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Technical Specification

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); SIP-ISUP Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks; Part 1: Protocol Implementation Conformance Statement (PICS)

Reference
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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

The present document is part 1 of a multi-part deliverable covering the Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control Protocol (BICC) or ISDN User Part (ISUP), as identified below:

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

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

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

1 Scope

The present document specifies the network PICS (Protocol Implementation Conformance Statement) of the Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control Protocol or ISDN User Part EN 283 027 [20]. The references [20] and [26] are identical.

2 References

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

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

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2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

[1] ITU-T Recommendations Q.761 to Q.764 (2000): "Signalling System No.7 ISDN User Part (ISUP)".

[2] ITU-T Recommendation Q.731.7 (1997): "Stage 3 description for number identification supplementary services using Signalling System No. 7: Malicious call identification (MCID)".

[3] ITU-T Recommendation Q.732.2 (1999): "Stage 3 description for call offering supplementary services using Signalling System No. 7: Call diversion services".

[4] ITU-T Recommendation Q.732.7 (1996): "Stage 3 description for call offering supplementary services using Signalling System No. 7: Explicit Call Transfer".

[5] ITU-T Recommendation Q.737.1 (1997): "Stage 3 description for additional information transfer supplementary services using Signalling System No. 7: User-to-user signalling (UUS)".

[6] IETF RFC 3261 (2002): "SIP: Session Initiation Protocol".

[7] IETF RFC 3262 (2002): "Reliability of Provisional Responses in the Session Initiation Protocol (SIP)".

[8] ISO/IEC 9646-7 (1995): "Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[9] ETSI EN 383 001: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control (BICC) Protocol or ISDN User Part (ISUP) [ITU-T Recommendation Q.1912.5, modified]".

[10] ITU-T Recommendation Q.1912.5 (03/2004): "Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control or ISDN User Part".

[11] ITU-T Recommendation E.164 (2005): "The international public telecommunication numbering plan".

[12] IETF RFC 768 (1980): "User Datagram Protocol".

[13] IETF RFC 761 (1980): "DoD standard Transmission Control Protocol".

[14] ITU-T Recommendation Q.767 (1991): "Application of the ISDN user part of CCITT signalling system No. 7 for international ISDN interconnections".

[15] ITU-T Recommendation Q.731.1 (1996): "Stage 3 description for number identification supplementary services using Signalling System No. 7: Direct-dialling-In (DDI)".

[16] ITU-T Recommendation Q.731.5 (1993): "Stage 3 description for number identification supplementary services using Signalling System No. 7: Connected line identification presentation (COLP)".

[17] ITU-T Recommendation Q.118 (1997): "Abnormal conditions - Special release arrangements".

[18] ITU-T Technical Report TRQ.2815 / Q.Sup45 (2003): "Requirements for interworking BICC/ISUP network with originating/destination networks based on Session Initiation Protocol and Session Description Protocol".

[19] ITU-T Recommendation Q.1902.4: "Bearer Independent Call Control protocol (Capability Set 2): Basic call procedures".

[20] ETSI ES 283 027 (V2.5.1): "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN) Endorsement of the SIP-ISUP Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks [3GPP TS 29.163 (Release 7), modified]".

[21] ETSI TS 183 008: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services Terminating Identification Presentation (TIP) and Terminating Identification Restriction (TIR); Protocol specification".

[22] ETSI TS 183 010: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Signalling Control Protocol; Communication HOLD (HOLD) PSTN/ISDN simulation services; Protocol specification".

[23] ETSI TS 183 029: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services: Explicit Communication Transfer (ECT); Protocol specification".

[24] ETSI TS 183 005: Telecommunications and Internet Converged Services and Protocols for Advanced Networking (TISPAN); NGN Signalling Control Protocol; Conference (CONF) PSTN/ISDN simulation services.

[25] ETSI TS 183 004: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services: Communication Diversion (CDIV); Protocol specification".

[26] ETSI TS 129 527 (V8.2.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); TISPAN; Endorsement of the SIP-ISUP Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks [3GPP TS 29.163 (Release 7), modified] (3GPP TS 29.527 version 8.2.0 Release 8)".

[27] ITU-T Recommendation Q.1902.2: "Bearer Independent Call control protocol (Capability Set 2) and Signalling System No.7 ISDN User Part: General functions of messages and parameters".

[28] IETF RFC 3267: "Real-Time Transport Protocol (RTP) Payload Format and File Storage Format for the Adaptive Multi-Rate (AMR) and Adaptive Multi-Rate Wideband (AMR-WB) Audio Codecs".

[29] ITU-T Recommendation Q.730: "ISDN user part supplementary services".

[30] IETF RFC 3264: "An Offer/Answer Model with the Session Description Protocol (SDP)".

[31] ITU-T Recommendation Q.731.3: "Stage 3 description for number identification supplementary services using Signalling System No. 7 : Calling line identification presentation (CLIP)".

2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area**.** For non-specific references, the latest version of the referenced document (including any amendments) applies.

Not applicable.

3 Definitions and abbreviations

3.1 Definitions

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

Abstract Test Case (ATC): complete and independent specification of the actions required to achieve a specific test purpose, defined at the level of abstraction of a particular Abstract Test Method, starting in a stable testing state and ending in a stable testing state

Abstract Test Method (ATM): description of how an SUT is to be tested, given at an appropriate level of abstraction to make the description independent of any particular realization of a Means of Testing, but with enough detail to enable abstract test cases to be specified for this method

Abstract Test Suite (ATS): test suite composed of abstract test cases

Implementation Under Test (IUT): implementation of one or more OSI protocols in an adjacent user/provider relationship, being part of a real open system which is to be studied by testing

Means of Testing (MOT): combination of equipment and procedures that can perform the derivation, selection, parameterization and execution of test cases, in conformance with a reference standardized ATS, and can produce a conformance log

PICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes the PICS

PIXIT proforma: document, in the form of a questionnaire, which when completed for the SUT becomes the PIXIT

Point of Control and Observation (PCO): point within a testing environment where the occurrence of test events is to be controlled and observed, as defined in an Abstract Test Method

pre-test condition: setting or state in the SUT which cannot be achieved by providing stimulus from the test environment

Protocol Implementation Conformance Statement (PICS): statement made by the supplier of a protocol claimed to conform to a given specification, stating which capabilities have been implemented

Protocol Implementation eXtra Information for Testing (PIXIT): statement made by a supplier or implementor of an SUT (protocol) which contains or references all of the information related to the SUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the SUT

SIP number: number conforming to the numbering and structure specified in ITU-T Recommendation E.164 [11]

System Under Test (SUT): real open system in which the SUT resides

user: access protocol entity at the User side of the user-network interface where a T reference point or coincident S and T reference point applies

3.2 Abbreviations

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

ATC	Abstract Test Case
ATM	Abstract Test Method
ATS	Abstract Test Suite
BICC	Bearer Independent Call Control protocol
CIC	Circuit Identification Code
ICS	Implementation Conformance Statement
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
IUT	Implementation Under Test
MOT	Means Of Testing
PCO	Point of Control and Observation
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SIP	Session Initiation Protocol
SUT	System Under Test
TP	Test Purpose
TSS&TP	Test Suite Structure and Test Purposes
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation

4 Scenarios

4.1 SIP Profile A and B for interworking between SIP and BICC/ISUP

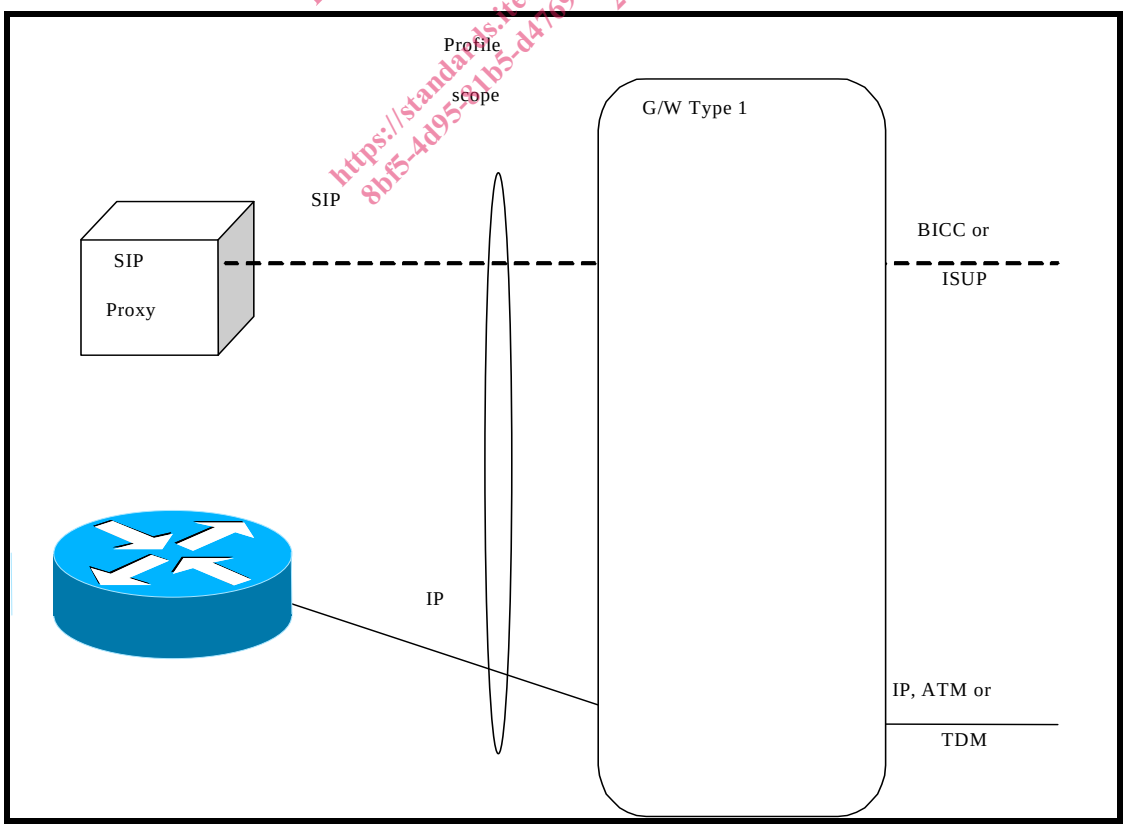

Figure 1: Profile Scope for SIP Interworking with BICC/ISUP with a Type 1 Gateway

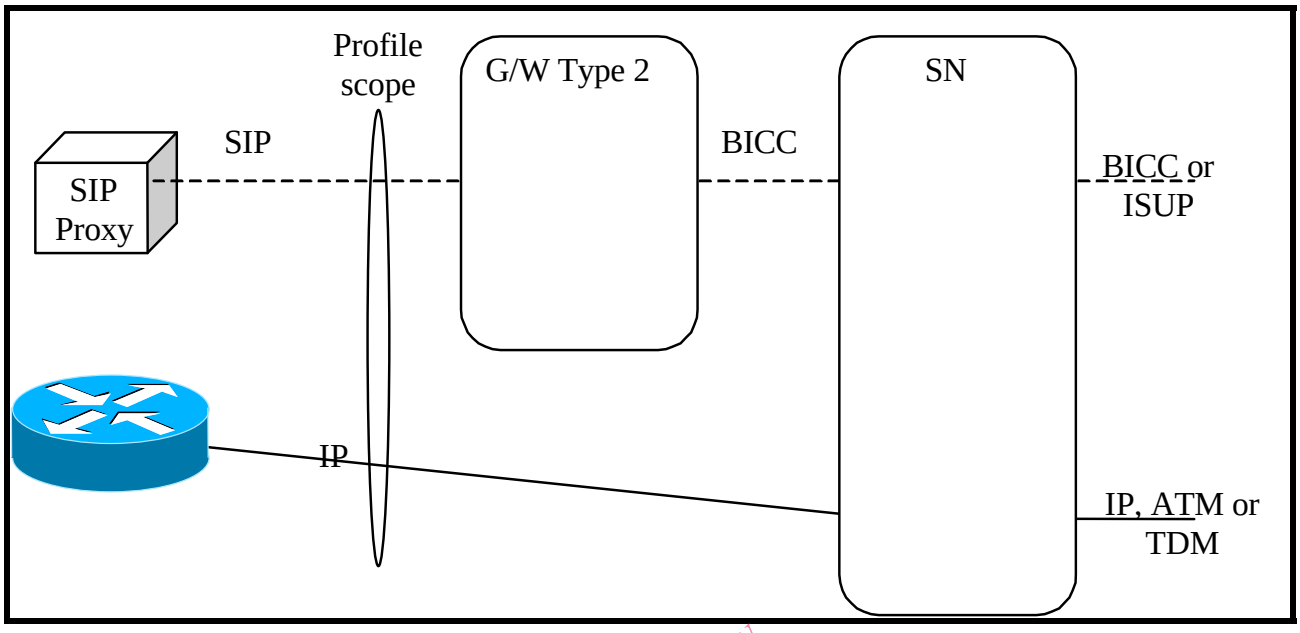

Figure 2: Profile Scope for SIP Interworking with BICC/ISUP with a Type 2 Gateway

4.2 SIP Profile C for Interworking Between SIP with MIME Encoding of ISUP and BICC/ISUP

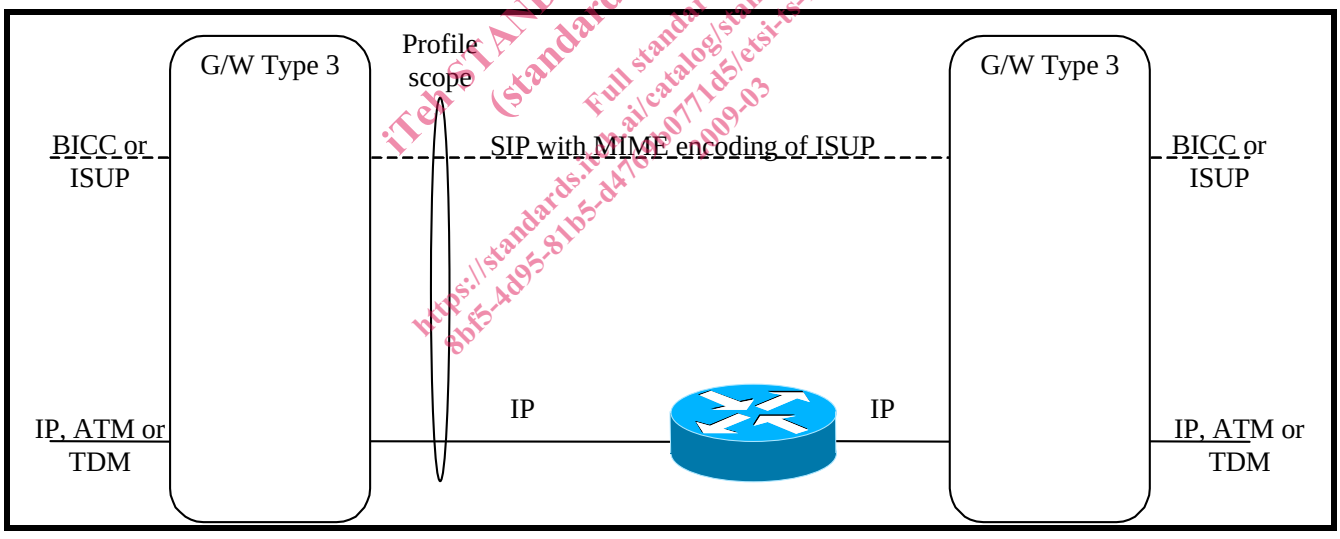

Figure 3: Profile Scope for SIP with MIME encoding of ISUP Interworking with BICC/ISUP with Type 3 Gateways

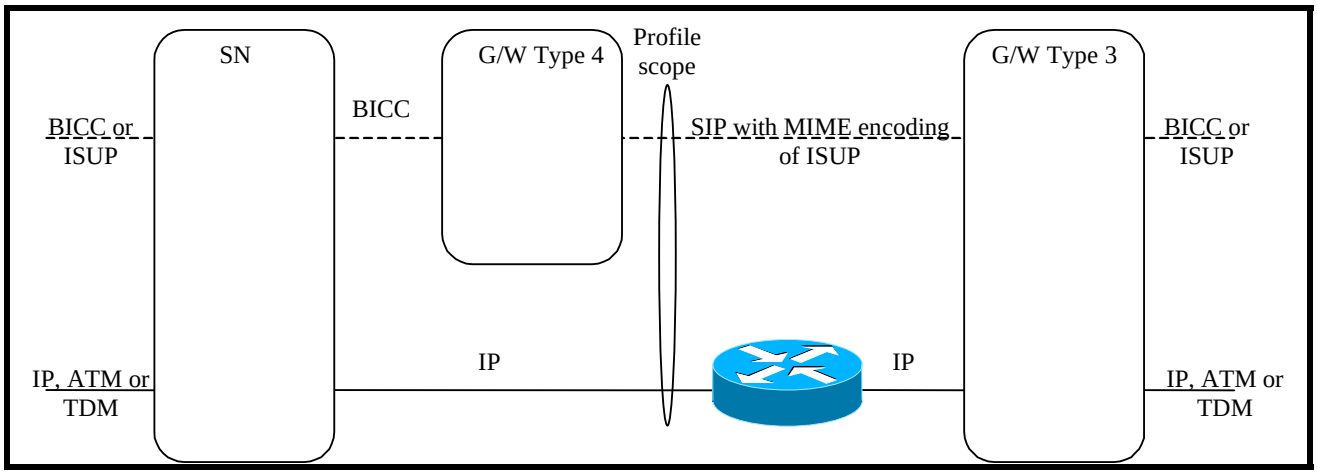

Figure 4: Profile Scope for SIP, with MIME Encoding of ISUP, Interworking with BICC/ISUP with Type 3 and 4 Gateways

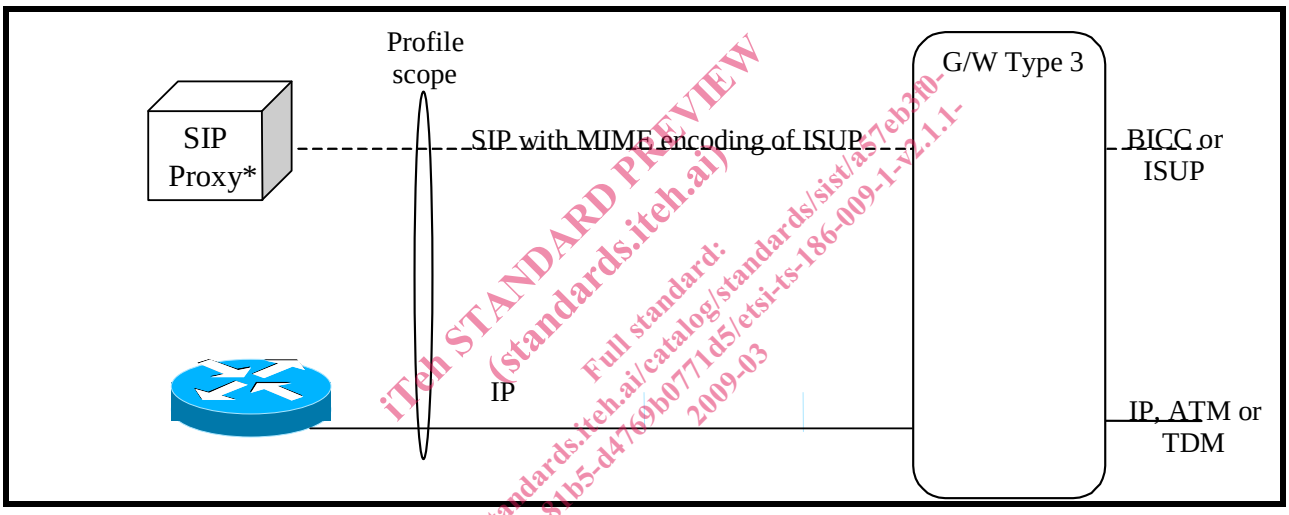

Figure 5: Profile Scope for SIP with MIME encoding of ISUP Interworking with BICC/ISUP with Type 3 Gateways