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Intelligentno omrežje (IN) - Prvi nabor zmožnosti (CS1) inteligentnega omrežja - Jedrni uporabni (aplikacijski) del inteligentnega omrežja (INAP) - 3. del: Specifikacija zgradbe preskušalnega niza in namena preskušanja (TSS&TP) za funkcijo komutacije storitev (SSF) in funkcijo posebnih virov (SRF)

Intelligent Network (IN); Intelligent Network Capability Set 1 (CS1); Core Intelligent Network Application Protocol (INAP); Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification for Service Switching Function (SSF) and Specialized Resource Function (SRF)

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Part 3: Test Suite Structure and Test Purposes (TSS&TP)
specification for Service Switching Function (SSF) and
Specialized Resource Function (SRF)

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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 3 of a multi-part standard covering the Capability Set 1 (CS1) core Intelligent Network Protocol (INAP) as described below:

Part 1: "Protocol specification";

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

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for Service Switching Function (SSF) and Specialized Resource Function (SRF)";

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

Part 5: "Protocol specification for the Service Control Function (SCF) - Service Data Function (SDF) interface";

Part 6: "PICS proforma specification for the SCF-SDF interface".

NOTE: Further parts of this standard may be identified later.

Transposition dates	
Date of adoption of this ETS:	1 March 1996
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1 Scope

This third part of ETS 300 374 provides the Test Suite Structure and Test Purposes (TSS&TP) for conformance testing of the Service Switching Function (SSF) and the Specialized Resource Function (SRF) of the core Intelligent Network Application Protocol (INAP) of Intelligent Network (IN) Capability Set 1 (CS1) according to ETS 300 374-1 [1].

ISO/IEC 9646-1 [3] and ISO/IEC 9646-2 [4] are used as the basis for the test methodology.

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 300 374-1 (1994): "Intelligent Network (IN); Intelligent Network Capability Set 1 (CS1); Core Intelligent Network Application Protocol (INAP); Part 1: Protocol specification".
- [2] ETS 300 374-2: "Intelligent Network (IN); Intelligent Network Capability Set 1 (CS1); Core Intelligent Network Application Protocol (INAP); Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification for Service Switching Function (SSF), Specialized Resource Function (SRF) and Service Control Function (SCF)".
- [3] ISO/IEC 9646-1: "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [4] ISO/IEC 9646-2: "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification".

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3 Definitions and abbreviations

3.1 Definitions

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

- terms defined in ETS 300 374-1 [1];
- terms defined in ISO/IEC 9646-1 [3] and in ISO/IEC 9646-2 [4].

In particular, the following terms defined in ISO/IEC 9646-1 [3] apply:

- Abstract Test Suite (ATS);
- Implementation Under Test (IUT);
- System Under Test (SUT);
- Protocol Implementation Conformance Statement (PICS).

3.2 Abbreviations

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

aS	assisting SSF
aSSP	assisting SSP
ATS	Abstract Test Suite
BI	Invalid Behaviour tests
BO	Inopportune Behaviour tests
bS	tests for SSP basic functions
BV	Valid Behaviour tests
CA	Capability tests
cl	IP with direct path to SCP
EDP-N	Event Detection Point - Notification
EDP-R	Event Detection Point - Request
FE	Functional Entity
FSM	Finite State Machine
IN	Intelligent Network
INAP	Intelligent Network Application Protocol
IP	Intelligent Peripheral
iS	initiating SSF
iSSP	initiating SSP
IUT	Implementation Under Test
PICS	Protocol Implementation Conformance Statement
PDU	Protocol Data Unit
rS	SSF relay
SCF	Service Control Function
SCP	Service Control Point
SDF	Service Data Function
SDP	Service Data Point
SRF	Specialized Resource Function
SRSM	SRF call State Model
SSF	Service Switching Function
SSME	SSF Management Entity
SSP	Service Switching Point
SUT	System Under Test
TCAP	Transaction Capabilities Application Part
TDP	Trigger Detection Point
TP	Test Purpose
TSS	Test Suite Structure

4 Test Suite Structure (TSS)

4.1 Overview

Tables 1 and 2 show the structure of the test suites for SSF and SRF.

Table 1: Test suite structure of the SSF tests

SUT	Interface	Category	State	Group	
SSP	SCF-SSF bS: SSP basic functions	CA	State 1	Network event	
				Operation	
			State 3	Operation	
			State 6	Network event	
			State 7	Operation	
		BV	State 1	Network event	
				Operation	
			State 3	Network event	
				Operation	
				Operation error	
			State 6	Network event	
				Operation	
				Operation error	
			State 7	Operation	
			State 8	Network event	
		BI	State 1	Operation	
			State 3	Operation	
				Operation error	
			State 6	Operation	
			State 7	Operation	
		BO	State 1	Operation	
			State 3	Operation	
			State 6	Operation	
		SCF-SSF-SRF rS: add. for SSP with relay functions	BV	State 3	Operation
				State 4	Network event
					Operation
				Operation error	
			BI	State 3	Operation
State 4	Operation				
BO	State 1		Operation		
	State 3		Operation		
	State 4		Operation		
	State 6		Operation		

(continued)

Table 1 (concluded): Test suite structure of the SSF tests

SUT	Interface	Category	State	Group	
SSP	SCF-SSF iS: add. for SSP acting as initiating SSP	BV	State 3	Operation	
			State 5	Network event	
				Operation	
		Operation error			
		BI	State 3	Operation	
			State 5	Operation	
		BO	State 1	Operation	
			State 3	Operation	
			State 5	Operation	
	State 6		Operation		
	SCF-SSF aS: add. for SSP acting as assisting SSP	BV	State 1	Network event	
				State 3	Network event
					Operation
			State 4	Operation error	
				Network event	
				Operation	
		BI	State 3	Operation	
			State 4	Operation	
State 3			Operation		
BO	State 3	Operation			
	State 4	Operation			

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Table 2: Test suite structure of the SRF tests
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SUT	Interface	Category	State	Group	
IP	SCF-SRF cl (IP direct path to SCP)	BV	State 1	Network event	
			State 2	Network event	
				Operation	
			State 3	Operation error	
				Network event	
			BI	State 2	Operation
		State 3		Operation	
		BO		State 1	Operation
				State 2	Operation

4.2 Physical scenarios

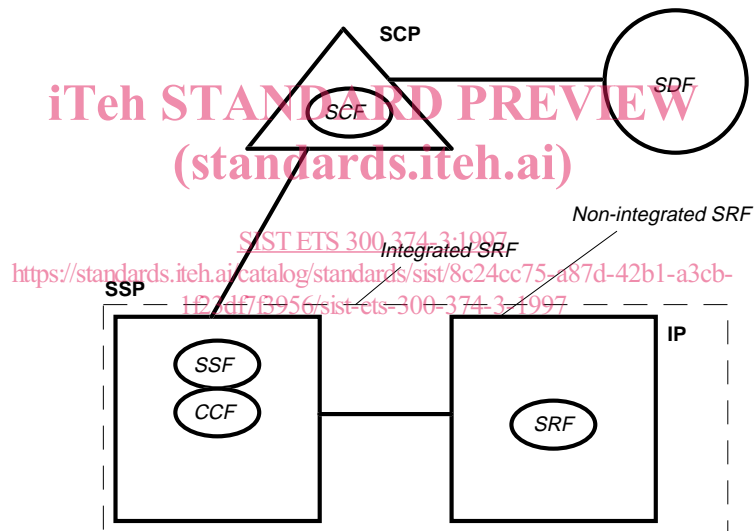
The test suites given in subclause 4.1 are based on the mapping of Functional Entities (FE) to Physical Entities (PE) as shown in table 3.

Table 3: Mapping of functional entities to physical entities

PE	FE			
	SRF	SSF	SCF	SDF
SSP	o	m	n/a	n/a
SCP	n/a	n/a	m	o
SDP	n/a	n/a	n/a	m
IP	m	n/a	n/a	n/a

The application of the test suites according to subclause 4.1 is given in figures 1 to 5 for a number of different example physical scenarios.

The following figures illustrate mainly the SRF configurations. The SDP is included for better understanding of the whole IN configuration. Nevertheless, it possible to support an SCP with an integrated SDF.



applied test suite groups for SSP testing: bS + rS

Figure 1: Example for SCP with single SSP Non-integrated or Integrated SRF