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Technical Specification

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

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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
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Contents

Intellectual Property Rights	4
Foreword.....	4
1 Scope	5
2 References	5
2.1 Normative references	5
2.2 Informative references.....	6
3 Definitions and abbreviations.....	6
3.1 Definitions.....	6
3.2 Abbreviations	7
4 Scenarios	8
4.1 SIP Profile A and B for interworking between SIP and BICC/ISUP	8
4.2 SIP Profile C for Interworking Between SIP with MIME Encoding of ISUP and BICC/ISUP	9
5 PICS proforma.....	11
5.1 Instructions for completing the PICS proforma.....	11
5.1.1 Other information	11
5.1.2 Purposes and structure	11
5.1.3 Conventions	12
5.2 Identification of the implementation	13
5.2.1 Date of the statement	13
5.2.2 Implementation Under Test (IUT) identification.....	13
5.2.3 System Under Test (SUT) identification.....	13
5.2.4 Product supplier.....	13
5.2.5 Client	13
5.2.6 PICS contact person.....	14
5.3 PICS proforma tables	14
5.3.1 Global statement of conformance	14
5.3.2 Roles	14
5.3.3 Connection types	14
5.3.4 Forward address signalling	15
5.3.5 Role independent capabilities.....	15
5.3.6 Supplementary Services Major Capabilities	16
5.3.7 Timers.....	19
5.4 Additional information for PICS.....	19
Annex A (informative): Bibliography.....	20
History	22

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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) for Profile A and B";
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) for Profile C";
- Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) for Profile A and B";
- Part 5: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) for Profile C".

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.

2 References

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.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
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NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

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 (1999): "Signalling System No.7 ISDN User Part".
- [2] ITU-T Recommendations Q.1902.1 to Q.1902.4 (2001): "Bearer Independent Call Control Protocol (BICC)".
- [3] ITU-T Recommendation Q.731.7 (1997): "Stage 3 description for number identification supplementary services using Signalling System No. 7: Malicious call identification (MCID)".
- [4] ITU-T Recommendation Q.732.2 (1999): "Stage 3 description for call offering supplementary services using Signalling System No. 7: Call diversion services - Call Forwarding Busy (CFB)".
- [5] ITU-T Recommendation Q.732.7 (1996): "Stage 3 description for call offering supplementary services using Signalling System No. 7: Explicit Call Transfer".
- [6] 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)".
- [7] IETF RFC 3261 (2002): "SIP: Session Initiation Protocol".
- [8] IETF RFC 3262 (2002): "Reliability of Provisional Responses in the Session Initiation Protocol (SIP)".

- [9] ISO/IEC 9646-7 (1995): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
- [10] 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]".
- [11] ITU-T Recommendation Q.1912.5 (03/2004): "Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control or ISDN User Part".
- [12] ITU-T Recommendation E.164 (2005): "The international public telecommunication numbering plan".
- [13] IETF RFC 768 (1980): "User Datagram Protocol".
- [14] IETF RFC 761 (1980): "DoD standard Transmission Control Protocol".
- [15] ITU-T Recommendation Q.767 (1991): "Application of the ISDN user part of CCITT signalling system No. 7 for international ISDN interconnections".
- [16] ITU-T Recommendation Q.731.1 (1996): "Stage 3 description for number identification supplementary services using Signalling System No. 7: Direct-dialling-In (DDI)".
- [17] 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)".
- [18] ITU-T Recommendation Q.118 (1997): "Abnormal conditions - Special release arrangements".
- [19] 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".
- [20] ITU-T Recommendation Q.1902.4: "Bearer Independent Call Control protocol (Capability Set 2): Basic call procedures".
- [21] 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".

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 [12]

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

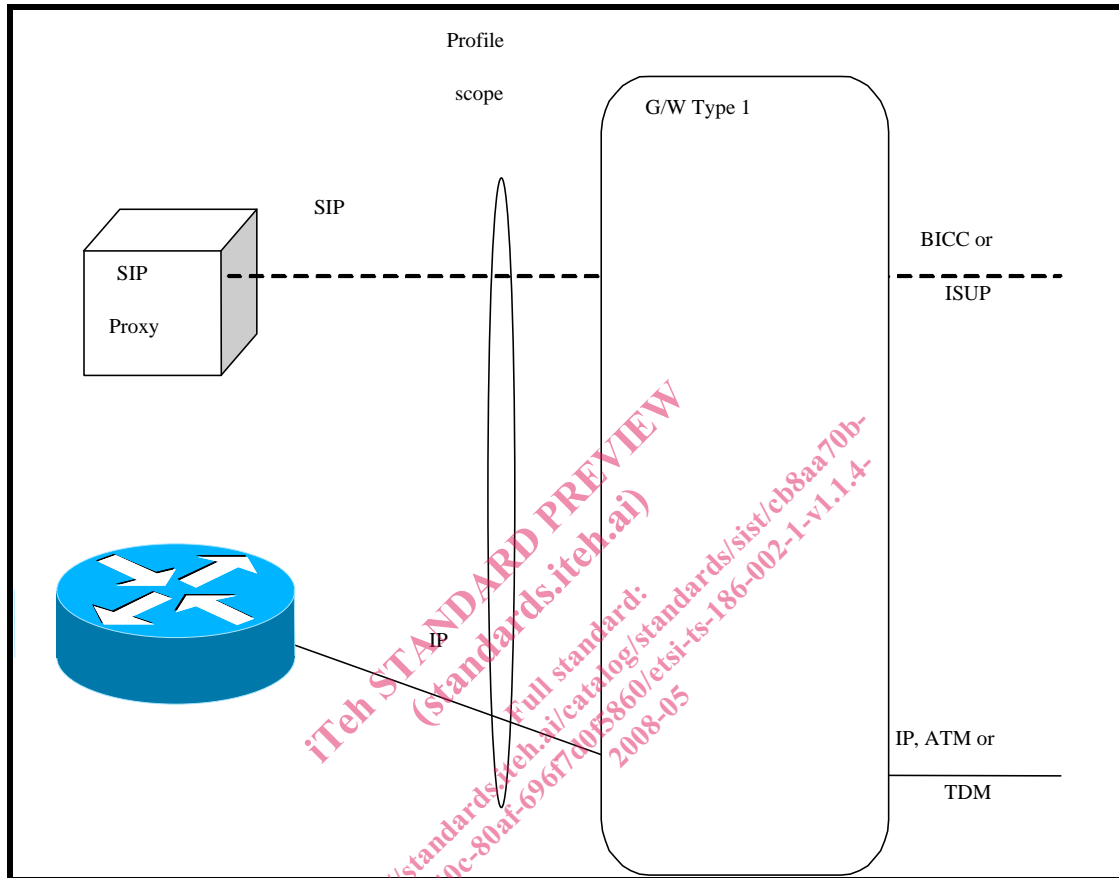


Figure 1: Profile Scope for SIP Interworking with BICC/ISUP with a Type 1 Gateway

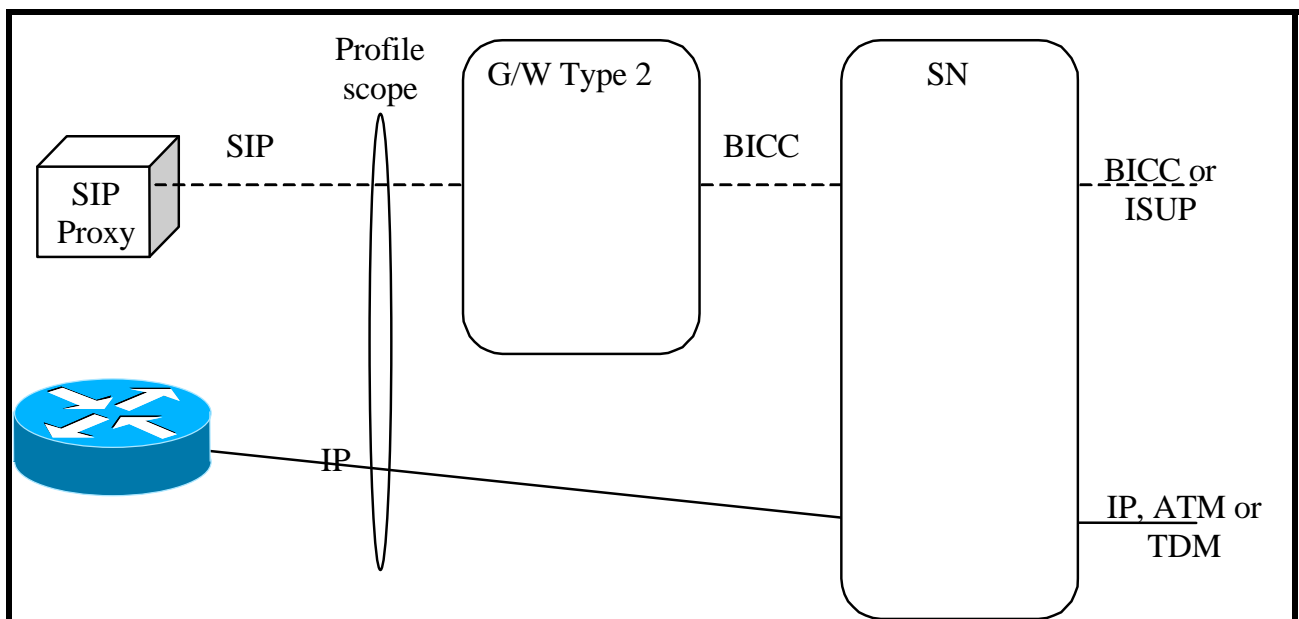


Figure 2: Profile Scope for SIP Interworking with BICC/ISUP with a Type 2 Gateway

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

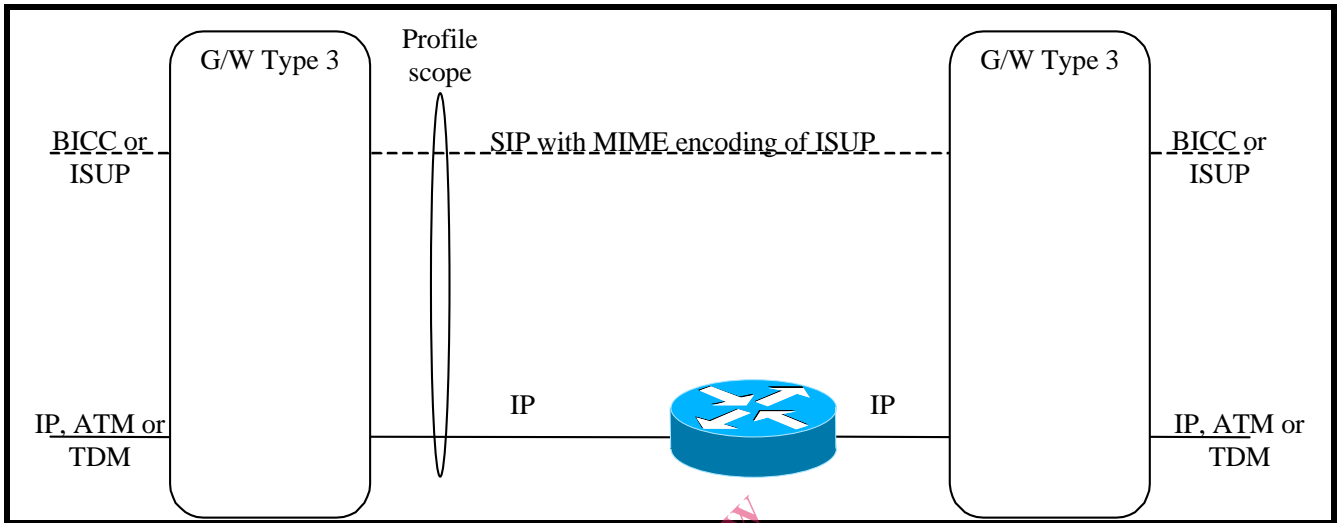


Figure 3: Profile Scope for SIP with MIME encoding of ISUP Interworking with BICC/ISUP with Type 3 Gateways

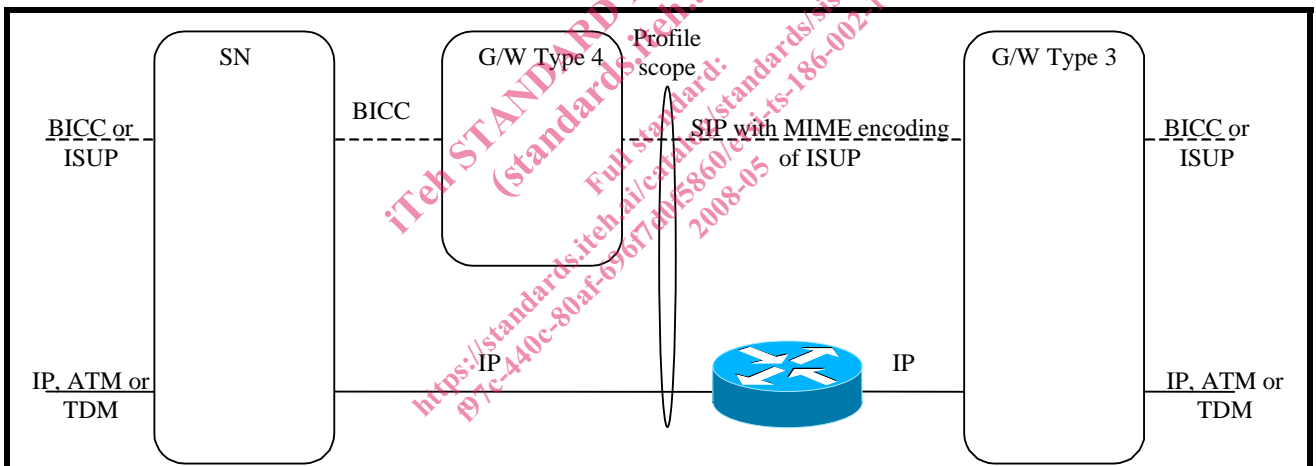


Figure 4: Profile Scope for SIP, with MIME Encoding of ISUP, Interworking with BICC/ISUP with Type 3 & 4 Gateways

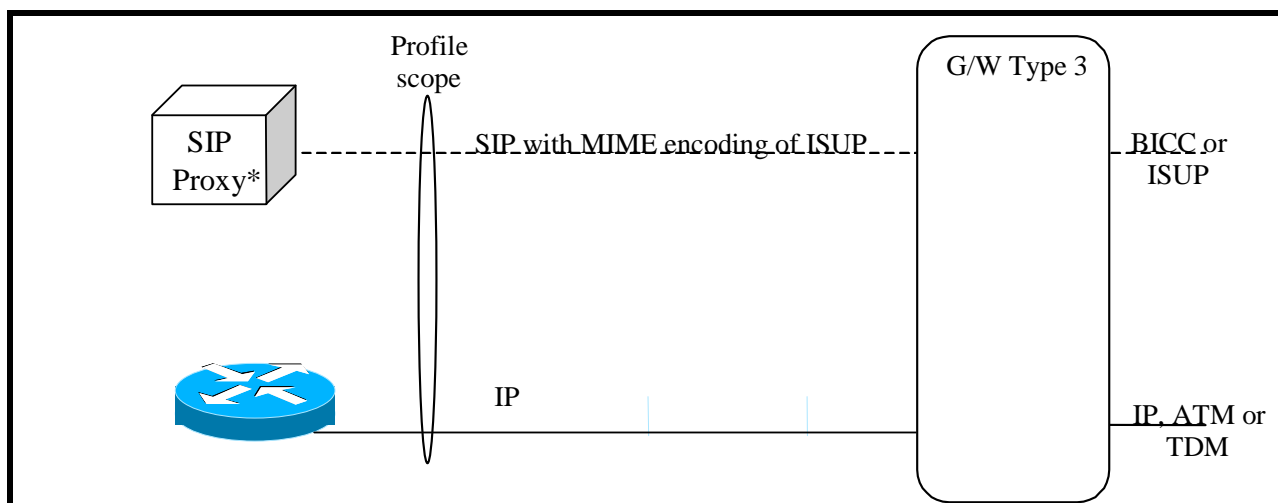


Figure 5: Profile Scope for SIP with MIME encoding of ISUP Interworking with BICC/ISUP with Type 3 Gateways

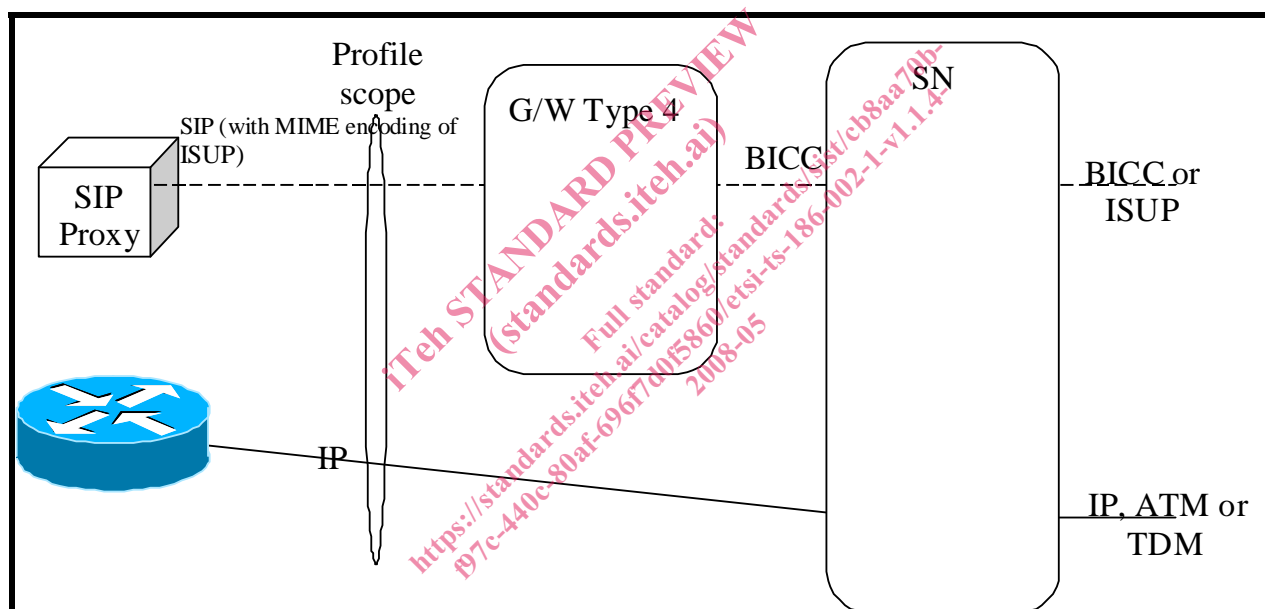


Figure 6: Profile Scope for SIP, with MIME Encoding of ISUP, Interworking with BICC/ISUP with Type 4 Gateway