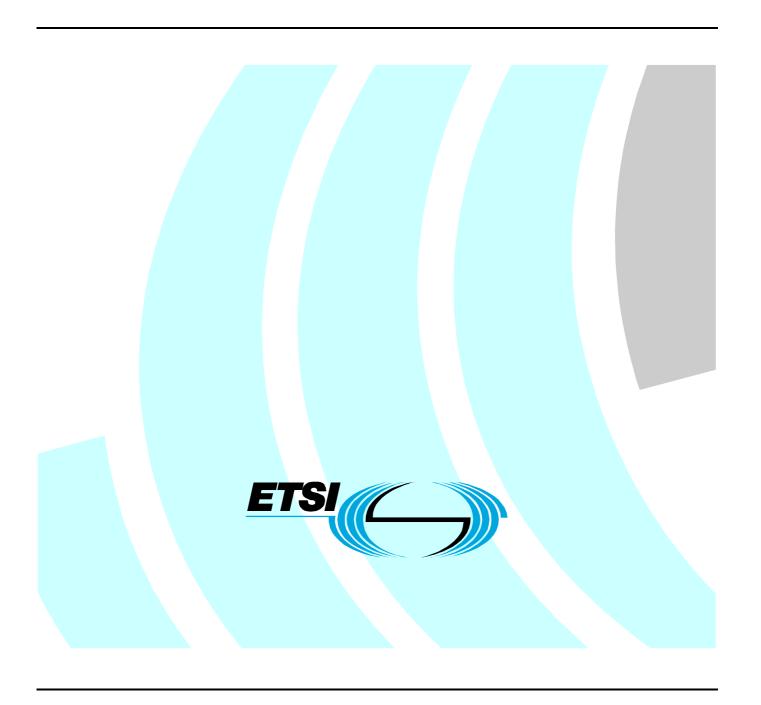# ETSI TS 102 027-2 V3.1.1 (2004-11)

Technical Specification

**Methods for Testing and Specification (MTS);
Conformance Test Specification for SIP (IETF RFC 3261);
Part 2: Test Suite Structure and Test Purposes (TSS&TP)**

ETSI

Reference

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Methods for Testing and Specification (MTS).

The present document is part 2 of a multi-part deliverable covering Conformance Test Specification for SIP (IETF RFC 3261), as identified below:

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

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

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

1 Scope

The present document provides a Test Suite Structure and Test Purposes (TSS&TP) for the Session Initiation Protocol (SIP) implementation in compliance with the relevant requirements specified in RFC 3261 [1].

The present document is a new release of TS 102 027-2.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.

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

[1]   IETF RFC 3261: "SIP: Session Initiation Protocol".

[2]   ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[3]   ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

[4]   ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation".

[5]   ISO/IEC 9646: (all parts): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in RFC 3261 [1], ISO/IEC 9646-1 [2], ISO/IEC 9646-2 [3], ISO/IEC 9646-3 [4] and the following apply:

callee: SIP entity that is requested to participate to a session by receiving an INVITE message

caller: SIP entity that initiates a session by sending an INVITE message

dialog: identifier defined as the combination of the remote address, local address, and Call-ID

inopportune: test group that handles invalid signalling exchanges of messages, which are properly structured and correctly encoded

Invalid (I): test group that handles valid signalling exchanges of messages, which are either not properly structured or incorrectly encoded

Test Purpose (TP): non-formal high-level description of a test, mainly using text

NOTE: This test description can be used as the basis for a formal test specification (e.g. Abstract Test Suite in TTCN). See ISO/IEC 9646 [5].

Valid (V): test group that handles valid signalling exchanges of messages, which are properly structured and correctly encoded

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ATS	Abstract Test Suite
CE	Call Establishment
CR	Call Release
I	Invalid
ICS	Implementation Conformance Statement
IUT	Implementation Under Test
MG	MessaGing
O	InOpportune
OE	Originating Endpoint
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PR	PRoxy
RD	ReDirect server
RG	ReGistration
RR	RegistraR
RT	RegistranT
SM	Session Modification
SS	SeSsion
TE	Terminating Endpoint
TP	Test Purpose
TR	TRansport
TSS	Test Suite Structure
UA	User Agent
UAC	User Agent Client
UAS	User Agent Server
V	Valid

4 Test Suite Structure (TSS)

4.1 Introduction

4.1.1 SIP Entities

Test Purposes have been written for SIP entities according to the RFC 3261 [1].

Four kinds of entities are considered successively as IUT:

- User Agent behaving as client or Server.

- Registrar.

- Proxy (outbound and simple proxy).

- Redirect server.

Figure 1: SIP protocol entities

4.1.2   General assumptions

Test purposes have been written for behaviours requested with "MUST" or that appear as obvious in present form.

Several proxy servers may forward the requests, but the test purposes are written from the point of view of one SIP entity only. The client can be either a user agent client or the client portion of a proxy server.

SDP has been considered as the method used to describe the session, but no test purposes have been written to check the SDP content itself as it is out of scope.

Proxy, redirect server, registrar and UA shall support both UDP and TCP as transport layer.

SIP entities are considered in the present document to be addressed with SIP-URLs, except for test purposes that validate the IUT's behaviour upon reception of non SIP-URLs.

The verb "ignore" in test purpose means that the IUT does not react with an error message and does not take into account the element to be ignored. When this element is an undefined Header field, according to RFC 3261, section 10 [1], proxy shall not remove or modify it.

The adjective "unknown" means in the test purpose not defined in the standard RFC 3261 [1] while "non-understood" means unknown from the point of view of the IUT.

The mandatory header fields like CALL-ID, Cseq, From, To and Via are supposed to be present in all messages as Max-Forwards in Request message without stressing this requirement in each test purpose (see sections 8.1.1 and 8.2.6 of RFC 3261 [1]).

4.1.3   System under test

In SIP, a client can either sends its request directly to the Request-URI or to its outbound proxy. It can also ask for SIP URL to a redirect server before sending its request. Test purpose will apply depending of the current tested configuration.

Three kinds of session have been considered in the present document:

- Call using a proxy.

- Direct call with no proxy.

- Call using a redirect server.

4.2   Overview of the Test Suite Structure

The Test Suite Structures is based on SIP entities and assumptions as described in clause 4.1.2.

Figure 2 shows the Test Suite Structure (TSS).

Last Sub groups may be subdivided in three subgroups: Valid behaviour (V), Invalid behaviour (I), Inopportune behaviour (O).

Test Suite	Main Functionalities	Role	Functionalities subgroups		Test group
SIP	Registration	Registrant			V
		Registrar			V-I-O
	Call Control	Originating Endpoint	Call establishment		V-Timers
			Call release		V-I-Timers
			Session Modification		V
		Terminating Endpoint	Call establishment		V-I-Timers
			Call release		V-I-Timers
			Session Modification		V-I
		Proxy	Message processing	Request	V-I
				Response	V
			Transaction	Client	V-Timers
				Server	V-Timers
		Redirect server	Call establishment		V
			Call release		V
	Querying for capabilities	Originating Endpoint	Asking for capabilities		
		Terminating Endpoint	Responding for capabilities		
		Proxy	Responding for capabilities		
	Messaging	Registrant			V-I
		Registrar			V-I
		Originating Endpoint			V-I
		Terminating Endpoint			V-I
		Proxy			V-I
		Redirect Server			V-I

Figure 2: TSS for SIP

5 Test Purposes (TP)

5.1 Introduction

5.1.1 TP naming convention

Table 1: TP identifier naming convention scheme

Identifier: **<protocol>_<main functionality>_<role>_<functionality>_<type>_<nn>**	
<protocol>	SIP
<main functionality>	Registration (RG), Call Control (CC), Querying for capabilities (QC), Messaging (MG)
<role> =	Registrant (RT), Registrar (RR) Originating Endpoint (OE), Terminating Endpoint (TE), Proxy (PR), Redirect (RD)
<functionality> (optional)	Call Establishment (CE), Call Release (CR), Session modification (SM), Message Processing (MP)
	Transaction (TR), Asking for capabilities (AC), Responding for capabilities (RC).
<sub-functionality> (optional)	Request (RQ), Response (RS), Client (CL), Server (SE)
<type>	Valid Behaviour (V), Invalid Behaviour (I), Inopportune Behaviour (O)
<nnn> =	sequential number (001-999)

5.1.2 State Definitions during a call

For more clarity and consistency, states defined in figures 5 to 8 in RFC 3261 [1], have been reused in the wording of test purposes.

5.1.3 TP structure

Each test purpose is decomposed in seven keywords.

- The TPId gives a unique identifier to each test purpose.

- "Status" specifies, when a test purpose is optional, the selection condition according to RFC 3261 [1] PICS document. It specifies also when is set to "Recommended" that the requirement appears in RFC 3261 [1] with a "SHOULD" statement. The group status applies to all test purposes belonging to this group. When no status is specified, mandatory shall be assumed.

- "Ref." outlines the references in RFC 3261 [1] used to create the test purpose.

- "Purpose" describes the objective of the test.

5.2 Test Purposes for Registration

5.2.1 Registrant

Group selection: Registration being listed as an option, the test purpose is applicable if the SUT is declared as supporting periodic registration and can behave as User Agent.

Status: PICS: A.1/1 and A.2/1

5.2.1.1 Valid Behaviour

TPId: **SIP_RG_RT_V_001**

Status: Mandatory

Ref: RFC 3261 [1] section 10.2.

Purpose: Ensure that the IUT, in order to be registered, sends a REGISTER request to its registrar, without user name in the Request-URI and with a SIP-URI as request-URI.

TPId: **SIP_RG_RT_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT having sent a REGISTER request is able to receive a Success (200 OK) response containing its current registration list in the Contact header and an expires parameter in the header.

TPId: **SIP_RG_RT_V_003**

Status: PICS: A.3/1.1

Ref: RFC 3261 [1] section 10.2.6.

Purpose: Ensure that the IUT, in order to be registered, sends a REGISTER request to its pre-configured registrar address and without username.

TPId: **SIP_RG_RT_V_004**

Status: PICS: A.3/1.2

Ref: RFC 3261 [1] section 10.2.6.

Purpose: Ensure that the IUT, in order to be registered, sends a REGISTER request to host part of address of record as the Request-URI and without username.

TPId: **SIP_RG_RT_V_005**

Status: PICS: A.3/1.3

Ref: RFC 3261 [1] section 10.2.6.

Purpose: Ensure that the IUT, in order to be registered, sends a REGISTER request to the well-known "all SIP servers" multicast address "sip.mcast.net" (224.0.1.75) and without username.

TPId: **SIP_RG_RT_V_006**

Status: Void

TPId: **SIP_RG_RT_V_007**

Status: PICS: A.8/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent a REGISTER request, on receipt of an Unauthorized (401 Unauthorized) response including a WWW-Authenticate header, repeats its REGISTER request with an Authorization header and with an incremented Cseq value.

TPId: **SIP_RG_RT_V_008**

Status: Mandatory

Ref: RFC 3261 [1] section 10.2.

Purpose: Ensure that the IUT, in order to be registered, sends a REGISTER request to its registrar, with a address-of record in the To header of type SIP URI.

TPId: **SIP_RG_RT_V_009**

Status: Mandatory

Ref: RFC 3261 [1] section 10.2.

Purpose: Ensure that the IUT, in order to be registered, sends a REGISTER request to its registrar, with the same URI in the From and the To header.

TPId: **SIP_RG_RT_V_010**

Status: Mandatory

Ref: RFC 3261 [1] section 10.2.

Purpose: Ensure that the IUT, having sent a REGISTER request to which no final response was received, does not send a new registration before expiration of the initial request.

TPId: **SIP_RG_RT_V_011**

Status: Mandatory AND PICS: A.3/4

Ref: RFC 3261 [1] section 10.2.

Purpose: Ensure that the IUT having sent a REGISTER request, will increment the CSeq value by one in the next new REGISTER request with the same Call-ID.

TPId: **SIP_RG_RT_V_012**

Status: Recommended AND PICS: A.3/4

Ref: RFC 3261 [1] section 10.2.4.

Purpose: Ensure that the IUT, already registered, sends at least one REGISTER request, during the shortest lifetime indicated in the Expires parameter of Contact addresses of the Success (200 OK) response it has received, using the same Call-ID as in the previous REGISTER request.

TPId: **SIP_RG_RT_V_013**

Status: Recommended AND PICS: A.3/3

Ref: RFC 3261 [1] section 10.2.2.

Purpose: Ensure that the IUT, in order to remove an existing binding sends a REGISTER request, with Expires parameter set to zero in the Contact headers or an Expires header set to 0 when Contact field is set to "*".

TPId: **SIP_RG_RT_V_014**

Status: PICS: A.3/5

Ref: RFC 3261 [1] section 10.2.1.

Purpose: Ensure that the IUT, in order to get its registered contacts, sends a REGISTER request to its registrar without Contact header.

TPId: **SIP_RG_RT_V_015**

Status: PICS: A.3/6

Ref: RFC 3261 [1] section 10.2.1.1.

Purpose: Ensure that the IUT, in order to suggest an expiration interval for its binding, sends a REGISTER request to its registrar with either an Expires header field or "expires" Contact header parameter.

TPId: **SIP_RG_RT_V_016**

Status: PICS: A.3/7

Ref: RFC 3261 [1] section 10.2.1.2.

Purpose: Ensure that the IUT, in order to order its bindings, to indicate a relative preference for the list in the Contact header field value, sends a REGISTER request to its registrar with "q" Contact header parameter.

TPId: **SIP_RG_RT_V_017**

Status: PICS: A.3/8

Ref: RFC 3261 [1] section 10.2.5.

Purpose: Ensure that the IUT having sent a REGISTER request is able to receive a Success (200 OK) response containing a Date header field.

TPId: **SIP_RG_RT_V_018**

Status: PICS: A.8/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent a REGISTER request, on receipt of an Unauthorized (401 Unauthorized) response including a WWW-Authenticate header, repeats its REGISTER request with an Authorization header including proper values for username, realm nonce, digest-uri and response HTTP parameters.

TPId: **SIP_RG_RT_V_019**

Status: PICS: A.8/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent a REGISTER message, on receipt of a Proxy Authentication Required (407 Proxy Authentication Required) response including a Proxy-Authenticate header, repeats its REGISTER request with a Proxy-Authorization header and with an incremented Cseq value.

TPId: **SIP_RG_RT_V_020**

Status: PICS: A.8/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent a REGISTER message, on receipt of a Proxy Authentication Required (407 Proxy Authentication Required) response including a Proxy-Authenticate header, repeats its REGISTER request with a Proxy-Authorization header including proper values for username, realm nonce, digest-uri and response HTTP parameters.

5.2.1.2 Timers

TPId: **SIP_RG_RT _TI_001**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.2.2.

Purpose: If an unreliable transport is used, ensure that the IUT, having sent a REGISTER request, repeats its request after timer E set to T1 value expires.

TPId: **SIP_RG_RT _TI_002**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: If an unreliable transport is used, ensure that the IUT, having sent twice times a REGISTER request, repeats its request after timer E set to the MIN(2*T1,T2) value expires.

TPId: **SIP_RG_RT _TI_003**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: If an unreliable transport is used, ensure that the IUT, having sent three times a REGISTER request, repeats its request after timer E set to the MIN(4*T1,T2) value expires.

TPId: **SIP_RG_RT _TI_004**

Status: PICS: A.15/5

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: If an unreliable transport is used, ensure that the IUT does not repeat a REGISTER request, after timer F set to 64*T1 expires.

TPId: **SIP_RG_RT _TI_005**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: Ensure that the IUT, when a REGISTER client transaction is in the Proceeding state, repeats its REGISTER request after timer E set to T1 value expires.

TPId: **SIP_RG_RT _TI_006**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: Ensure that the IUT, when a REGISTER client transaction is in the Proceeding state and REGISTER request have been already repeated in this state, repeats its REGISTER request after timer E set to T2 value expires.

TPId: **SIP_RG_RT _TI_007**

Status: PICS: A.15/5

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: Ensure that the IUT, when a REGISTER client transaction is in the Proceeding state, does not repeat its REGISTER request, after timer F set to 64*T1 expires.

5.2.2   Registrar

Group selection: IUT is a Registrar

Status: PICS: A.1/2

REGISTER message can be received either on unicast or multicast address, depending of IUT ability (PICS: A.63/4 or A.63/5)

5.2.2.1   Valid Behaviour

TPId: **SIP_RG_RR_V_001**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT on receipt of a REGISTER and without user name in the Request-URI, sends a Success (200 OK) response, containing all current bindings listed in the Contact header, with the expires parameter for each Contact value.

TPId: **SIP_RG_RR_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT on receipt of a REGISTER request including multiple Contact header sends a Success (200 OK) response, and adds these addresses to the current bindings list.

TPId:	**SIP_RG_RR_V_003**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 10.2 and 10.3.
Purpose:	Ensure that the IUT on receipt of a successive REGISTER with the same Call-ID but with different Contact header answers successively each of them with a Success (200 OK) response, and adds these addresses to the current bindings list.
TPId:	**SIP_RG_RR_V_004**
Status:	PICS: A.63/6
Ref:	RFC 3261 [1] sections 10.2 and 10.3.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including a From header addressing a different entity than that addressed by the To header (third party registration), sends a Success (200 OK) response.
TPId:	**SIP_RG_RR_V_005**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 10.2 and 10.3.
Purpose:	Ensure that the IUT on receipt of periodic REGISTER request with the same Call-ID and Contact header, and with an increasing CSeq number answers each of them with a Success (200 OK) response.
TPId:	**SIP_RG_RR_V_006**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 10.2 and 10.3.
Purpose:	Ensure that the IUT when the UA is already registered, on receipt of REGISTER request without Contact header, sends a Success (200 OK) response including the expiration time of the registration in an expires parameter in the Contact header.
TPId:	**SIP_RG_RR_V_007**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 10.2 and 10.3.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including an Expires header, sends a Success (200 OK) response.
TPId:	**SIP_RG_RR_V_008**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 10.2 and 10.3.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including an Expires parameter in the Contact header, sends a Success (200 OK) response.
TPId:	**SIP_RG_RR_V_009**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 10.2 and 20.10.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including a Contact header without display name, sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_010**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to * and an Expires header set to zero, and Call-ID is the same as the stored Call-ID value and CSeq is greater than the stored CSeq value of that binding, removes that binding and sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_011**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to * and an Expires header set to zero, and Call-ID is different from the stored Call-ID value of that binding, removes that binding and sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to an address which is not in the bindings list, and the received expiration time other than zero, and Call-ID is different from the stored Call-ID value of that binding, adds that binding to the list and sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_013**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to an address which is in the bindings list with a Call-ID different from the value stored for that binding, and an expiration time other than zero, sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_014**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to an address which is in the bindings list with a Call-ID different from the value stored for that binding, and an expiration time set to zero, deletes that binding and sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_015**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to an address which is in the bindings list with the same Call-ID as the value stored for that binding, CSeq is greater than the stored CSeq value of that binding, and an expiration time other than zero, sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_016**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to an address which is in the bindings list with the same Call-ID as the value stored for that binding, CSeq is greater than the stored CSeq value of that binding, and an expiration time equal to zero, deletes that binding and sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_017**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a call is currently established, on receipt of a REGISTER request, sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_018**

Status: PICS: A.68/1

Ref: RFC 3261 [1] sections 10.3, item 3 and 22.2.

Purpose: Ensure that the IUT on receipt of a REGISTER request not including an Authorization or Proxy-Authorization header fields, sends an Unauthorized (401 Unauthorized) or Proxy Authentication Required (407 Proxy Authentication Required) response, containing a WWW-Authenticate or a Proxy-Authenticate header.

TPId: **SIP_RG_RR_V_019**

Status: PICS: A.68/1

Ref: RFC 3261 [1] section 10.3, item 4.

Purpose: Ensure that the IUT on receipt of a REGISTER request, but the authenticated user not authorized to modify this address-of record, sends a Forbidden (403 Forbidden) response.

TPId: **SIP_RG_RR_V_020**

Status: PICS: A.63/2

Ref: RFC 3261 [1] section 10.2.1.2.

Purpose: Ensure that the IUT on receipt of a REGISTER and including "q" Contact header parameter, sends a Success (200 OK) response.

TPId: **SIP_RG_RR_V_021**

Status: PICS: A.68/1

Ref: RFC 3261 [1] sections 10.3, item 3 and 22.2.

Purpose: Ensure that the IUT on receipt of a REGISTER request not including an Authorization or a
                    Proxy-Authorization header fields, sends an Unauthorized (401 Unauthorized) or Proxy
                    Authentication Required (407 Proxy Authentication Required) response, containing a WWW-
                    Authenticate or a Proxy-Authenticate header including proper value for realm and nonce HTTP
                    parameters.

TPId: **SIP_RG_RR_V_022**

Status: PICS: A.68/1

Ref: RFC 3261 [1] sections 10.3, item 3 and 22.2.

Purpose: Ensure that the IUT having sent an Unauthorized (401 Unauthorized) or a Proxy Authentication
                    Required (407 Proxy Authentication Required) response to a REGISTER request, on receipt of a
                    REGISTER request including a valid Authorization or Proxy-Authorization header field, sends a
                    Success (200 OK) response.

5.2.2.2   Invalid Behaviour

TPId: **SIP_RG_RR_I_001**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT on receipt of a REGISTER request including a To header from which the
                    extracted address-of-record is not valid for the domain in the Request-URI, sends a Request
                    Failure (404 Not Found) response.

TPId: **SIP_RG_RR_I_002**

Status: Mandatory

Ref: RFC 3261 [1] sections 10.3 and 19.1.1.

Purpose: Ensure that the IUT on receipt of a REGISTER request including a user name in the SIP URI as
                    the Request-URI, sends a Success (200 OK) response.

TPId: **SIP_RG_RR_I_003**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT on receipt of a REGISTER request including a Contact header set to "*"
                    together with an additional Contact header, sends a Client error (400 Bad Request) response.

TPId: **SIP_RG_RR_I_004**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT on receipt of a REGISTER request including a Contact header set to "*", and
                    an Expires header with an expiration time set to other than zero, sends a Client error (400 Bad
                    Request) response.

5.2.2.3   Inopportune Behaviour

TPId: **SIP_RG_RR_O_001**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to * and an Expires header set to zero, and Call-ID is the same as the stored Call-ID value and CSeq is equal to the stored CSeq value of that binding, does not remove that binding and sends a Success (200 OK) response.

TPId: **SIP_RG_RR_O_002**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to an address which is in the bindings list with the same Call-ID as the value stored for that binding, CSeq is equal to the stored CSeq value of that binding, and an expiration time other than zero, sends a Server Failure (500 Server Error) response.

TPId: **SIP_RG_RR_O_003**

Status: Mandatory

Ref: RFC 3261 [1] section 10.3.

Purpose: Ensure that the IUT when a binding already registered, on receipt of a REGISTER request including a Contact header set to an address which is in the bindings list with the same Call-ID as the value stored for that binding, CSeq is equal to the stored CSeq value of that binding, and an expiration time equal to zero, does not remove that binding and sends a Server Failure (500 Server Error) response.

5.3   Test Purposes for Call Control

Ref: RFC 3261 [1] section 1.4.4.

5.3.1   Originating Endpoint

Group selection: IUT is an User Agent.

Status: PICS: A.1/1

5.3.1.1   Call establishment

Group selection: IUT can behave as a User Agent client to establish a call.

Status: PICS: A.16/1.1

5.3.1.1.1   Valid Behaviour

TPId: **SIP_CC_OE_CE_V_001**

Status: Mandatory

Ref: RFC 3261 [1] section 8.1.1.

Purpose: Ensure that the IUT, to establish a call sends an INVITE request including at least To, From, CSeq, Call-ID, Max-Forwards, Contact and Via headers.

TPId:	**SIP_CC_OE_CE_V_002**
Status:	Recommended
Ref:	RFC 3261 [1] section 8.1.1.
Purpose:	Ensure that the IUT, to establish a call sends an INVITE request with a Request-URI set to the same URI value of the To header.

TPId:	**SIP_CC_OE_CE_V_003**
Status:	Mandatory
Ref:	RFC 3261 [1] section 8.1.1.2.
Purpose:	Ensure that the IUT, to establish a call sends an INVITE request including a To header set to an address of the callee and without TAG parameter.

TPId:	**SIP_CC_OE_CE_V_004**
Status:	Mandatory
Ref:	RFC 3261 [1] section 8.1.1.3.
Purpose:	Ensure that the IUT, to establish a call sends an INVITE request including a From header with a TAG parameter.

TPId:	**SIP_CC_OE_CE_V_005**
Status:	Mandatory
Ref:	RFC 3261 [1] section 8.1.1.5.
Purpose:	Ensure that the IUT, to establish a call sends an INVITE request including a CSeq header with a method that matches "INVITE".

TPId:	**SIP_CC_OE_CE_V_006**
Status:	Recommended
Ref:	RFC 3261 [1] section 8.1.1.6.
Purpose:	Ensure that the IUT, to establish a call sends an INVITE request including a Max-Forward header set to 70.

TPId:	**SIP_CC_OE_CE_V_007**
Status:	Mandatory
Ref:	RFC 3261 [1] section 8.1.1.7.
Purpose:	Ensure that the IUT, to establish a call sends an INVITE request including a Via header with a protocol name set to SIP, a protocol version set to 2.0 and a branch parameter set to a value beginning with "z9hG4bK".

TPId:	**SIP_CC_OE_CE_V_008**
Status:	PICS: A.22/2.5
Ref:	RFC 3261 [1] section 13.2.1.
Purpose:	Ensure that the IUT, to establish a call sends an INVITE request including Allow and Supported headers.

TPId: **SIP_CC_OE_CE_V_009**

Status: Mandatory

Ref: RFC 3261 [1] sections 8, 8.1.3.2 and 13.2.2.1, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Trying (100 Trying) response enters in the Proceeding state.

TPId: **SIP_CC_OE_CE_V_010**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.1.3.2 and 13.2.2.1, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Session Progress (183 Session Progress) response enters in the Proceeding state.

TPId: **SIP_CC_OE_CE_V_011**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.1.3.2 and 13.2.2.1, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Unknown (199 Unknown) response enters in the Proceeding state.

TPId: **SIP_CC_OE_CE_V_012**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.1.3.2 and 13.2.2.1, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Proceeding state, on receipt of a Trying (100 Trying) response stays in the Proceeding state.

TPId: **SIP_CC_OE_CE_V_013**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, 13.2.2.4, figure 5 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response sends an ACK request.

TPId: **SIP_CC_OE_CE_V_014**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, 13.2.2.4, figure 5 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Proceeding state, on receipt of a Success (200 OK) response sends an ACK request.

TPId: **SIP_CC_OE_CE_V_015**

Status: Recommended

Ref: RFC 3261 [1] section 8.1.3.3, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Proceeding state, on receipt of a Success (200 OK) response with more than one Via header value does not send an ACK request, discards the response.

TPId: **SIP_CC_OE_CE_V_016**

Status: Mandatory

Ref: RFC 3261 [1] sections12.2.1.1, 13.2.2.4, figure 5 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response sends an ACK request with the same CSeq sequence number as in the original INVITE request and the CSeq method field value set to "ACK".

TPId: **SIP_CC_OE_CE_V_017**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, 13.2.2.4, figure 5 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response sends an ACK request with the To header set to the same value as in the received final response.

TPId: **SIP_CC_OE_CE_V_018**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, 13.2.2.4, figure 5 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response including a To header without TAG sends an ACK request with a To header without TAG.

TPId: **SIP_CC_OE_CE_V_019**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, 13.2.2.4, figure 5 and 17.1.1.2.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of Success (200 OK) responses differing only on the tag in the To header, sends an ACK request with a To header identical to the received one for each received Success (200 OK) responses.

TPId: **SIP_CC_OE_CE_V_020**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, figure 5 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response sends an ACK request with the same Call-ID and From headers as in the original INVITE request.

TPId: **SIP_CC_OE_CE_V_021**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.1.1 and 13.2.2.4, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response with no Record-Route header set sends an ACK request with the Request-URI set to the Contact URI included in the received final response and with no Route header set.

TPId: **SIP_CC_OE_CE_V_022**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, and 13.2.2.4, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response with a Record-Route header set to a list in which the last element contains lr parameter, sends an ACK request with the Request-URI set to the Contact URI and a Route header set to the list in a reverse order of the Record-Route included in the received final response.

TPId: **SIP_CC_OE_CE_V_023**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, and 13.2.2.4, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response with a Record-Route header set to a list in which the last element does not contain lr parameter, sends an ACK request with the Request-URI set to this element and a Route header set to the remainder list in a reverse order of the received Record-Route appended with the received Contact URI.

TPId: **SIP_CC_OE_CE_V_024**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.2, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Multiple Choices (300 Multiple Choices) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in the Multiple Choices (300 Multiple Choices) response.

TPId: **SIP_CC_OE_CE_V_025**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.2, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Proceeding state, on receipt of a Multiple Choices (300 Multiple Choices) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in the Multiple Choices (300 Multiple Choices) response.

TPId: **SIP_CC_OE_CE_V_026**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.2, figure 5 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Multiple Choices (300 Multiple Choices) response sends an ACK request with a single Via header equal to the top Via header sent in the original INVITE request.

TPId: **SIP_CC_OE_CE_V_027**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.2, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Moved Permanently (301 Moved Permanently) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in the Moved Permanently (301 Moved Permanently) response.

TPId: **SIP_CC_OE_CE_V_028**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1, 13.2.2.2, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Moved Temporarily (302 Moved Temporarily) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in the Moved Temporarily (302 Moved Temporarily) response.

TPId: **SIP_CC_OE_CE_V_029**

Status: PICS: A.16/1.3

Ref: RFC 3261 [1] sections 8.1.3.4, 21.3.4, 13.2.2.2, figure 5, 17.1.1.2 [1], and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Use Proxy (305 Use Proxy) response sends an INVITE request to the proxy given by the Contact header.

TPId: **SIP_CC_OE_CE_V_030**

Status: PICS: A.16/1.3

Ref: RFC 3261 [1] section 8.1.3.4, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a
                 Moved Permanently (301 Moved Permanently) response sends a new INVITE request with a
                 Request-URI set with one of URI given in the Contact header of the redirection response.

TPId: **SIP_CC_OE_CE_V_031**

Status: PICS: A.16/1.3

Ref: RFC 3261 [1] section 8.1.3.4, figure 5.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a
                 Moved Permanently (301 Moved Permanently) response sends a new INVITE request with a new
                 branch ID in the top Via header.

TPId: **SIP_CC_OE_CE_V_032**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Not
                 Found (404 Not Found) response sends an ACK request with the same Call-ID, From headers and
                 Request-URI as in the original INVITE request and the same Tag in the To header as in this
                 response.

TPId: **SIP_CC_OE_CE_V_033**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Proceeding state, on receipt of a
                 Not Found (404 Not Found) response sends an ACK request with the same Call-ID, From headers
                 and Request-URI as in the original INVITE request and the same Tag in the To header as in this
                 response.

TPId: **SIP_CC_OE_CE_V_034**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Gone
                 (410 Gone) response sends an ACK request with the same Call-ID, From headers and
                 Request-URI as in the original INVITE request and the same Tag in the To header as in this
                 response.

TPId: **SIP_CC_OE_CE_V_035**

Status: Mandatory

Ref: RFC 3261 [1] section 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Temporarily Unavailable (480 Temporarily Unavailable) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in this response.

TPId: **SIP_CC_OE_CE_V_036**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3 figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Busy Here (486 Busy Here) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in this response.

TPId: **SIP_CC_OE_CE_V_037**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Server Internal Error (500 Server Internal Error) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in this response.

TPId: **SIP_CC_OE_CE_V_038**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Busy Everywhere (600 Busy Everywhere) and a Server Internal Error (500 Server Internal Error) responses with different branch parameter value on the top Via header sends only one ACK request.

TPId: **SIP_CC_OE_CE_V_039**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Decline (603 Decline) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in this response.

TPId: **SIP_CC_OE_CE_V_040**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT having already received a non 2XX final response to its INVITE request, on receipt of a Decline (603 Decline) response, with the same Via branch parameter and CSeq header method as in the INVITE request, sends an ACK message.

TPId: **SIP_CC_OE_CE_V_041**

Status: Mandatory

Ref: RFC 3261 [1] sections 17, 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT having already received a 2XX final response to its INVITE request, on receipt of a Success (200 OK) response, with a different Record-Route as in previous response, but with the same Via branch parameter and CSeq header method as in the INVITE request, sends an ACK request with a Route header set according to this new Record-Route.

TPId: **SIP_CC_OE_CE_V_042**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.1.3.2, 13.2.2.3, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Calling state, on receipt of a Unknown (699 Unknown) response sends an ACK request with the same Call-ID, From headers and Request-URI as in the original INVITE request and the same Tag in the To header as in this response.

TPId: **SIP_CC_OE_CE_V_043**

Status: PICS: A.16/1.3

Ref: RFC 3261 [1] sections 21.3.3, 12.2.1, 13.2.2.2, figure 5, 17.1.1.2 and 17.1.1.3.

Purpose: Ensure that the IUT having sent an INVITE to the location get from the redirect server, on receipt of a Success (200 OK) response sends an ACK request.

TPId: **SIP_CC_OE_CE_V_044**

Status: Mandatory

Ref: RFC 3261 [1] section 13.2.1.

Purpose: Ensure that the IUT while is establishing a call, sends a unique session description either in the INVITE request or in the ACK request to answer the initial offers given then in the final 2XX response.

TPId: **SIP_CC_OE_CE_V_045**

Status: PICS: A.22/2.13

Ref: RFC 3261 [1] sections 20.14 and 13.2.1.

Purpose: Ensure that the IUT while is establishing a call, sends a Content-Length header set to the size of the body in the message that contains the session description.

TPId: **SIP_CC_OE_CE_V_046**

Status: Mandatory

Ref: RFC 3261 [1] sections 20.15 and 13.2.1.

Purpose: Ensure that the IUT while is establishing a call, sends a Content-Type header in the message that contains the session description.

TPId: **SIP_CC_OE_CE_V_047**

Status: Mandatory

Ref: RFC 3261 [1] sections 7.4 and 13.2.1.

Purpose: Ensure that the IUT while is establishing a call, sends a Content-Encoding header only in the message that contains the session description.

TPId: **SIP_CC_OE_CE_V_048**

Status: Mandatory

Ref: RFC 3261 [1] section 13.2.1.

Purpose: Ensure that the IUT while is establishing a call on receipt of in 2XX a not acceptable session description, sends an ACK request immediately followed by a BYE request.

TPId: **SIP_CC_OE_CE_V_049**

Status: Mandatory

Ref: RFC 3261 [1] sections 20.14 and 13.2.1.

Purpose: If a reliable transport (TCP) is used, ensure that the IUT while is establishing a call, sends a Content-Length header set to the size of the body in the message that contains the session description.

TPId: **SIP_CC_OE_CE_V_050**

Status: PICS: A.31/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent an INVITE request, on receipt of an Unauthorized (401 Unauthorized) response including a WWW-Authenticate header, repeats its INVITE request with an Authorization header and with an incremented Cseq value.

TPId: **SIP_CC_OE_CE_V_051**

Status: PICS: A.31/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent an INVITE request, on receipt of an Unauthorized (401 Unauthorized) response including a WWW-Authenticate header, repeats its INVITE request with an Authorization header including proper values for username, realm nonce, digest-uri and response HTTP parameters.

TPId: **SIP_CC_OE_CE_V_052**

Status: PICS: A.31/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent an INVITE request, on receipt of a Proxy Authentication Required (407 Proxy Authentication Required) response including a Proxy-Authenticate header, repeats its INVITE request with a Proxy-Authorization header and with an incremented Cseq value.

TPId: **SIP_CC_OE_CE_V_053**

Status: PICS: A.31/1

Ref: RFC 3261 [1] sections 8.1.3.5 and 22.2.

Purpose: Ensure that the IUT having sent an INVITE request, on receipt of a Proxy Authentication Required (407 Proxy Authentication Required) response including a Proxy-Authenticate header, repeats its INVITE request with a Proxy-Authorization header including proper values for username, realm nonce, digest-uri and response HTTP parameters.

5.3.1.1.2 Timers

TPId: **SIP_CC_OE_CE_TI_001**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport (UDP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state repeats its INVITE request on the timeout condition of timer A set with a value of T1.

TPId: **SIP_CC_OE_CE_TI_002**

Status: Recommended

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If a reliable transport (TCP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state does not repeat its INVITE request on the timeout condition of timer A set with a value of T1.

TPId: **SIP_CC_OE_CE_TI_003**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport (UDP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state having already repeated its INVITE wait for a timer A set with a value of 2*T1 before sending it again.

TPId: **SIP_CC_OE_CE_TI_004**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport (UDP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state retransmits its INVITE request with intervals that double after each transmission.

TPId:	**SIP_CC_OE_CE_TI_005**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 17.1.1.1.
Purpose:	Ensure that the IUT, when an INVITE client transaction is in the Calling state, when timer B set to a value of 64*T1 expires, does not send an ACK.

TPId:	**SIP_CC_OE_CE_TI_006**
Status:	Recommended
Ref:	RFC 3261 [1] Annex A and section 17.1.1.1.
Purpose:	Ensure that the IUT, when an INVITE client transaction is in the Calling state, when timer B set to a value of 64*T1 expires, considers the transaction terminated.

TPId:	**SIP_CC_OE_CE_TI_007**
Status:	Recommended
Ref:	RFC 3261 [1] Annex A and section 17.1.1.1.
Purpose:	Ensure that the IUT, when an INVITE client transaction is in the Proceeding state, does not repeat its INVITE request.

TPId:	**SIP_CC_OE_CE_TI_008**
Status:	PICS: A.38/6
Ref:	RFC 3261 [1] Annex A and section 17.1.1.1.
Purpose:	If an unreliable transport is used, ensure that the IUT, when an INVITE client transaction is in the Completed state, on receipt of final responses that matches the transaction, still answer with an ACK request until timer D set to at least 32 second expires.

TPId:	**SIP_CC_OE_CE_TI_009**
Status:	PICS: A.38/6
Ref:	RFC 3261 [1] Annex A and section 17.1.1.1.
Purpose:	If a reliable transport is used, ensure that the IUT, when an INVITE client transaction is in the Completed state, on receipt of a final response that matches the transaction, does not repeats its ACK request.

TPId:	**SIP_CC_OE_CE_TI_010**
Status:	PICS: A.38/6
Ref:	RFC 3261 [1] Annex A and section 17.1.1.1.
Purpose:	If an unreliable transport is used, ensure that the IUT, when an INVITE client transaction is in the Completed state, on receipt of new final responses with different Via branch parameter value, does not repeat its ACK request until timer D set to at least 32 second expires.

TPId:	**SIP_CC_OE_CE_TI_011**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 13.2.2.4.
Purpose:	Ensure that the IUT, when an INVITE client transaction has been in the Terminated state, on receipt of a retransmitted Success (200 OK) responses sends an ACK request until 64*T1 duration expires.

TPId: **SIP_CC_OE_CE_TI_012**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 13.2.2.4.

Purpose: Ensure that the IUT, when an INVITE client transaction has been in the Terminated state, after 64*T1 duration expires, on receipt of a retransmitted Success (200 OK) responses does not send an ACK request.

5.3.1.2   Call release

5.3.1.2.1   Valid Behaviour

TPId: **SIP_CC_OE_CR_V_001**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1 and 15.

Purpose: Ensure that the IUT, once a dialog has been established, to release it sends a BYE request with a To header set to the same value as in the last received final response.

TPId: **SIP_CC_OE_CR_V_002**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1 and 15.

Purpose: Ensure that the IUT, once a dialog has been established with a final response in which the TAG in the To header was omitted, to release it sends a BYE request with an identical To header without TAG value.

TPId: **SIP_CC_OE_CR_V_003**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1 and 15.

Purpose: Ensure that the IUT, once a dialog has been established, to release it sends a BYE request with the same Call-ID, From headers as in the original INVITE message.

TPId: **SIP_CC_OE_CR_V_004**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.1.1.

Purpose: Ensure that the IUT, once a dialog has been established, to release it sends a BYE request with an incremented of one CSeq value, a method field in the CSeq header set to "BYE".

TPId: **SIP_CC_OE_CR_V_005**

Status: Mandatory

Ref: 12.2.1.1 [1], 15 [1]

Purpose: Ensure that the IUT, once a dialog has been established with a Success (200 OK) response including no Record-Route header set, to release it sends a BYE request with the Request-URI set to the Contact URI included in the received final response and with no Route header set.

TPId: **SIP_CC_OE_CR_V_006**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1 and 15.

Purpose: Ensure that the IUT, once a dialog has been established with a Success (200 OK) response including a Record-Route header set to a list in which the last element contains lr parameter, to release the call, sends a BYE request with the Request-URI set to the Contact URI and a Route header set to the list in a reverse order of the Record-Route included in the received final response.

TPId: **SIP_CC_OE_CR_V_007**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1 and 15.

Purpose: Ensure that the IUT, once a dialog has been established with a Success (200 OK) response including a Record-Route header set to a list in which the last element does not contain lr parameter, to release the call, sends an BYE request with the Request-URI set to this element and a Route header set to the remainder list in a reverse order of the received Record-Route appended with the received Contact URI.

TPId: **SIP_CC_OE_CR_V_008**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1 and 15.

Purpose: Ensure that the IUT, once a dialog has been established, having sent a BYE request, on receipt of a Success (200 OK) response considers the session and the dialog terminated.

TPId: **SIP_CC_OE_CR_V_009**

Status: Mandatory

Ref: RFC 3261 [1] sections 12.2.1.1 and 15.1.1.

Purpose: Ensure that the IUT, once a dialog has been established, having sent a BYE request, on receipt of a Call Leg/Transaction Does Not Exist (481 Call Leg/Transaction Does Not Exist) considers the session and the dialog terminated.

TPId: **SIP_CC_OE_CR_V_010**

Status: Mandatory

Ref: RFC 3261 [1] sections 15 and 9.1, figure 5.

Purpose: Ensure that the IUT having received a Trying (100 Trying) response to its INVITE request, to give up the call, sends a CANCEL request.

TPId: **SIP_CC_OE_CR_V_011**

Status: Mandatory

Ref: RFC 3261 [1] sections15 and 9.1, figure 5.

Purpose: Ensure that the IUT having received a Trying (100 Trying) response to its INVITE request, to give up the call, sends a CANCEL request with the same Request-URI, Call-ID, From, To headers as in the original INVITE message.

TPId: **SIP_CC_OE_CR_V_012**

Status: Mandatory

Ref: RFC 3261 [1] sections15 and 9.1, figure 5.

Purpose: Ensure that the IUT having received a Trying (100 Trying) response to its INVITE request, sends a CANCEL request with the same numeric part of CSeq as in the original INVITE message and with a method field in the CSeq header set to "CANCEL".

TPId: **SIP_CC_OE_CR_V_013**

Status: Mandatory

Ref: RFC 3261 [1] sections15 and 9.1, figure 5.

Purpose: Ensure that the IUT having received a Trying (100 Trying) response to its INVITE request, sends a CANCEL request with a single Via header value matching the top Via value of the Via header of the original INVITE message.

TPId: **SIP_CC_OE_CR_V_014**

Status: Mandatory

Ref: RFC 3261 [1] sections15 and 9.1, figure 5.

Purpose: Ensure that the IUT having received a Trying (100 Trying) response to its INVITE request, to give up the call, sends a CANCEL request without Require or Proxy-Require header.

TPId: **SIP_CC_OE_CR_V_015**

Status: Mandatory

Ref: RFC 3261 [1] sections15 and 9.1, figure 5.

Purpose: Ensure that the IUT having received a Trying (100 Trying) response to its INVITE request, to give up the call having sent a CANCEL request, on receipt of a 2XX response to the original INVITE sends an ACK request.

5.3.1.2.2 Invalid Behaviour

TPId:	**SIP_CC_OE_CR_I_001**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 9 and 16.10.
Purpose:	Ensure that the IUT, once a dialog has been established, on receipt of a CANCEL request followed by a BYE request, sends a Success (200 OK) response to the BYE request.

5.3.1.2.3 Timers

TPId:	**SIP_CC_OE_CR_TI_001**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 17.1.2.2.
Purpose:	If an unreliable transport is used, ensure that the IUT, having sent a BYE request on an established dialog, repeats its request after timer E set to T1 value expires.

TPId:	**SIP_CC_OE_CR_TI_002**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 17.1.3.
Purpose:	If an unreliable transport is used, ensure that the IUT, having sent twice times a BYE request on an established dialog, repeats its request after timer E set to the MIN(2*T1,T2) value expires.

TPId:	**SIP_CC_OE_CR_TI_003**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 17.1.3.
Purpose:	If an unreliable transport is used, ensure that the IUT, having sent three times a BYE request on an established dialog, repeats its request after timer E set to the MIN(4*T1,T2) value expires.

TPId:	**SIP_CC_OE_CR_TI_004**
Status:	PICS: A.38/8
Ref:	RFC 3261 [1] Annex A and section 17.1.3.
Purpose:	If an unreliable transport is used, ensure that the IUT does not repeat a BYE request on an established dialog, after timer F set to 64*T1 expires.

TPId:	**SIP_CC_OE_CR_TI_005**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 17.1.3.
Purpose:	Ensure that the IUT, when a BYE client transaction is in the Proceeding state, repeats its BYE request after timer E set to T1 value expires.

TPId:	**SIP_CC_OE_CR_TI_006**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 17.1.3.
Purpose:	Ensure that the IUT, when a BYE client transaction is in the Proceeding state and BYE request have been already repeated in this state, repeats its BYE request after timer E set to T2 value expires.

TPId: **SIP_CC_OE_CR_TI_007**

Status: PICS: A.38/8

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: Ensure that the IUT, when a BYE client transaction is in the Proceeding state, does not repeat a BYE request on an established dialog, after timer F set to 64*T1 expires.

TPId: **SIP_CC_OE_CR_TI_008**

Status: PICS: A.38/8

Ref: RFC 3261 [1] Annex A and sections 17.1.3.and 9.1.

Purpose: Ensure that the IUT, when a BYE client transaction is in the Trying state, considers the transaction terminated after timer F set to 64*T1 duration expires without receiving any final response.

5.3.1.3   Session modification

5.3.1.3.1   Valid Behaviour

TPId: **SIP_CC_OE_SM_V_001**

Status: Mandatory

Ref: RFC 3261 [1] section 14.2.

Purpose: Ensure that the IUT, having sent an INVITE, on receipt of a re-INVITE on this dialog, sends a Request Pending (491 Request Pending) response.

TPId: **SIP_CC_OE_SM_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 14.2.

Purpose: Ensure that the IUT when an INVITE client transaction is in the Proceeding state, on receipt of an re-INVITE on this dialog, sends a Request Pending (491 Request Pending) response.

5.3.2   Terminating Endpoint

Group selection: IUT is an User Agent.

Status: PICS: A.1/1

5.3.2.1   Call establishment

Group selection: IUT can behave as a User Agent server to establish a call.

Status: PICS: A.16/1.2

5.3.2.1.1   Valid Behaviour

TPId: **SIP_CC_TE_CE_V_001**

Status: Mandatory

Ref: RFC 3261 [1] sections 8, 8.2, and 13.3.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request, sends a Success (200 OK) or a provisional (101-199) response.

TPId:	**SIP_CC_TE_CE_V_002**
Status:	PICS: A.18/4.14 Status/Sending
Ref:	RFC 3261 [1] section 8.2.2.1.
Purpose:	Ensure that the IUT on receipt of an INVITE request with a Request-URI set with a scheme that it does not support, sends a Unsupported URI scheme (416 Unsupported URI scheme) response.

TPId:	**SIP_CC_TE_CE_V_003**
Status:	PICS: A.18/4.5 Status/Sending
Ref:	RFC 3261 [1] section 8.2.2.1.
Purpose:	Ensure that the IUT on receipt of an INVITE request with a Request-URI set with an address that it does not accept sends a Not Found (404 Not Found) response.

TPId:	**SIP_CC_TE_CE_V_004**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 8 and 8.2.6.1.
Purpose:	Ensure that the IUT on receipt of an INVITE request with a Timestamp header, when it answers with a provisional response Trying (100 Trying), set a Timestamp header with an increased value of the received Timestamp in its response.

TPId:	**SIP_CC_TE_CE_V_005**
Status:	PICS: A.18/4.23 Status/Sending
Ref:	RFC 3261 [1] section 13.3.1.
Purpose:	Ensure that the IUT on receipt of an INVITE request including an Expires header set to 0, sends a Request Terminated (487 Request Terminated) response.

TPId:	**SIP_CC_TE_CE_V_006**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 13.2.1 and 13.3.1.
Purpose:	Ensure that the IUT on receipt of an INVITE request including no message body, includes in its first 2xx response an initial offer session description.

TPId:	**SIP_CC_TE_CE_V_007**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 13.2.1 and 13.3.1.
Purpose:	Ensure that the IUT on receipt of an INVITE request including an initial offer session description in its message body, includes the answer in its first 2xx response a session description.

TPId:	**SIP_CC_TE_CE_V_008**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 13.2.1 and 13.3.1.
Purpose:	Ensure that the IUT on receipt of an INVITE request including a message body with a Content-Disposition header not set to session value, includes in its first 2xx response an initial offer session description.

TPId: **SIP_CC_TE_CE_V_009**

Status: Mandatory

Ref: RFC 3261 [1] sections 13.2.1, 13.3.1 and 20.11.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Content-Language header value
                   that it cannot understood and a Content-Disposition header including a handling set to "optional",
                   includes in its first 2xx response an initial offer session description.

TPId: **SIP_CC_TE_CE_V_010**

Status: PICS: A.18/4.13 Status/Sending

Ref: RFC 3261 [1] sections 8.2.3, 13.2.1, 13.3.1 and 20.11.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Content-Language header value
                   that it cannot understood, a Content-Disposition header including a handling empty sends an
                   Unsupported Media Type (415 Unsupported Media Type) response with an Accept header that
                   lists the types of all bodies it understands.

TPId: **SIP_CC_TE_CE_V_011**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.2.3, 21.4.13, 13.2.1, 13.3.1 and 20.11.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Content-Language header value
                   that it cannot understood, a Content-Disposition with a handling set to "required" and a
                   disposition-types set to session, sends an Unsupported Media Type (415 Unsupported Media
                   Type) response with an Accept header that lists the types of all bodies it understands.

TPId: **SIP_CC_TE_CE_V_012**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.2.3, 21.4.13, 13.2.1, 13.3.1 and 20.11.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Content-Encoding header set to
                   content-coding values that it does not support, sends an Unsupported Media Type (415
                   Unsupported Media Type) response with an Accept-Encoding header that list the types of coding
                   that it understands.

TPId: **SIP_CC_TE_CE_V_013**

Status: PICS: A.18/4.24 Status/Sending

Ref: RFC 3261 [1] sections 13.3.1.3 and 21.4.13.

Purpose: Ensure that the IUT on receipt of an INVITE request including a session description that it can
                   understand but it cannot accept, a Content-Disposition with a handling set to "required" and a
                   disposition-types set to session, sends a Not Acceptable Here (488 Not Acceptable Here) response
                   including a Warning header.

TPId: **SIP_CC_TE_CE_V_014**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an INVITE request, sends a Success (200 OK) or a provisional (101-199) response including the headers From, Call-ID, CSeq and Via headers copy from the INVITE request.

TPId: **SIP_CC_TE_CE_V_015**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an INVITE request with no TAG set on the To header, sends a Success (200 OK) or a provisional (101-199) response including the same URI and an additional TAG for the To header.

TPId: **SIP_CC_TE_CE_V_016**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an INVITE request with a TAG set on the To header, sends a Success (200 OK) or a provisional (101-199) response including the same URI and the same TAG for the To header.

TPId: **SIP_CC_TE_CE_V_017**

Status: Mandatory

Ref: RFC 3261 [1] section 12.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request, sends a Success (200 OK) or a provisional (101-199) response including a single Contact header.

TPId: **SIP_CC_TE_CE_V_018**

Status: Mandatory

Ref: RFC 3261 [1] section 12.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Record-Route header, sends a Success (200 OK) or a provisional (101-199) response including a Record-Route header copy from the INVITE request, in the same order.

TPId: **SIP_CC_TE_CE_V_019**

Status: Mandatory

Ref: RFC 3261 [1] section 12.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Record-Route header with parameters that it does not understand, sends a Success (200 OK) or a provisional (101-199) response including a Record-Route header copy from the INVITE request, with the unknown parameters.

TPId: **SIP_CC_TE_CE_V_020**

Status: Mandatory

Ref: RFC 3261 [1] section 12.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including From header without tag, sends a Success (200 OK) or a provisional (101-199) response including a From header without tag.

TPId: **SIP_CC_TE_CE_V_021**

Status: Recommended

Ref: RFC 3261 [1] section 13.3.1.4.

Purpose: Ensure that the IUT having received an INVITE request, sends a Success (200 OK) including an Allow and a Supported headers.

TPId: **SIP_CC_TE_CE_V_022**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of an INVITE request, including a Via header set with the same branch parameter and sent-by value in the topmost list value, repeats its last response.

TPId: **SIP_CC_TE_CE_V_023**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of an INVITE request, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_TE_CE_V_024**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of an INVITE request, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_TE_CE_V_025**

Status: Recommended

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Completed state, on receipt of an INVITE request, including a Via header set with the same branch parameter and sent-by value in the topmost list value, repeats its last response.

TPId: **SIP_CC_TE_CE_V_026**

Status: Recommended

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Completed state, on receipt of an INVITE request, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_TE_CE_V_027**

Status: Recommended

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Completed state, on receipt of an INVITE request, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_TE_CE_V_028**

Status: PICS: A.18/4.19 Status/Sending

Ref: RFC 3261 [1] sections 8.2.2.2, 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of an INVITE request, including a Via header set with a different branch parameter starting with the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID and CSeq identical as in the first INVITE request, sends a Loop Detected (482 Loop Detected) response.

TPId: **SIP_CC_TE_CE_V_029**

Status: PICS: A.18/4.19 Status/Sending

Ref: RFC 3261 [1] sections 8.2.2.2, 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of an
                 INVITE request, including a Via header set to an identical branch parameter starting with the
                 magic cookie "z9hG4bK" and a different sent-by value, but with the Request-URI, To tag, From
                 tag, Call-ID and CSeq identical as in the first INVITE request, sends a Loop Detected (482 Loop
                 Detected) response.

TPId: **SIP_CC_TE_CE_V_030**

Status: PICS: A.18/4.19 Status/Sending

Ref: RFC 3261 [1] sections 8.2.2.2, 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of an
                 INVITE request, including a top Via header set to a different value but with the Request-URI, To
                 tag, From tag, Call-ID and CSeq identical as in the first INVITE request, sends a Loop Detected
                 (482 Loop Detected) response.

TPId: **SIP_CC_TE_CE_V_031**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.2.3.

Purpose: Ensure that the IUT on receipt of an INVITE request with a Require header set to an option value
                 that the IUT does not support, sends a Bad Extension (420 Bad Extension) response including
                 those options in the Unsupported header.

TPId: **SIP_CC_TE_CE_V_032**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.3.1 and 13.3.1.4, figure 7.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, after sending a
                 4XX response, enters in the Completed state.

TPId: **SIP_CC_TE_CE_V_033**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.3.1 and 13.3.1.4, figure 7.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Completed state, on receipt of an
                 ACK request, enters in the Confirmed transaction state.

TPId: **SIP_CC_TE_CE _V_034**

Status: PICS: A.31/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT on receipt of an INVITE request not including an Authorization header field, sends an Unauthorized (401 Unauthorized) response, containing a WWW-Authenticate header.

TPId: **SIP_CC_TE_CE _V_035**

Status: PICS: A.31/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT on receipt of an INVITE request not including an Authorization header field, sends an Unauthorized (401 Unauthorized) response, containing a WWW-Authenticate header including proper value for realm and nonce HTTP parameters.

TPId: **SIP_CC_TE_CE _V_036**

Status: PICS: A.31/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT having sent an Unauthorized (401 Unauthorized) response to an INVITE request, on receipt of a INVITE request including a valid Authorization header field, sends a Success (200 OK) response.

5.3.2.1.2   Invalid Behaviour

TPId: **SIP_CC_TE_CE_I_001**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.3 and 8.2.2.3, figure 7.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Completed state, on receipt of an ACK request including a Proxy-Require header set with an option-tag that it does not support, enters in the Confirmed transaction state.

TPId: **SIP_CC_TE_CE_I_002**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.3 and 8.2.2.3, figure 7.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Completed state, on receipt of an ACK request including a Require header set with an option-tag that it does not support, enters in the Confirmed transaction state.

5.3.2.1.3   Timers

TPId: **SIP_CC_TE_CE_TI_001**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state repeats its response on the timeout condition of timer G set with a value of T1.

TPId: **SIP_CC_TE_CE_TI_002**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If a reliable transport (TCP) is used, ensure that the IUT, when an INVITE server transaction is in the Completed state does not repeat its response on the timeout condition of timer G set with a value of T1.

TPId: **SIP_CC_TE_CE_TI_003**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state and having already sent twice times its response, repeats it after timer G set MIN(2*T1,T2) value expires.

TPId: **SIP_CC_TE_CE_TI_004**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state and having already sent three times its response, repeats it after timer G set the MIN(4*T1,T2) value expires.

TPId: **SIP_CC_TE_CE_TI_005**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: Ensure that the IUT, when an INVITE server transaction is in the Completed state and, enters in the Terminated state after timer H set to 64*T1 value expires.

TPId: **SIP_CC_TE_CE_TI_006**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state and, does not repeats its response after timer H set to 64*T1 value expires.

TPId: **SIP_CC_TE_CE_TI_007**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Confirmed state, enters in the Terminated state after timer I set to T4 value expires.

TPId:	**SIP_CC_TE_CE_TI_008**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 17.2.1.
Purpose:	If a reliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Confirmed state, enters immediately in the Terminated state.

TPId:	**SIP_CC_TE_CE_TI_009**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 13.3.1.4.
Purpose:	Ensure that the IUT, when it has answered to an INVITE request with 2XX response, repeats it after T1 duration expires without receiving an ACK request.

TPId:	**SIP_CC_TE_CE_TI_010**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 13.3.1.4.
Purpose:	Ensure that the IUT, when it has already answered twice times to an INVITE request with a 2XX response, repeats it after 2*T1 duration expires without receiving an ACK request.

TPId:	**SIP_CC_TE_CE_TI_011**
Status:	Mandatory
Ref:	RFC 3261 [1] Annex A and section 13.3.1.4.
Purpose:	Ensure that the IUT, does not repeat its 2XX response to an INVITE request after T2 duration expires without receiving an ACK request.

TPId:	**SIP_CC_TE_CE_TI_012**
Status:	Recommended
Ref:	RFC 3261 [1] Annex A and section 13.3.1.4.
Purpose:	Ensure that the IUT, when it has receive no ACK to its 2XX responses during a duration of 64*T1 seconds, sends a BYE request.

5.3.2.2   Call release

5.3.2.2.1   Valid Behaviour

TPId:	**SIP_CC_TE_CR_V_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 15.
Purpose:	Ensure that the IUT while a session has been established, on receipt of a BYE request sends a Success (200 OK) response.

TPId:	**SIP_CC_TE_CR_V_002**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 15 and 12.
Purpose:	Ensure that the IUT while the dialog is in an early stage, on receipt of a BYE request sends a response.

TPId: **SIP_CC_TE_CR_V_003**

Status: Mandatory

Ref: RFC 3261 [1] sections 15 and 12.

Purpose: Ensure that the IUT while the dialog is in a confirmed stage, on receipt of a BYE request sends a Success (200 OK) response.

TPId: **SIP_CC_TE_CR_V_004**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.2.2 and 15.1.2.

Purpose: Ensure that the IUT once a dialog has been established, on receipt of a BYE request including a header that it does not understand sends a Success (200 OK) response.

TPId: **SIP_CC_TE_CR_V_005**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.2.2 and 15.1.2.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including a Require header set with an option-tag that it does not support, sends a Bad Extension (420 Bad Extension) response including a Unsupported set with this option-tag.

TPId: **SIP_CC_TE_CR_V_006**

Status: Mandatory

Ref: RFC 3261 [1] sections 8.2.6.2 and 15.1.2.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request, sends a Success (200 OK) response with From, Call-ID, CSeq and Via headers set to the same value as in the request.

TPId: **SIP_CC_TE_CR_V_007**

Status: PICS: A.20/4.11 Status/Sending

Ref: RFC 3261 [1] section 15.1.2.

Purpose: Ensure that the IUT, while no dialog has been established, on receipt of a BYE request, sends a Call/Transaction does not exist (481 Call/Transaction does not exist).

TPId: **SIP_CC_TE_CR_V_008**

Status: PICS: A.20/4.11 Status/Sending

Ref: RFC 3261 [1] section 15.1.2.

Purpose: Ensure that the IUT, while a dialog has been established, on receipt of a BYE request without TAG in the To header, sends a Call/Transaction does not exist (481 Call/Transaction does not exist).

TPId: **SIP_CC_TE_CR_V_009**

Status: Recommended

Ref: RFC 3261 [1] section 12.2.2.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including a CSeq header set with a more than one higher value as in the previous request, sends a Success (200 OK) response with the same CSeq value.

TPId: **SIP_CC_TE_CR_V_010**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.1.1.

Purpose: Ensure that the IUT once a dialog has been established, to release it sends a BYE request with a To header set to the same value as in the From header of the previous received request.

TPId: **SIP_CC_TE_CR_V_011**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.1.1.

Purpose: Ensure that the IUT once a dialog has been established, to release it sends a BYE request with a From header set to the same value as in the To header of the last sent response.

TPId: **SIP_CC_TE_CR_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.1.1.

Purpose: Ensure that the IUT once a dialog has been established with an INVITE request including no Record-Route header set, to release it sends a BYE request with the Request-URI set to the Contact URI included in the original INVITE request and with no Route header set.

TPId: **SIP_CC_TE_CR_V_013**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.1.1.

Purpose: Ensure that the IUT once a dialog has been established with an INVITE request including a Record-Route header set to a list in which the last element does not contain a lr parameter, to release the call, sends a BYE request with the Request-URI set to the Contact URI and a Route header set to the list in a reverse order of the Record-Route included in the original INVITE request.

TPId: **SIP_CC_TE_CR_V_014**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.1.1.

Purpose: Ensure that the IUT once a dialog has been established with an INVITE request including a Record-Route header set to a list in which the last element contains a lr parameter, to release the call, sends a BYE request with the Request-URI set to this element and a Route header set to the remainder list in a reverse order of the received Record-Route appended with the received Contact URI.

TPId: **SIP_CC_TE_CR_V_015**

Status: Mandatory

Ref: RFC 3261 [1] section 9.2.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of a
                 CANCEL, sends a Success (200 Success) response.

TPId: **SIP_CC_TE_CR_V_016**

Status: PICS: A.18/4.23 Status/Sending

Ref: RFC 3261 [1] section 9.2.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of a
                 CANCEL answers to the original INVITE, request with a Request Terminated (487 Request
                 Terminated) response.

TPId: **SIP_CC_TE_CR_V_017**

Status: PICS: A.21/4.11 Status/Sending

Ref: RFC 3261 [1] section 9.2.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of a
                 CANCEL request including a Via header set with a different branch parameter starting with the
                 magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID and CSeq identical
                 as in the original INVITE request, sends a Call Leg/Transaction Does Not Exist (481 Call
                 Leg/Transaction Does Not Exist) response.

TPId: **SIP_CC_TE_CR_V_018**

Status: PICS: A.21/4.11 Status/Sending

Ref: RFC 3261 [1] sections 9.2 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of a
                 CANCEL request including a Via header set to an identical branch parameter starting with the
                 magic cookie "z9hG4bK" and a different sent-by value, but with the Request-URI, To tag, From
                 tag, Call-ID and CSeq identical as in the original INVITE request, sends a Call Leg/Transaction
                 Does Not Exist (481 Call Leg/Transaction Does Not Exist) response.

TPId: **SIP_CC_TE_CR_V_019**

Status: PICS: A.21/4.11 Status/Sending

Ref: RFC 3261 [1] sections 9.2 and 17.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of a
                   CANCEL request, including a top Via header set to a different value but with the Request-URI, To
                   tag, From tag, Call-ID and CSeq identical as in the original INVITE request, sends a Call
                   Leg/Transaction Does Not Exist (481 Call Leg/Transaction Does Not Exist) response.

TPId: **SIP_CC_TE_CR_V_020**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.3, 17.2.2, 12.2.1.1 and 15.1.2.

Purpose: Ensure that the IUT, having already answer to a BYE request, on receipt of a BYE request, before
                   timer J fires, including a Via header set with the same branch parameter in the topmost list value,
                   repeats its last response.

TPId: **SIP_CC_TE_CR_V_021**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.3, 17.2.2 and 15.1.2.

Purpose: Ensure that the IUT, having already answer to a BYE request, on receipt of a BYE request, before
                   timer J fires, including a Via header set with no branch parameter but with the Request-URI, To
                   tag, From tag, Call-ID and CSeq identical as in the first BYE request, repeats its last response.

TPId: **SIP_CC_TE_CR_V_022**

Status: Mandatory

Ref: RFC 3261 [1] sections 17.2.3, 17.2.2, 12.2.1.1 and 15.1.2.

Purpose: Ensure that the IUT, having already answer to a BYE request, on receipt of a BYE request, before
                   timer J fires, including a Via header set with a different branch parameter but with the Request-
                   URI, To tag, From tag, Call-ID and CSeq identical as in the first BYE request, repeats its last
                   response.

5.3.2.2.2   Invalid Behaviour

TPId: **SIP_CC_TE_CR_I_001**

Status: Mandatory

Ref: RFC 3261 [1] section 12.2.2.

Purpose: Ensure that the IUT on receipt of a BYE request with a CSeq number set to a lower value than in
                   the preceding INVITE request, sends a 500 (Server Internal Error) response.

TPId: **SIP_CC_TE_CR_I_002**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of a CANCEL request including a Require header set with an option-tag that it does not support, sends a Success (200 OK) response.

TPId: **SIP_CC_TE_CR_I_003**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.2.3.

Purpose: Ensure that the IUT when a server INVITE transaction is in the Proceeding state, on receipt of a CANCEL request including a Proxy-Require header set with an option-tag that it does not support, sends a Success (200 OK) response.

TPId: **SIP_CC_TE_CR_I_004**

Status: PICS: A.21/4.11 Status/Sending

Ref: RFC 3261 [1] sections 9.2 and 15.1.2.

Purpose: Ensure that the IUT while no session has been initiated, on receipt of a CANCEL request, sends a Call/transaction Does Not Exist (481 Call/transaction Does Not Exist) response.

TPId: **SIP_CC_TE_CR_I_005**

Status: PICS: A.20/4.11 Status/Sending

Ref: RFC 3261 [1] section 15.1.2.

Purpose: Ensure that the IUT, while a session has been released, on receipt of a BYE request, sends a Call/transaction Does Not Exist (481 Call/transaction Does Not Exist) response.

5.3.2.2.3   Timers

TPId: **SIP_CC_TE_CR_TI_001**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.2.2.

Purpose: If an unreliable transport is used, ensure that the IUT, when a BYE server transaction is in the Completed state, on receipt of the repetitions of the BYE request, retransmits its response until the timer J set to 64*T1 expires.

5.3.2.3   Session modification

5.3.2.3.1   Valid Behaviour

TPId:	**SIP_CC_TE_SM_V_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 14.
Purpose:	Ensure that the IUT while a session has been established, on receipt of a re-INVITE request with a higher CSeq and a new complete session description sends a Success (200 OK) response including the last received CSeq.

TPId:	**SIP_CC_TE_SM_V_002**
Status:	Mandatory
Ref:	RFC 3261 [1] section 14.
Purpose:	Ensure that the IUT while a session has been established, on receipt of a re-INVITE request with no session description sends a Success (200 OK) response.

TPId:	**SIP_CC_TE_SM_V_003**
Status:	Recommended
Ref:	RFC 3261 [1] section 14.
Purpose:	Ensure that the IUT having sent a Success (200 OK) response to a re-INVITE request and receiving no ACK message, sends a BYE request for the dialog.

5.3.2.3.2   Invalid Behaviour

TPId:	**SIP_CC_TE_SM_I_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 14.
Purpose:	Ensure that the IUT when an INVITE server transaction is in the Proceeding state, on receipt of a re-INVITE with a lower CSeq values, sends a Server Internal Error (500 Server Internal Error) response including a Retry-After header set to a randomly chosen value between 0 and 10 seconds.

5.3.3 Proxy

Group selection: IUT is a Proxy

Status: PICS: A.1/3

5.3.3.1 Message processing

5.3.3.1.1 Request

5.3.3.1.1.1 Valid Behaviour

TPId: **SIP_CC_PR_MP_RQ_V_001**

Status: PICS: A.79/4.14 Status/Sending

Ref: RFC 3261 [1] section 16.3 item 2.

Purpose: Ensure that the IUT on receipt of an INVITE request with a Request-URI with a scheme that it does not understand, sends a Unsupported URI Scheme (416 Unsupported URI Scheme) request failure response.

Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing context with a Request-URI with a scheme that it does not understand, sends a Unsupported URI Scheme [416 Unsupported URI Scheme] request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 16.3 item 3.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Max-Forwards header set to 0, sends a Too many hops (483 Too many hops) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_003**

Status: Mandatory

Ref: RFC 3261 [1] section 16.3 item 5.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Proxy-Require header set to a value that it does not understand, sends a Bad Extension (420 Bad Extension) request failure response including a list of the options that it does not support in the Unsupported header.

TPId: **SIP_CC_PR_MP_RQ_V_004**

Status: Mandatory

Ref: RFC 3261 [1] section 16.4.

Purpose: Ensure that the IUT on receipt of an INVITE request with the Request-URI with a maddr parameter indicating a value the proxy is responsible for and the request was received using the port and transport indicated, removes the maddr and any non default port or transport parameter from the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_005**

Status: Mandatory

Ref: RFC 3261 [1] section 16.4.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Route header with the first value indicates the IUT, removes that value from the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_006**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of an INVITE request with the Request-URI with a maddr parameter, indicating a value the proxy is not responsible for, forwards the message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_007**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of an INVITE request with the Request-URI, indicating a domain the proxy is not responsible for, forwards the message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_008**

Status: PICS: A.79/4.22 Status/Sending

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of an INVITE, which Request-URI does not contain sufficient information to determine the target set, sends back an Ambiguous (485 Ambiguous) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_009**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of an INVITE request with the Request-URI, indicating a resource, which does not exist at this proxy, sends back a Not found (404 Not found) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_010**

Status: Void

TPId: **SIP_CC_PR_MP_RQ_V_011**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Max-Forwards header set to 5, forwards it after having decreasing this counter of one.

TPId: **SIP_CC_PR_MP_RQ_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Max-Forwards header set to 1,
                   forwards it after decreasing the Max-Forwards by one [i.e. setting it to 0].

TPId: **SIP_CC_PR_MP_RQ_V_013**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of an INVITE request, without a Max-Forwards header, forwards it
                   after having added a Max-Forwards header.

TPId: **SIP_CC_PR_MP_RQ_V_014**

Status: Recommended

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of an INVITE request, without a Max-Forwards header, forwards it
                   after having added a Max-Forwards header with the value set to 70.

TPId: **SIP_CC_PR_MP_RQ_V_015**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 6.

Purpose: Ensure that the IUT on receipt of an INVITE request with a Route header, and the first URI of this
                   Route does not contain a lr parameter, put the Request-URI into the last position of the Route
                   header, and put the first value of the Route header into the Request-URI, and then forwards the
                   message.

TPId: **SIP_CC_PR_MP_RQ_V_016**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 7.

Purpose: Ensure that the IUT on receipt of an INVITE request with a Route header, and the first URI of this
                   Route containing a lr parameter, forwards the message to the address in the first element of Route
                   header.

TPId: **SIP_CC_PR_MP_RQ_V_017**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 7.

Purpose: Ensure that the IUT on receipt of an INVITE request without a Route header, forwards the
                   message to the address in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_018**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.6, item 8 and 8.1.1.7.

Purpose: Ensure that the IUT on receipt of an INVITE request forwards the message after having inserted in
                   first position a Via header set to its location with a protocol name set to SIP, a protocol version set
                   to 2.0 and a branch parameter beginning with "z9hG4bK" - to the received list of Via headers.

TPId: **SIP_CC_PR_MP_RQ_V_019**

Status: Mandatory

Ref: RFC 3261 [1] section 16.4.

Purpose: Ensure that the IUT on receipt of an ACK request with the Request-URI with a maddr parameter indicating a value the proxy is responsible for and the request was received using the port and transport indicated, removes the maddr and any non default port or transport parameter from the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_020**

Status: Mandatory

Ref: RFC 3261 [1] section 16.4.

Purpose: Ensure that the IUT on receipt of an ACK request including a Route header with the first value indicates the IUT, removes that value from the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_021**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of an ACK request with the Request-URI with a maddr parameter, indicating a value the proxy is not responsible for, forwards the message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_022**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of an ACK request with the Request-URI, indicating a domain the proxy is not responsible for, forwards the message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_023**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of an ACK request including a Max-Forwards header set to 5, forwards after having decreasing this counter of one.

TPId: **SIP_CC_PR_MP_RQ_V_024**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of an ACK request including a Max-Forwards header set to 1, forwards it after decreasing the Max-Forwards by one [i.e. setting it to 0].

TPId:	**SIP_CC_PR_MP_RQ_V_025**
Status:	Mandatory
Ref:	RFC 3261 [1] section 16.6 item 3.
Purpose:	Ensure that the IUT on receipt of an ACK request without a Max-Forwards header, forwards it after having added a Max-Forwards header.
TPId:	**SIP_CC_PR_MP_RQ_V_026**
Status:	Recommended
Ref:	RFC 3261 [1] section 16.6 item 3.
Purpose:	Ensure that the IUT on receipt of an ACK request without a Max-Forwards header, forwards it after having added a Max-Forwards header with the value set to 70.
TPId:	**SIP_CC_PR_MP_RQ_V_027**
Status:	Mandatory
Ref:	RFC 3261 [1] section 16.6 item 6 and 7.
Purpose:	Ensure that the IUT on receipt of an ACK request with a Route header, and the first URI of this Route does not contain a lr parameter, put the Request-URI into the last position of the Route header, and put the first value of the Route header into the Request-URI, and then forwards the message to the address in the Request-URI.
TPId:	**SIP_CC_PR_MP_RQ_V_028**
Status:	Void
Ref:	
Purpose:	
Note:	This TP has the same behaviour as **SIP_CC_PR_MP_RQ_V_027**
TPId:	**SIP_CC_PR_MP_RQ_V_029**
Status:	Mandatory
Ref:	RFC 3261 [1] section 16.6 item 7.
Purpose:	Ensure that the IUT on receipt of an ACK request without a Route header, forwards the message to the address in the Request-URI.
TPId:	**SIP_CC_PR_MP_RQ_V_030**
Status:	Mandatory
Ref:	RFC 3261 [1] section 16.6 item 8, and 8.1.1.7.
Purpose:	Ensure that the IUT on receipt of an ACK request forwards the message after having inserted in first position a Via header - set to its location with a protocol name set to SIP, a protocol version set to 2.0 and a branch parameter beginning with "z9hG4bK" - to the received list of Via headers.
TPId:	**SIP_CC_PR_MP_RQ_V_031**
Status:	PICS: A.82/4.12 Status/Sending
Ref:	RFC 3261 [1] section 16.3, item 2 and 16.10.
Purpose:	Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing context with a Request-URI with a scheme that it does not understand, sends a Unsupported URI Scheme (416 Unsupported URI Scheme) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_032**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.3, item 3 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context including a Max-Forwards header set to 0, sends a Too many hops (483 Too many hops)
                   request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_033**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.3 item 5, and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context including a Proxy-Require header set to a value that it does not understand, sends a Bad
                   Extension (420 Bad Extension) request failure response including a list of the options that it does
                   not support in the Unsupported header.

TPId: **SIP_CC_PR_MP_RQ_V_034**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.4 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context with the Request-URI with a maddr parameter indicating a value the proxy is responsible
                   for and the request was received using the port and transport indicated, removes the maddr and any
                   non default port or transport parameter from the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_035**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.4 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context including a Route header with the first value indicates the IUT, removes that value from
                   the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_036**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context with the Request-URI with a maddr parameter, indicating a value the proxy is not
                   responsible for, forwards the message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_037**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.5 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context with the Request-URI, indicating a domain the proxy is not responsible for, forwards the
                   message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_038**

Status: PICS: A.82/4.19 Status/Sending

Ref: RFC 3261 [1] sections 16.5 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                 context but does not sufficient information to determine the target set, sends back a Ambiguous
                 (485 Ambiguous) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_039**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.5 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                 context with the Request-URI, indicating a resource, which does not exist at this proxy, sends back
                 a Not found (404 Not found) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_040**

Status: PICS: A.82/4.14 Status/Sending

Ref: RFC 3261 [1] sections 16.5 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                 context but does not find any target to forward, sends back a Temporary Unavailable (480
                 Temporary Unavailable) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_041**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 3 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                 context including a Max-Forwards header set to 5, forwards it after having decreasing this counter
                 of one.

TPId: **SIP_CC_PR_MP_RQ_V_042**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 3 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                 context including a Max-Forwards header set to 1, forwards it after having decreasing this counter
                 of one.

TPId: **SIP_CC_PR_MP_RQ_V_043**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.6, item 3 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                 context, without a Max-Forwards header, forwards it after having added a Max-Forwards header.

TPId: **SIP_CC_PR_MP_RQ_V_044**

Status: Recommended

Ref: RFC 3261 [1] section 16.6, item 3 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context, without a Max-Forwards header, forwards it after having added a Max-Forwards header
                   with the value set to 70.

TPId: **SIP_CC_PR_MP_RQ_V_045**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.6, item 6 and 7 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context with a Route header, and the first URI of this route does not contain a lr parameter, put the
                   Request-URI into the last position of the Route header, and put the first value of the Route header
                   into the Request-URI, and then forwards the message to the address in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_046**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.6, item 7 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context with a Route header, and the first URI of that containing a lr parameter, forwards the
                   message to the address in the first element of Route header.

TPId: **SIP_CC_PR_MP_RQ_V_047**

Status: Recommended

Ref: RFC 3261 [1] sections 16.6, item 7 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context without a Route header, forwards the message to the address in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_048**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.6, item 8, 8.1.1.7 and 16.10.

Purpose: Ensure that the IUT on receipt of a CANCEL request that does not correspond to an existing
                   context forwards the message after having inserted in first position a Via header - set to its location
                   with a protocol name set to SIP, a protocol version set to 2.0 and a branch parameter beginning
                   with "z9hG4bK" - to the received list of Via headers.

TPId: **SIP_CC_PR_MP_RQ_V_049**

Status: PICS: A.81/4.14 Status/Sending

Ref: RFC 3261 [1] section 16.3 item 2.

Purpose: Ensure that the IUT on receipt of a BYE request with a Request-URI with a scheme that it does not understand, sends a Unsupported URI Scheme (416 Unsupported URI Scheme) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_050**

Status: Mandatory

Ref: RFC 3261 [1] section 16.3 item 3.

Purpose: Ensure that the IUT on receipt of a BYE request including a Max-Forwards header set to 0, sends a Too many hops (483 Too many hops) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_051**

Status: Mandatory

Ref: RFC 3261 [1] section 16.3 item 5.

Purpose: Ensure that the IUT on receipt of a BYE request including a Proxy-Require header set to a value that it does not understand, sends a Bad Extension (420 Bad Extension) request failure response including a list of the options that it does not support in the Unsupported header.

TPId: **SIP_CC_PR_MP_RQ_V_052**

Status: Mandatory

Ref: RFC 3261 [1] section 16.4.

Purpose: Ensure that the IUT on receipt of a BYE request with the Request-URI with a maddr parameter indicating a value the proxy is responsible for and the request was received using the port and transport indicated, removes the maddr and any non default port or transport parameter from the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_053**

Status: Mandatory

Ref: RFC 3261 [1] section 16.4.

Purpose: Ensure that the IUT on receipt of a BYE request including a Route header with the first value indicates the IUT, removes that value from the request and forwards the message.

TPId: **SIP_CC_PR_MP_RQ_V_054**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of a BYE request with the Request-URI with a maddr parameter, indicating a value the proxy is not responsible for, forwards the message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_055**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of a BYE request with the Request-URI, indicating a domain the proxy is not responsible for, forwards the message to the target indicated in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_056**

Status: PICS: A.81/4.22 Status/Sending

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of a BYE request but does not contain sufficient information to determine the target set, sends back a Ambiguous (485 Ambiguous) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_057**

Status: Mandatory

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of a BYE request with the Request-URI, indicating a resource, which does not exist at this proxy, sends back a Not found (404 Not found) request failure response.

TPId: **SIP_CC_PR_MP_RQ_V_058**

Status: PICS: A.81/4.17 Status/Sending

Ref: RFC 3261 [1] section 16.5.

Purpose: Ensure that the IUT on receipt of a BYE request but does not find any target to forward, sends back a Temporary Unavailable (480 Temporary Unavailable) request failure response.

NOTE: clarification requested on which failure response is expected: 404 or 480?

If no clarification received, the TP will be removed (assuming same behaviour than V_057

TPId: **SIP_CC_PR_MP_RQ_V_059**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of a BYE request including a Max-Forwards header set to 5, forwards it after having decreasing this counter of one.

TPId: **SIP_CC_PR_MP_RQ_V_060**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of a BYE request including a Max-Forwards header set to 1, forwards it after decreasing the Max-Forwards by one [i.e. setting it to 0].

TPId: **SIP_CC_PR_MP_RQ_V_061**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of a BYE request, without a Max-Forwards header, forwards it after having added a Max-Forwards header.

TPId: **SIP_CC_PR_MP_RQ_V_062**

Status: Recommended

Ref: RFC 3261 [1] section 16.6 item 3.

Purpose: Ensure that the IUT on receipt of a BYE request, without a Max-Forwards header, forwards it after having added a Max-Forwards header with the value set to 70.

TPId: **SIP_CC_PR_MP_RQ_V_063**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 6 and 7.

Purpose: Ensure that the IUT on receipt of a BYE request with a Route header, and the first URI of this route does not contain a lr parameter, put the Request-URI into the last position of the Route header, and put the first value of the Route header into the Request-URI, and then forwards the message to the address in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_064**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 7.

Purpose: Ensure that the IUT on receipt of a BYE request with a Route header, and the first URI of that containing a lr parameter, forwards the message to the address in the first element of Route header.

TPId: **SIP_CC_PR_MP_RQ_V_065**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 7.

Purpose: Ensure that the IUT on receipt of a BYE request without a Route header, forwards the message to the address in the Request-URI.

TPId: **SIP_CC_PR_MP_RQ_V_066**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.6, item 8 and 8.1.1.7.

Purpose: Ensure that the IUT on receipt of a BYE request forwards the message after having inserted in first position a Via header - set to its location with a protocol name set to SIP, a protocol version set to 2.0 and a branch parameter beginning with "z9hG4bK" - to the received list of Via headers.

TPId: **SIP_CC_PR_MP_RQ_V_067**

Status: PICS: A.77/1.4

Ref: RFC 3261 [1] section 16.6, item 7 and 10 and section16.5.

Purpose: Ensure that the IUT on receipt of an INVITE request and the determined target set is containing two URIs forwards the message (forking) to both URIs.

5.3.3.1.1.2   Invalid Behaviour

TPId: **SIP_CC_PR_MP_RQ_I_001**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 2.

Purpose: Ensure that the IUT on receipt of an INVITE request with the Request-URI containing a not allowed parameter, removes this parameter from the Request-URI before forwarding that message.

TPId: **SIP_CC_PR_MP_RQ_I_002**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 2.

Purpose: Ensure that the IUT on receipt of an ACK request, with the Request-URI containing a not allowed parameter, removes that parameter from the Request-URI before forwarding that message.

TPId: **SIP_CC_PR_MP_RQ_I_003**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 2.

Purpose: Ensure that the IUT on receipt of a CANCEL request with the Request-URI containing a not allowed parameter, removes that parameter from the Request-URI before forwarding that message.

TPId: **SIP_CC_PR_MP_RQ_I_004**

Status: Mandatory

Ref: RFC 3261 [1] section 16.6, item 2.

Purpose: Ensure that the IUT on receipt of a BYE request with the Request-URI containing a not allowed parameter, removes that parameter from the Request-URI before forwarding that message.

5.3.3.1.2 Response

5.3.3.1.2.1 Valid Behaviour

TPId:	**SIP_CC_PR_MP_RS_V_001**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 16.7 and 16.11.
Purpose:	Ensure that the IUT on receipt of a Success (200 OK) response with the topmost Via header indicating its own location, deletes that header and forwards the message to the address indicated in the next Via header value.

TPId:	**SIP_CC_PR_MP_RS_V_002**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 16.11 and 18.1.2.
Purpose:	Ensure that the IUT on receipt of a Success (200 OK) response with the topmost Via header not indicating its own location, does not forward the message.

TPId:	**SIP_CC_PR_MP_RS_V_003**
Status:	Void

TPId:	**SIP_CC_PR_MP_RS_V_004**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 16.7, item 3 and 16.11.
Purpose:	Ensure that the IUT, on receipt of a Success (200 OK) response that does not match to an existing client transaction with a single Via header, does not forward the message.

TPId:	**SIP_CC_PR_MP_RS_V_005**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 16.7 and 16.11.
Purpose:	Ensure that the IUT, on receipt of a Success (200 OK) response that matches to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId:	**SIP_CC_PR_MP_RS_V_006**
Status:	PICS: A.77/1.1 OR A.77/2.1 OR A.77/3.1 OR A.77/4.1
Ref:	RFC 3261 [1] sections 16.7 and 16.11.
Purpose:	Ensure that the IUT, on receipt of a Trying (100 Trying) provisional response that does not match to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId:	**SIP_CC_PR_MP_RS_V_007**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 16.7 and 16.11.
Purpose:	Ensure that the IUT, on receipt of a Ringing (180 Ringing) provisional response that does not match to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_008**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.7 and 16.11.

Purpose: Ensure that the IUT on receipt of a Moved Temporarily (302 Moved Temporarily) Redirection response that does not match to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_009**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.7 and 16.11.

Purpose: Ensure that the IUT on receipt of a Gone (410 Gone) Request failure response that does not match to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_010**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.7 and 16.11.

Purpose: Ensure that the IUT on receipt of a Server Internal Error (500 Server Internal Error) server failure response that does not match to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_011**

Status: Mandatory

Ref: RFC 3261 [1] sections 16.7 and 16.11.

Purpose: Ensure that the IUT on receipt of a Decline (603 Decline) Global failure response that does not match to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_012**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 16.7 item 5.

Purpose: Ensure that the IUT having already proxy an INVITE, on receipt of a Ringing (180 Ringing) provisional response matching to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_013**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 16.7 item 5.

Purpose: Ensure that the IUT having already proxy an INVITE, on receipt of a Moved Temporarily (302 Moved Temporarily) Redirection response matching to an existing client transaction and the Request-URI indicating a URI the proxy is not responsible for, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

NOTE: if it is not possible to define a URI which the proxy is not responsible for, the TP should be deselected.

TPId: **SIP_CC_PR_MP_RS_V_014**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 16.7 item 5.

Purpose: Ensure that the IUT having already proxy an INVITE, on receipt of a Gone (410 Gone) Request failure response matching to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_015**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 16.7 item 5.

Purpose: Ensure that the IUT having already proxy an INVITE, on receipt of a Server Internal Error (500 Server Internal Error) server failure response matching to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_016**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] section 16.7, item 5 and 6.

Purpose: Ensure that the IUT having already proxy an INVITE, on receipt of a Service Unavailable (503 Service Unavailable) server failure response matching to an existing client transaction, generates a Server Internal Error (500 Server Internal Error) server failure response, and forwards it.

TPId: **SIP_CC_PR_MP_RS_V_017**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 16.7, item 5.

Purpose: Ensure that the IUT having already proxy an INVITE, on receipt of a Decline (603 Decline) Global failure response matching to an existing client transaction, removes the topmost via from the response and forwards it to the address indicated in the next Via header.

TPId: **SIP_CC_PR_MP_RS_V_018**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 302 response from one client transaction, on receipt of a 200 response from the other client transaction, forwards the 200 response.

TPId: **SIP_CC_PR_MP_RS_V_019**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 302 response from one client transaction, on receipt of a 302 response from the other client transaction, forwards the 302 response.

TPId: **SIP_CC_PR_MP_RS_V_020**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 302 response from one client transaction, on receipt of a 486 response from the other client transaction, forwards the 302 response.

TPId: **SIP_CC_PR_MP_RS_V_021**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 302 response from one client transaction, on receipt of a 500 response from the other client transaction, forwards the 302 response.

TPId: **SIP_CC_PR_MP_RS_V_022**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 302 response from one client transaction, on receipt of a 603 response from the other client transaction, forwards the 603 response.

TPId: **SIP_CC_PR_MP_RS_V_023**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response from one client transaction, on receipt of a 200 response from the other client transaction, forwards the 200 response.

TPId: **SIP_CC_PR_MP_RS_V_024**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response
                   from one client transaction, on receipt of a 302 response from the other client transaction, forwards
                   the 302 response.

TPId: **SIP_CC_PR_MP_RS_V_025**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response
                   from one client transaction, on receipt of a 486 response from the other client transaction, forwards
                   the 486 response.

TPId: **SIP_CC_PR_MP_RS_V_026**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response
                   from one client transaction, on receipt of a 401 response from the other client transaction, forwards
                   the 401 response.

TPId: **SIP_CC_PR_MP_RS_V_027**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response
                   from one client transaction, on receipt of a 407 response from the other client transaction, forwards
                   the 407 response.

TPId: **SIP_CC_PR_MP_RS_V_028**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response
                   from one client transaction, on receipt of a 415 response from the other client transaction, forwards
                   the 415 response.

TPId: **SIP_CC_PR_MP_RS_V_029**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response from one client transaction, on receipt of a 420 response from the other client transaction, forwards the 420 response.

TPId: **SIP_CC_PR_MP_RS_V_030**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response from one client transaction, on receipt of a 484 response from the other client transaction, forwards the 484 response.

TPId: **SIP_CC_PR_MP_RS_V_031**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response from one client transaction, on receipt of a 500 response from the other client transaction, forwards the 486 response.

TPId: **SIP_CC_PR_MP_RS_V_032**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response from one client transaction, on receipt of a 603 response from the other client transaction, forwards the 603 response.

TPId: **SIP_CC_PR_MP_RS_V_033**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.3, item 7.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 401 response from one client transaction, on receipt of a 401 response from the other client transaction, forwards the 401 response including all WWW-Authenticate and Proxy-Authenticate headers collected from the received responses.

TPId: **SIP_CC_PR_MP_RS_V_034**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.3, item 7.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 407 response from one client transaction, on receipt of a 407 response from the other client transaction, forwards the 407 response including all Proxy-Authenticate headers collected from the received responses.

TPId: **SIP_CC_PR_MP_RS_V_035**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 500 response from one client transaction, on receipt of a 200 response from the other client transaction, forwards the 200 response.

TPId: **SIP_CC_PR_MP_RS_V_036**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 500 response from one client transaction, on receipt of a 302 response from the other client transaction, forwards the 302 response.

TPId: **SIP_CC_PR_MP_RS_V_037**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 500 response from one client transaction, on receipt of a 486 response from the other client transaction, forwards the 486 response.

TPId: **SIP_CC_PR_MP_RS_V_038**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 503 response from one client transaction, on receipt of a 500 response from the other client transaction, forwards the 500 response.

TPId: **SIP_CC_PR_MP_RS_V_039**

Status: Recommended AND PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 503 response from one client transaction, on receipt of a 503 response from the other client transaction, forwards the 500 response.

TPId: **SIP_CC_PR_MP_RS_V_040**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 300 response from one client transaction, on receipt of a 603 response from the other client transaction, forwards the 603 response.

TPId: **SIP_CC_PR_MP_RS_V_041**

Status: PICS: A.77/1.2 AND A.77/1.4ork

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 302 response from one client transaction, on receipt of a 180 response from the other client transaction, forwards the 180 response.

TPId: **SIP_CC_PR_MP_RS_V_042**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 486 response from one client transaction, on receipt of a 180 response from the other client transaction, forwards the 180 response.

TPId: **SIP_CC_PR_MP_RS_V_043**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 500 response from one client transaction, on receipt of a 180 response from the other client transaction, forwards the 180 response.

TPId: **SIP_CC_PR_MP_RS_V_044**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 180 response from one client transaction, on receipt of a 182 response from the other client transaction, forwards the 182 response.

TPId: **SIP_CC_PR_MP_RS_V_045**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 180 response from one client transaction, on receipt of a 200 response from the other client transaction, forwards the 200 response.

TPId: **SIP_CC_PR_MP_RS_V_046**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 10.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 180 response from one client transaction, on receipt of a 200 response from the other client transaction, sends a CANCEL request to the first client transaction with the same Call-ID, From header, To header, Request-URI, CSeq number as in the previous INVITE, with a single Via header same as topmost Via of the previous INVITE and the CSeq method set to CANCEL.

TPId: **SIP_CC_PR_MP_RS_V_047**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 180 response from one client transaction, on receipt of a 302 response from the other client transaction, does not forward the 302 response immediately.

TPId: **SIP_CC_PR_MP_RS_V_048**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 180 response from one client transaction, on receipt of a 486 response from the other client transaction, does not forward the 486 response immediately.

TPId: **SIP_CC_PR_MP_RS_V_049**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 6.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 180 response from one client transaction, on receipt of a 500 response from the other client transaction, does not forward the 500 response immediately.

TPId: **SIP_CC_PR_MP_RS_V_050**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 10.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 180 response from one client transaction, on receipt of a 603 response from the other client transaction, sends a CANCEL request to the first client transaction with the same Call-ID, From header, To header, Request-URI, CSeq number as in the previous INVITE, with a single Via header same as topmost Via of the previous INVITE and the CSeq method set to CANCEL.

TPId: **SIP_CC_PR_MP_RS_V_051**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 10.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 200 response from one client transaction, on receipt of a 180 response from the other client transaction, sends a CANCEL request to that client transaction with the same Call-ID, From header, To header, Request-URI, CSeq number as in the previous INVITE, with a single Via header same as topmost Via of the previous INVITE and the CSeq method set to CANCEL.

TPId: **SIP_CC_PR_MP_RS_V_052**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] section 16.7, item 10.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received (and forwarded) a 603 response from one client transaction, on receipt of a 180 response from the other client transaction, sends a CANCEL request to that client transaction with the same Call-ID, From header, To header, Request-URI, CSeq number as in the previous INVITE, with a single Via header same as topmost Via of the previous INVITE and the CSeq method set to CANCEL.

TPId: **SIP_CC_PR_MP_RS_V_053**

Status: PICS: A.77/1.2 AND A.77/1.4

Ref: RFC 3261 [1] sections 16.7, item 10, and 16.7, item 5.

Purpose: Ensure that the IUT, after forking an INVITE to two locations and having received a 603 response from one client transaction, and having sent a CANCEL to the second client transaction, on receipt of a 487 response from the other client transaction, forwards the 603 response.

5.3.3.2   Transaction

5.3.3.2.1   Client

5.3.3.2.1.1   Valid Behaviour

TPId:	**SIP_CC_PR_TR_CL_V_001**
Status:	PICS: A.77/1.2
Ref:	RFC 3261 [1] sections 16.10 and 9.1.
Purpose:	Ensure that the IUT, on receipt of a CANCEL at server side matching to a response context and the related client transaction is in the INVITE Proceeding state, sends a CANCEL from the related pending client transaction with the Request-URI, Call-ID, To, From headers, CSeq number and the Tag parameters identical as in the INVITE request to be cancelled and the CSeq method set to CANCEL.

TPId:	**SIP_CC_PR_TR_CL_V_002**
Status:	PICS: A.77/1.2
Ref:	RFC 3261 [1] sections 16.10 and 9.1.
Purpose:	Ensure that the IUT, on receipt of a CANCEL at server side matching to a response context and the related client transaction is in the INVITE Proceeding state, sends a CANCEL from the related pending client transaction with the Via header identical as in topmost Via header in the INVITE request to be cancelled.

TPId:	**SIP_CC_PR_TR_CL_V_003**
Status:	PICS: A.77/1.2
Ref:	16.10 [1], 9.1 [1]
Purpose:	Ensure that the IUT, on receipt of a CANCEL at server side matching to a response context, but the related client transaction is in the INVITE Calling state, does not send a CANCEL.

TPId:	**SIP_CC_PR_TR_CL_V_004**
Status:	PICS: A.77/1.2
Ref:	RFC 3261 [1] sections 16.10 and 9.1.
Purpose:	Ensure that the IUT, having received a CANCEL request matching to a response context while the related client transaction is in the INVITE Calling state, on receipt of a provisional response, sends a CANCEL from the related client transaction.

TPId:	**SIP_CC_PR_TR_CL_V_005**
Status:	PICS: A.77/1.2
Ref:	RFC 3261 [1] sections 16.10 and 9.1.
Purpose:	Ensure that the IUT, having received a CANCEL request matching to a response context while the related client transaction is in the INVITE Calling state, on receipt of a final response, does not send a CANCEL from the related client transaction.

TPId: **SIP_CC_PR_TR_CL_V_006**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.7 and 17.1.1.3.

Purpose: Ensure that the IUT in the INVITE Client Calling state on receipt of a Moved Temporarily (302 Moved Temporarily) Redirection response matching to an existing client transaction, responds with an ACK request, with the same Call-ID, From header, Request-URI, CSeq number as in the previous INVITE, with a single Via header same as topmost Via of the previous INVITE and the To header the same value as the To header in the received response and the CSeq method set to ACK.

TPId: **SIP_CC_PR_TR_CL_V_007**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.7 and 17.1.1.3.

Purpose: Ensure that the IUT in the INVITE Client Calling state on receipt of a Gone (410 Gone) Request failure response matching to an existing client transaction, responds with an ACK request, with the same Call-ID, From header, Request-URI, CSeq number as in the previous INVITE, with a single Via header same as topmost Via of the previous INVITE and the To header the same value as the To header in the received response and the CSeq method set to ACK.

TPId: **SIP_CC_PR_TR_CL_V_008**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.7 and 17.1.1.3.

Purpose: Ensure that the IUT in the INVITE Client Calling state on receipt of a Service Unavailable (503 Service Unavailable) server failure response matching to an existing client transaction, responds with an ACK request, with the same Call-ID, From header, Request-URI, CSeq number as in the previous INVITE and the To header the same value as the To header in the received response and the CSeq method set to ACK.

TPId: **SIP_CC_PR_TR_CL_V_009**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.7 and 17.1.1.3.

Purpose: Ensure that the IUT in the INVITE Client Calling state on receipt of a Decline (603 Decline) Global failure response matching to an existing client transaction, responds with an ACK request, with the same Call-ID, From header, Request-URI, CSeq number as in the previous INVITE, with a single Via header same as topmost Via of the previous INVITE and the To header the same value as the To header in the received response and the CSeq method set to ACK.

TPId: **SIP_CC_PR_TR_CL_V_010**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 17.1.1.2, figure 5.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Trying (100 Trying) response enters in the Proceeding state.

TPId: **SIP_CC_PR_TR_CL_V_011**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 17.1.1.2, figure 5.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Session Progress (183 Session Progress) response enters in the Proceeding state.

TPId: **SIP_CC_PR_TR_CL_V_012**

Status: PICS: A.92/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT on receipt of an INVITE request not including a Proxy-Authorization header field, sends a Proxy Authentication Required (407 Proxy Authentication Required) response, containing a Proxy-Authenticate header.

TPId: **SIP_CC_PR_TR_CL_V_013**

Status: PICS: A.92/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT on receipt of an INVITE request not including a Proxy-Authorization header field, sends a Proxy Authentication Required (407 Proxy Authentication Required) response, containing a Proxy-Authenticate header including proper value for realm and nonce HTTP parameters.

TPId: **SIP_CC_PR_TR_CL_V_014**

Status: PICS: A.92/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT having sent a Proxy Authentication Required (407 Proxy Authentication Required) response to an INVITE request, on receipt of an INVITE request including a valid Proxy-Authenticate header field, forwards the INVITE.

5.3.3.2.1.2   Timers

TPId: **SIP_CC_PR_TR_CL_TI_001**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport (UDP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state repeats its INVITE request on the timeout condition of timer A set with a value of T1.

TPId: **SIP_CC_PR_TR_CL_TI_002**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If a reliable transport (TCP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state does not repeat its INVITE request on the timeout condition of timer A set with a value of T1.

TPId: **SIP_CC_PR_TR_CL_TI_003**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport (UDP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state having already repeated its INVITE wait for a timer A set with a value of 2*T1 before sending it again.

TPId: **SIP_CC_PR_TR_CL_TI_004**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport (UDP) is used, ensure that the IUT, when an INVITE client transaction is in the Calling state retransmits its INVITE request with intervals that double after each transmission.

TPId: **SIP_CC_PR_TR_CL_TI_005**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, when timer B set to a value of 64*T1 expires, considers the transaction terminated and does not send an ACK.

TPId: **SIP_CC_PR_TR_CL_TI_006**

Status: Void

TPId: **SIP_CC_PR_TR_CL_TI_007**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Proceeding state, does not repeat its INVITE request.

TPId: **SIP_CC_PR_TR_CL_TI_008**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE client transaction is in the Completed state, on receipt of a final response that matches the transaction, repeats its ACK request until timer D set to at least 32 second expires.

TPId: **SIP_CC_PR_TR_CL_TI_009**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If a reliable transport is used, ensure that the IUT, when an INVITE client transaction is in the Completed state, on receipt of a final response that matches the transaction, repeats its ACK request.

TPId: **SIP_CC_PR_TR_CL_TI_010**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.1.1.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE client transaction is in the Completed state, on receipt of new final responses with different Via branch parameter value, does not repeat its ACK request until timer D set to at least 32 second expires.

TPId:	**SIP_CC_PR_TR_CL_TI_011**	
Status:	Void	
TPId:	**SIP_CC_PR_TR_CL_TI_012**	
Status:	PICS: A.77/3.2	
Ref:	RFC 3261 [1] Annex A and section 17.1.2.2.	
Purpose:	If an unreliable transport is used, ensure that the IUT, when a BYE client transaction is in the Trying state having sent a BYE request, repeats its request after timer E set to T1 value expires.	
TPId:	**SIP_CC_PR_TR_CL_TI_013**	
Status:	PICS: A.77/3.2	
Ref:	RFC 3261 [1] Annex A and section 17.1.2.2.	
Purpose:	If an unreliable transport is used, ensure that the IUT, when a BYE client transaction is in the Trying state having sent twice times a BYE request, repeats its request after timer E set to the MIN(2*T1,T2) value expires.	
TPId:	**SIP_CC_PR_TR_CL_TI_014**	
Status:	PICS: A.77/3.2	
Ref:	RFC 3261 [1] Annex A and section 17.1.2.2.	
Purpose:	If an unreliable transport is used, ensure that the IUT, when a BYE client transaction is in the Trying state having sent three times a BYE request, repeats its request after timer E set to the MIN(4*T1,T2) value expires.	
TPId:	**SIP_CC_PR_TR_CL_TI_015**	
Status:	PICS: A.77/3.2	
Ref:	RFC 3261 [1] Annex A and section 17.1.2.2.	
Purpose:	If an unreliable transport is used, ensure that the IUT, when a BYE client transaction is in the Trying state does not repeat a BYE request, after timer F set to 64*T1 expires.	
TPId:	**SIP_CC_PR_TR_CL_TI_016**	
Status:	PICS: A.77/3.2	
Ref:	RFC 3261 [1] Annex A and section 17.1.2.2.	
Purpose:	Ensure that the IUT, when a BYE client transaction is in the Proceeding state, repeats its BYE request after timer E set in Trying state to T1 value expires.	
TPId:	**SIP_CC_PR_TR_CL_TI_017**	
Status:	PICS: A.77/3.2	
Ref:	RFC 3261 [1] Annex A and section 17.1.2.2.	
Purpose:	Ensure that the IUT, when a BYE client transaction is in the Proceeding state and BYE request have been already repeated in this state, repeats its BYE request after timer E set to T2 value expires.	

TPId: **SIP_CC_PR_TR_CL_TI_018**

Status: PICS: A.77/3.2

Ref: RFC 3261 [1] Annex A and 17.1.2.2.

Purpose: Ensure that the IUT, when a BYE client transaction is in the Proceeding state, does not repeat a BYE request on an established dialog, after timer F set to 64*T1 expires.

TPId: **SIP_CC_PR_TR_CL_TI_019**

Status: PICS: A.77/3.2 AND A.99/9

Ref: RFC 3261 [1] Annex A, 17.1.2.2 and 9.1.

Purpose: Ensure that the IUT, when a BYE client transaction is in the Trying state, considers the transaction terminated after 64*T1 duration expires without receiving any final response.

5.3.3.2.2   Server

5.3.3.2.2.1   Valid Behaviour

TPId: **SIP_CC_PR_TR_SE_V_001**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 16.2.

Purpose: Ensure that the IUT on receipt of an INVITE request, sends a provisional (100 Trying) response.

TPId: **SIP_CC_PR_TR_SE_V_002**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.2 and 8.2.6.2.

Purpose: Ensure that the IUT, on receipt of an INVITE request, sends a provisional (100 Trying) response including the headers From, Call-Id, CSeq and Via copied from from the INVITE message.

TPId: **SIP_CC_PR_TR_SE_V_003**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.2, 8.2.6.2, and 17.2.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request with no "tag" set on the To header, sends a provisional (100 Trying) response including the same URI and no tag in the To header.

TPId: **SIP_CC_PR_TR_SE_V_004**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.2, 8.2.6.2, and 17.2.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request with a "tag" set on the To header, sends a provisional (100 Trying) response including the same URI and the same tag in the To header.

TPId: **SIP_CC_PR_TR_SE_V_005**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 16.2 and 8.2.6.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request with a Timestamp header, sends a provisional (100 Trying) response with a Timestamp header.

TPId: **SIP_CC_PR_TR_SE_V_006**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT in a server INVITE Proceeding state, on receipt of an INVITE request, including a Via header set with the same branch parameter and sent-by value in the topmost list value, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_007**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT in a server INVITE Proceeding state, on receipt of an INVITE request, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_008**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT in a server INVITE Proceeding state, on receipt of an INVITE request, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_009**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT in a server INVITE Completed state, on receipt of an INVITE request, including a Via header set with the same branch parameter and sent-by value in the topmost list value, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_010**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT in a server INVITE Completed state, on receipt of an INVITE request, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_011**

Status: Recommended AND PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: Ensure that the IUT in a server INVITE Completed state, on receipt of an INVITE request, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first INVITE request, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_012**

Status: PICS: A.77/3.2

Ref: RFC 3261 [1] sections 17.2.2 and 17.2.3.

Purpose: Ensure that the IUT in a server BYE Proceeding state, on receipt of a BYE request, including a Via header set with the same branch parameter and sent-by value in the topmost list value, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_013**

Status: PICS: A.77/3.2

Ref: RFC 3261 [1] sections 17.2.2 and 17.2.3.

Purpose: Ensure that the IUT in a server BYE Proceeding state, on receipt of a BYE request, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first BYE request, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_014**

Status: PICS: A.77/3.2

Ref: RFC 3261 [1] sections 17.2.2 and 17.2.3.

Purpose: Ensure that the IUT in a server BYE Proceeding state, on receipt of a BYE request, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first BYE request, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_015**

Status: Recommended AND PICS: A.77/3.2

Ref: RFC 3261 [1] sections 17.2.2 and 17.2.3.

Purpose: Ensure that the IUT in a server BYE Completed state, on receipt of a BYE request, including a Via header set with the same branch parameter and sent-by value in the topmost list, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_016**

Status: Recommended AND PICS: A.77/3.2

Ref: RFC 3261 [1] sections 17.2.2 and 17.2.3.

Purpose: Ensure that the IUT in a server BYE Completed state, on receipt of a BYE request, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first BYE request, repeats its last response.

TPId: **SIP_CC_PR_TR_SE_V_017**

Status: Recommended AND PICS: A.77/3.2

Ref: RFC 3261 [1] sections 17.2.2 and 17.2.3.

Purpose: Ensure that the IUT in a server BYE Completed state, on receipt of a BYE request, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq and top Via header identical as in the first BYE request, repeats its last response.

TPId:	**SIP_CC_PR_TR_SE_V_018**
Status:	PICS: A.77/1.2
Ref:	RFC 3261 [1] sections 16.10 and 9.2.
Purpose:	Ensure that the IUT in a server INVITE Proceeding state, on receipt of a CANCEL, including a Via header set with the same branch parameter and sent-by value with the topmost Via value INVITE to be cancelled, sends a Success (200 Success) response to the CANCEL request.

TPId:	**SIP_CC_PR_TR_SE_V_019**
Status:	PICS: A.77/1.2 AND A.79/4.24 Status/Sending
Ref:	RFC 3261 [1] section 9.2.
Purpose:	Ensure that the IUT in a server INVITE Proceeding state, on receipt of a CANCEL, including a Via header set with the same branch parameter and sent-by value with the topmost Via value INVITE to be cancelled, answers to the original INVITE request with a Request Terminated (487 Request Terminated) response.

TPId:	**SIP_CC_PR_TR_SE_V_020**
Status:	PICS: A.77/1.2
Ref:	RFC 3261 [1] sections 16.10 and 9.2.
Purpose:	Ensure that the IUT in a server INVITE Proceeding state, on receipt of a CANCEL, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq number and top Via header identical as in the INVITE to be cancelled, sends a Success (200 Success) response to the CANCEL request.

TPId:	**SIP_CC_PR_TR_SE_V_021**
Status:	PICS: A.77/1.2 AND A.79/4.24 Status/Sending
Ref:	RFC 3261 [1] section 9.2.
Purpose:	Ensure that the IUT in a server INVITE Proceeding state, on receipt of a CANCEL, including a Via header set with no branch parameter but with the Request-URI, To tag, From tag, Call-ID, CSeq number and top Via header identical as in the INVITE to be cancelled, answers to the original INVITE, request with a Request Terminated (487 Request Terminated) response.

TPId:	**SIP_CC_PR_TR_SE_V_022**
Status:	PICS: A.77/1.2
Ref:	RFC 3261 [1] sections 16.10 and 9.2.
Purpose:	Ensure that the IUT in a server INVITE Proceeding state, on receipt of a CANCEL, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq number and top Via header identical as in the INVITE to be cancelled, sends a Success (200 Success) response to the CANCEL request.

TPId:	**SIP_CC_PR_TR_SE_V_023**
Status:	PICS: A.77/1.2 AND A.79/4.24 Status/Sending
Ref:	RFC 3261 [1] section 9.2.
Purpose:	Ensure that the IUT in a server INVITE Proceeding state, on receipt of a CANCEL, including a Via header set with a different branch parameter without the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq number and top Via header identical as in the INVITE to be cancelled, answers to the original INVITE, request with a Request Terminated (487 Request Terminated) response.

TPId: **SIP_CC_PR_TR_SE_V_024**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: If an unreliable transport is used, ensure that the IUT in a server INVITE Confirmed state, on
                   receipt of an ACK request, including a Via header set with the same branch parameter and sent-by
                   value in the topmost list value, does not forward the message.

TPId: **SIP_CC_PR_TR_SE_V_025**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.1 and 17.2.3.

Purpose: If an unreliable transport is used, ensure that the IUT in a server INVITE Confirmed state, on
                   receipt of an ACK request, including a Via header set with no branch parameter but with the
                   Request-URI, To tag, From tag, Call-ID, CSeq number and top Via header identical as in the first
                   INVITE request, does not forward the message.

TPId: **SIP_CC_PR_TR_SE_V_026**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT in a server INVITE Confirmed state, on
                   receipt of an ACK request, including a Via header set with a different branch parameter without
                   the magic cookie "z9hG4bK" but with the Request-URI, To tag, From tag, Call-ID, CSeq number
                   and top Via header identical as in the first INVITE request, does not forward the message.

TPId: **SIP_CC_PR_TR_SE_V_027**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.3.1 and 13.3.1.4, figure 7.

Purpose: Ensure that the IUT in a server INVITE Proceeding state, after sending a 4XX response, enters in
                   the Completed state.

TPId: **SIP_CC_PR_TR_SE_V_028**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] sections 17.2.3.1 and 13.3.1.4, figure 7.

Purpose: Ensure that the IUT in a server INVITE Completed state, on receipt of an ACK request, enters in
                   the Confirmed state.

TPId: **SIP_CC_PR_TR_SE_V_029**

Status: PICS: A.77/1.2 AND A.79/4.18 Status/Sending

Ref: RFC 3261 [1] section 15.1.2.

Purpose: Ensure that the IUT, while no dialog has been established, on receipt of a BYE request, sends a Call/Transaction does not exist (481 Call/Transaction does not exist).

5.3.3.2.2.2   Timers

TPId: **SIP_CC_PR_TR_SE_TI_001**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state repeats its response on the timeout condition of timer G set with a value of T1.

TPId: **SIP_CC_PR_TR_SE_TI_002**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If a reliable transport (TCP) is used, ensure that the IUT, when an INVITE server transaction is in the Completed state does not repeat its response on the timeout condition of timer G set with a value of T1.

TPId: **SIP_CC_PR_TR_SE_TI_003**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state and having already sent twice times its response, repeats it after timer G set MIN(2*T1,T2) value expires.

TPId: **SIP_CC_PR_TR_SE_TI_004**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state and having already sent three times its response, repeats it after timer G set the MIN(4*T1,T2) value expires.

TPId: **SIP_CC_PR_TR_SE_TI_005**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: Ensure that the IUT, when an INVITE server transaction is in the Completed state and, enters in the Terminated state after timer H set to 64*T1 value expires.

TPId: **SIP_CC_PR_TR_SE_TI_006**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Completed state and, does not repeats its response after timer H set to 64*T1 value expires.

TPId: **SIP_CC_PR_TR_SE_TI_007**

Status: Mandator PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If an unreliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Confirmed state, enters in the Terminated state after timer I set to T4 value expires.

TPId: **SIP_CC_PR_TR_SE_TI_008**

Status: PICS: A.77/1.2

Ref: RFC 3261 [1] Annex A and section 17.2.1.

Purpose: If a reliable transport is used, ensure that the IUT, when an INVITE server transaction is in the Confirmed state, enters immediately in the Terminated state.

TPId: **SIP_CC_PR_TR_SE_TI_009**

Status: PICS: A.77/3.2

Ref: RFC 3261 [1] Annex A and section 17.2.2.

Purpose: If an unreliable transport is used, ensure that the IUT, when a BYE server transaction is in the Completed state, on receipt of the repetitions of the BYE request, retransmits its response until the timer J set to 64*T1 expires.

5.3.4   Redirect Server

GroupSelection: IUT is a Redirect Server.

Status: PICS: A.1/4

5.3.4.1   Call establishment

5.3.4.1.1   Valid Behaviour

TPId: **SIP_CC_RD_CE_V_001**

Status: PICS: A.114/1

Ref: RFC 3261 [1] sections 8.3 and 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an INVITE request, sends a 3XX redirection response to the caller including a Contact header set to the registered location of the callee and the To header set to the received value with an additional TAG.

TPId: **SIP_CC_RD_CE_V_002**

Status: PICS: A.114/1

Ref: RFC 3261 [1] sections 8.3 and 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an INVITE request, sends a 3XX redirection response to the caller after having copy the received Via header into the response.

TPId: **SIP_CC_RD_CE_V_003**

Status: PICS: A.114/1

Ref: RFC 3261 [1] section 8.3.

Purpose: Ensure that the IUT, having sent a 3XX redirection response, accepts an ACK request.

TPId: **SIP_CC_RD_CE_V_004**

Status: PICS: A.114/1

Ref: RFC 3261 [1] section 8.3.

Purpose: Ensure that the IUT on receipt of an INVITE request, send a 3XX redirection response to the caller including a Contact header set to the list of locations of the callee previously registered.

TPId: **SIP_CC_RD_CE_V_005**

Status: PICS: A.114/1

Ref: RFC 3261 [1] section 8.3.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Require header set to a value that it does not understand, sends a 3XX redirection response to the caller.

TPId: **SIP_CC_RD_CE_V_006**

Status: PICS: A.114/1

Ref: RFC 3261 [1] sections 8.3 and 21.4.18.

Purpose: Ensure that the IUT on receipt of an INVITE request for a UA for which the registration has expired, sends a Temporarily Unavailable (480 Temporarily Unavailable) request failure response to the caller.

TPId: **SIP_CC_RD_CE_V_007**

Status: PICS: A.114/1 AND A.115/4.5

Ref: RFC 3261 [1] sections 8.3 and 21.4.5.

Purpose: Ensure that the IUT on receipt of an INVITE request for an unknown UA, sends a Not found (404 Not Found) request failure response to the caller.

TPId: **SIP_CC_RD_CE_V_008**

Status: PICS: A.121/1

Ref: RFC 3261 [1] sections 10.3, item 3 and 22.2.

Purpose: Ensure that the IUT on receipt of an INVITE request not including an Authorization or Proxy-Authorization header fields, sends an Unauthorized (401 Unauthorized) or Proxy Authentication Required (407 Proxy Authentication Required) response, containing a WWW-Authenticate or a Proxy-Authenticate header.

TPId: **SIP_CC_RD_CE_V_009**

Status: PICS: A.121/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the on receipt of an INVITE request not including an Authorization or a Proxy-Authorization header fields, sends an Unauthorized (401 Unauthorized) or Proxy Authentication Required (407 Proxy Authentication Required) response, containing a WWW-Authenticate or a Proxy-Authenticate header including proper value for realm and nonce HTTP parameters.

TPId: **SIP_CC_RD_CE_V_010**

Status: PICS: A.121/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT having sent an Unauthorized (401 Unauthorized) or a Proxy Authentication Required (407 Proxy Authentication Required) response to an INVITE request, on receipt of a INVITE request including a valid Authorization or Proxy-Authorization header field, sends a 3XX redirection response.

5.3.4.2   Call release

5.3.4.2.1   Valid Behaviour

TPId: **SIP_CC_RD_CR_V_001**

Status: PICS: A.114/1

Ref: RFC 3261 [1] section 8.3.

Purpose: Ensure that the IUT on receipt of an INVITE request immediately followed by a CANCEL request with the same Call-ID, To, From, top Via header, Request URI and CSeq, sends an OK (200 OK) response to the caller.

TPId: **SIP_CC_RD_CR_V_002**

Status: PICS: A.114/1 AND A.117/4.9

Ref: RFC 3261 [1] section 8.3 and 21.4.19.

Purpose: Ensure that the IUT on receipt of a CANCEL request whose Call-ID does not match a pending request, sends a Call Leg/Transaction Does Not Exist (481 Call Leg/Transaction Does Not Exist) request failure to the caller.

TPId: **SIP_CC_RD_CR_V_003**

Status: PICS: A.114/2

Ref: RFC 3261 [1] section 8.3 and 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an BYE request, sends a 3XX redirection response to the caller including a Contact header set to the registered location of the callee.

5.4   Test Purposes for Querying for capabilities

5.4.1   Originating Endpoint

Group Selection: IUT is an User Agent that can ask for capabilities.

Status: PICS: A.49/1 AND A.1/1

5.4.1.1   Valid Behaviour

TPId: **SIP_QC_OE_ V_001**

Status: Mandatory

Ref: RFC 3261 [1] sections 11 and 8.1.1.

Purpose: Ensure that the IUT, to query for capabilities sends an OPTIONS request including at least To, From, CSeq, Call-ID, Max-Forwards and Via headers.

TPId: **SIP_QC_OE _V_002**

Status: Recommended

Ref: RFC 3261 [1] sections 11 and 8.1.1.

Purpose: Ensure that the IUT, to query for capabilities sends an OPTIONS request with a Request-URI set to the same URI value of the To header.

TPId: **SIP_QC_OE _V_003**

Status: Mandatory

Ref: RFC 3261 [1] sections 11 and 8.1.1.3.

Purpose: Ensure that the IUT, to query for capabilities sends an OPTIONS request including a From header with a TAG parameter.

TPId: **SIP_QC_OE _V _004**

Status: Mandatory

Ref: RFC 3261 [1] sections 11 and 8.1.1.5.

Purpose: Ensure that the IUT, to query for capabilities sends an OPTIONS request including a CSeq header with a method that matches "OPTIONS".

TPId: **SIP_QC_OE _V _005**

Status: Recommended

Ref: RFC 3261 [1] sections 11 and 8.1.1.6.

Purpose: Ensure that the IUT, to query for capabilities sends an OPTIONS request including a Max-Forward header set to 70.

TPId: **SIP_QC_OE _V _007**

Status: Mandatory

Ref: RFC 3261 [1] sections 11 and 8.1.1.7.

Purpose: Ensure that the IUT, to query for capabilities sends an OPTIONS request including a Via header with a protocol name set to SIP, a protocol version set to 2.0 and a branch parameter set to a value beginning with "z9hG4bK".

TPId: **SIP_QC_OE _V _008**

Status: PICS: A.52/2.1

Ref: RFC 3261 [1] section 11.1.

Purpose: Ensure that the IUT, to query for capabilities sends an OPTIONS request including an Accept header set to the type of message body expected in the response.

TPId: **SIP_QC_OE _V _009**

Status: Mandatory

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT having sent an OPTIONS request is able to receive a Success (200 OK) response.

TPId: **SIP_QC_OE _V _010**

Status: Mandatory

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT having sent an OPTIONS request is able to receive a Busy here (486 Busy here) response.

TPId: **SIP_QC_OE _V _011**

Status: Mandatory

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT having sent an OPTIONS request is able to receive a Success (200 OK) response including Allow, Accept, Accept-Encoding, Accept-Language and Supported header.

TPId: **SIP_QC_OE _V _012**

Status: PICS: A.54/1

Ref: RFC 3261 [1] sections 11 and 22.2.

Purpose: Ensure that the IUT having sent an OPTIONS request, on receipt of an Unauthorized (401 Unauthorized) response including a WWW-Authenticate header, repeats its OPTIONS request with an Authorization header and with an incremented Cseq value.

TPId: **SIP_QC_OE _V _013**

Status: PICS: A.54/1

Ref: RFC 3261 [1] sections 11 and 22.2.

Purpose: Ensure that the IUT having sent an OPTIONS request, on receipt of an Unauthorized (401 Unauthorized) response including a WWW-Authenticate header, repeats its OPTIONS request with an Authorization header including proper values for username, realm nonce, digest-uri and response HTTP parameters.

TPId: **SIP_QC_OE _V _014**

Status: PICS: A.54/1

Ref: RFC 3261 [1] sections 11 and 22.2.

Purpose: Ensure that the IUT having sent an OPTIONS request, on receipt of a Proxy Authentication
                   Required (407 Proxy Authentication Required) response including a Proxy-Authenticate header,
                   repeats its OPTIONS request with a Proxy-Authorization header and with an incremented Cseq
                   value.

TPId: **SIP_QC_OE _V _015**

Status: PICS: A.54/1

Ref: RFC 3261 [1] sections 11 and 22.2.

Purpose: Ensure that the IUT having sent an OPTIONS request, on receipt of a Proxy Authentication
                   Required (407 Proxy Authentication Required) response including a Proxy-Authenticate header,
                   repeats its OPTIONS request with a Proxy-Authorization header including proper values for
                   username, realm nonce, digest-uri and response HTTP parameters.

5.4.1.2   Timers

TPId: **SIP_QC_OE _TI_001**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.2.2.

Purpose: If an unreliable transport is used, ensure that the IUT, having sent an OPTIONS request, repeats its
                   request after timer E set to T1 value expires.

TPId: **SIP_QC_OE _TI_002**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: If an unreliable transport is used, ensure that the IUT, having sent twice times an OPTIONS
                   request, repeats its request after timer E set to the MIN(2*T1,T2) value expires.

TPId: **SIP_QC_OE _TI_003**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: If an unreliable transport is used, ensure that the IUT, having sent three times an OPTIONS
                   request, repeats its request after timer E set to the MIN(4*T1,T2) value expires.

TPId: **SIP_QC_OE _TI_004**

Status: PICS: A.61/6

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: If an unreliable transport is used, ensure that the IUT does not repeat an OPTIONS request, after
                   timer F set to 64*T1 expires.

TPId: **SIP_QC_OE _TI_005**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: Ensure that the IUT, when an OPTIONS client transaction is in the Proceeding state, repeats its
                   OPTIONS request after timer E set to T1 value expires.

TPId: **SIP_QC_OE _TI_006**

Status: Mandatory

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: Ensure that the IUT, when an OPTIONS client transaction is in the Proceeding state and
                   OPTIONS request have been already repeated in this state, repeats its OPTIONS request after
                   timer E set to T2 value expires.

TPId: **SIP_QC_OE _TI_007**

Status: PICS: A.61/6

Ref: RFC 3261 [1] Annex A and section 17.1.3.

Purpose: Ensure that the IUT, when an OPTIONS client transaction is in the Proceeding state, does not
                   repeat its OPTIONS request, after timer F set to 64*T1 expires.

5.4.2   Terminating Endpoint

Group Selection: IUT is an User Agent that can answer to capabilities request.

Status: PICS: A.1/1 AND A.49/2

5.4.2.1   Valid Behaviour

TPId: **SIP_QC_TE_ V_001**

Status: Mandatory

Ref: RFC 3261 [1] sections 11.2 and 8.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request, sends a Success (200 OK).

TPId: **SIP_QC_TE_ V _002**

Status: Mandatory

Ref: RFC 3261 [1] sections 11.2 and 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request, sends a Success (200 OK) including the
                   headers From, Call-ID, CSeq and Via headers copy from the OPTIONS request.

TPId: **SIP_QC_TE_ V _003**

Status: Mandatory

Ref: RFC 3261 [1] sections 11.2 and 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request with no TAG set on the To header, sends a
                   Success (200 OK) including the same URI and an additional TAG for the To header.

TPId: **SIP_QC_TE_ V _004**

Status: Mandatory

Ref: RFC 3261 [1] sections 11.2 and 8.2.6.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request with a TAG set on the To header, sends a
               Success (200 OK) including the same URI and the same TAG for the To header.

TPId: **SIP_QC_TE_ V _005**

Status: Recommended

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request, sends a Success (200 OK) including
               Allow, Accept, Accept-Encoding, Accept-Language and Supported headers.

TPId: **SIP_QC_TE_ V _006**

Status: Recommended

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request with an Accept header set to
               "application/sdp", sends a Success (200 OK) including a message Body.

TPId:	**SIP_QC_TE_ V _007**
Status:	Recommended
Ref:	RFC 3261 [1] section 11.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request with no Accept header, sends a Success (200 OK) including a message Body.
TPId:	**SIP_QC_TE_ V _008**
Status:	PICS: A.54/1
Ref:	RFC 3261 [1] sections 11and 22.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request not including an Authorization header field, sends an Unauthorized (401 Unauthorized) response, containing a WWW-Authenticate header.
TPId:	**SIP_QC_TE_ V _009**
Status:	PICS: A.54/1
Ref:	RFC 3261 [1] sections 11and 22.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request not including an Authorization header field, sends an Unauthorized (401 Unauthorized) response, containing a WWW-Authenticate header including proper value for realm and nonce HTTP parameters.
TPId:	**SIP_QC_TE_ V _010**
Status:	PICS: A.54/1
Ref:	RFC 3261 [1] sections 11and 22.2.
Purpose:	Ensure that the IUT having sent an Unauthorized (401 Unauthorized) response to an OPTIONS request, on receipt of a OPTIONS request including a valid Authorization header field, sends a Success (200 OK) response.

5.4.3 Proxy

Group Selection: IUT is a Proxy

Status: PICS: A.1/3

5.4.3.1 Valid Behaviour

TPId:	**SIP_QC_PR_ V_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 11.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request addressing itself with a Request-URI without user part, sends a Success (200 OK).
TPId:	**SIP_QC_PR_ V_002**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 11.2 and 8.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS identified by a Request-URI addressing another UA, forwards the message to the target indicated in the Request-URI.

TPId:	**SIP_QC_PR_ V_003**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 11.2 and 8.2.6.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request addressing itself with a Request-URI without user part, sends a Success (200 OK) including the headers From, Call-ID, CSeq and Via headers copy from the OPTIONS request.

TPId:	**SIP_QC_PR_ V_004**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 11.2 and 8.2.6.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request , addressing itself with a Request-URI without user part, with no TAG set on the To header, sends a Success (200 OK) including the same URI and an additional TAG for the To header.

TPId:	**SIP_QC_PR_ V _005**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 11.2 and 8.2.6.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request, addressing itself with a Request-URI without user part, with a TAG set on the To header, sends a Success (200 OK) including the same URI and the same TAG for the To header.

TPId:	**SIP_QC_PR_ V _006**
Status:	Recommended
Ref:	RFC 3261 [1] section 11.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request addressing itself with a Request-URI without user part, sends a Success (200 OK) including Allow, Accept, Accept-Encoding, Accept-Language and Supported headers.

TPId:	**SIP_QC_PR_ V _007**
Status:	Recommended
Ref:	RFC 3261 [1] section 11.2.
Purpose:	Ensure that the IUT on receipt of an OPTIONS request, addressing itself with a Request-URI without user part, with an Accept header set to "application/sdp", sends a Success (200 OK) including a message Body.

TPId: **SIP_QC_PR_ V _008**

Status: Recommended

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request, addressing itself with a Request-URI
                   without user part, with no Accept header, sends a Success (200 OK) including a message Body.

TPId: **SIP_QC_PR_ V _009**

Status: PICS: A.77/1.4

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request and the determined target set is containing
                   two URIs forwards the message (forking) to both URIs.

TPId: **SIP_QC_PR_ V _010**

Status: PICS: A.77/1.4

Ref: RFC 3261 [1] section 11.2.

Purpose: Ensure that the IUT, after forking an OPTIONS to two locations and having received (and
                   forwarded) a 200 response from one client transaction, on receipt of a 200 response from the other
                   client transaction, does not forward the additional 200 response.

TPId: **SIP_QC_PR_ V _011**

Status: PICS: A.105/1

Ref: RFC 3261 [1] section 22.2.

Purpose: Ensure that the IUT on receipt of an OPTIONS request, addressing itself with a Request-URI
                   without user part, not including a Proxy-Authorization header field, sends a Proxy Authentication
                   Required (407 Proxy Authentication Required) response, containing a Proxy-Authenticate header.

| **TPId:** | **SIP_QC_PR_ V _012** |

| **Status:** | PICS: A.105/1 |

| **Ref:** | RFC 3261 [1] section 22.2. |

| **Purpose:** | Ensure that the IUT on receipt of an OPTIONS request, addressing itself with a Request-URI without user part, not including a Proxy-Authorization header field, sends a Proxy Authentication Required (407 Proxy Authentication Required) response, containing a Proxy-Authenticate header including proper value for realm and nonce HTTP parameters. |

| **TPId:** | **SIP_QC_PR_ V _013** |

| **Status:** | PICS: A.105/1 |

| **Ref:** | RFC 3261 [1] section 22.2. |

| **Purpose:** | Ensure that the IUT having sent a Proxy Authentication Required (407 Proxy Authentication Required) response to an OPTIONS request, addressing itself with a Request-URI without user part,, on receipt of an OPTIONS request including a valid Proxy-Authenticate header field, for sends a Success (200 OK) response. |

5.5 Test Purposes for Messaging

5.5.1 Registrant

Group selection: Registration being listed as an option, the test purpose is applicable if the SUT is declared as supporting periodic registration and can behave as User Agent.

Status: PICS: A.1/1 AND A.2/1

5.5.1.1 Valid Behaviour

| **TPId:** | **SIP_MG_RT_V_001** |

| **Status:** | Mandatory |

| **Ref:** | RFC 3261 [1] section 19.1.1. |

| **Purpose:** | Ensure that the IUT, having sent a REGISTER request, on receipt of a valid Success (200 OK) response including non-understood uri-parameters in SIP-URI of the Contact header, ignores it and considers to have received a Success (200 OK). |

| **TPId:** | **SIP_MG_RT_V_002** |

| **Status:** | Mandatory |

| **Ref:** | RFC 3261 [1] section 19.1.1. |

| **Purpose:** | Ensure that the IUT, having sent a REGISTER request, on receipt of a valid Success (200 OK) response including header parameters in the SIP-URI of the Contact header, considers to have received a Success (200 OK). |

| **TPId:** | **SIP_MG_RT_V_003** |

| **Status:** | Mandatory |

| **Ref:** | RFC 3261 [1] section 7.2. |

| **Purpose:** | Ensure that the IUT, having sent a REGISTER request, on receipt of a valid Success (299 OK) response with non-defined last two digits considers to have received a Success (200 OK). |

TPId:	**SIP_MG_RT_V_004**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.2.
Purpose:	Ensure that the IUT, having sent a REGISTER request, on receipt of a valid Success (200 PERFECT) response with an unknown reason phrase considers to have received a Success (200 OK).

TPId:	**SIP_MG_RT_V_005**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.3.1.
Purpose:	Ensure that the IUT, having sent a REGISTER request, is able to receive a Success (200 OK) response including headers named with upper and lower cases.

TPId:	**SIP_MG_RT_V_006**
Status:	Mandatory
Ref:	RFC 3261 [1] section 25.1.
Purpose:	Ensure that the IUT, having sent a REGISTER request, is able to receive a Success (200 OK) response including a header set with values preceded by several leading white space and properly extended over multiple lines.

TPId:	**SIP_MG_RT_V_007**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 25.1 and 7.3.3.
Purpose:	Ensure that the IUT, having sent a REGISTER request, is able to receive a Success (200 OK) response including headers set with short field names.

TPId:	**SIP_MG_RT_V_008**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.5.
Purpose:	Ensure that the IUT, having sent a REGISTER request over a stream-oriented (TCP) transport, on receipt of a Success (200 OK) response with several CRLF before the start ignores them and considers to have received a Success (200 OK).

5.5.1.2   Invalid Behaviour

TPId:	**SIP_MG_RT_I_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, having sent a REGISTER request, on receipt of a Success (200 OK) response with transport parameters in the From and To headers considers to have received a Success (200 OK).

TPId:	**SIP_MG_RT_I_002**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, having sent a REGISTER request, on receipt of a Success (200 OK) response with a ttl parameter in the From and To headers ignores them and considers to have received a Success (200 OK).

TPId:	**SIP_MG_RT_I_003**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, having sent a REGISTER request, on receipt of a Success (200 OK) response with an URI including a header parameter in the To and From headers ignores them and considers to have received a Success (200 OK).

TPId:	**SIP_MG_RT_I_004**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, having sent a REGISTER request, on receipt of a Success (200 OK) response with a method parameters in the To and From headers ignores them and considers to have received a Success (200 OK).

TPId:	**SIP_MG_RT_I_005**
Status:	Mandatory
Ref:	RFC 3261 [1] section 20, table 2.
Purpose:	Ensure that the IUT, having sent a REGISTER request, on receipt of a Session Progress (183 Session Progress) response with a Contact header ignores it and accepts the following Success (200 OK).

5.5.2   Registrar

GroupSelection: IUT is a Registrar

Status: PICS: A.1/2

5.5.2.1   Valid Behaviour

TPId:	**SIP_MG_RR_V_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including escaped characters in the SIP-URI of the Contact header, sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_V_002**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including escaped delimiters in SIP-URI of the Contact header, sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_V_003**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including non-understood uri- parameters in SIP-URI of the Contact header, ignores it and sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_V_004**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including a header parameter in the SIP-URI of the Contact header, sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_V_005**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including a method parameter set to "REGISTER" in the SIP-URI of Contact header, sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_V_006**
Status:	Mandatory
Ref:	RFC 3261 [1] section 8.2.2.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including an unknown header, ignores them and sends a Success (200 OK) response.

TPId: **SIP_MG_RR_V_007**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of a REGISTER request including headers named with upper and lower cases, sends a Success (200 OK) response.

TPId: **SIP_MG_RR_V_008**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of a REGISTER request including headers set with values preceded by several leading white space and properly extended over multiple lines, sends a Success (200 OK) response.

TPId: **SIP_MG_RR_V_009**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of a REGISTER request including a Contact header set with multiple values separated by a comma, sends a Success (200 OK) response.

TPId: **SIP_MG_RR_V_010**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of a REGISTER request including multiple Contact headers, sends a Success (200 OK) response.

TPId: **SIP_MG_RR_V_011**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of a REGISTER request including an expires parameter named with upper and lower cases of Contact header, sends a Success (200 OK) response.

TPId: **SIP_MG_RR_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.3.

Purpose: Ensure that the IUT on receipt of a REGISTER request including headers set with short names, sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_V_013**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.5.
Purpose:	Ensure that the IUT, on receipt of a REGISTER request over a stream-oriented (TCP) transport with several CRLF before the start-line, sends a Success (200 OK) response.

5.5.2.2   Invalid Behaviour

TPId:	**SIP_MG_RR_I_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including a Request line SIP-Version in lower cases ignores it and sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_I_002**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including ttl parameter in the From and To headers ignores them and sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_I_003**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including header parameters in the SIP-URI of the From and To headers ignores them and sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_I_004**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including method parameters set to "INVITE" in the SIP-URI of the From and To headers ignores them and sends a Success (200 OK) response.

TPId:	**SIP_MG_RR_I_005**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 7.3.2 and 20, table 2.
Purpose:	Ensure that the IUT on receipt of a REGISTER request including an Alert-Info header ignores it and sends a Success (200 OK) response.

TPId: **SIP_MG_RR_I_006**

Status: Recommended

Ref: RFC 3261 [1] section 21.4.1.

Purpose: Ensure that the IUT on receipt of a REGISTER request without CSeq header sends a Bad Request
                   (400 Bad Request) response.

5.5.3   Originating Endpoint

Group Selection: IUT can behave as a User Agent client to establish a call.

Status: PICS: A.1/1 AND PICS: A.16/1.1

5.5.3.1   Valid Behaviour

TPId: **SIP_MG_OE_V_001**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a
                   Success (200 OK) response including non-understood uri-parameters in SIP-URI of the From
                   header, ignores it and sends an ACK request.

TPId: **SIP_MG_OE_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a
                   Success (200 OK) response including header parameters in the SIP-URI of the Contact header,
                   sends an ACK request.

TPId: **SIP_MG_OE_V_003**

Status: Mandatory

Ref: RFC 3261 [1] section 7.2.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a
                   Success (299 OK) response with non-defined last two digits, sends an ACK request.

TPId: **SIP_MG_OE_V_004**

Status: Mandatory

Ref: RFC 3261 [1] section 7.2.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a
                   Success (200 PERFECT) response with an unknown reason phrase, sends an ACK request.

TPId:	**SIP_MG_OE_V_005**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.3.1.
Purpose:	Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response including headers named with upper and lower cases, sends an ACK request.
TPId:	**SIP_MG_OE_V_006**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.3.1.
Purpose:	Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response including headers set with values preceded by several leading white space and properly extended over multiple lines, sends an ACK request.
TPId:	**SIP_MG_OE_V_007**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.3.1.
Purpose:	Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response including a headers set with short names, sends an ACK request.
TPId:	**SIP_MG_OE_V_008**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including escaped characters in the SIP-URI of the From header, sends a Success (200 OK) response.
TPId:	**SIP_MG_OE_V_009**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including escaped delimiters in the SIP-URI of the From header, sends a Success (200 OK) response.
TPId:	**SIP_MG_OE_V_010**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including non-understood uri-parameters in the SIP-URI of the BYE Request-URI, sends a Success (200 OK) response.
TPId:	**SIP_MG_OE_V_011**
Status:	Mandatory
Ref:	RFC 3261 [1] section 8.2.2.
Purpose:	Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including an unknown header, ignores it and sends a Success (200 OK) response.

TPId: **SIP_MG_OE_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including headers named with upper and lower cases sends a Success (200 OK) response.

TPId: **SIP_MG_OE_V_013**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including headers set with values preceded by several leading white space and properly extended over multiple lines, sends a Success (200 OK) response.

TPId: **SIP_MG_OE_V_014**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.3.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including headers set with short names, sends a Success (200 OK) response.

TPId: **SIP_MG_OE_V_015**

Status: Mandatory

Ref: RFC 3261 [1] section 18.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a 65.535 bytes long Success (200 OK) response including session description parameters that it can accept, transported by UDP, sends an ACK request.

5.5.3.2   Invalid Behaviour

TPId: **SIP_MG_OE_I_001**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response including transport parameters in the From and To headers, ignores them and sends an ACK request.

TPId: **SIP_MG_OE_I_002**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response with a ttl parameter in the From and To headers, ignores them and sends an ACK request.

TPId: **SIP_MG_OE_I_003**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response with an URI including a header parameter in the To and From headers ignores them and sends an ACK request.

TPId: **SIP_MG_OE_I_004**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state, on receipt of a Success (200 OK) response with a method parameter in the To and From headers ignores them and sends an ACK request.

TPId: **SIP_MG_OE_I_005**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including maddr parameters in the From and To headers ignores them and sends a Success (200 OK) response.

TPId: **SIP_MG_OE_I_006**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including header parameters in the SIP-URI of the From and To headers ignores them and sends a Success (200 OK) response.

TPId: **SIP_MG_OE_I_007**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including method parameters set to "CANCEL" parameter in the SIP-URI of the From and To headers ignores them and sends a Success (200 OK) response.

TPId: **SIP_MG_OE_I_008**

Status: Mandatory

Ref: RFC 3261 [1] sections 7.3.2 and 20, table 2.

Purpose: Ensure that the IUT, once a dialog has been established, on receipt of a BYE request including an In-Reply-To header ignores it and sends a Success (200 OK) response.

TPId: **SIP_MG_OE_I_009**

Status: Recommended

Ref: RFC 3261 [1] section 18.3.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state while a message-oriented (UDP) transport is used, on receipt of a Success (200 OK) response including a body part shorter than the length indicated in the Content-Length header field, discards it and does not send a ACK request.

TPId: **SIP_MG_OE_I_010**

Status: Recommended

Ref: RFC 3261 [1] section 18.3.

Purpose: Ensure that the IUT, when an INVITE client transaction is in the Calling state while a message-oriented (UDP) transport is used, on receipt of a Success (200 OK) response including a body part longer than the length indicated in the Content-Length header field, ignores extra bytes and sends a ACK request.

5.5.4   Terminating Endpoint

Group Selection: IUT can behave as a User Agent server to establish a call.

Status: PICS: A.1/1 AND A.16/1.2

5.5.4.1   Valid Behaviour

TPId:	**SIP_MG_TE_V_001**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including escaped characters in the SIP-URI of the Contact header, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId:	**SIP_MG_TE_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including escaped delimiters in the SIP-URI of the Contact header, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId:	**SIP_MG_TE_V_003**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including non-understood uri-parameters in the SIP-URI of the Contact header, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId:	**SIP_MG_TE_V_004**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a header parameter in the SIP-URI of the Contact header, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId:	**SIP_MG_TE_V_005**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a method parameter set to "INVITE" in the SIP-URI of the Contact header, sends a Success (200 OK) response preceeded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_006**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.1.

Purpose: Ensure that the IUT on receipt of a request including a non-supported Method, sends a Method not allowed (405 Method Not Allowed) response including an Allow header that lists the set of method supported.

TPId: **SIP_MG_TE_V_007**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.2.

Purpose: Ensure that the IUT on receipt of an INVITE request including an unknown header, ignores them and sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_008**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including headers named with upper and lower cases, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_009**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including headers set with values preceded by several leading white space and properly extended over multiple lines, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_010**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Via header set with multiple values separated by a comma, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_011**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including multiple Via headers, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a branch parameter named with upper and lower cases of Via header, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_013**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.3.

Purpose: Ensure that the IUT on receipt of an INVITE request including headers set with short names, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_014**

Status: Mandatory

Ref: RFC 3261 [1] section 18.1.1.

Purpose: Ensure that the IUT on receipt of a 65.535 bytes long INVITE request including session description parameters that it can accept, transported by UDP, sends a Success (200 OK) response, preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_V_015**

Status: Mandatory

Ref: RFC 3261 [1] section 7.5.

Purpose: Ensure that the IUT, on receipt of a INVITE request over a stream-oriented (TCP) transport with several CRLF before the start-line, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

5.5.4.2   Invalid Behaviour

TPId: **SIP_MG_TE_I_001**

Status: Mandatory

Ref: RFC 3261 [1] section 7.1.

Purpose: Ensure that the IUT on receipt of an INVITE request with SIP-version in lower case, sends a Success (200 OK) response preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_I_002**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a maddr parameter in the From and To headers, ignores them and sends a Success (200 OK) response, preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_I_003**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including header parameters in the SIP-URI of the From and To headers, ignores them and sends a Success (200 OK) response, preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_I_004**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including method parameters set to "CANCEL" in the SIP-URI of the From and To headers, ignores them and sends a Success (200 OK) response, preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_I_005**

Status: Recommended

Ref: RFC 3261 [1] section 21.4.1.

Purpose: Ensure that the IUT on receipt of an INVITE request without Call-ID header sends a Bad Request (400 Bad Request) response.

TPId: **SIP_MG_TE_I_006**

Status: Mandatory

Ref: RFC 3261 [1] sections 7.3.2 and 20, table 2.

Purpose: Ensure that the IUT on receipt of an INVITE request including header field Retry-After, ignores it and sends a Success (200 OK) response, preceded optionally by informational (1XX) response.

TPId: **SIP_MG_TE_I_007**

Status: Recommended

Ref: RFC 3261 [1] section 18.3.

Purpose: Ensure that the IUT, on receipt of an INVITE request, while a message-oriented (UDP) transport is used, including a body part shorter than the length indicated in the Content-Length header field, sends a Bad Request (400 Bad Request) response.

TPId: **SIP_MG_TE_I_008**

Status: Recommended

Ref: RFC 3261 [1] section 18.3.

Purpose: Ensure that the IUT, on receipt of an INVITE request, while a message-oriented (UDP) transport is used, including a body part longer than the length indicated in the Content-Length header field, ignores extra bytes and sends a Success (200 OK) response, preceded optionally by informational (1XX) response.

5.5.5   Proxy

Group Selection: IUT is a Proxy

Status: PICS: A.1/3

5.5.5.1   Valid Behaviour

TPId: **SIP_MG_PR_V_001**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: nsure that the IUT on receipt of an INVITE request including escaped characters in the SIP-URI of the Contact header forwards the message.

TPId: **SIP_MG_PR_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including escaped delimiters in the SIP-URI of the Contact header forwards the message.

TPId: **SIP_MG_PR_V_003**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including non-understood uri-parameters in the SIP-URI of the Contact header forwards the message.

TPId: **SIP_MG_PR_V_004**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a header parameter in the SIP-URI of the Contact header forwards the message.

TPId: **SIP_MG_PR_V_005**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a method parameter set to "INVITE" in the SIP-URI of the Contact header forwards the message.

TPId: **SIP_MG_PR_V_006**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.2.

Purpose: Ensure that the IUT on receipt of an INVITE request including unknown header forwards the message without removing or modifying those fields.

TPId: **SIP_MG_PR_V_007**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including headers named with upper and lower cases forwards the message.

TPId: **SIP_MG_PR_V_008**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including headers set with values preceded by several leading white space and properly extended over multiple lines forwards the message.

TPId: **SIP_MG_PR_V_009**

Status: Mandatory

Ref: RFC 3261 [1] sections 7.3.1 and 10.46.4.

Purpose: Ensure that the IUT on receipt of an INVITE request including a Via header set with multiple values separated by a comma forwards the message after having inserted its own Via header value without changing the order of these field values.

TPId: **SIP_MG_PR_V_010**

Status: Mandatory

Ref: RFC 3261 [1] sections 7.3.1 and 10.46.4.

Purpose: Ensure that the IUT on receipt of an INVITE request including multiple Via headers forwards the message after having inserted its own Via header value but without changing the order of these fields.

TPId: **SIP_MG_PR_V_011**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT on receipt of an INVITE request including a branch parameter named with upper and lower cases in Via header forwards the message.

TPId: **SIP_MG_PR_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 7.2.

Purpose: Ensure that the IUT after having forwarded an INVITE request, on receipt of a Success (299 OK) response with non-defined last two digits forwards the message.

TPId: **SIP_MG_PR_V_013**

Status: Mandatory

Ref: RFC 3261 [1] section 7.2.

Purpose: Ensure that the IUT after having forwarded an INVITE request, on receipt of a Success (200 PERFECT) response with an unknown reason phrase forwards the message.

TPId: **SIP_MG_PR_V_014**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.3.

Purpose: Ensure that the IUT on receipt of an INVITE request including headers set with short names forwards the message.

TPId: **SIP_MG_PR_V_015**

Status: Mandatory

Ref: RFC 3261 [1] section 18.1.1.

Purpose: Ensure that the IUT on receipt of a 65.535 bytes long INVITE request forwards the message.

TPId: **SIP_MG_PR_V_016**

Status: Mandatory

Ref: RFC 3261 [1] section 7.5.

Purpose: Ensure that the IUT, on receipt of a INVITE request over a stream-oriented (TCP) transport with
                   several CRLF before the start-line, forwards the message.

5.5.5.2   Invalid Behaviour

TPId: **SIP_MG_PR_I_001**

Status: Mandatory

Ref: RFC 3261 [1] section 7.1.

Purpose: Ensure that the IUT on receipt of an INVITE request with SIP version in lower case forwards the
                   message.

TPId: **SIP_MG_PR_I_002**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including a transport parameter in the From
                   and To headers, ignores them and forwards the message.

TPId: **SIP_MG_PR_I_003**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including header parameters in the SIP-URI
                   of the From and To headers, ignores them and forwards the message.

TPId: **SIP_MG_PR_I_004**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including method parameters set to
                   "CANCEL" in the SIP-URI of the From and To headers, ignores them and forwards the message.

TPId: **SIP_MG_PR_I_005**

Status: Recommended

Ref: RFC 3261 [1] section 21.4.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request without Call-Id header sends a Bad Request
                   (400 Bad Request) response.

TPId:	**SIP_MG_PR_I_006**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 7.3.2 and 20, table 2.
Purpose:	Ensure that the IUT on receipt of an INVITE request including header field Retry-After, ignores it and forwards the message.

TPId:	**SIP_MG_PR_I_007**
Status:	Recommended
Ref:	RFC 3261 [1] section 18.3.
Purpose:	Ensure that the IUT, on receipt of an INVITE request, while a message-oriented (UDP) transport is used, including a body part shorter than the length indicated in the Content-Length header field, sends a Bad Request (400 Bad Request) response.

TPId:	**SIP_MG_PR_I_008**
Status:	Recommended
Ref:	RFC 3261 [1] section 18.3.
Purpose:	Ensure that the IUT, on receipt of an INVITE request, while a message-oriented (UDP) transport is used, including a body part longer than the length indicated in the Content-Length header field, ignores extra bytes and forwards the message.

TPId:	**SIP_MG_PR_I_009**
Status:	Recommended
Ref:	RFC 3261 [1] section 18.3.
Purpose:	Ensure that the IUT, while a message-oriented (UDP) transport is used, on receipt of a Success (200 OK) response including a body part shorter than the length indicated in the Content-Length header field, discards it and does not forward it.

TPId:	**SIP_MG_PR_I_010**
Status:	Recommended
Ref:	RFC 3261 [1] section 18.3.
Purpose:	Ensure that the IUT, when an INVITE client transaction is in the Calling state while a message-oriented (UDP) transport is used, on receipt of a Success (200 OK) response including a body part longer than the length indicated in the Content-Length header field, ignores extra bytes and forwards it.

5.5.6   Redirect server

GroupSelection: IUT is a Redirect Server.

Status: PICS: A.1/4 AND A.114/1

5.5.6.1   Valid Behaviour

TPId:	**SIP_MG_RD_V_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, on receipt of an INVITE request including escaped characters in the SIP-URI of the Contact header, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_002**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including escaped delimiters in the SIP-URI of the Contact header, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_003**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including non-understood uri-parameters in the SIP-URI of the Contact header, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_004**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including a header parameter in the SIP-URI of the Contact header, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_005**

Status: Mandatory

Ref: RFC 3261 [1] section 19.1.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including a method parameter set to "INVITE" in the SIP-URI of the Contact header, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_006**

Status: Mandatory

Ref: RFC 3261 [1] section 8.2.2.

Purpose: Ensure that the IUT, on receipt of an INVITE request including an unknown header, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_007**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including headers named with upper and lower cases, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_008**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including headers set with values preceded by several leading white space and properly extended over multiple lines, sends a 3XX redirection response to the caller.

TPId: **SIP_MG_RD_V_009**

Status: Mandatory

Ref: RFC 3261 [1] sections 7.3.1 and 10.46.4.

Purpose: Ensure that the IUT, on receipt of an INVITE request including a Via header set with multiple values separated by a comma, sends a 3XX redirection response including the received Via header values, without changing their order, to the caller.

TPId: **SIP_MG_RD_V_010**

Status: Mandatory

Ref: RFC 3261 [1] sections 7.3.1 and 10.46.4.

Purpose: Ensure that the IUT, on receipt of an INVITE request including multiple Via headers, sends a 3XX redirection response including the received Via header values, without changing their order, to the caller.

TPId: **SIP_MG_RD_V_011**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.1.

Purpose: Ensure that the IUT, on receipt of an INVITE request including a branch parameter named with upper and lower cases in Via header, sends a 3XX redirection to the caller.

TPId: **SIP_MG_RD_V_012**

Status: Mandatory

Ref: RFC 3261 [1] section 7.3.3.

Purpose: Ensure that the IUT, on receipt of an INVITE request including headers set with short names, sends a 3XX redirection to the caller.

TPId: **SIP_MG_RD_V_013**

Status: Mandatory

Ref: RFC 3261 [1] section 18.1.1.

Purpose: Ensure that the IUT on receipt of a 65.535 bytes long INVITE request sends a 3XX redirection to the caller.

TPId: **SIP_MG_RD_V_014**

Status: Mandatory

Ref: RFC 3261 [1] section 7.5.

Purpose: Ensure that the IUT, on receipt of a INVITE request over a stream-oriented (TCP) transport with several CRLF before the start-line, sends a 3XX redirection to the caller.

5.5.6.2 Invalid Behaviour

TPId:	**SIP_MG_RD_I_001**
Status:	Mandatory
Ref:	RFC 3261 [1] section 7.1.
Purpose:	Ensure that the IUT, on receipt of an INVITE request with SIP version in lower case, sends a 3XX redirection response to the caller.

TPId:	**SIP_MG_RD_I_002**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, on receipt of an INVITE request including a transport parameter in the From and To headers, ignores them and sends a 3XX redirection to the caller.

TPId:	**SIP_MG_RD_I_003**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, on receipt of an INVITE request including header parameters in the SIP-URI of the From and To headers, ignores them and sends a 3XX redirection to the caller.

TPId:	**SIP_MG_RD_I_004**
Status:	Mandatory
Ref:	RFC 3261 [1] section 19.1.1.
Purpose:	Ensure that the IUT, on receipt of an INVITE request including method parameters set to "CANCEL" in the SIP-URI of the From and To headers, ignores them and sends a 3XX redirection to the caller.

TPId:	**SIP_MG_RD_I_005**
Status:	Recommended
Ref:	RFC 3261 [1] section 21.4.1.
Purpose:	Ensure that the IUT, on receipt of an INVITE request without Call-Id header sends a Bad Request (400 Bad Request) response.

TPId:	**SIP_MG_RD_I_006**
Status:	Mandatory
Ref:	RFC 3261 [1] sections 7.3.2 and 20, table 2.
Purpose:	Ensure that the IUT on receipt of an INVITE request including header field Retry-After, ignores it and sends a 3XX redirection to the caller.

TPId:	**SIP_MG_RD_I_007**
Status:	Recommended
Ref:	RFC 3261 [1] section 18.3.
Purpose:	Ensure that the IUT, on receipt of an INVITE request, while a message-oriented (UDP) transport is used, including a body part shorter than the length indicated in the Content-Length header field, sends a Bad Request (400 Bad Request) response.

TPId: **SIP_MG_RD_I_008**

Status: Recommended

Ref: RFC 3261 [1] section 18.3.

Purpose: Ensure that the IUT, on receipt of an INVITE request, while a message-oriented (UDP) transport is used, including a body part longer than the length indicated in the Content-Length header field, ignores extra bytes and sends a 3XX redirection to the caller.

Annex A (informative):
Bibliography

- ETSI TS 102 027-1: "Methods for Testing and Specification (MTS); Conformance Test Specification for SIP IETF RFC 3261; Part 1: Protocol Implementation Conformance Statement (PICS) proforma".

- IETF RFC 2327: "SDP: Session Description Protocol".

- IETF RFC 2616: "Hypertext Transfer Protocol - HTTP/1.1".

- IETF RFC 2617: "HTTP Authentication: Basic and Digest Access Authentication".

- IETF RFC 3264: "An Offer/Answer Model with the Session Description Protocol (SDP)".

- ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

History

Document history		
V1.1.1	September 2002	Publication
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