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Technical Specification

**IMS Network Testing (INT);
Closed User Group (CUG) using IP Multimedia (IM)
Core Network (CN) subsystem;
Conformance Test Specification;
Part 2: Test Suite Structure and Test Purposes (TSS&TP)**

Reference

DTS/INT-00070-2

Keywords

CUG, IMS, PICS, testing

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Foreword

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

The present document is part 2 of a multi-part deliverable covering the Conformance Test Specification of Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem, as identified below:

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

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

1 Scope

The present document provides the Test Suite Structure and Test Purposes for the Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem defined in Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem [1] in compliance with the relevant requirements.

2 References

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

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2.1 Normative references

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

[1] ETSI TS 124 654: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem, Protocol Specification (3GPP TS 24.654 Release 10)".

[2] ETSI TS 101 597-1: "IMS Network Testing (INT); Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem; Conformance Test Specification; Part 1: Protocol Implementation Conformance Statement (PICS)".

2.2 Informative references

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

Not applicable.

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 124 654 [1] apply.

3.2 Symbols

For the purposes of the present document, the symbols given in TS 124 654 [1] and the following apply:

Gm   Reference point: supports the communication between UE and IMS
Mw   Reference point allows the communication and forwarding of signalling messaging between CSCFs

3.3   Abbreviations

For the purposes of the present document, the abbreviations given in TS 124 654 [1] and the following apply:

AS	Application Server
CD	Communication Deflection
CDIV	Communication DIVersion service
CFB	Communication Forwarding on Busy
CFNL	Communication Forwarding on Not Logged-in
CFNR	Communication Forwarding on no Reply
CFU	Communication Forwarding Unconditional
CONF	CONFerence calling
CSCF	Call Session Control Function
CUG	Closed User Group
ECT	Explicit Communication Transfer
IA	Incoming Access
ICB	Incoming Communication Barring within a CUG
IMS	IP Multimedia Subsystem
IP	Internet Protocol
ISC	Reference point between Serving CSCF and Application Server
IUT	Implementation Under Test
NNI	Network-to-Network Interface
OA	Outgoing Access
OAE	Outgoing Access, explicit request required
OAI	Outgoing Access, implicit outgoing access for all communications
OCB	Outgoing Communication Barring within a CUG
PIXIT	Protocol Implementation eXtra Information for Testing
SIP	Session Initiation Protocol
SS	Supplementary Services
SUT	System Under Test
TP	Test Purposes
TSS	Test Suite Structure
UA	User Agent
UE	User Equipment
XML	eXtensible Markup Language

4   Test Suite Structure (TSS)

CUG			
	originating_UE		CUG_U01_xxx
	originating_AS		
		CUG without preference	CUG_N01_xxx
		CUG without preference + OAE	CUG_N02_xxx
		CUG without preference + OAI	CUG_N03_xxx
		CUG with preference	CUG_N04_xxx
		CUG with preference + OAE	CUG_N05_xxx
		CUG with preference + OAI	CUG_N06_xxx
		No CUG	CUG_N07_xxx
	terminating_AS		
		CUG with OA not allowed	CUG_N08_xxx
		CUG with OA allowed	CUG_N09_xxx
		No CUG	CUG_N10_xxx
	Services	CONF	CUG_N11_xxx
		CDIV	CUG_N12_xxx
		ECT	CUG_N13_xxx

4.1 Configuration

The scope of the present document is to test the signalling and procedural aspects of the stage 3 requirements as described in TS 124 654 [1]. The stage 3 description describes the requirements for several network entities and also the requirements regarding terminal devices. Therefore several interfaces (reference points) are addressed to satisfy the test of the different entities.

Therefore to test the appropriate entities the configurations below are applicable.

4.1.1 Testing of the AS

The AS entity is responsible for performing and managing services. The ISC interface is the appropriate access point for testing.
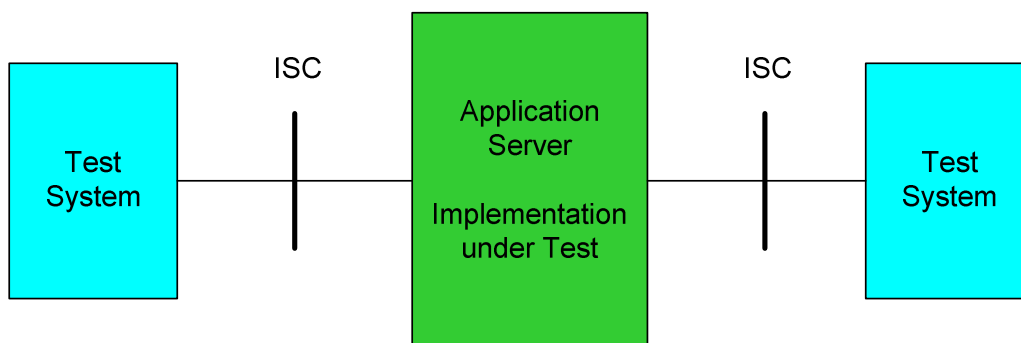
Figure 4.1.1-1: Applicable interface to test AS functionalities

If the ISC interface is not accessible it is also possible to perform the test of the AS using any NNI (Mw, Mw, Mx) interface (see figure 4.1.1-2). In case only the Gm interface is accessible this interface can be used instead for testing, but the verification of all requirements may not be possible.
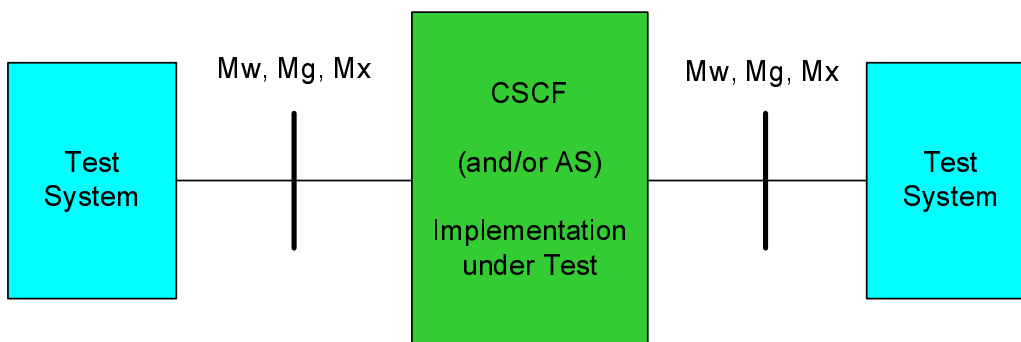
Figure 4.1.1-2: Applicable interfaces for tests using a (generic) NNI interface

4.1.2 Testing of the UE

There are special clauses in the protocol standard describing the procedures that apply at the originating and terminating user equipment. Therefore the test configuration in figure 4.1.2-1 has been chosen.
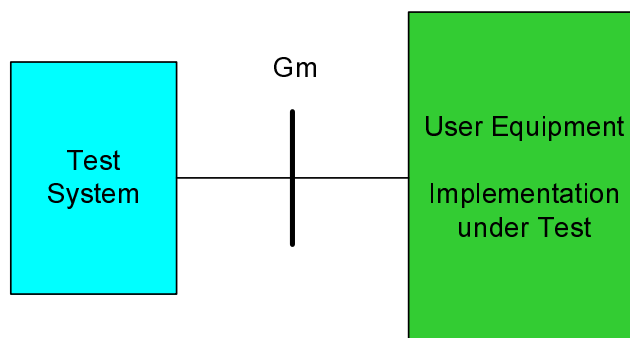
Figure 4.1.2-1: Applicable configuration to test UE functionalities

5   Test Purposes (TP)

5.1   Introduction

For each test requirement a TP is defined.

5.1.1   TP naming convention

TPs are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite and whether it applies to the network or the user (see table 1).

Table 1: TP identifier naming convention scheme

Identifier:		**<ss>_<iut><group>_<nnn>**	
<ss>	=	supplementary service:	e.g. "CUG"
<iut>	=	type of IUT:	U User equipment N Network entity
<group>	=	group	2 digit field representing group reference according to TSS
<nnn>	=	sequential number	(001-999)

5.1.2   Test strategy

As the base standard TS 124 654 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification TS 101 597-1 [2]. The criteria applied include the following:

- Whether or not a test case can be built from the TP is not considered.

5.2 Test Purposes for Closed User Group (CUG)

5.2.1 Actions at the originating UA

TSS CUG/originating_UE	TP CUG_U01_001	CUG reference clause 4.5.2.1	Selection expression PICS 4.5.1/1 AND PICS 4.6.1/1
Test purpose *Explicit request of CUG service Outgoing Access.* The originating user requests explicitly the CUG service by including in the initial INVITE an xml CUGrequestType containing the preferred CUG and an outgoing access request set to "true".			
Preconditions:			
SIP header values: INVITE: `<cug>` `<cugCallOperation>` `<outgoingAccessRequest>TRUE</outgoingAccessRequest>` `<cugIndex>[PIXIT]</cugIndex>` `</cugCallOperation>` `</cug>`			

Comments:

User equipment		Test equipment
	➔	INVITE requesting CUG explicitly

TSS CUG/originating_UE	TP CUG_U01_002	CUG reference clause 4.5.2.1	Selection expression PICS 4.5.1/1 AND PICS 4.6.1/1
Test purpose *Explicit request of CUG service without Outgoing Access.* The originating user requests explicitly the CUG service by including in the initial INVITE an xml CUGrequestType containing the preferred CUG and an outgoing access request set to "false".			
Preconditions:			
SIP header values: INVITE: `<cug>` `<cugCallOperation>` `<outgoingAccessRequest>FALSE</outgoingAccessRequest>` `<cugIndex>[PIXIT]</cugIndex>` `</cugCallOperation>` `</cug>`			

Comments:

User equipment		Test equipment
	➔	INVITE requesting CUG explicitly

TSS CUG/originating_UE	TP CUG_U01_003	CUG reference clause 4.5.2.1	Selection expression PICS 4.5.1/1 AND PICS 4.6.1/1 AND PICS 4.6.1/2
Test purpose *Explicit request of CUG service without CUG index.* The originating user requests explicitly the CUG service by including in the initial INVITE an xml CUGrequestType containing the preferred CUG and no 'cugIndex' element is present.			
Preconditions:			

SIP header values:
INVITE:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[PIXIT]</cugIndex>
   </cugCallOperation>
</cug>			

Comments:			
User equipment		**Test equipment**	
	➔	INVITE requesting CUG explicitly	

5.2.2　Actions at the AS of the originating User

5.2.2.1　CUG without preference

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_001	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1

Test purpose
CUG without preference: INVITE with CUG index, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
       registered CUGIndex,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).			

Preconditions: Originating user has subscribed to CUG
   Options for registered CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed			

SIP header values:
INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
 	
INVITE2:
Content-Disposition: …;handling=required
<cug>
   <networkIndicator >[PIXIT]</ networkIndicator>
   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>			

Comments:			
Test equipment (Gm)		**AS**	**Test equipment (ISC, Mw)**
INVITE1	➔	➔	INVITE2

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1 AND PICS 4.7.1/10

Test purpose

CUG without preference + OCB: INVITE with CUG index, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
      registered CUGIndex,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG
   Options for registered CUG index:
   Intra CUG restrictions: OCB
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed

SIP header values:

INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS
INVITE	→	
603 Decline	←	
ACK	→	

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1

Test purpose

CUG without preference: INVITE with unallocated CUG index, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
      unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.

Preconditions: Originating user has subscribed to CUG
   Options for registered CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed

SIP header values:

INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS
INVITE	→	
403 Forbidden	←	
ACK	→	

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_004	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1

Test purpose
CUG without preference: INVITE with CUG index and outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).

Preconditions: Originating user has subscribed to CUG
  Options for registered CUG index:
Intra CUG restrictions: None designated (-OCB)
  Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed

SIP header values:
INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

INVITE2:
Content-Disposition: …;handling=required
<cug>
   <networkIndicator >[registered CUG index]</ networkIndicator>
   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_005	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1 AND PICS 4.7.1/10

Test purpose
CUG without preference +OCB: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
Intra CUG restrictions: OCB
    Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed

SIP header values:
INVITE:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS
INVITE	→	
603 Decline	←	
ACK	→	

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_006	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1

Test purpose
CUG without preference: INVITE with unallocated CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed

SIP header values:
INVITE:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS
INVITE	→	
403 Forbidden	←	
ACK	→	

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_007	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1

Test purpose
CUG without preference: INVITE without CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
     outgoingAccessRequest = false,
rejects the INVITE request by sending a 403 Forbidden due to missing CUGindex.			

Preconditions: Originating user has subscribed to CUG
  Options for registered CUG index:
  Intra CUG restrictions: None designated (-OCB)
  Options for public identity in use:
  Preferential CUG: None designated
  Outgoing access: not allowed			

SIP header values:
INVITE:
<cug>
  <cugCallOperation>
    <outgoingAccessRequest>FALSE</outgoingAccessRequest>
  </cugCallOperation>
</cug>			

Comments: **Test equipment (Gm)** **AS** INVITE ➔ 403 Forbidden ➔ ACK ➔			

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_008	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1

Test purpose
CUG without preference: INVITE without CUG index and with outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
     outgoingAccessRequest = true,
rejects the INVITE request by sending a 403 Forbidden due to missing CUGindex.			

Preconditions: Originating user has subscribed to CUG
  Options for registered CUG index:
  Intra CUG restrictions: None designated (-OCB)
  Options for public identity in use:
  Preferential CUG: None designated
  Outgoing access: not allowed			

SIP header values:
INVITE:
<cug>
  <cugCallOperation>
    <outgoingAccessRequest>TRUE</outgoingAccessRequest>
  </cugCallOperation>
</cug>			

Comments: **Test equipment (Gm)** **AS** INVITE ➔ 403 Forbidden ➔ ACK ➔			

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_009	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1
Test purpose *CUG without preference: INVITE for non-CUG communication, unsuccessful.* Ensure that the SUT on receipt of an INVITE request containing no xml element cug, rejects the INVITE request by sending a 403 Forbidden due to missing cug XML element.			

Preconditions: Originating user has subscribed to CUG
   Options for registered CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed			

SIP header values: INVITE: No xml element <cug>			
Comments: **Test equipment (Gm)** **AS** INVITE → 403 Forbidden ← ACK →			

5.2.2.2 CUG without preference + OAE

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_001	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE: INVITE with CUG index, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
      registered CUGIndex,
forwards an INVITE request containing an xml element cug with
   cugInterlockBinaryCode related to registered CUG index,
   networkIndicator (PIXIT) and
   cugCommunicationIndicator set to "11" (CUG without outgoing access).			

Preconditions: Originating user has subscribed to CUG
   Options for registered CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: allowed per communication			

SIP header values: INVITE1: <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug> INVITE2: Content-Disposition: …;handling=required <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>			
Comments: **Test equipment (Gm)** **AS** **Test equipment (ISC, Mw)** INVITE1 → → INVITE2			

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2 AND PICS 4.7.1/10

Test purpose
CUG without preference + OAE + OCB: INVITE with CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        registered CUGIndex,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG
Options for registered CUG index: Intra CUG restrictions: OCB **Options for public identity in use:** Preferential CUG: None designated Outgoing access: allowed per communication

SIP header values:
INVITE:
```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>FALSE</outgoingAccessRequest>
        <cugIndex>[registered CUG index]</cugIndex>
    </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS
INVITE	→	
603 Decline	←	
ACK	→	

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE: INVITE with unallocated CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.

Preconditions: Originating user has subscribed to CUG
Options for registered CUG index: Intra CUG restrictions: None designated (-OCB) **Options for public identity in use:** Preferential CUG: None designated Outgoing access: allowed per communication

SIP header values:
INVITE:
```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>FALSE</outgoingAccessRequest>
        <cugIndex>[unregistered CUG]</cugIndex>
    </cugCallOperation>
</cug>
```

403 Forbidden
    Reason: …

Comments:

Test equipment (Gm)		AS
INVITE	→	
403 Forbidden	←	
ACK	→	

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_004	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE: INVITE with CUG index and outgoingAccessRequest = true, successful non CUG
communication.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "10" (CUG with outgoing access).			

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: None designated
Outgoing access: allowed per communication			

SIP header values: INVITE1: <cug> <cugCallOperation> <outgoingAccessRequest>TRUE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug> INVITE2: <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>10</cugCommunicationIndicator> </cug>			
Comments: **Test equipment (Gm)** **AS** **Test equipment (ISC, Mw)** INVITE1 → → INVITE2			

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_005	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE + OCB within CUG: INVITE with CUG index and outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards the INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
    Intra CUG restrictions: **OCB** within CUG
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: allowed per communication

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
       <outgoingAccessRequest>TRUE</outgoingAccessRequest>
       <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

INVITE2:
No xml element <cug>

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_006	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE: INVITE with unallocated CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: allowed per communication

SIP header values:
INVITE:
```
<cug>
   <cugCallOperation>
       <outgoingAccessRequest>TRUE</outgoingAccessRequest>
       <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>
```

403 Forbidden
    Reason: …

Comments:

Test equipment (Gm)		AS
INVITE	→	
403 Forbidden	←	
ACK	→	

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_007	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE: INVITE without CUG index, unsuccessful outgoing access not allowed.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = false,
rejects the INVITE request by sending a 403 Forbidden due to outgoing access not allowed.			

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: None designated
Outgoing access: allowed per communication			

SIP header values:
INVITE:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
   </cugCallOperation>
</cug>
 	
403 Forbidden
   Reason: …			

Comments: **Test equipment (Gm)** **AS** INVITE ➔ 403 Forbidden ← ACK ➔			

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_008	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE: INVITE without CUG index and with outgoingAccessRequest = true, successful outgoing access allowed.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true,
forwards the INVITE request containing no xml element cug due to outgoing access allowed.			

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: None designated
Outgoing access: allowed per communication			

SIP header values:
INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
   </cugCallOperation>
</cug>
 	
INVITE2:
No xml element <cug>			

Comments: **Test equipment (Gm)** **AS** **Test equipment (ISC, Mw)** INVITE1 ➔ ➔ INVITE2			

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/CUG without preference + OAE	CUG_N02_009	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/2

Test purpose
CUG without preference + OAE: INVITE for non-CUG communication, unsuccessful. Ensure that the SUT on receipt of an INVITE request containing no xml element cug, rejects the INVITE request by sending a 403 Forbidden.

Preconditions: Originating user has subscribed to CUG
Options for registered CUG index: Intra CUG restrictions: None designated (-OCB) **Options for public identity in use:** Preferential CUG: None designated Outgoing access: allowed per communication

SIP header values:
INVITE: No xml element <cug>
403 Forbidden   Reason: …

Comments:

Test equipment (ISC)		**AS**
INVITE	➔	
403 Forbidden	←	
ACK	➔	

5.2.2.3   CUG without preference + OAI

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/CUG without preference + OAI	CUG_N03_001	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI: INVITE with CUG index, successful. Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, forwards an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "10" (CUG with outgoing access).

Preconditions: Originating user has subscribed to CUG
Options for registered CUG index: Intra CUG restrictions: None designated (-OCB) **Options for public identity in use:** Preferential CUG: None designated Outgoing access: allowed permanent

SIP header values:
INVITE1:
<cug>   <cugCallOperation>   <outgoingAccessRequest>FALSE</outgoingAccessRequest>   <cugIndex>[registered CUG index]</cugIndex>   </cugCallOperation> </cug>
INVITE2:
<cug>   <networkIndicator >[PIXIT]</ networkIndicator>   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>   <cugCommunicationIndicator>10</cugCommunicationIndicator> </cug>

Comments:

Test equipment (Gm)		**AS**		**Test equipment (ISC, Mw)**
INVITE1	➔		➔	INVITE2

TSS CUG/originating_AS/CUG without preference + OAI	TP CUG_N03_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI and OCB within CUG*: INVITE with CUG index, successful.*
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
       registered CUGIndex,
forwards an INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
    Intra CUG restrictions: OCB within CUG
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: allowed permanent

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

INVITE2:
No xml element <cug>

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	➔		➔	INVITE2

TSS CUG/originating_AS/CUG without preference + OAI	TP CUG_N03_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI: INVITE with unregistered CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
       unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: allowed permanent

SIP header values:
INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>
```

403 Forbidden
   Reason: …

Comments:

Test equipment (Gm)		AS
INVITE	➔	
403 Forbidden	⬅	
ACK	➔	

TSS CUG/originating_AS/CUG without preference + OAI	TP CUG_N03_004	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose

CUG without preference + OAI: INVITE with CUG index and outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards the INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "10" (CUG with outgoing access).

Preconditions: Originating user has subscribed to CUG
    Options for registered CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: None designated
Outgoing access: allowed permanent

SIP header values:

INVITE1:
```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>TRUE</outgoingAccessRequest>
        <cugIndex>[ registered CUG]</cugIndex>
    </cugCallOperation>
</cug>
```

INVITE2:
```
<cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>
```

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/CUG without preference + OAI	CUG_N03_005	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI and OCB within CUG*: INVITE with CUG index and outgoingAccessRequest = true, successful.*
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards an INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
Options for registered CUG index:
Intra CUG restrictions: OCB within CUG
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: allowed permanent

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

INVITE2:
No xml element <cug>

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	➜		➜	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/CUG without preference + OAI	CUG_N03_006	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI: INVITE with unregistered CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.

Preconditions: Originating user has subscribed to CUG
Options for registered CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: allowed permanent

SIP header values:
INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>
```

403 Forbidden
    Reason: …

Comments:

Test equipment (Gm)		AS
INVITE	➜	
403 Forbidden	⬅	
ACK	➜	

TSS CUG/originating_AS/CUG without preference + OAI	TP CUG_N03_007	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI: INVITE without CUG index, successful outgoing access allowed.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
     outgoingAccessRequest = false,
forwards an INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
   Options for registered CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: allowed permanent

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
   </cugCallOperation>
</cug>
```

INVITE2:
No xml element <cug>

Comments:

Test equipment (Gm)		**AS**		**Test equipment (ISC, Mw)**
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG without preference + OAI	TP CUG_N03_008	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI: INVITE without CUG index and with outgoingAccessRequest = true, successful outgoing access allowed.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
     outgoingAccessRequest = true,
forwards an INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
   Options for registered CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: allowed permanent

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
   </cugCallOperation>
</cug>
```

INVITE2:
No xml element <cug>

Comments:

Test equipment (Gm)		**AS**		**Test equipment (ISC, Mw)**
INVITE1	→		→	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/CUG without preference + OAI	CUG_N03_009	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose
CUG without preference + OAI: INVITE for non-CUG communication, successful. Ensure that the SUT on receipt of an INVITE request containing no xml element cug, forwards an INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
Options for registered CUG index: Intra CUG restrictions: None designated (-OCB) **Options for public identity in use:** Preferential CUG: None designated Outgoing access: allowed permanent

SIP header values:
INVITE1: No xml element <cug> INVITE2: No xml element <cug>

Comments:			
Test equipment (Gm)		**AS**	**Test equipment (ISC, Mw)**
INVITE1	→	→	INVITE2

5.2.2.4 CUG with preference

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/CUG with preference	CUG_N04_001	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/4

Test purpose

CUG with preference: INVITE with CUG index, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        registered CUGIndex,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).

Preconditions: Originating user has subscribed to CUG
Options for registered and preferred CUG index: Intra CUG restrictions: None designated (-OCB) **Options for public identity in use:** Preferential CUG: registered CUG Outgoing access: not allowed

SIP header values:
INVITE1: <cug>   <cugCallOperation>   <outgoingAccessRequest>FALSE</outgoingAccessRequest>   <cugIndex>[registered CUG index]</cugIndex>   </cugCallOperation> </cug> INVITE2: Content-Disposition: …;handling=required <cug>   <networkIndicator >[PIXIT]</ networkIndicator>   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>   <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>

Comments:			
Test equipment (Gm)		**AS**	**Test equipment (ISC, Mw)**
INVITE1	→	→	INVITE2

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4 AND PICS 4.7.1/10

Test purpose
CUG with preference + OCB: INVITE with CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
     registered CUGIndex,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
Intra CUG restrictions: OCB
   Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: not allowed

SIP header values:
INVITE:
<cug>
   <cugCallOperation>
     <outgoingAccessRequest>FALSE</outgoingAccessRequest>
     <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS
INVITE	→	
603 Decline	←	
ACK	→	

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4

Test purpose
CUG with preference: INVITE with unregistered CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
     unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.

Preconditions: Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: not allowed

SIP header values:
INVITE:
<cug>
   <cugCallOperation>
     <outgoingAccessRequest>FALSE</outgoingAccessRequest>
     <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>

403 Forbidden
   Reason: …

Comments:

Test equipment (Gm)		AS
INVITE	→	
403 Forbidden	←	
ACK	→	

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_004	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4

Test purpose
CUG with preference: INVITE with CUG index and outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).			

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: not allowed			

SIP header values: INVITE1: <cug> <cugCallOperation> <outgoingAccessRequest>TRUE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug> INVITE2: Content-Disposition: …;handling=required <cug> <networkIndicator >[registered CUG index]</ networkIndicator> <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>			
Comments:			

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_005	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4 AND PICS 4.7.1/10

Test purpose
CUG with preference +OCB: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG

    Options for registered and preferred CUG index:
Intra CUG restrictions: OCB
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: not allowed

SIP header values:
INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

Comments:
Test equipment (Gm)   **AS**
INVITE   →
603 Decline   ←
ACK   →

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_006	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4

Test purpose
CUG with preference: INVITE with unregistered CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.

Preconditions: Originating user has subscribed to CUG

    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: not allowed

SIP header values:
INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>

403 Forbidden
   Reason: …
```

Comments:
Test equipment (Gm)   **AS**
INVITE   →
403 Forbidden   ←
ACK   →

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_007	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4

Test purpose
CUG with preference: INVITE without CUG index, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = false,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to preferred CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).			

Preconditions: Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: not allowed			

SIP header values:
INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
   </cugCallOperation>
</cug>
 	
INVITE2:
Content-Disposition: …;handling=required
<cug>
   <networkIndicator >[registered CUG index]</ networkIndicator>
   <cugInterlockBinaryCode>[related to preferred CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>			

Comments: **Test equipment (Gm)** **AS** **Test equipment (ISC, Mw)** INVITE1 ➔ ➔ INVITE2			

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_008	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4
Test purpose *CUG with preference: INVITE without CUG index and with outgoingAccessRequest = true, unsuccessful.* Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true, rejects the INVITE request by sending a 403 Forbidden due to outgoing access not allowed.			
Preconditions: Originating user has subscribed to CUG **Options for registered and preferred CUG index:** Intra CUG restrictions: None designated **Options for public identity in use:** Preferential CUG: registered CUG Outgoing access: not allowed			
SIP header values: INVITE: \<cug\> \<cugCallOperation\> \<outgoingAccessRequest\>TRUE\</outgoingAccessRequest\> \</cugCallOperation\> \</cug\> 403 Forbidden Reason: …			
Comments: **Test equipment (Gm)** **AS** INVITE → 403 Forbidden ← ACK →			

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_009	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4
Test purpose *CUG with preference: INVITE for non-CUG communication, successful.* Ensure that the SUT on receipt of an INVITE request containing no xml element cug, forwards an INVITE request containing an xml element cug with cugInterlockBinaryCode related to preferred CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "11" (CUG without outgoing access).			
Preconditions: Originating user has subscribed to CUG **Options for registered and preferred CUG index:** Intra CUG restrictions: None designated (-OCB) **Options for public identity in use:** Preferential CUG: registered CUG Outgoing access: not allowed			
SIP header values: INVITE1: No xml element \<cug\> INVITE2: Content-Disposition: …;handling=required \<cug\> \<networkIndicator \>[registered CUG index]\</ networkIndicator\> \<cugInterlockBinaryCode\>[related to preferred CUG index]\</cugInterlockBinaryCode\> \<cugCommunicationIndicator\>11\</cugCommunicationIndicator\> \</cug\>			
Comments: **Test equipment (Gm)** **AS** **Test equipment (ISC, Mw)** INVITE1 → → INVITE2			

5.2.2.5 CUG with preference + OAE

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_001	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose
CUG with preference + OAE: INVITE with CUG index, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        registered CUGIndex,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).			

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication			

SIP header values:
INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
 	
INVITE2:
Content-Disposition: …;handling=required
<cug>
   <networkIndicator >[PIXIT]</ networkIndicator>
   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>			

Comments:			
Test equipment (Gm) INVITE1	**AS** ➜	**Test equipment (ISC, Mw)** ➜ INVITE2	

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5 AND PICS 4.7.1/10

Test purpose

CUG with preference + OAE + OCB: INVITE with CUG index, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
      registered CUGIndex,
rejects the INVITE request by sending a 603 Decline to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: OCB
Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication

SIP header values:

INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

Comments:
Test equipment (Gm)   AS
INVITE   →
603 Decline   ←
ACK   →

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose

CUG with preference + OAE: INVITE with unregistered CUG index, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
      unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.

Preconditions: Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication

SIP header values:

INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>
```

403 Forbidden
   Reason: …

Comments:
Test equipment (Gm)   AS
INVITE   →
403 Forbidden   ←
ACK   →

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_004	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose

CUG with preference + OAE: INVITE with CUG index and outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "10" (CUG with outgoing access).

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication

SIP header values:
INVITE1:
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>TRUE</outgoingAccessRequest>
        <cugIndex>[registered CUG index]</cugIndex>
    </cugCallOperation>
</cug>

INVITE2:
<cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_005	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose
CUG with preference + OAE + OCB within CUG*: INVITE with CUG index and outgoingAccessRequest = true, successful.*
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards an INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: OCB within CUG
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

INVITE2:
No xml element <cug>

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	➔		➔	INVITE2

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_006	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose
CUG with preference + OAE: INVITE with unregistered CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication

SIP header values:
INVITE:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[unregistered CUG]</cugIndex>
   </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS
INVITE	➔	
403 Forbidden	⬅	
ACK	➔	

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_007	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose
CUG with preference + OAE: INVITE without CUG index and with outgoingAccessRequest = false, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = false,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to preferred CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication

SIP header values:
INVITE1:
```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>FALSE</outgoingAccessRequest>
    </cugCallOperation>
</cug>
```

INVITE2:
Content-Disposition: …;handling=required
```
<cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[related to preferred CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>
```

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_008	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose
CUG with preference + OAE: INVITE without CUG index and with outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true,
forwards an INVITE request containing no xml element cug.

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed per communication

SIP header values:
INVITE1:
```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>TRUE</outgoingAccessRequest>
    </cugCallOperation>
</cug>
```

INVITE2:
No xml element <cug>

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_009	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5

Test purpose
CUG with preference + OAE: INVITE for non-CUG communication, successful.
Ensure that the SUT on receipt of an INVITE request containing no xml element cug,
returns an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to preferred CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access).			

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: registered CUG
    Outgoing access: allowed per communication			

SIP header values: INVITE1: No xml element <cug> INVITE2: Content-Disposition: …;handling=required <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to preferred CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>			
Comments: **Test equipment (Gm)** **AS** **Test equipment (ISC, Mw)** INVITE1 ➔ ➔ INVITE2			

5.2.2.6 CUG with preference + OAI

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_001	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6

Test purpose
CUG with preference + OAI: INVITE with CUG index, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
   cugCallOperation containing
     registered CUGIndex,
forwards an INVITE request containing an xml element cug with
   cugInterlockBinaryCode related to registered CUG index,
   networkIndicator (PIXIT) and
   cugCommunicationIndicator set to "10" (CUG with outgoing access).			

Preconditions: Originating user has subscribed to CUG
  Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
  Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent			

SIP header values:
INVITE1:
\<cug>
   \<cugCallOperation>
      \<outgoingAccessRequest>FALSE\</outgoingAccessRequest>
      \<cugIndex>[registered CUG index]\</cugIndex>
   \</cugCallOperation>
\</cug>
 	
INVITE2:
\<cug>
   \<networkIndicator >[PIXIT]\</ networkIndicator>
   \<cugInterlockBinaryCode>[related to registered CUG index]\</cugInterlockBinaryCode>
   \<cugCommunicationIndicator>10\</cugCommunicationIndicator>
\</cug>			

Comments:			
Test equipment (Gm)	**AS**	**Test equipment (ISC, Mw)**	
INVITE1	→	→ INVITE2	

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6 AND PICS 4.7.1/10

Test purpose
CUG with preference + OAI and OCB: INVITE with CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        registered CUGIndex,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.			

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: OCB
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent			

SIP header values:
INVITE:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>			

Comments: **Test equipment (Gm)** **AS** INVITE → 603 Decline ← ACK →			

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6

Test purpose
CUG with preference + OAI and OCB within CUG: INVITE with CUG index, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        registered CUGIndex,
forwards an INVITE request containing no xml element cug is present			

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: OCB within CUG
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent			

SIP header values:
INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
 	
INVITE2:
No xml element <cug>			

Comments: **Test equipment (Gm)** **AS** INVITE1 → → INVITE2			

TSS		TP	CUG reference	Selection expression
CUG/originating_AS/CUG with preference + OAI		CUG_N06_004	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/6

Test purpose
CUG with preference + OAI: INVITE with unregistered CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
cugCallOperation containing
unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.

Preconditions: Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent

SIP header values:
INVITE:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[unregistered CUG]</cugIndex>
</cugCallOperation>
</cug>
403 Forbidden
Reason: …

Comments:
Test equipment (Gm)   **AS**
INVITE   →
403 Forbidden   ←
ACK   →

TSS		TP	CUG reference	Selection expression
CUG/originating_AS/CUG with preference + OAI		CUG_N06_005	clause 4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/6

Test purpose
CUG with preference + OAI: INVITE with CUG index and outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
cugCallOperation containing
outgoingAccessRequest = true and
registered CUGIndex,
forwards an INVITE request containing an xml element cug with
cugInterlockBinaryCode related to registered CUG index,
networkIndicator (PIXIT) and
cugCommunicationIndicator set to "10" (CUG with outgoing access).

Preconditions: Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent

SIP header values:
INVITE1:
<cug>
<cugCallOperation>
<outgoingAccessRequest>TRUE</outgoingAccessRequest>
<cugIndex>[registered CUG]</cugIndex>
</cugCallOperation>
</cug>
INVITE2:
<cug>
<networkIndicator >[PIXIT]</ networkIndicator>
<cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
<cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>

Comments:			
Test equipment (Gm)		**AS**	**Test equipment (ISC, Mw)**
INVITE1	→	→	INVITE2

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_006	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6 AND PICS 4.7.1/10

Test purpose
CUG with preference + OAI and OCB: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: OCB
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[registered CUG]</cugIndex>
   </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS	Test equipment (ISC, Mw)
INVITE	➔		
603 Decline	⬅		
ACK	➔		

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_007	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6

Test purpose
CUG with preference + OAI and OCB within CUG: INVITE with CUG index and outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        registered CUGIndex,
forwards an INVITE request containing no xml element cug is present

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: OCB within CUG
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent

SIP header values:
INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>TRUE</outgoingAccessRequest>
      <cugIndex>[registered CUG]</cugIndex>
   </cugCallOperation>
</cug>

INVITE2:
No xml element <cug>
```

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	➔		➔	INVITE2

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_008	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6

Test purpose
CUG with preference + OAI: INVITE with unregistered CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true and
        unregistered CUGIndex,
rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.			

Preconditions: Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent			

SIP header values: INVITE: <cug> <cugCallOperation> <outgoingAccessRequest>TRUE</outgoingAccessRequest> <cugIndex>[unregistered CUG]</cugIndex> </cugCallOperation> </cug> 403 Forbidden Reason: …			
Comments: **Test equipment (Gm)** **AS** INVITE → 403 Forbidden ← ACK →			

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_009	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6

Test purpose
CUG with preference + OAI: INVITE without CUG index and with outgoingAccessRequest = true, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true,
forwards an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to preferred CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "10" (CUG with outgoing access).

Preconditions: Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent

SIP header values:
INVITE1:
```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>TRUE</outgoingAccessRequest>
    </cugCallOperation>
</cug>

INVITE2:
<cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[related to preferred CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>
```

Comments:

Test equipment (Gm)		AS		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2

TSS CUG/originating_AS/CUG with preference + OAI	TP CUG_N06_010	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/6 AND PICS 4.7.1/10

Test purpose
CUG with preference + OAI and OCB: INVITE without CUG index and with outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugCallOperation containing
        outgoingAccessRequest = true,
rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.

Preconditions: Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: OCB
Options for public identity in use:
Preferential CUG: registered CUG
Outgoing access: allowed permanent

SIP header values:
INVITE:
```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>TRUE</outgoingAccessRequest>
    </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS
INVITE	→	
603 Decline	←	
ACK	→	

ETSI

5.2.2.7   No CUG

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_001	clause 4.5.2.4	PICS 4.5.1/2

Test purpose
No CUG: INVITE with CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
cugCallOperation containing
any CUGIndex,
rejects the INVITE request by sending a 403 Forbidden.

Preconditions: Originating user has **not** subscribed to CUG

SIP header values:
INVITE:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[any CUG index]</cugIndex>
</cugCallOperation>
</cug>
403 Forbidden
Reason: …

Comments:
Test equipment (Gm)   **AS**
INVITE   ➔
403 Forbidden   ←
ACK   ➔

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_002	clause 4.5.2.4	PICS 4.5.1/2

Test purpose
No CUG: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
cugCallOperation containing
outgoingAccessRequest = true and
any CUGIndex,
rejects the INVITE request by sending a 403 Forbidden.

Preconditions: Originating user has **not** subscribed to CUG

SIP header values:
INVITE:
<cug>
<cugCallOperation>
<outgoingAccessRequest>TRUE</outgoingAccessRequest>
<cugIndex>[any CUG index]</cugIndex>
</cugCallOperation>
</cug>
403 Forbidden
Reason: …

Comments:
Test equipment (Gm)   **AS**
INVITE   ➔
403 Forbidden   ←
ACK   ➔

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_003	clause 4.5.2.4	PICS 4.5.1/2

Test purpose
No CUG: INVITE without CUG index, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
cugCallOperation containing
outgoingAccessRequest = false,
rejects the INVITE request by sending a 403 Forbidden.

Preconditions: Originating user has **not** subscribed to CUG

SIP header values:
INVITE:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
</cugCallOperation>
</cug>
403 Forbidden
Reason: …

Comments:
Test equipment (Gm)   **AS**
INVITE   →
403 Forbidden   ←
ACK   →

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_004	clause 4.5.2.4	PICS 4.5.1/2

Test purpose
No CUG: INVITE without CUG index and with outgoingAccessRequest = true, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
cugCallOperation containing
outgoingAccessRequest = true,
rejects the INVITE request by sending a 403 Forbidden.

Preconditions: Originating user has **not** subscribed to CUG

SIP header values:
INVITE:
<cug>
<cugCallOperation>
<outgoingAccessRequest>TRUE</outgoingAccessRequest>
</cugCallOperation>
</cug>
403 Forbidden
Reason: …

Comments:
Test equipment (Gm)   **AS**
INVITE   →
403 Forbidden   ←
ACK   →

5.2.3   Actions at the AS of the terminating user

5.2.3.1   CUG with OA not allowed

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_001	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

CUG with IA not allowed: INVITE with interlock code matching registered CUG index and without outgoing access, successful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
  cugInterlockBinaryCode related to registered CUG index,
  networkIndicator (PIXIT) and
  cugCommunicationIndicator set to "11" (CUG without outgoing access),
forwards an INVITE request containing no xml element cug.

Preconditions: Terminating user has subscribed to CUG
  Options for registered CUG index:
  Intra CUG restrictions: None designated (-ICB)
  Options for public identity in use:
  Incoming access: not allowed

SIP header values:

INVITE1:
<cug>
  <networkIndicator >[PIXIT]</ networkIndicator>
  <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
  <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>

INVITE2:
No XML <cug> element

Comments:

Test equipment (ISC, Mw)		AS		Test equipment (Gm)
INVITE1	➔		➔	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_002	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

CUG with IA not allowed and ICB: INVITE with interlock code matching registered CUG index and without outgoing access, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
  cugInterlockBinaryCode related to registered CUG index,
  networkIndicator (PIXIT) and
  cugCommunicationIndicator set to "11" (CUG without outgoing access),
rejects the INVITE request by sending a 603 Decline due to incoming calls barred.

Preconditions: Terminating user has subscribed to CUG
  Options for registered CUG index:
  Intra CUG restrictions: ICB
  Options for public identity in use:
  Incoming access: not allowed

SIP header values:

INVITE:
<cug>
  <networkIndicator >[PIXIT]</ networkIndicator>
  <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
  <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>

Comments:

Test equipment (ISC, Mw)		AS
INVITE	➔	
603 Decline	⬅	
ACK	➔	

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_003	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

CUG with IA not allowed: INVITE with interlock code not matching registered CUG index and without outgoing access, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode not related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access),
rejects the INVITE request by sending a 403 Forbidden due to not matched CUG index.

Preconditions: Terminating user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed

SIP header values:
INVITE:
<cug>
   <networkIndicator >[PIXIT]</ networkIndicator>
   <cugInterlockBinaryCode>[not related to registered CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>

Comments:

Test equipment (ISC, Mw)		**AS**
INVITE	→	
403 Forbidden	←	
ACK	→	

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_004	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

CUG with IA allowed: INVITE with interlock code matching registered CUG index and without outgoing access, successful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access),
forwards an INVITE request containing no xml element cug.

Preconditions: Terminating user has subscribed to CUG
Options for registered CUG index:
Intra CUG restrictions: None designated (-ICB)
Options for public identity in use:
Incoming access: allowed

SIP header values:
INVITE1:
<cug>
   <networkIndicator >[PIXIT]</ networkIndicator>
   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>

INVITE2:
No XML <cug> element

Comments:

Test equipment (ISC, Mw)		**AS**		**Test equipment (Gm)**
INVITE1	→		→	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_005	clause 4.5.2.10	PICS 4.5.1/2

Test purpose
CUG with IA allowed and ICB: INVITE with interlock code matching registered CUG index and without outgoing access, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access),
rejects the INVITE request by sending a 603 Decline due to incoming calls barred.

Preconditions: Terminating user has subscribed to CUG
Options for registered CUG index:
Intra CUG restrictions: ICB
Options for public identity in use:
Incoming access: allowed

SIP header values:
INVITE:
<cug>
<networkIndicator >[PIXIT]</ networkIndicator>
<cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
<cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>

Comments:
Test equipment (ISC, Mw)   **AS**
INVITE   →
603 Decline   ←
ACK   →

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_006	clause 4.5.2.10	PICS 4.5.1/2

Test purpose
CUG with IA allowed: INVITE with interlock code not matching registered CUG index and without outgoing access, unsuccessful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode not related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access),
rejects the INVITE request by sending a 403 Forbidden due to not matched CUG index.

Preconditions: Terminating user has subscribed to CUG
Options for public identity in use:
Incoming access: allowed

SIP header values:
INVITE:
<cug>
<networkIndicator >[PIXIT]</ networkIndicator>
<cugInterlockBinaryCode>[not related to registered CUG index]</cugInterlockBinaryCode>
<cugCommunicationIndicator>11</cugCommunicationIndicator>
</cug>

Comments:
Test equipment (ISC, Mw)   **AS**
INVITE   →
403 Forbidden   ←
ACK   →

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_007	clause 4.5.2.10	PICS 4.5.1/2
Test purpose			

No CUG: INVITE with interlock code and without outgoing access, unsuccessful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "11" (CUG without outgoing access),
rejects the INVITE request by sending a 403 Forbidden due to 'Outgoing access not allowed'.			

Preconditions: Terminating user has not subscribed to CUG			
SIP header values: INVITE: <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to any CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>			
Comments: **Test equipment (ISC, Mw)** **AS** INVITE → 403 Forbidden ← ACK →			

5.2.3.2 CUG with OA allowed

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_001	clause 4.5.2.10	PICS 4.5.1/2
Test purpose			

CUG with IA not allowed: INVITE with interlock code matching registered CUG index and with outgoing access, successful.
Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "10" (CUG with outgoing access),
forwards an INVITE request containing no xml element cug.			

Preconditions: Terminating user has subscribed to CUG
    Options for registered CUG index:
    Intra CUG restrictions: None designated (-ICB)
    Options for public identity in use:
    Incoming access: not allowed			

SIP header values: INVITE1: <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>10</cugCommunicationIndicator> </cug> INVITE2: No XML <cug> element			
Comments: **Test equipment (ISC, Mw)** **AS** **Test equipment (Gm)** INVITE1 → → INVITE2			

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_002	clause 4.5.2.10	PICS 4.5.1/2
Test purpose			

CUG with IA not allowed and ICB: INVITE with interlock code matching registered CUG index and with outgoing access, unsuccessful.
 Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
     cugInterlockBinaryCode related to registered CUG index,
     networkIndicator (PIXIT) and
     cugCommunicationIndicator set to "10" (CUG with outgoing access),
 rejects the INVITE request by sending a 603 Decline due to incoming calls barred.			

Preconditions: Terminating user has subscribed to CUG
    Options for registered CUG index:
 Intra CUG restrictions: ICB
    Options for public identity in use:
 Incoming access: not allowed			

SIP header values:
 INVITE:
 <cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>10</cugCommunicationIndicator>
 </cug>			

Comments:			
Test equipment (ISC, Mw) **AS** INVITE → 603 Decline ← ACK →			

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_003	clause 4.5.2.10	PICS 4.5.1/2
Test purpose			

CUG with IA not allowed: INVITE with interlock code not matching registered CUG index and with outgoing access, unsuccessful.
 Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
     cugInterlockBinaryCode not related to registered CUG index,
     networkIndicator (PIXIT) and
     cugCommunicationIndicator set to "10" (CUG with outgoing access),
 rejects the INVITE request by sending a 403 Forbidden due to not matched CUG index.			

Preconditions: Terminating user has subscribed to CUG **Options for public identity in use:** Incoming access: not allowed			

SIP header values:
 INVITE:
 <cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[not related to registered CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>10</cugCommunicationIndicator>
 </cug>			

Comments:			
Test equipment (ISC, Mw) **AS** INVITE → 403 Forbidden ← ACK →			

TSS		TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed		CUG_N09_004	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

CUG with IA allowed: INVITE with interlock code matching registered CUG index and with outgoing access, successful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
  cugInterlockBinaryCode related to registered CUG index,
  networkIndicator (PIXIT) and
  cugCommunicationIndicator set to "10" (CUG with outgoing access),
forwards an INVITE request containing no xml element cug.

Preconditions: Terminating user has subscribed to CUG
Options for registered CUG index:
Intra CUG restrictions: None designated (-ICB)
Options for public identity in use:
Incoming access: allowed

SIP header values:

INVITE1:

```
<cug>
   <networkIndicator >[PIXIT]</ networkIndicator>
   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>
```

INVITE2:
No XML <cug> element

Comments:

Test equipment (ISC, Mw)		**AS**		**Test equipment (Gm)**
INVITE1	→		→	INVITE2

TSS		TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed		CUG_N09_005	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

CUG with IA allowed and ICB: INVITE with interlock code matching registered CUG index and with outgoing access, successful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
  cugInterlockBinaryCode related to registered CUG index,
  networkIndicator (PIXIT) and
  cugCommunicationIndicator set to "10" (CUG with outgoing access),
forwards an INVITE request containing no xml element cug.

Preconditions: Terminating user has subscribed to CUG
Options for registered CUG index:
Intra CUG restrictions: ICB
Options for public identity in use:
Incoming access: allowed

SIP header values:

INVITE1:

```
<cug>
   <networkIndicator >[PIXIT]</ networkIndicator>
   <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode>
   <cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>
```

INVITE2:
No XML <cug> element

Comments:

Test equipment (ISC, Mw)		**AS**		**Test equipment (Gm)**
INVITE1	→		→	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_006	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

CUG with IA allowed: INVITE with interlock code not matching registered CUG index and with outgoing access, successful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode not related to registered CUG index,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "10" (CUG with outgoing access),
forwards an INVITE request containing no xml element cug.

Preconditions: Terminating user has subscribed to CUG
Options for public identity in use:
Incoming access: allowed

SIP header values:

INVITE1:

<cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[not related to registered CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>

INVITE2:
No XML <cug> element

Comments:

Test equipment (ISC, Mw)		AS		Test equipment (Gm)
INVITE1	→		→	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_007	clause 4.5.2.10	PICS 4.5.1/2

Test purpose

No CUG: INVITE with interlock code and with outgoing access, successful.

Ensure that the SUT on receipt of an INVITE request containing an xml element cug with
    cugInterlockBinaryCode,
    networkIndicator (PIXIT) and
    cugCommunicationIndicator set to "10" (CUG with outgoing access),
forwards an INVITE request containing no xml element cug.

Preconditions: Terminating user has not subscribed to CUG

SIP header values:

INVITE1:

<cug>
    <networkIndicator >[PIXIT]</ networkIndicator>
    <cugInterlockBinaryCode>[related to any CUG index]</cugInterlockBinaryCode>
    <cugCommunicationIndicator>10</cugCommunicationIndicator>
</cug>

INVITE2:
No XML <cug> element

Comments:

Test equipment (ISC, Mw)		AS		Test equipment (Gm)
INVITE1	→		→	INVITE2

5.2.2.3 No CUG

TSS		TP	CUG reference	Selection expression
CUG/ terminating _AS/No CUG		CUG_N10_001	clause 4.5.2.10	PICS 4.5.1/2
Test purpose				
CUG with IA not allowed: INVITE without xml element cug, unsuccessful. Ensure that the SUT on receipt of an INVITE request containing no xml element cug, rejects the INVITE request by sending a 403 Forbidden.				

Preconditions: Terminating user has subscribed to CUG
  Options for public identity in use:
  Incoming access: not allowed				

SIP header values: INVITE: No xml element <cug>				
Comments:				
Test equipment (ISC)		**AS**		
INVITE	→			
403 Forbidden	←			
ACK	→			

TSS		TP	CUG reference	Selection expression
CUG/ terminating _AS/No CUG		CUG_N10_002	clause 4.5.2.10	PICS 4.5.1/2
Test purpose				
CUG with IA allowed: INVITE without xml element cug, successful. Ensure that the SUT on receipt of an INVITE request containing no xml element cug, forwards an INVITE request containing no xml element cug.				

Preconditions: Terminating user has subscribed to CUG
  Options for public identity in use:
  Incoming access: allowed				

SIP header values: INVITE1: No xml element <cug> INVITE2: No XML <cug> element				
Comments:				
Test equipment (ISC, Mw)		**AS**		**Test equipment (Gm)**
INVITE1	→		→	INVITE2

5.3 Interaction with other services

5.3.1 Conference calling (CONF)

TSS	TP	CUG reference	Selection expression
CUG/Services/CONF	CUG_N11_001	clause 4.6.6	PICS 4.7.1/7

Test purpose
CUG with OA not allowed: First added conferee join the conference, successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
        registered CUGIndex,
the conference focus allows to join the created conference as the first conferee.

Preconditions: Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed

SIP header values:
INVITE:
Request Line <conference URI>
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:
Test equipment (Gm)   **AS**
                    A conference is already created
INVITE   ➔
200 OK   ←

TSS	TP	CUG reference	Selection expression
CUG/Services/CONF	CUG_N11_002	clause 4.6.6	PICS 4.7.1/7

Test purpose
CUG with OA not allowed: Subsequent conferee added to the conference, successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
        registered CUGIndex,
the conference focus allows to join the created conference as a subsequent conferee and belongs to the same closed user group.

Preconditions: Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed

SIP header values:
INVITE:
Request Line <conference URI>
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:
Test equipment (ISC, Mw)   **AS**
                    A conference is already created
             A CUG user is already added to the conference
INVITE   ➔
200 OK   ←

5.3.2   Communication Diversion Services (CDIV)

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_001	clause 4.6.7.1	PICS 4.7.1/8
Test purpose				

CUG with OA not allowed: Call setup between originating party and forwarding party, CFU successful.
 Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
        registered CUGIndex,
 the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the
 Communication Diversion Service CFU.				

Preconditions:				

Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: not allowed
 Forwarding user has subscribed to CUG
    Options for public identity in use:
    Incoming access: not allowed
 Forwarding user has subscribed to CDIV
    Communication Forwarding Unconditional (CFU)
 Originating party and forwarding party are in the same CUG				

SIP header values:				

INVITE1:
 \<cug\>
    \<cugCallOperation\>
        \<outgoingAccessRequest\>FALSE\</outgoingAccessRequest\>
        \<cugIndex\>[registered CUG index]\</cugIndex\>
    \</cugCallOperation\>
 \</cug\>				

Comments:				
Test equipment (Gm)		**AS**	**Test equipment (ISC, Mw)**	
INVITE1	➔			
		➔	INVITE2	

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_002	clause 4.6.7.1	PICS 4.7.1/8
Test purpose				

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFU successful.
 Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
        registered CUGIndex,
 the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFU)
 and the communication to the forwarded-to party is successful.				

Preconditions:				

Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: not allowed
 Forwarding user has subscribed to CUG
    Options for public identity in use:
    Incoming access: not allowed
 Forwarding user has subscribed to CDIV
    Communication Forwarding Unconditional (CFU)
 Forwarded-to user has subscribed to CUG
    Options for public identity in use:
    Incoming access: not allowed
 Originating party and forwarding party are in the same CUG
 Originating party and forwarded-to party are in the same CUG				

SIP header values:				
INVITE1: <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug>				
Comments:				
Test equipment (Gm)		**AS**	**Test equipment (Gm)**	
INVITE1	➔			
		➔	INVITE2	

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_003	clause 4.6.7.1	PICS 4.7.1/8

Test purpose
CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFU unsuccessful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
cugCallOperation containing
registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFU)
and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a
403 Forbidden due to not matched CUG data.

Preconditions:
Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Forwarding user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Forwarding user has subscribed to CDIV
Communication Forwarding Unconditional (CFU)
Forwarded-to user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Originating party and forwarding party are in the same CUG
Originating party and forwarded-to party are in different CUG

SIP header values:
INVITE1:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[registered CUG index]</cugIndex>
</cugCallOperation>
</cug>

Comments:
Test equipment (Gm)   **AS**
INVITE1   ➜
403 Forbidden   ⬅
ACK   ➜

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_004	clause 4.6.7.2	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarding party, CFB successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
   cugCallOperation containing
     registered CUGIndex,
the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the
Communication Diversion Service CFB.

Preconditions:

Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
Forwarding user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Forwarding user has subscribed to CDIV
   Communication Forwarding on Busy user (CFB)
Originating party and forwarding party are in the same CUG

SIP header values:

INVITE1:
<cug>
   <cugCallOperation>
     <outgoingAccessRequest>FALSE</outgoingAccessRequest>
     <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS		Test equipment (Gm)		Test equipment (ISC, Mw)
INVITE1	→		→	INVITE2		
			←	486 Busy Here		
			→	ACK		
			→		→	INVITE3

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_005	clause 4.6.7.2	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFB successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
        registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFB)
and the communication to the forwarded-to party is successful.

Preconditions:

Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: not allowed
Forwarding user has subscribed to CUG
    Options for public identity in use:
    Incoming access: not allowed
Forwarding user has subscribed to CDIV
    Communication Forwarding on Busy user (CFB)
Forwarded-to user has subscribed to CUG
    Options for public identity in use:
    Incoming access: not allowed
Originating party and forwarding party are in the same CUG
Originating party and forwarded-to party are in the same CUG

SIP header values:

INVITE1:
```
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS		Test equipment (Gm)		Test equipment (Gm)
INVITE1	➔	AS	➔	INVITE2		
			←	486 Busy Here		
			➔	ACK		
					➔	INVITE3

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_006	clause 4.6.7.2	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFB unsuccessful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
        registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFB)
and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a
403 Forbidden due to not matched CUG data.

Preconditions:

Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
Forwarding user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Forwarding user has subscribed to CDIV
   Communication Forwarding on Busy user (CFB)
Forwarded-to user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Originating party and forwarding party are in the same CUG
Originating party and forwarded-to party are in different CUG

SIP header values:

INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS		Test equipment (Gm)
INVITE1	➔		➔	INVITE2
			←	486 Busy Here
			➔	ACK
403 Forbidden	←			
ACK	➔			

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_007	clause 4.6.7.3	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarding party, CFNR successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
   cugCallOperation containing
     registered CUGIndex,
the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the
Communication Diversion Service CFNR.

Preconditions:

Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
Forwarding user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Forwarding user has subscribed to CDIV
   Communication Forwarding on no Reply (CFNR)
Originating party and forwarding party are in the same CUG

SIP header values:

INVITE1:
<cug>
   <cugCallOperation>
     <outgoingAccessRequest>FALSE</outgoingAccessRequest>
     <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS		Test equipment (Gm)	Test equipment (ISC, Mw)
INVITE1	➔		➔	INVITE2	
			←	180 Ringing	
					➔ INVITE3

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_008	clause 4.6.7.3	PICS 4.7.1/8

Test purpose
CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNR successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
cugCallOperation containing
registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNR)
and the communication to the forwarded-to party is successful.

Preconditions:
Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Forwarding user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Forwarding user has subscribed to CDIV
Communication Forwarding on no Reply (CFNR)
Forwarded-to user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Originating party and forwarding party are in the same CUG
Originating party and forwarded-to party are in the same CUG

SIP header values:
INVITE1:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[registered CUG index]</cugIndex>
</cugCallOperation>
</cug>

Comments:			
Test equipment (Gm)	**AS**	**Test equipment (Gm)**	**Test equipment (Gm)**
INVITE1	→ →	INVITE2	
		← 180 Ringing	
		→	INVITE3

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_009	clause 4.6.7.3	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNR unsuccessful.
 Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
      registered CUGIndex,
 the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNR) and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a 403 Forbidden due to not matched CUG data.

Preconditions:

Originating user has subscribed to CUG
    Options for registered and preferred CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: not allowed
 Forwarding user has subscribed to CUG
    Options for public identity in use:
    Incoming access: not allowed
 Forwarding user has subscribed to CDIV
    Communication Forwarding on no Reply (CFNR)
 Forwarded-to user has subscribed to CUG
    Options for public identity in use:
    Incoming access: not allowed
 Originating party and forwarding party are in the same CUG
 Originating party and forwarded-to party are in different CUG

SIP header values:
INVITE1:   <cug>   <cugCallOperation>   <outgoingAccessRequest>FALSE</outgoingAccessRequest>   <cugIndex>[registered CUG index]</cugIndex>   </cugCallOperation>   </cug>

Comments:

Test equipment (Gm)		AS		Test equipment (Gm)
INVITE1	→		→	INVITE2
			←	180 Ringing
403 Forbidden	←			
ACK	→			

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_010	clause 4.6.7.4	PICS 4.7.1/8
Test purpose			

CUG with OA not allowed: Call setup between originating party and forwarding party, CFNL successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
       registered CUGIndex,
the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the
Communication Diversion Service CFNL.			

Preconditions:			

Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
Forwarding user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Forwarding user has subscribed to CDIV
   Communication Forwarding on Not Logged-in (CFNL)
Originating party and forwarding party are in the same CUG			

SIP header values:			

INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>			

Comments:			

Test equipment (Gm)		AS	Test equipment (ISC, Mw)
INVITE1	→		
		→	INVITE2

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_011	clause 4.6.7.4	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNL successful.

Ensure that on receipt of an INVITE request containing an xml element **cug** with

    cugCallOperation containing

      registered CUGIndex,

the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNL) and the communication to the forwarded-to party is successful.

Preconditions:

Originating user has subscribed to CUG

    Options for registered and preferred CUG index:

    Intra CUG restrictions: None designated (-OCB)

    Options for public identity in use:

    Preferential CUG: None designated

    Outgoing access: not allowed

Forwarding user has subscribed to CUG

    Options for public identity in use:

    Incoming access: not allowed

Forwarding user has subscribed to CDIV

    Communication Forwarding on Not Logged-in (CFNL)

Forwarded-to user has subscribed to CUG

    Options for public identity in use:

    Incoming access: not allowed

Originating party and forwarding party are in the same CUG

Originating party and forwarded-to party are in the same CUG

SIP header values:

INVITE1:

<cug>

    <cugCallOperation>

      <outgoingAccessRequest>FALSE</outgoingAccessRequest>

      <cugIndex>[registered CUG index]</cugIndex>

    </cugCallOperation>

</cug>

Comments:

Test equipment (Gm)		AS	Test equipment (Gm)
INVITE1	➜		
		➜	INVITE2

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_012	clause 4.6.7.4	PICS 4.7.1/8

Test purpose
CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNL unsuccessful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
cugCallOperation containing
registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNL)
and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a
403 Forbidden due to not matched CUG data.

Preconditions:
Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Forwarding user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Forwarding user has subscribed to CDIV
Communication Forwarding on Not Logged-in (CFNL)
Forwarded-to user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Originating party and forwarding party are in the same CUG
Originating party and forwarded-to party are in different CUG

SIP header values:
INVITE1:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[registered CUG index]</cugIndex>
</cugCallOperation>
</cug>

Comments:
Test equipment (Gm)   AS
INVITE1   →
403 Forbidden   ←
ACK   →

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_013	clause 4.6.7.5	PICS 4.7.1/8

Test purpose
CUG with OA not allowed: Call setup between originating party and forwarding party, CNRc successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
cugCallOperation containing
registered CUGIndex,
the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the
Communication Diversion Service CFNRc.

Preconditions:
Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Forwarding user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Forwarding user has subscribed to CDIV
Communication Forwarding on Subscriber Not Reachable (CFNRc)
Originating party and forwarding party are in the same CUG

SIP header values:
INVITE1:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[registered CUG index]</cugIndex>
</cugCallOperation>
</cug>

Comments:				
Test equipment (Gm)	**AS**		**Test equipment (Gm)**	**Test equipment (ISC, Mw)**
INVITE1	➔	➔	INVITE2	
				➔ INVITE3

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_014	clause 4.6.7.5	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNRc successful.

Ensure that on receipt of an INVITE request containing an xml element **cug** with

    cugCallOperation containing

      registered CUGIndex,

the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNRc) and the communication to the forwarded-to party is successful.

Preconditions:

Originating user has subscribed to CUG

    Options for registered and preferred CUG index:

    Intra CUG restrictions: None designated (-OCB)

    Options for public identity in use:

    Preferential CUG: None designated

    Outgoing access: not allowed

Forwarding user has subscribed to CUG

    Options for public identity in use:

    Incoming access: not allowed

Forwarding user has subscribed to CDIV

    Communication Forwarding on Subscriber Not Reachable (CFNRc)

Forwarded-to user has subscribed to CUG

    Options for public identity in use:

    Incoming access: not allowed

Originating party and forwarding party are in the same CUG

Originating party and forwarded-to party are in the same CUG

SIP header values:

INVITE1:

```
<cug>
    <cugCallOperation>
        <outgoingAccessRequest>FALSE</outgoingAccessRequest>
        <cugIndex>[registered CUG index]</cugIndex>
    </cugCallOperation>
</cug>
```

Comments:

Test equipment (Gm)		AS	Test equipment (Gm)		Test equipment (Gm)
INVITE1	→	AS	INVITE2		
				→	INVITE3

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_015	clause 4.6.7.5	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNRc unsuccessful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
   cugCallOperation containing
     registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNRc)
and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a
403 Forbidden due to not matched CUG data.

Preconditions:

Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
Forwarding user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Forwarding user has subscribed to CDIV
   Communication Forwarding on Subscriber Not Reachable (CFNRc)
Forwarded-to user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Originating party and forwarding party are in the same CUG
Originating party and forwarded-to party are in different CUG

SIP header values:

INVITE1:
<cug>
   <cugCallOperation>
     <outgoingAccessRequest>FALSE</outgoingAccessRequest>
     <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS	Test equipment (Gm)	Test equipment (Gm)
INVITE1	→		INVITE2	
403 Forbidden	←			
ACK	→			

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_016	clause 4.6.7.6	PICS 4.7.1/8

Test purpose
CUG with OA not allowed: Call setup between originating party and deflecting party, CD successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
cugCallOperation containing
registered CUGIndex,
the SUT checks the CUG restrictions for the originating party and the deflecting party and performs the Communication Diversion Service CD.

Preconditions:
Originating user has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Forwarding user has subscribed to CUG
Options for public identity in use:
Incoming access: not allowed
Deflecting user has subscribed to CDIV
Communication Deflection (CD)
Originating party and deflecting party are in the same CUG

SIP header values:
INVITE1:
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[registered CUG index]</cugIndex>
</cugCallOperation>
</cug>

Comments:			
Test equipment (Gm)	**AS**	**Test equipment (Gm)**	**Test equipment (ISC, Mw)**
INVITE1	→ →	INVITE2	
	←	180 Ringing	
	←	302 Moved Temporarily	
	→	ACK	
			→ INVITE3

TSS	TP	CUG reference	Selection expression
CUG/Services/CDIV	CUG_N12_017	clause 4.6.7.6	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and forwarded-to party, CD successful.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
   cugCallOperation containing
     registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the deflecting party and the deflected-to party (CD) and
the communication to the deflected-to party is successful.

Preconditions:

Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
Deflecting user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Deflected-to user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Originating party and deflecting party are in the same CUG
Originating party and deflected-to party are in the same CUG

SIP header values:

INVITE1:
<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS		Test equipment (Gm)		Test equipment (Gm)
INVITE1	→		→	INVITE2		
			←	180 Ringing		
			←	302 Moved Temporarily		
			→	ACK		
					→	INVITE3

TSS		TP	CUG reference	Selection expression
CUG/Services/CDIV		CUG_N12_018	clause 4.6.7.6	PICS 4.7.1/8

Test purpose

CUG with OA not allowed: Call setup between originating party and deflected-to party, CD unsuccessful.

Ensure that on receipt of an INVITE request containing an xml element **cug** with
   cugCallOperation containing
      registered CUGIndex,
the SUT checks the CUG restrictions for the originating party, the deflecting party and the deflected-to party (CD) and the communication to the deflected-to party is unsuccessful. The SUT rejects the INVITE request by sending a 403 Forbidden due to not matched CUG data.

Preconditions:

Originating user has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
Deflecting user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
deflected-to user has subscribed to CUG
   Options for public identity in use:
   Incoming access: not allowed
Originating party and deflecting party are in the same CUG
Originating party and deflected-to party are in different CUG

SIP header values:

INVITE1:

<cug>
   <cugCallOperation>
      <outgoingAccessRequest>FALSE</outgoingAccessRequest>
      <cugIndex>[registered CUG index]</cugIndex>
   </cugCallOperation>
</cug>

Comments:

Test equipment (Gm)		AS		Test equipment (Gm)
INVITE1	➔		➔	INVITE2
			⬅	180 Ringing
			⬅	302 Moved Temporarily
			➔	ACK
403 Forbidden	⬅			
ACK	➔			

5.3.3   Explicit Communication Transfer (ECT)

TSS	TP	CUG reference	Selection expression
CUG/Services/ECT	CUG_N13_001	clause 4.6.7.10	PICS 4.7.1/9
Test purpose			

CUG with OA not allowed: Communication transfer - transferor and transferee in the same CUG, successful.
 Ensure that on receipt of an INVITE request containing an xml element **cug** with
    cugCallOperation containing
       registered CUGIndex,
 the SUT checks the CUG restrictions for the transferor and the transferee. The communication is successful			

Preconditions:			

Transferor has subscribed to CUG
    Options for registered and preferred CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: not allowed
 Transferee has subscribed to CUG
    Options for registered and preferred CUG index:
    Intra CUG restrictions: None designated (-OCB)
    Options for public identity in use:
    Preferential CUG: None designated
    Outgoing access: not allowed
 Transferor and transferee are in the same CUG			

SIP header values:			
INVITE: Request Line <conference URI> <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug>			
Comments:			

Test equipment (Gm)		AS		Test equipment (Gm)
INVITE	→		→	INVITE
180 Ringing	←		←	180 Ringing
200 OK	←		←	200 OK
ACK	→		→	ACK

TSS		TP	CUG reference	Selection expression
CUG/Services/ECT		CUG_N13_001	clause 4.6.7.10	PICS 4.7.1/9
Test purpose				

CUG with OA not allowed: Call Communication transfer transferee and transfer target in the same CUG, successful blind transfer.
 Ensure that on receipt of an INVITE request containing an xml element **cug** with
   cugCallOperation containing
     registered CUGIndex,
 the SUT checks the CUG restrictions for the transferee and the transfer target and performs the Communication transfer Service (Blind transfer).				

Preconditions:				

Transferor has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
 Transferee has subscribed to CUG
   Options for registered and preferred CUG index:
   Intra CUG restrictions: None designated (-OCB)
   Options for public identity in use:
   Preferential CUG: None designated
   Outgoing access: not allowed
 Transferor and transferee are in the same CUG				

SIP header values:				
INVITE1: Request Line <conference URI> <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug>				
Comments:				

Test equipment (Gm)   **AS**   **Test equipment (Gm)**   **Test equipment (ISC, Mw)**
          A communication between transferor and transferee already exits
 REFER   →
 202 Accepted   ←
 BYE   →
 200 OK (BYE)   ←
                                 INVITE1 → INVITE2				

TSS		TP	CUG reference	Selection expression
CUG/Services/ECT		CUG_N13_001	clause 4.6.7.10	PICS 4.7.1/9

Test purpose
CUG with OA not allowed: Call Communication transfer transferee and transfer target in the same CUG, successful assured transfer.
Ensure that on receipt of an INVITE request containing an xml element **cug** with
cugCallOperation containing
registered CUGIndex,
the SUT checks the CUG restrictions for the transferee and the transfer target and performs the Communication transfer Service (assured transfer).

Preconditions:
Transferor has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Transferee has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Transferor and transferee are in the same CUG

SIP header values:
INVITE1:
Request Line <conference URI>
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[registered CUG index]</cugIndex>
</cugCallOperation>
</cug>

Comments:			
Test equipment (Gm)	**AS**	**Test equipment (Gm)**	**Test equipment (ISC, Mw)**
	A communication between transferor and transferee already exits		
REFER	→		
202 Accepted	←		
		INVITE1 → INVITE2	

TSS		TP	CUG reference	Selection expression
CUG/Services/ECT		CUG_N13_001	clause 4.6.7.10	PICS 4.7.1/9

Test purpose
CUG with OA not allowed: Call Communication transfer transferee and transfer target in the same CUG, successful consultative transfer.

Ensure that on receipt of an INVITE request containing an xml element **cug** with
   cugCallOperation containing
      registered CUGIndex,
the SUT checks the CUG restrictions for the transferee and the transfer target and performs the Communication transfer Service (assured transfer).

Preconditions:
Transferor has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Transferee has subscribed to CUG
Options for registered and preferred CUG index:
Intra CUG restrictions: None designated (-OCB)
Options for public identity in use:
Preferential CUG: None designated
Outgoing access: not allowed
Transferor and transferee are in the same CUG

SIP header values:
INVITE1:
Request Line <conference URI>
<cug>
<cugCallOperation>
<outgoingAccessRequest>FALSE</outgoingAccessRequest>
<cugIndex>[registered CUG index]</cugIndex>
</cugCallOperation>
</cug>

Comments:			
Test equipment (Gm)	**AS**	**Test equipment (Gm)**	**Test equipment (ISC, Mw)**
	A communication between transferor and transferee already exits		
	A communication between transferor and transfer target already exits		
REFER	➜		
202 Accepted	←		
		INVITE1 ➜ INVITE2	

History

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<tr><td>V1.1.1</td><td>July 2013</td><td>Publication</td></tr>
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