
Digitalno omrežje z integriranimi storitvami (ISDN) - Signalizacija št. 7 - Digitalni celični telekomunikacijski sistem (faza 2) - Aplikacija druge različice uporabniškega dela ISDN (ISUP) za signalizacijski vmesnik ISDN - javno kopensko mobilno omrežje (PLMN) - 4. del: Abstraktni preskušalni niz (ATS) in delna dodatna informacija za preskušanje izvedbe protokola (PIXIT) - Proforma specifikacije

Integrated Services Digital Network (ISDN); Signalling System No.7; Digital cellular telecommunications system (Phase 2); Application of ISDN User Part (ISUP) version 2 for the ISDN-Public Land Mobile Network (PLMN) signalling interface; Part 4: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification

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Ta slovenski standard je istoveten z: ETS 300 646-4 Edition 1

ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
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EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 646-4

March 1998

Source: SPS

Reference: DE/SPS-01029-3

ICS: 33.020

Key words: ISDN, SS7, ISUP, GSM, mobile, radio, PLMN, interworking, testing, ATS, PIXIT

**Integrated Services Digital Network (ISDN);
Signalling System No.7;
Digital cellular telecommunications system (Phase 2);
Application of ISDN User Part (ISUP) version 2 for the
ISDN-Public Land Mobile Network (PLMN) signalling interface;
Part 4: Abstract Test Suite (ATS) and partial Protocol
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specification**

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is part 4 of a multi-part standard covering the application of Integrated Services Digital Network (ISDN) User Part (ISUP) version 2 for the ISDN-Public Land Mobile Network (PLMN) signalling interface as described below:

Part 1: "Protocol specification (GSM 09.12)";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification";

Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".

Transposition dates	
Date of adoption of this ETS:	6 March 1998
Date of latest announcement of this ETS (doa):	30 June 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 December 1998
Date of withdrawal of any conflicting National Standard (dow):	31 December 1998

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1 Scope

This fourth part of ETS 300 646 provides the conformance test specification for the second version of the Integrated Services Digital Network (ISDN) - Global System for Mobile communications (GSM) Public Land Mobile Network (PLMN) signalling interface defined in ETS 300 646-1 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-1 [6].

This ETS contains the abstract test suite (ATS) for ISUP version 2 for the ISDN-PLMN interface, written in Tree and Tabular Combined Notation (TTCN) as specified in ISO/IEC 9646-3 [8]. It is based on ETS 300 646-3 [3] which specifies the Test Suite Structure and Test Purposes (TSS&TP).

This ETS applies only to exchanges having implemented the ISUP version 2 protocol specification. It is applicable for conformance testing of gateways in the fixed network or in the public land mobile network as defined in the ISUP version 2 for the ISDN-PLMN interface specification ETS 300 646-1 [1]. This ETS does not deal with compatibility testing.

The main text part of this ETS presents the requirements regarding the chosen test method and the conventions used within the ATS.

The annexes present the ATS for ISUP version 2 for the ISDN-PLMN interface (available on electronic media), the partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma and the Protocol Conformance Test Report (PCTR) proforma.

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 646-1 (1997): "Integrated Services Digital Network (ISDN); Signalling System No.7; Digital cellular telecommunication systems (Phase 2); Application of the ISDN User Part (ISUP) version 2 for the ISDN-Public Land Mobile Network (PLMN) signalling interface; Part 1: Protocol specification (GSM 09.12 version 4.1.1)".
- [2] ETS 300 646-2: "Integrated Services Digital Network (ISDN); Signalling System No.7; Digital cellular telecommunication systems (Phase 2); Application of the ISDN User Part (ISUP) version 2 for the ISDN-Public Land Mobile Network (PLMN) signalling interface; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [3] ETS 300 646-3: "Integrated Services Digital Network (ISDN); Signalling System No.7; Digital cellular telecommunication systems (Phase 2); Application of the ISDN User Part (ISUP) version 2 for the ISDN-Public Land Mobile Network (PLMN) signalling interface; Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification".
- [4] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [5] ETR 141: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; The Tree and Tabular Combined Notation (TTCN) style guide".
- [6] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [7] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

- [8] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [9] ISO/IEC 9646-5: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

- terms defined in ETS 300 646-1 [1];
- terms defined in ISO/IEC 9646-1 [6] and in ISO/IEC 9646-3 [8].

In particular, the following terms apply:

Abstract Test Case (ATC): A 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 (see ISO/IEC 9646-1 [6], subclause 3.3.3).

Abstract Test Method (ATM): The description of how an IUT 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 (see ISO/IEC 9646-1 [6], subclause 3.3.5).

Abstract Test Suite (ATS): A test suite composed of abstract test cases (see ISO/IEC 9646-1 [6], subclause 3.3.6).

Implementation Under Test (IUT): An 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 (see ISO/IEC 9646-1 [6], subclause 3.3.43).

Means Of Testing (MOT): The combination of equipment and procedures that can perform the derivation, selection, parametrization and execution of test cases, in conformance with a reference standardized ATS, and can produce a conformance log (see ISO/IEC 9646-1 [6], subclause 3.3.54).

Point of Control and Observation (PCO): A point within a testing environment where the occurrence of test events is to be controlled and observed, as defined in an abstract test method (see ISO/IEC 9646-1 [6], subclause 3.3.64).

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

Protocol Implementation Conformance Statement (PICS): A statement made by the supplier of a protocol claimed to conform to a given specification, stating which capabilities have been implemented (see ISO/IEC 9646-1 [6], subclauses 3.3.39 and 3.3.80).

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

Protocol Implementation eXtra Information for Testing (PIXIT): A statement made by a supplier or implementor of an IUT (protocol) which contains or references all of the information related to the IUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the IUT (see ISO/IEC 9646-1 [6], subclauses 3.3.41 and 3.3.81).

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

System Under Test (SUT): The real open system in which the IUT resides (see ISO/IEC 9646-1 [6], subclause 3.3.103).

user: The 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 this ETS, the following abbreviations apply:

ASP	Abstract Service Primitive
ATC	Abstract Test Case
ATM	Abstract Test Method
ATS	Abstract Test Suite
CIC	Circuit Identification Code
GMSC	Gateway MSC
GSM	Global System for Mobile communications
IncGateway	Incoming fixed network gateway
IncGMSC	Incoming GMSC
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
IUT	Implementation Under Test
LT	Lower Tester
MOT	Means Of Testing
MSC	Mobile-service Switching Centre
MS	Mobile Station
MSISDN	Mobile Station ISDN number
MSRN	Mobile Station Roaming Number
MTC	Main Test Component
MTP	Message Transfer Part
NNI	Network-network interface
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PTC	Parallel Test Component
PDU	Protocol Data Unit
NI	Network Indicator
OutGateway	Outgoing fixed network gateway
OutGMSC	Outgoing GMSC
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PLMN	Public Land Mobile Network
SCS	System Conformance Statement
SP	Signalling Point
SPC	Signalling Point Code
SS7	Signalling System No.7
SUT	System Under Test
TCP	Test Co-ordination Procedures
TSS&TP	Test Suite Structure and Test Purposes
TTCN	Tree and Tabular Combined Notation
UNI	User-network interface
UT	Upper Tester
VMSC	Visited MSC