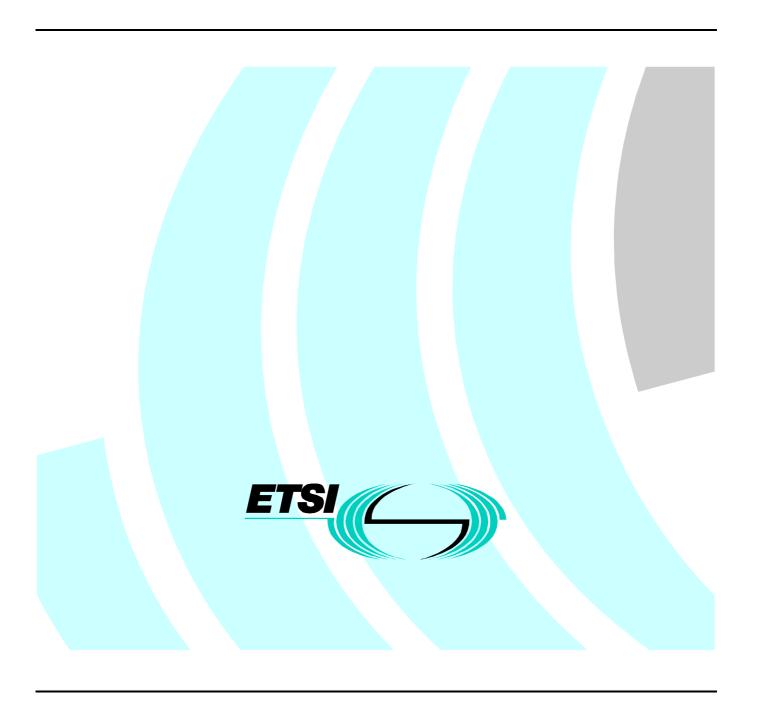# Draft ETSI EN 301 483-1 V1.2.2 (1999-12)

European Standard (Telecommunications series)

Private Integrated Services Network (PISN);
Inter-exchange signalling protocol;
Advice of Charge (AoC) supplementary services
[ISO/IEC 15049 (1997), modified];
Part 1: Test Suite Structure and Test Purposes
(TSS&TP) specification

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN) and is now submitted for the Public Enquiry phase of the ETSI standards Two-step Approval Procedure.

The present document is part 1 of a multi-part EN covering the Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Advice of Charge (AoC) supplementary services [ISO/IEC 15049 (1997), modified]; as identified below:

Part 1: "Test Suite Structure and Test Purposes (TSS&TP) specification";

Part 2: " Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma".

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for the Advice of charge supplementary services of the Interexchange signalling protocol for Private Integrated Services Networks (PISN).

The objective of this TSS and TPs specification is to provide conformance tests which give a greater probability of inter-operability. The TSS and TPs specification covers the procedures described in EN 301 264 [1].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [2], ISO/IEC 9646-2 [3] and ISO/IEC 9646-3 [4]) is used as basis for the test methodology.

The Test Suite Structure and Test Purposes specified in the present document are only intended for VPN scenarios at the "b" service entry point.

The VPN "b" service entry point is defined in EN 301 060-1 [5] and ETR 172 [6].

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, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.

- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1]   EN 301 264 (1998): "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Advice of Charge (AoC) supplementary services [ISO/IEC 15050 (1997), modified]".

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

[3]   ISO/IEC 9646-2: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 2: Abstract test suite specification".

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

[5]   EN 301 060-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Basic call control; Enhancement at the "b" service entry point for Virtual Private Network (VPN) applications; Part 1: Protocol specification".

[6]   ETR 172: "Business TeleCommunications (BTC); Virtual Private Networking (VPN); Services and networking aspects; Standardization requirements and work items".

[7]   ETS 300 239: "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Generic functional protocol for the support of supplementary services [ISO/IEC 11582 (1995), modified]".

[8]   ITU-T Recommendation I.112: "Vocabulary of terms for ISDNs".

[9]   EN 300 172: "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Circuit-mode basic services [ISO/IEC 11572 (1996) modified]".

[10]   ITU-T Recommendation I.210: "Principles of the telecommunication services supported by an ISDN and the means to describe them".

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

3   Definitions and abbreviations

3.1   Definitions

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

Abstract Test Suite (ATS): refer to ISO/IEC 9646-1 [2].

Implementation Under Test (IUT): refer to ISO/IEC 9646-1 [2].

Protocol Implementation Conformance Statement (PICS): refer to ISO/IEC 9646-1 [2].

PICS proforma: refer to ISO/IEC 9646-1 [2].

Test Purpose (TP): refer to ISO/IEC 9646-1 [2].

call independent signalling connection: see ETS 300 239 [7], definition 4.7.

call related: see ETS 300 239 [7], definition 4.9.

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [8], definition 308.

invoke APDU: see ETS 300 239 [7], subclause 11.3.3.4.

originating PINX: see EN 300 172 [9], subclause 4.5.

outgoing Gateway PINX: see EN 300 172 [9], subclause 4.6.

reject APDU: see ETS 300 239 [7], subclause 11.3.3.4.

return error APDU: see ETS 300 239 [7], subclause 11.3.3.4.

return result APDU: see ETS 300 239 [7], subclause 11.3.3.4.

service; telecommunication service: see ITU-T Recommendation I.112 [8], definition 201.

supplementary service: see ITU-T Recommendation I.210 [10], subclause 2.4.

terminating PINX: see EN 300 172 [9], subclause 4.5.

Virtual Private Network (VPN): refer to EN 301 060-1 [5].

3.2   Abbreviations

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

APDU	Application Protocol Data Unit
ATS	Abstract Test Suite
IE	Information Element
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
PICS	Protocol Implementation Conformance Statement
PINX	Private Integrated Services Network eXchange
PISN	Private Integrated Services Network
PSS1	Private Integrated Signalling System Number 1
sc	call independent signalling connection
SS	Supplementary services
TP	Test Purpose

TSS	Test Suite Structure
VPN	Virtual Private Network

4 Test Suite Structure (TSS)

SS-AOC signalling procedures at the VPN "b" service entry point	Group
Actions at the Originating PINX	
Normal procedures	Orig01
Exceptional procedures	Orig02
Actions at the Outgoing Gateway PINX	
Normal procedures	Ogw01
Exceptional procedures	Ogw02
Additional procedures for Call Transfer	Ogw03
Additional procedures for Call Diversion	Ogw04
Actions at the Terminating PINX	Term01
Interaction with Call Transfer	Int01
Interaction with Call Diversion	Int02

5 Test Purposes (TP)

5.1 Introduction

For each test requirement a TP is defined.

5.1.1 TP naming convention

TPs are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite and whether it applies to the network or the user (see table 1).

Table 1: TP identifier naming convention scheme

Identifier: **<ss>_<group>_<nnn>**			
<ss>	=	supplementary service:	"AOC"
<group>	=	group	up to 8 digit field representing group reference according to TSS
<nnn>	=	sequential number	(001-999)

5.1.2 Source of TP definition

The TPs are based on EN 301 264 [1].

5.1.3   TP structure

Each TP has been written in a manner which is consistent with all other TPs. The intention of this is to make the TPs more readable and checkable. A particular structure has been used and this is illustrated in table 2. This table should be read in conjunction with any TP, i.e. use a TP as an example to fully understand the table.

Table 2: Structure of a single TP for CCNR

TP part	Text	Example
Header	<Identifier> *tab* <paragraph number in base ETS> *tab*	see table 1 subclause 0.0.0
Stimulus	Ensure that the IUT in the <basic call state> or <AOC state> <trigger> *see below for message structure* *or* <goal>	 state 3 or AOC-Idle, etc. receiving a XXXX message to request a...
Reaction	<action> <conditions> *if the action is sending* *see below for message structure* <next action>, *etc.* and remains in the same state *or* and enters state <state>	sends, saves, does, etc. using en bloc sending,...
Message structure	<message type> message containing a *a)* <info element> information element with *b)* a <field name> encoded as *or* including <coding of the field> and *back to a or b,*	SETUP, FACILITY, CONNECT,... Bearer capability, Facility,...
NOTE:	Text in italics will not appear in TPs and text between <> is filled in for each TP and may differ from one TP to the next.	

5.1.4   Test strategy

As the base standard EN 301 264 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification Draft EN 301 264 [1].

The TPs are only based on conformance requirements related to the externally observable behaviour of the IUT, and are limited to conceivable situations to which a real implementation is likely to be faced (ETS 300 406 [11]).

All the test purposes are mandatory unless they have a selection criteria. Optional test purposes (with selection criteria), are applicable according to the configuration options of the IUT. The configuration option shall be covered by a PICS item.

5.2   TPs for SS-AOC signalling procedures

All PICS items referred to in this subclause are as specified in EN 301 264 [1] unless indicated otherwise by another numbered reference.

Unless specified:

-    only the requirements from the point of view of the VPN "b" service entry point are considered. This implies that the interactions with other networks are out of scope of this specification and causes that the corresponding Test Purposes are not included in this specification;

-    the messages indicated are valid and contain at least the mandatory information elements and possibly optional information elements;

-    the information elements indicated are valid and contain at least the mandatory parameters and possibly optional parameters.

The following wording convention was defined to make the test purposes more readable:

- when a message is to be sent or received on a call independent signalling connection, the message name shall be followed by a '(sc)', e.g. CONNECT (sc) means that the CONNECT message is conveyed on a call independent signalling connection.

All the test purposes are valid for both user and network side of the VPN b interface. In order to simplify the text and to make the test purposes more readable, only the User side Call states (Ux) are indicated in the test purposes. For the network side of the VPNb interface, the mapping table below indicates which network call state (Ny) corresponds to the user call state used in the test purpose. Equivalent call state means there that the same message flow applies from the IUT point of view (e.g.: IUT sends a SETUP message gives the call state U1 or N6)

User side call state	equivalent network side call state
U0	N0
U1	N6
U3	N9
U4	N7
U10	N10

EXAMPLE: Ensure that the IUT in the call state U1 …

is equivalent to the following network side test purpose:

Ensure that the IUT in the call state N6 …

5.2.1   Actions at the Originating PINX

Selection: IUT supports SS-AOC in Originating PINX. PICS: A1.

5.2.1.1   Normal procedures

AOC_Orig01_001   subclause 6.6.1.1.1
Ensure that the IUT in the call state U0 and in the Aoc-Orig-Idle state, in order to invoke one or more AOC service with the establishment of a new call,
   sends a SETUP message including a Facility IE with a chargeRequest invoke APDU and enters the Aoc-Orig-Wait1-Ack state.

AOC_Orig01_002   subclause 6.6.1.1.1
Ensure that the IUT in the call state U1 and in the Aoc-Orig-Wait1-Ack state, on receipt of a PROGRESS message including a Facility IE with a chargeRequest return result APDU,
   continues with normal call establishment and enters the Aoc-Orig-Active state.

AOC_Orig01_003   subclause 6.6.1.1.1
Ensure that the IUT in the call state U3 and in the Aoc-Orig-Wait1-Ack state, on receipt of an ALERTING message including a Facility IE with a chargeRequest return result APDU,
   continues with normal call establishment and enters the Aoc-Orig-Active state.

AOC_Orig01_004   subclause 6.6.1.1.1
Ensure that the IUT in the call state U3 or U4 and in the Aoc-Orig-Wait1-Ack state, on receipt of a CONNECT message including a Facility IE with a chargeRequest return result APDU,
   sends no message and enters the Aoc-Orig-Active state.

AOC_Orig01_005   subclause 6.6.1.1.1
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Wait1-Ack state, on receipt of a FACILITY message including a Facility IE with a chargeRequest return result APDU,
   sends no message and enters the Aoc-Orig-Active state.

AOC_Orig01_006   subclause 6.6.1.1.2
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Idle state, in order to invoke one or more AOC service,
   sends a FACILITY message including a Facility IE with a chargeRequest invoke APDU and enters the Aoc-Orig-Wait2-Ack state.

AOC_Orig01_007   subclause 6.6.1.1.2
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Wait2-Ack state, on receipt of a FACILITY message including a Facility IE with a chargeRequest return result APDU,
> sends no message and enters the Aoc-Orig-Active state.

AOC_Orig01_008   subclause 6.6.1.1.2
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, in order to invoke one or more additional AOC service,
> sends a FACILITY message including a Facility IE with a chargeRequest invoke APDU and remains in the same
> AOC state.

AOC_Orig01_009   subclause 6.6.1.1.3
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, on receipt of a FACILITY message including a Facility IE with a aocInterim invoke APDU,
> sends no message and remains in the same AOC state.

Selection: IUT supports provision of interim charge. PICS: A5

AOC_Orig01_010   subclause 6.6.1.1.3
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, on receipt of a FACILITY message including a Facility IE with a aocRate invoke APDU,
> sends no message and remains in the same AOC state.

Selection: IUT supports provision of rate charge. PICS: A4

AOC_Orig01_011   subclause 6.6.1.1.3
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, and interim charge provision or final charge provision is in operation, on receipt of a Release Request from the calling user,
> sends a FACILITY message including a Facility IE with a getFinalCharge invoke APDU and enters the
> Aoc-Orig-Wait-Charge state.

Selection: IUT supports provision of interim charge or final charge. PICS: A5 OR A6

AOC_Orig01_012   subclause 6.6.1.1.3
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, and neither interim charge provision nor final charge provision is in operation, on receipt of a Release Request from the calling user,
> starts the basic call clearing procedures and enters the Aoc-Orig-idle state.

Selection: IUT supports provision of rate charge. PICS: A4

AOC_Orig01_013   subclause 6.6.1.1.3
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Wait-Charge state, on receipt of a DISCONNECT message including a Facility IE with an aocFinal invoke APDU,
> continues the basic call clearing procedures and enters the Aoc-Orig-idle state.

Selection: IUT supports provision of final charge. PICS: A6

AOC_Orig01_014   subclause 6.6.1.1.3
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, on receipt of a DISCONNECT message including a Facility IE with an aocFinal invoke APDU,
> continues the basic call clearing procedures and enters the Aoc-Orig-idle state.

Selection: IUT supports provision of final charge. PICS: A6

5.2.1.2   Exceptional procedures

AOC_Orig02_001   subclause 6.6.1.2
Ensure that the IUT in the call state U1 and in the Aoc-Orig-Wait1-Ack state, on receipt of a FACILITY message including a Facility IE with a chargeRequest return error APDU indicating the value "notAvailable",
        continues with normal call establishment and enters the Aoc-Orig-Idle state.

AOC_Orig02_002   subclause 6.6.1.2
Ensure that the IUT in the call state U3 and in the Aoc-Orig-Wait1-Ack state, on receipt of an ALERTING message including a Facility IE with a chargeRequest return error APDU indicating the value "freeOfCharge",
        continues with normal call establishment and enters the Aoc-Orig-Idle state.

AOC_Orig02_003   subclause 6.6.1.2
Ensure that the IUT in the call state U3 or U4 and in the Aoc-Orig-Wait1-Ack state, on receipt of a CONNECT message including a Facility IE with a chargeRequest return error APDU indicating the value "unspecified",
        continues with normal call establishment and enters the Aoc-Orig-Idle state.

AOC_Orig02_004   subclause 6.6.1.2
Ensure that the IUT in the call state U1 or U3 or U4 and in the Aoc-Orig-Wait1-Ack state, on receipt of a FACILITY message including a Facility IE with a reject APDU,
        continues with normal call establishment and enters the Aoc-Orig-Idle state.

AOC_Orig02_005   subclause 6.6.1.2
Ensure that the IUT in the call state U3 or U4 and in the Aoc-Orig-Wait1-Ack state, on receipt of a CONNECT message without Facility IE,
        continues with normal call establishment and enters the Aoc-Orig-Idle state.

AOC_Orig02_006   subclause 6.6.1.2
Ensure that the IUT in the Active call state U10 and in the Aoc-Orig-Wait2-Ack state, on receipt of a FACILITY message including a Facility IE with a chargeRequest return error APDU,
        sends no message and enters the Aoc-Orig-Idle state.

AOC_Orig02_007   subclause 6.6.1.2
Ensure that the IUT in the Active call state U10 and in the Aoc-Orig-Wait2-Ack state, on receipt of a FACILITY message including a Facility IE with a reject APDU,
        sends no message and enters the Aoc-Orig-Idle state.

AOC_Orig02_008   subclause 6.6.1.2
Ensure that the IUT in the Active call state U10 and in the Aoc-Orig-Wait2-Ack state, on expiry of timer T1,
        sends no message and enters the Aoc-Orig-Idle state.

AOC_Orig02_009   subclause 6.6.1.2
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Wait-Charge state, on receipt of a DISCONNECT message without any aocFinal invoke APDU,
        continues the basic call clearing procedures and enters the Aoc-Orig-idle state.

Selection: IUT supports provision of final charge. PICS: A6

AOC_Orig02_010   subclause 6.6.1.2
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Wait-Charge state, on expiry of timer T2,
        initiates the basic call clearing procedures and enters the Aoc-Orig-idle state.

AOC_Orig02_011   subclause 6.6.1.2
Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, on receipt of a DISCONNECT message without any aocFinal invoke APDU,
        continues the basic call clearing procedures and enters the Aoc-Orig-idle state.

Selection: IUT supports provision of interim charge or final charge. PICS: A5 OR A6

AOC_Orig02_012   subclause 6.6.1.2

Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, having invoked one or more additional AOC services, on receipt of a FACILITY message including a Facility IE with a chargeRequest return error APDU,
>   sends no message and remains in the Aoc-Orig-Active state.

Selection: IUT supports provision of interim charge or final charge. PICS: A5 OR A6

AOC_Orig02_013   subclause 6.6.1.2

Ensure that the IUT in the call state U10 and in the Aoc-Orig-Active state, having invoked one or more additional AOC services, on expiry of timer T1,
>   sends no message and remains in the Aoc-Orig-Active state.

Selection: IUT supports provision of interim charge or final charge. PICS: A5 OR A6

5.2.2   Actions at the Outgoing Gateway PINX

Selection: IUT supports SS-AOC in Outgoing Gateway PINX. PICS: A3

5.2.2.1   Normal procedures

AOC_Ogw01_001   subclause 6.6.2.1

Ensure that the IUT in the call state U0 and in the Aoc-Ogw-Idle state, on receipt of a SETUP message including a Facility IE with a chargeRequest invoke APDU containing at least one adviceModeCombination, and the accounting function is able to accept one of them,
>   continues with normal call establishment, sends a chargeRequest return result APDU in a Faclity IE included in a PROGRESS, a FACILITY, an ALERTING or a CONNECT message and enters the Aoc-Ogw-Active state.

AOC_Ogw01_002   subclause 6.6.2.1

Ensure that the IUT in the call state U0 and in the Aoc-Ogw-Idle state, on receipt of a SETUP message including a Facility IE with a chargeRequest invoke APDU containing no adviceModeCombination, and the accounting function is able to provide an adviceModeCombination,
>   continues with normal call establishment, sends a chargeRequest return result APDU with an adviceModeCombination, in a Faclity IE with an adviceModeCombination, included in a PROGRESS, a FACILITY, an ALERTING or a CONNECT message and enters the Aoc-Ogw-Active state.

AOC_Ogw01_003   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Idle state, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU containing at least one adviceModeCombination, and the accounting function is able to accept one of them,
>   sends a chargeRequest return result APDU in a Faclity IE included in a FACILITY message and enters the Aoc-Ogw-Active state.

AOC_Ogw01_004   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Idle state, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU containing no adviceModeCombination, and the accounting function is able to provide an adviceModeCombination,
>   sends a chargeRequest return result APDU with an adviceModeCombination, in a Faclity IE with an adviceModeCombination, included in a FACILITY message and enters the Aoc-Ogw-Active state.

AOC_Ogw01_005   subclause 6.6.2.1

Ensure that the IUT in the call state U0 and in the Aoc-Ogw-Idle state, on receipt of a SETUP message including a Facility IE with a chargeRequest invoke APDU, and charge rate provision is in operation,
>   continues with normal call establishment, sends a chargeRequest return result APDU and a aocRate invoke APDU in a Faclity IE included in a PROGRESS, a FACILITY, an ALERTING or a CONNECT message and enters the Aoc-Ogw-Active state.

AOC_Ogw01_006   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Idle state, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU, and charge rate provision is in operation,
>   sends a chargeRequest return result APDU and an aocRate invoke APDU in a Faclity IE included in a FACILITY message, and enters in the Aoc-Ogw-Active state.

AOC_Ogw01_007   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU, and charge rate provision is in operation,

> sends a chargeRequest return result APDU and an aocRate invoke APDU in a Faclity IE included in a FACILITY message, and remains in the Aoc-Ogw-Active state.

AOC_Ogw01_008   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, and charge rate provision is in operation, whenever a change of the rate is detected,

> sends an aocRate invoke APDU in a Faclity IE included in a FACILITY message, and remains in the Aoc-Ogw-Active state.

AOC_Ogw01_009   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, and interim charge provision is in operation, after a certain period (IUT dependent),

> sends an aocInterim invoke APDU in a Faclity IE included in a FACILITY message, and remains in the Aoc-Ogw-Active state.

AOC_Ogw01_010   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a FACILITY message including a Facility IE with a getFinalCharge invoke APDU, and interim charge or final charge provision is in operation, on receipt of the final charge from the accounting function,

> sends an aocFinal invoke APDU in a Faclity IE included in a DISCONNECT message, and enters the Aoc-Ogw-Idle state.

AOC_Ogw01_011   subclause 6.6.2.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a DISCONNECT message,

> continues with the normal call clearing procedures and enters the Aoc-Ogw-Idle state.

5.2.2.2   Exceptional procedures

AOC_Ogw02_001   subclause 6.6.2.2

Ensure that the IUT in the call state U0 and in the Aoc-Ogw-Idle state, on receipt of a SETUP message including a Facility IE with a chargeRequest invoke APDU, and the accounting function is unable to accept the request,

> continues with normal call establishment, sends a chargeRequest return error APDU with error value "notAvailable" or "freeOfCharge" in a Facility IE included in a PROGRESS, a FACILITY, an ALERTING or a CONNECT message and remains in the Aoc-Ogw-Idle state.

AOC_Ogw02_002   subclause 6.6.2.2

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a FACILITY message including a Facility IE with a getFinalCharge invoke APDU, and neither interim nor final charge provision is in operation,

> sends a chargeRequest return error APDU with error value "notAvailable" or "freeOfCharge" in a Facility IE included in a PROGRESS, a FACILITY, an ALERTING or a CONNECT message and remains in the Aoc-Ogw-Idle state.

AOC_Ogw02_003   subclause 6.6.2.2

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU, and the accounting function is unable to accept the request,

> sends a chargeRequest return error APDU with error value "notAvailable" in a Facility IE included in a FACILITY message and remains in the Aoc-Ogw-Active state.

5.2.2.3   Additional procedures for Call Transfer.

AOC_Ogw03_001   subclause 6.6.2.3.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a FACILITY message including a Facility IE with an aocComplete invoke APDU, and the accounting function decides to charge User A for the call before and after the transfer,

> sends an aocComplete return result APDU with the value aocContinueCharging in a Facility IE included in a FACILITY message and enters either the Aoc-Ogw-Idle state when final charge provision is not in operation, or Aoc-Final-Accounting when final charge provision is in operation.

AOC_Ogw03_002 subclause 6.6.2.3.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a FACILITY message including a Facility IE with an aocComplete invoke APDU, and the accounting function decides not to charge User A for the call before and after the transfer,

> sends an aocComplete return result APDU with the value aocFreeOfCharge in a Facility IE included in a FACILITY message and enters the Aoc-Ogw-Idle state.

AOC_Ogw03_003 subclause 6.6.2.3.1

Ensure that the IUT in the call state U10 and in the Aoc-Ogw-Active state, on receipt of a FACILITY message including a Facility IE with an aocComplete invoke APDU, and the accounting function decides to charge User A for the call after the transfer,

> sends an aocComplete return result APDU with the value aocStopCharging in a Facility IE included in a FACILITY message and enters either the Aoc-Ogw-Idle state when neither interim charge nor final charge provision is in operation, or Aoc-Final-Accounting when Interim charge or final charge provision is in operation.

AOC_Ogw03_004 subclause 6.6.2.3.1

Ensure that the IUT in the Aoc-Final-Accounting state, on receipt of the final charge information from the accounting function,

> sends an aocFinal invoke APDU with the element finalBilliingId coded with the value "callTransfer" in a Facility IE included in a SETUP (sc) message and enters the Aoc-Ogw-Idle state.

AOC_Ogw03_005 subclause 6.6.2.3.2

Ensure that the IUT in the Aoc-Final-Accounting state, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU,

> sends a chargeRequest return error APDU with the value "notAvailable" in a Facility IE included in a FACILITY message and remains in the same state.

5.2.2.4　　　　Additional procedures for Call Diversion.

AOC_Ogw04_001 subclause 6.6.2.4.1

Ensure that the IUT in the Aoc-Ogw-Idle state, on receipt of a FACILITY message including a Facility IE with a aocDivChargeReq invoke APDU,

> sends no message and enters the Aoc-Final-Accounting state.

AOC_Ogw04_002 subclause 6.6.2.4.1

Ensure that the IUT in the Aoc-Final-Accounting state, on receipt of the final charge information from the accounting function,

> sends an aocFinal invoke APDU with the element finalBilliingId coded with one of the following values: "callForwardingUnconditional", "CallForwardingBusy", "callForwardingNoReply" or "callDeflection", in a Facility IE included in a SETUP (sc) message and enters the Aoc-Ogw-Idle state.

AOC_Ogw04_003 subclause 6.6.2.4.2

Ensure that the IUT in the Aoc-Final-Accounting state, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU,

> sends a chargeRequest return error APDU with the value "notAvailable" in a Facility IE included in a FACILITY message and remains in the same state.

5.2.3　　　Actions at the Terminating PINX

Selection: IUT supports SS-AOC in Terminating PINX. PICS: A2

AOC_Term01_001 subclause 6.6.4.2

Ensure that the IUT in the call state U0, on receipt of a SETUP message including a Facility IE with a chargeRequest invoke APDU,

> continues with normal call establishment and sends a chargeRequest return error APDU with the value "freeOfCharge" in a Facility IE included in the CONNECT message.

AOC_Term01_002 subclause 6.6.4.2

Ensure that the IUT in the call state U10, on receipt of a FACILITY message including a Facility IE with a chargeRequest invoke APDU,

> sends a chargeRequest return error APDU with the value "freeOfCharge" in a Facility IE included in a FACILITY message.

5.2.4 Interactions with Call Transfer

Selection: IUT supports SS-AOC in Originating PINX. PICS: A1

AOC_Int01_001 subclause 6.9.3.1.1

Ensure that the IUT in the state Aoc-Orig-Active, on a Call Transfer request,

> sends an aocComplete invoke APDU in a Facility IE included in a FACILITY message and enters the state Aoc-Orig-Wait-Completion.

AOC_Int01_002 subclause 6.9.3.1.1

Ensure that the IUT in the state Aoc-Orig-Wait-Completion, on receipt of a FACILITY message including a Facility IE with an aocComplete return result APDU coded aocFreeOfCharge,

> starts the call transfer procedures and enters the state Aoc-Orig-Idle.

AOC_Int01_003 subclause 6.9.3.1.1

Ensure that the IUT in the state Aoc-Orig-Wait-Completion, on receipt of a FACILITY message including a Facility IE with an aocComplete return result APDU coded aocContinueCharging,

> starts the call transfer procedures and enters the state Aoc-Orig-Idle.

AOC_Int01_004 subclause 6.9.3.1.1

Ensure that the IUT in the state Aoc-Orig-Wait-Completion, on receipt of a FACILITY message including a Facility IE with an aocComplete return result APDU coded aocStopCharging,

> starts the call transfer procedures and enters the state Aoc-Orig-Idle.

AOC_Int01_005 subclause 6.9.3.1.1

Ensure that the IUT in the state Aoc-Orig-Idle, on receipt of a SETUP (sc) message including a Facility IE with an aocFinal invoke APDU,

> clears the call-independent signalling connection and remains in the state Aoc-Orig-Idle.

AOC_Int01_006 subclause 6.9.3.1.2

Ensure that the IUT in the state Aoc-Orig-Wait-Completion, on expiry of timer T1,

> starts the call transfer procedures and enters the state Aoc-Orig-Idle.

AOC_Int01_007 subclause 6.9.3.1.2

Ensure that the IUT in the state Aoc-Orig-Wait-Completion, on receipt of a FACILITY message including a Facility IE with an aocComplete return error APDU,

> starts the call transfer procedures and enters the state Aoc-Orig-Idle.

AOC_Int01_008 subclause 6.9.3.1.2

Ensure that the IUT in the state Aoc-Orig-Wait-Completion, on receipt of a FACILITY message including a Facility IE with an aocComplete reject   APDU,

> starts the call transfer procedures and enters the state Aoc-Orig-Idle.

5.2.5 Interactions with Call Diversion

AOC_Int02_001 subclause 6.9.4.1

Ensure that the IUT to invoke callRerouting, and final charge provision is required,

> sends a FACILITY message including a Facility IE with a callRerouting invoke APDU and an aocDivChargeReq invoke APDU containing the diversion type invoked at the served user PINX.

Selection: IUT supports SS-AOC in Outgoing Gateway PINX. PICS: A3

AOC_Int02_002 **subclause 6.9.4.1**

Ensure that the IUT in the state Aoc-Orig-Idle, on receipt of a SETUP (sc) message including a Facility IE with an aocFinal invoke APDU,

> clears the call-independent signalling connection and remains in the state Aoc-Orig-Idle.

Selection: IUT supports SS-AOC in Originating PINX. PICS: A1

6 Compliance

An ATS which complies with this TSS&TP specification shall:

a) consist of a set of test cases corresponding to the set or to a subset of the TPs specified in clause 5;

b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 4;

c) use the same naming conventions for the test groups and test cases;

d) maintain the relationship specified in clause 5 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection;

e) comply with ISO/IEC 9646-2 [3].

In the case of a) or b) above, a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 5 shall be included in a compliant ATS.

7 Requirements for a comprehensive testing service

As a minimum the Remote test method, as specified in ISO/IEC 9646-2 [3], shall be used by any organization claiming to provide a comprehensive testing service for equipment claiming conformance to EN 301 264 [1].

History

Document history			
V1.2.2	December 1999	Public Enquiry	PE 200016: 1999-12-22 to 2000-04-21