

# ETSI TS 101 585 V2.1.1 (2018-02)



**Core Network and Interoperability Testing (INT);  
IMS interconnection tests at the Ic Interface;  
(3GPP™ Release 13);  
Test Suite Structure and Test Purposes (TSS&TP)**

*Standard PREVIEW*  
*Full catalogue: <https://standards.iteh.ai/catalog/standards/sist/602420-5c0e-4541-b0a8-171d5a616d15/etsi-101-585-v2-1-2018-02>*



---

**Reference**

RTS/INT-00134

---

**Keywords**IMS, interconnection, PSTN, SIP, testing,  
TSS&TP, UNI**ETSI**

---

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

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

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

---

**Important notice**

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

---

**Copyright Notification**

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2018.

All rights reserved.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

**3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

**oneM2M** logo is protected for the benefit of its Members.

**GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

# Contents

Intellectual Property Rights .....	5
Foreword.....	5
Modal verbs terminology.....	5
1 Scope .....	6
2 References .....	6
2.1 Normative references .....	6
2.2 Informative references.....	8
3 Definitions, conventions and abbreviations .....	9
3.1 Definitions.....	9
3.2 Conventions for representation of SIP/SDP information .....	9
3.3 Abbreviations .....	10
4 Test Suite Structure (TSS).....	12
5 Declarations.....	12
5.1 Numbering Scheme .....	12
5.2 Reference configuration .....	12
5.3 Selection of End Devices .....	13
6 Selection Expressions.....	14
7 Test purposes.....	16
7.0 Introduction .....	16
7.1 Testing of SIP protocol requirements.....	16
7.1.1 Test purposes for Basic call, Successful.....	16
7.1.2 Codec negotiation .....	48
7.1.3 Resource Reservation .....	50
7.1.4 Test purposes for SIP-SIP, Basic call, Unsuccessful .....	53
7.1.5 Test purposes for Supplementary services.....	65
7.1.5.1 Test purposes for OIP.....	65
7.1.5.2 Test purposes for OIR .....	70
7.1.5.3 Test purposes for TIP .....	73
7.1.5.4 Test purposes for TIR.....	78
7.1.5.5 Communication Hold (HOLD) .....	82
7.1.5.6 Communication Diversion (CDIV).....	99
7.1.5.6.1 Communication Forwarding Unconditional (CFU).....	99
7.1.5.6.2 Communication Forwarding Busy (CFB) .....	114
7.1.5.6.3 Communication Forwarding No Reply (CFNR) .....	129
7.1.5.6.4 Communication Forwarding Not Logged in (CFNL).....	144
7.1.5.6.5 Communication Deflection.....	159
7.1.5.6.6 Call establishment when multiple diversions occur.....	173
7.1.5.7 Conference (CONF) .....	175
7.1.5.8 Anonymous Communication Rejection (ACR) and Communication Barring (CB) .....	185
7.1.5.9 Closed User Group (CUG).....	187
7.1.5.10 Communication Waiting (CW) .....	199
7.1.5.11 Explicit Communication Transfer (ECT).....	201
7.1.5.12 Malicious Communication Identification (MCID).....	210
7.1.5.13 Message Waiting Indication (MWD).....	214
7.1.5.14 Completion of Communications to Busy Subscriber (CCBS), Completion of Communications by No Reply (CCNR).....	216
7.1.6 Other PSTN services (SIP-I interworking) .....	223
7.1.6.1 User-to-User Signalling (UUS).....	223
7.1.6.2 Subaddressing (SUB) .....	239
7.1.6.3 Terminal Portability (TP).....	241
7.2 Number Portability .....	243
7.3 Accounting .....	244

7.4	Carrier Selection.....	253
7.5	Emergency call.....	258
7.6	SIP Support of Charging .....	259
7.7	Quality of Service (optional).....	265
7.7.1	Delay Values.....	265
7.7.2	Test purposes for Quality of Service test.....	265
<b>Annex A (informative): Test case list and test case selection.....</b>		<b>270</b>
A.0	Introduction .....	270
A.1	First step - "Identification of the Networks" .....	270
A.2	Second step - Selection Expression.....	270
A.3	Third step - Access and End Devices Types .....	271
A.4	Fourth step - activation.....	272
<b>Annex B (informative): Bibliography.....</b>		<b>274</b>
History .....		276

**iTeh STANDARD PREVIEW**  
 (standards.iteh.ai)  
 Full standard:  
<https://standards.iteh.ai/catalog/standards/sist/66229e20-5e0e-4541-b0a8-171d5a616d15/etsi-ts-101-585-v2.1.1-2018-02>

---

## Intellectual Property Rights

### Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

### Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

---

## Foreword

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

---

## Modal verbs terminology

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

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

# 1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for IMS interconnection tests at the Ic Interface to verify the overall compatibility of SIP, ISDN and non-ISDN (PSTN) over the national or international networks when using End Devices. The TSS&TP specification covers the procedures described in ETSI TS 124 229 [2] and ETSI TS 129 165 [1] respectively.

# 2 References

## 2.1 Normative references

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

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

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

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

- [1] ETSI TS 129 165: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Inter-IMS Network to Network Interface (NNI) (3GPP TS 29.165 Release 13)".
- [2] ETSI TS 124 229: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229 Release 13)".
- [3] IETF RFC 4566 (2006): "SDP: Session Description Protocol".
- [4] IETF RFC 3261 (2002): "SIP: Session Initiation Protocol".
- [5] IETF RFC 3264 (2002): "An Offer/Answer Model with Session Description Protocol (SDP)".
- [6] IETF RFC 3312 (2002): "Integration of Resource Management and Session Initiation Protocol (SIP)".
- [7] ETSI TS 124 607: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Originating Identification Presentation (OIP) and Originating Identification Restriction (OIR) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.607 Release 13)".
- [8] ETSI TS 124 608: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Terminating Identification Presentation (TIP) and Terminating Identification Restriction (TIR) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.608 Release 13)".
- [9] ETSI TS 124 604: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Communication Diversion (CDIV) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.604 Release 13)".
- [10] ETSI TS 124 605: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Conference (CONF) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.605 Release 13)".

- [11] ETSI TS 124 629: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Explicit Communication Transfer (ECT) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.629 Release 13)".
- [12] ETSI TS 124 611: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Anonymous Communication Rejection (ACR) and Communication Barring (CB) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.611 Release 13)".
- [13] 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 13)".
- [14] ETSI TS 124 642: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Completion of Communications to Busy Subscriber (CCBS) and Completion of Communications by No Reply (CCNR) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.642 Release 13)".
- [15] ETSI TS 124 615: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Communication Waiting (CW) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol Specification (3GPP TS 24.615 Release 13)".
- [16] ETSI TS 124 606: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Message Waiting Indication (MWI) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.606 Release 13)".
- [17] ETSI TS 124 610: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.610 Release 13)".
- [18] ETSI TS 124 616: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Malicious Communication Identification (MCID) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.616 Release 13)".
- [19] ETSI TS 129 658: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; SIP Transfer of IP Multimedia Service Tariff Information; Protocol specification (3GPP TS 29.658 Release 13)".
- [20] ETSI TS 124 628: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Common Basic Communication procedures using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.628 Release 13)".
- [21] IETF RFC 5009 (September 2007): "Private Header (P-Header) Extension to the Session Initiation Protocol (SIP) for Authorization of Early Media".
- [22] Recommendation ITU-T V.152 (09-2010): "Procedures for supporting voice-band data over IP networks".
- [23] Recommendation ITU-T T.38 (11-2015): "Procedures for real-time Group 3 facsimile communication over IP networks".
- [24] Recommendation ITU-T Q.1912.5: "Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control protocol or ISDN User Part".
- [25] ETSI TS 183 036: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); ISDN/SIP interworking; Protocol specification".
- [26] IETF RFC 4733: "RTP Payload for DTMF Digits, Telephony Tones, and Telephony Signals".

- [27] IETF RFC 4028: "Session Timers in the Session Initiation Protocol (SIP)".
- [28] Recommendation ITU-T Q.4016 (08-2016): "Testing specification of call establishment procedures based on SIP/SDP and ITU-T H.248 for a real-time fax over IP service".
- [29] ETSI TS 101 563 (V1.3.1): "Speech and multimedia Transmission Quality (STQ); IMS/PES/VoLTE exchange performance requirements".
- [30] ETSI ES 202 765-2 (V1.2.1): "Speech and multimedia Transmission Quality (STQ); QoS and network performance metrics and measurement methods; Part 2: Transmission Quality Indicator combining Voice Quality Metrics".
- [31] Recommendation ITU-T Q.543: "Digital exchange performance design objectives".
- [32] ETSI TS 102 250-2: "Speech and multimedia Transmission Quality (STQ); QoS aspects for popular services in mobile networks; Part 2: Definition of Quality of Service parameters and their computation".

## 2.2 Informative references

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

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

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

- [i.1] ETSI EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".
- [i.2] ISO/IEC 9646 (1994): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework".
- [i.3] ETSI TR 102 775 (V1.5.1): "Speech and multimedia Transmission Quality (STQ); Guidance on objectives for Quality related Parameters at VoIP Segment-Connection Points; A support to NGN transmission planners".
- [i.4] Recommendation ITU-T Q.1902.2 (07-2001): "Bearer Independent Call Control protocol (Capability Set 2) and Signalling System No.7 ISDN User Part: General functions of messages and parameters".
- [i.5] Recommendation ITU-T G.826: "End-to-end error performance parameters and objectives for international, constant bit-rate digital paths and connections".
- [i.6] ETSI TS 183 043: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IMS-based PSTN/ISDN Emulation; Stage 3 specification".
- [i.7] Recommendation ITUT-T Q.76: "Service procedures for Universal Personal Telecommunication - Functional modelling and information flows".
- [i.8] Recommendation ITUT-T Q.764: "Signalling System No. 7 - ISDN User Part signalling procedures".
- [i.9] ETSI TS 129 163: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks (3GPP TS 29.163 Release 10)".



## 3 Definitions, conventions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**Adjacent SIP Node (ASN):** SIP node (e.g. SIP Proxy or Back-to-Back User Agent or the SIP side of an IWU) that has established a direct trust relation (association) with Incoming or Outgoing IWU entities

NOTE: The SIP Proxy and Back-to-Back User Agent are defined in accordance with IETF RFC 3261 [4].

**Basic Call Control (BCC):** signalling protocol associated with the DSS1 - ISDN Basic Call control procedures of ETSI EN 300 403-1 [i.1]

**Incoming Interworking Unit (I-IWU):** physical entity, (which can be combined with a BICC ISN or ISUP exchange) that terminates incoming calls using SIP and originates outgoing calls using the BICC or ISUP protocols

**incoming or outgoing:** direction of a call (not signalling information) with respect to a reference point

**incoming SIP or BICC/ISUP (network):** network, from which the incoming calls are received, that uses the SIP or BICC/ISUP protocol (without the term "network", it simply refers to the protocol)

**Outgoing Interworking Unit (O-IWU):** physical entity, (which can be combined with a BICC ISN or ISUP exchange) that terminates incoming calls using BICC or ISUP protocols and originates outgoing calls using the SIP

**outgoing SIP or BICC/ISUP (network):** network, to which the outgoing calls are sent, that uses the SIP or BICC/ISDN protocol

NOTE: Without the term "network", it simply refers to the protocol.

**SIP precondition:** mechanism for reserving bearer resources that is required for certain access technologies

NOTE: As defined in IETF RFC 3312 [6].

**test purpose:** non-formal test description, mainly using text

NOTE: TSIs test description can be used as the basis for a formal test specification (e.g. Abstract Test Suite in TTCN). See ISO/IEC 9646 [i.2].

### 3.2 Conventions for representation of SIP/SDP information

- 1) All letters of SIP method names are in capital.

EXAMPLE 1: INVITE, INFO.

- 2) SIP header fields are identified by the unabbreviated header field name as defined in the relevant RFC, including capitalization and enclosed hyphens but excluding the following colon.

EXAMPLE 2: To, From, Call-ID.

- 3) Where it is necessary to refer with finer granularity to components of a SIP message, the component concerned is identified by the ABNF rule name used to designate it in the defining RFC (generally 25/IETF RFC 3261 [4]), in plain text without surrounding angle brackets.

EXAMPLE 3: Request-URI, the user info portion of a sip: URI.

- 4) URI types are represented by the lower-case type identifier followed by a colon and the abbreviation "URI"

EXAMPLE 4: sip: URI, tel: URI.

- 5) SIP provisional responses and final responses other than 2XX are represented by the status code followed by the normal reason phrase for that status code, with initial letters capitalized.

EXAMPLE 5: 100 Trying, 484 Address Incomplete.

- 6) Because of potential ambiguity within a call flow about which request a 200 OK final response answers, 200 OK is always followed by the method name of the request.

EXAMPLE 6: 200 OK INVITE, 200 OK PRACK.

- 7) A particular line of an SDP session description is identified by the two initial characters of the line -- that is, the line type character followed by "="

EXAMPLE 7: m=line, a=line.

- 8) Where it is necessary to refer with finer granularity to components of a session description, the component concerned is identified by its rule name in the ABNF description of the SDP line concerned, delimited with angle brackets.

EXAMPLE 8: The <media> and <fmt> components of the m= line.

### 3.3 Abbreviations

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

ACR	Anonymous Communication Rejection
ACR-CB	Anonymous Call Rejection and Call Barring
AS	Application Server
ATP	Access Transport Parameter
ATS	Abstract Test Suite
BC	Bearer Capability
BCALL	Basic CALL
CB	Communication Barring
CC	Completion of Completion
CCBS	Completion of Communications to Busy Subscriber
CCNR	Completion of Communications by No Reply
CD	Communication Deflection
CDIV	Communication DIVersion
CDP	Charging Determinating Point
CDR	Communication Data Record
CFB	Communication Forwarding Busy
CFNL	Communication Forwarding Not Logged in
CFNR	Communication Forwarding No Reply
CFU	Communication Forwarding Unconditional
CN	Core Network
COLP	Connected Line Presentation
COLR	COnnected Line Restriction
CONF	Conference
CS	Circuit Switched
CUG	Closed User Group
CUG-OA	Closed User Group Outgoing Access
CW	Communication Waiting
DTMF	Dual Tone Multi-Frequency
ECT	Explicit Communication Transfer
FFS	For Further Study
GSM	Global System for Mobile Communications
GW	GateWay
HLC	High layer Compatibility
HOLD	Communication Hold
IA	In coming Access allowed
IBCF	Interconnection Boarder Control Function
ICB	Incoming Call Barring
IMS	IP Multimedia core network Subsystem
IP	Internet Protocol
ISDN	Integrated Services Digital Network

ISUP	ISdn User Part
IUT	Implementation Under Test
LLC	Low Layer Comaptibility
MCID	Malicious Communication Identification
MGCF	Media Gateway Control Function
MWI	Message Waiting Indication
NDUB	Network Determined User Busy
OA	Outgoing Access
OIP	Originating Identification Presentation
OIR	Originating Identification presentation Restriction
PBX	Private Branch eXchage
PDP	Programmable Data Processor
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information
PLMN	Public Land Mobile Network
PSTN	Public Switched Telephone Network
PT	Payload Type
PTY	ParTY
QoS	Quality of Service
RTP	Realtime Transport Protocol
SDP	Session Description Protocol
SE	Selection Expression
SIP	Session Initiation Protocol
SIP-I	SIP containing ISUP
SS	Supplementary Service
SUB	SUB addressing
TIP	Terminating Identification Presentation
TIR	Terminating Identification Restriction
TP	Test Purpose
TSS	Test Suite Structure
TSS&TP	Test Suite Structure and Test Purposes
UA	User Agent
UAC	User Agent Client
UAS	User Agent Server
UDUB	User Determined User Busy
UE	User Equipment
UE-A	User Equipment A side
UE-B	User Equipment B side
URI	Uniform Resource Identifier
USI	User Service Information
UUS	User to User Service
XML	eXtensible Markup Language

## 4 Test Suite Structure (TSS)

BCALL	successful	SS_bcall_xxx	
	Codec_Negotiation	SS_codec_xxx	
	Resource_Reservation	SS_resource_xxx	
	unsuccessful	SS_unsucc_xxx	
SIP-SIP	Service	OIP	SS_oip_xxx
		OIR	SS_oir_xxx
		TIP	SS_tip_xxx
		TIR	SS_tir_xxx
		HOLD	SS_hold_xxx
		CFU	SS_cfu_xxx
		CFB	SS_cfb_xxx
		CFNR	SS_cfnr_xxx
		CFNL	SS_cfnl_xxx
		CD	SS_cd_xxx
		CONF	SS_conf_xxx
		ACR-CB	SS_acr-cb_xxx
		CUG	SS_cug_xxx
		CW	SS_cw_xxx
		ECT	SS_ect_xxx
		MCID	SS_mcid_xxx
		MWI	SS_mwi_xxx
	CC	SS_cc_xxx	
	SIP-I	UUS	SS_uus_xxx
		SUB	SS_sub_xxx
		TP	SS_tp_xxx
	NubP	SS_NP_xxx	
	ACCOUNTING	SS_acc_xxx	
	CS	SS_csel_xxx	
	EmC	SS_ecall_xxx	
	SIP_charging	SS_sipc_xxx	
	SIP-SIP/QoS	SS_qos_xxx	

## 5 Declarations

### 5.1 Numbering Scheme

FFS.

### 5.2 Reference configuration

This reference configuration depicted in figure 5.2-1 shall be used to perform an interconnection test between two network operators. Here is depicted the reference point to observe the message flow at the 'Ic' interface between the two networks (in the Test purposes mentioned '**Interconnection Interface**') one for a single operator and the possible set of end devices used to perform the Test Purposes.

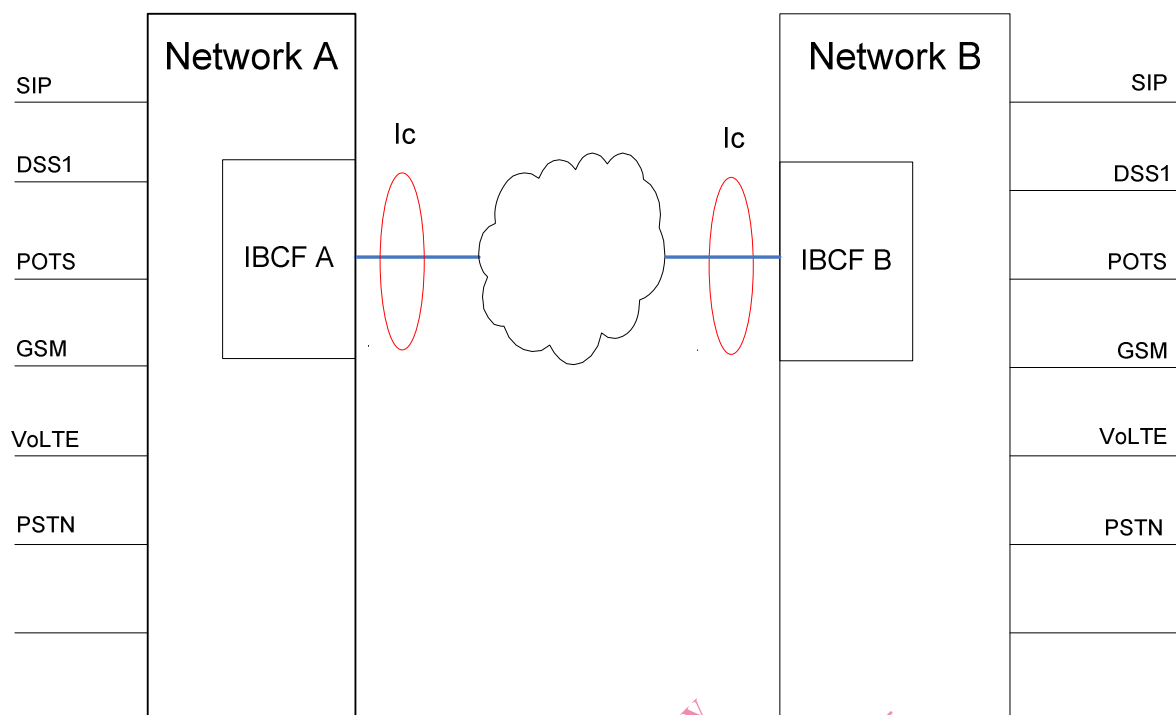


Figure 5.2-1: Reference configuration for the interconnection test

### 5.3 Selection of End Devices

With the specified Test Purposes in the present document, the compatibility between the interconnected networks and the used end devices shall be assured. Each Test Purpose shall be performed by using a physical end device to assure the end-to-end compatibility between the two interconnected networks. This is highly recommended due to the fact that the impact from an end device to another end device is important and will be marginal compensated by the network.

Which Test Purposes are possible to perform depends on the types of end devices used in the network. The table 5.3-1 gives an overview of end devices.

The **green** highlighted element in the table represents the mandatory type of end devices used in the test.

The **yellow** highlighted elements in the table represents the optional type of end devices used in the test.

Table 5.3-1: Overview of end devices

Type of End devices	Network B							
	Network A	SIP	POTS	ISDN	GSM	VoHSPA	VoLTE	PSTN
SIP								
POTS								
ISDN								
GSM								
VoHSPA								
VoLTE								
PSTN								