SLOVENSKI STANDARD
SIST-TS TS 101 890-3 V1.1.1:2004

01-april-2004

Harmonizacija telekomunikacij in internetnega protokola prek omrežij (TIPHON), 3. izdaja - Specifikacija tehnološke ustreznosti - Profil TIPHON za ITU-T H.245 - 3. del: Abstraktni preskušalni niz (ATS) in delna dodatna informacija za preskušanje izvedbe protokola (PIXIT) - Proforma specifikacija

Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 3; Technology Compliance Specifications; TIPHON profile for ITU-T H.245; Part 3: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification

Ta slovenski standard je istoveten z: **TS 101 890-3 Version 1.1.1**

ICS:

33.020	Telekomunikacije na splošno	Telecommunications in general

SIST-TS TS 101 890-3 V1.1.1:2004 **en**

ETSI TS 101 890-3 V1.1.1 (2002-01)

Technical Specification

Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 3; Technology Compliance Specifications; TIPHON profile for ITU-T H.245; Part 3: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification

Reference
DTS/TIPHON-06018-3

Keywords
ATS, IP, supplementary service, testing, VoIP

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Foreword

This Technical Specification (TS) has been produced by ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON).

The present document is part 3 of multi-part deliverable covering Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 3; Technology Compliance Specifications; TIPHON profile for ITU-T Recommendation H.245, as identified below:

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

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

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

1 Scope

The present document specifies the Abstract Test Suite (ATS) for TIPHON profile for ITU-T Recommendation H.245 [4], according to TS 101 883 [1].

The objective of this test specification is to provide a basis for conformance tests for TIPHON profile for ITU-T Recommendation H.245 equipment giving a high probability of inter-operability between different manufacturer's TIPHON profile for ITU-T Recommendation H.245 equipments.

This test specification covers the procedures described in TS 101 883 [1], ITU-T Recommendation H.323 [2] and ITU-T Recommendation H.245 [4].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [6] and ISO/IEC 9646-2 [7]) as well as the ETSI rules for conformance testing (ETS 300 406 [5]) are used as a basis for the test methodology.

Annex A provides the Tree and Tabular Combined Notation (TTCN) part of the ATS.

Annex B provides the Partial Protocol Implementation eXtra Information for Testing (PIXIT) Proforma of the ATS.

Annex C provides the Protocol Conformance Test Report (PCTR) Proforma of the ATS.

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.

[1] ETSI TS 101 883: "Telecommunications and Internet protocol Harmonization Over Networks (TIPHON) Release 3; Technology Mapping; Implementation of TIPHON architecture using H.323".

[2] ITU-T Recommendation H.323 (Version 3, 1999): "Packet-based multimedia communications systems".

[3] ITU-T Recommendation H.225.0: "Call signalling protocols and media stream packetization for packet-based multimedia communication systems".

[4] ITU-T Recommendation H.245 (Version 7, 2000): "Control protocol for multimedia communication".

[5] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[6] ISO/IEC 9646-1 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[7] ISO/IEC 9646-2 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

[8] ISO/IEC 9646-3 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

[9] ISO/IEC 9646-6 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".

[10] ISO/IEC 9646-7 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

3 Definitions and abbreviations

3.1 Definitions

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

- Terms defined in ITU-T Recommendation H.323 [2];
- Terms defined in ITU-T Recommendation H.245 [4];
- Terms defined in TS 101 883 [1];
- Terms defined in ISO/IEC 9646-1 [6] and in ISO/IEC 9646-2 [7].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [6], ISO/IEC 9646-6 [9], ISO/IEC 9646-7 [10] and TS 101 883 [1] and the following apply:

ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
BI	Invalid Behaviour
BLC	Bi-directional Logical Channel
B-LCSE	Bi-directional Logical Channel Signalling Entity
BO	Inopportune Behaviour
BV	Valid Behaviour
CEP	Capability Exchange Procedures
CESE	Capability Exchange Signalling Entity
CLC	Close Logical Channel
CLCSE	Close Logical Channel Signalling Entity
IUT	Implementation Under Test
LCS	Logical Channel Signalling
LCSE	Logical Channel Signalling Entity
LT	Lower Tester
MC	H.323 Multipoint Control entity
MCU	Multipoint Control Unit
MRS	Mode RequeSt
MRSE	Mode Request Signalling Entity
MSD	Master Slave Determination
MSDSE	Master Slave Determination Signalling Entity
MTC	Main Test Component
OE	Originating Endpoint
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Component
SUT	System Under Test
TC	Test Cases
TE	Terminating Endpoint
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Abstract Test Method (ATM)

This clause describes the ATM used to test the TIPHON profile for ITU-T Recommendation H.245 [4], according to TS 101 883 [1].

4.1 Network architecture

The IUT to be tested can be one of the following: Originating (outgoing) or Terminating (incoming) Endpoint. They are a part of a Packet Based Network using a LAN with TCP/IP (see figure 1).

Figure 1: network architecture

4.2 Protocol architecture

The Implementation Under Test (IUT) for which this Test case specification applies consists of the H.245 protocol (see figure 2).

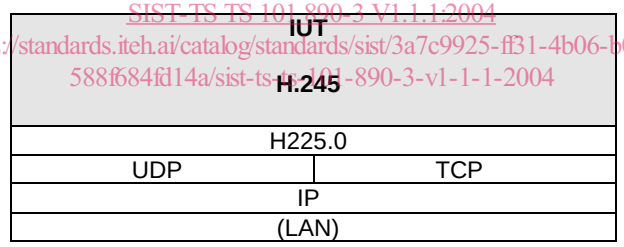

Figure 2: TIPHON protocol architecture (see note)

NOTE: According to TS 101 883 [1] clause 5.1.6.1.4.2: ITU-T Recommendation H.245 [4] messages are encapsulated within ITU-T Recommendation H.225.0 [3] messages according to ITU-T Recommendation H.323 [2] clause 8.2.1.

4.3 Test architecture

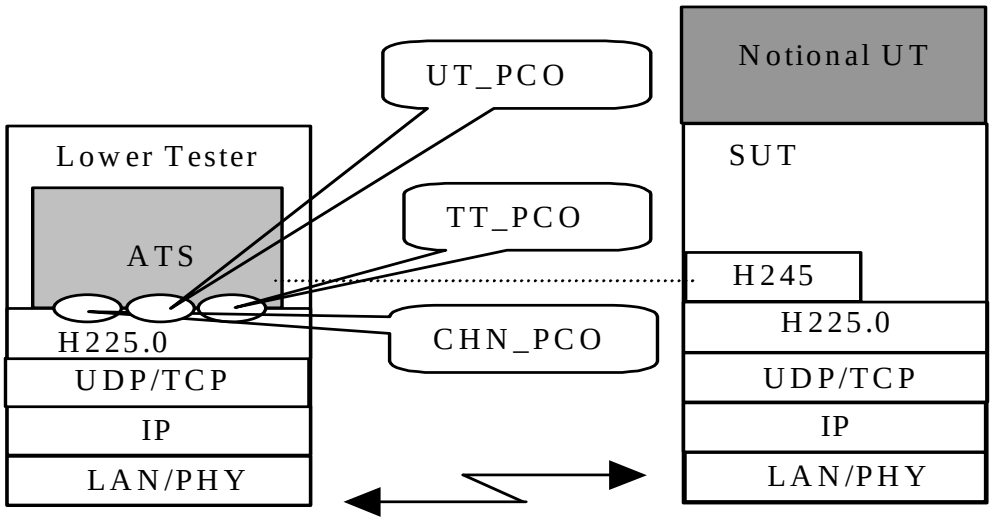

Figure 3: Test architecture

A single-party testing concept is used, which consists of the following abstract testing functions:

Lower Tester A Lower Tester (LT) is located in the remote test system. It controls and observes the behaviour of the IUT.

ATS: The Abstract Test Suite (ATS), defined in the present document, and located in the remote test system.

TT_PCO: A Point of Control and Observation (PCO) located at TT_SAP and used to open and to close the H245 channel over the H225.0 protocol. All test events at the PCO are specified in terms of Abstract Service Primitives (ASP).

CHN_PCO: A Point of Control and Observation (PCO) located at a virtual SAP corresponding to the H245 channel over the H225.0 protocol. All test events at the PCO are specified in terms of Abstract Service Primitives (ASP) containing complete PDU.

UT_PCO: A specific Point of Control and Observation (PCO) located at specific SAP and used to control the Upper layer of H245 in the IUT. The upper layer of H245 shall understand and answer to specific primitives for testing. All test events at the PCO are specified in terms of Abstract Service Primitives (ASP).

Notional UT: No explicit upper tester (UT) exists in the system under test. Nevertheless, some specific actions to cover implicit send events and to obtain feedback information are necessary for the need of the test procedures. A black box covering these requirements is used in the SUT as a notional UT as defined in ISO 9646. This notional UT is considered as part of the test system.

5 Untestable Test Purposes (TP)

This clause gives a list of TP, which are not implemented in the ATS due to the chosen ATM or other restrictions.

Table 1: Untestable TP

Test purpose	Reason