INTERNATIONAL STANDARD

ISO/IEC 10168-1

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Information technology — Open Systems Interconnection — Conformance test suite for the Session protocol —

Part 1:
Test suite structure and test purposes

Technologies de l'information — Interconnexion de systèmes ouverts — Suite de tests de conformité pour le protocole de session —

Partie 1: Structure de la suite de tests et objets des tests

Reference number
ISO/IEC 10168-1:1997(E)

Contents

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization as a whole. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committee established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 10168-1 was prepared by Joint Technical Committee ISO/IEC JTC1, *Information technology,* Subcommittee SC21, *Open systems interconnection, data management and open distributed processing.*

ISO/IEC 10168 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Conformance test suite for the Session protocol:*

— *Part 1: Test suite structure and test purposes*

— *Part 4: Test management protocol specification*

Annex A forms an integral part of this part of ISO/IEC 10168. Annex B is for information only.

Introduction

This part of ISO/IEC 10168, a multipart International Standard, specifies a test suite structure and a set of test purposes for use by test suite specifiers as the basis for all standardized conformance test suites needed to evaluate conformance to ISO/IEC 8327-1, the Session protocol.

A fundamental objective of the related standardized conformance test suites is to establish uniform conformance testing and unambiguous evaluation procedures for checking the ability of a Session protocol implementation to operate according to ISO/IEC 8327-1.

The standardization of these test suites should lead to comparability and wide acceptance of test results produced by different test laboratories, and therefore minimize repeated conformance testing of the same Session protocol implementation.

The conformance test suites based on this part of ISO/IEC 10168 are designed for use by:

a) test laboratories which provide a conformance testing service for the Session protocol;

b) test realizers which provide a means of testing to be used by such test laboratories;

c) implementors of the Session protocol.

The purpose of conformance testing is to increase the probability that different implementations are able to interwork, although conformance testing alone cannot give a guarantee of interworking. Conformance testing increases the confidence that each implementation conforms to the protocol specification by establishing that it has the required capabilities and that its behaviour conforms to the protocol specification in representative instances of communication.

Information technology — Open Systems Interconnection — Conformance test suite for the Session protocol —

Part 1 :

Test suite structure and test purposes

1 Scope

This part of ISO/IEC 10168 specifies a test suite structure and test purposes for the Session protocol, as defined in ISO/IEC 8327-1 except for the symmetric synchronize and for the data separation functional units.

This part of ISO/IEC 10168 does not specify how the conformance tests are to be realized or used, nor how the test results are to be presented or used.

This part of ISO/IEC 10168 applies to conformance test suites for testing Session protocol implementations which operate over a connection oriented Transport service (ISO 8072) and which claim conformance to ISO/IEC 8327-1.

NOTE - The choice of test method may restrict the test purposes which can be realised.

This part of ISO/IEC 10168 does not include a general assessment of performance, reliability or robustness of relevant protocol implementations, nor an assessment of the design of the protocol itself.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 10168. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 10168 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 7498-1:1994, *Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model.*

ISO 7498-3:1989[1], *Information processing systems — Open Systems Interconnection — Basic Reference Model — Part°3 Naming and addressing.*

ISO/IEC 8072:1996, *Information technology — Open Systems Interconnection — Transport service definition.*

ISO/IEC 8326:1996, *Information technology — Open Systems Interconnection — Session service definition.*

ISO/IEC 8327-1:1996, *Information technology — Open Systems Interconnection — Connection-oriented Session protocol: Protocol specification.*

ISO/IEC 8327-2:1996, *Information technology — Open Systems Interconnection — Basic connection-oriented Session protocol: Protocol Implementation Conformance Statement (PICS) proforma.*

ISO/IEC 9646-1:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts.*

ISO/IEC 9646-2:1995, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 2: Abstract Test Suite specification.*

ISO/IEC 10731:1994, *Information technology — Open Systems Interconnection — Basic Reference Model — Conventions for the definition of OSI services.*

3 Definitions

For the purposes of this part of ISO/IEC 10168, the following definitions apply.

3.1 Reference model definitions

This part of ISO/IEC 10168 uses the following terms defined in ISO/IEC 7498-1:

a) session-connection;

b) session layer;

c) session-protocol-data-unit;

d) session-service;

e) session-service-access-point;

f) session-service-data-unit;

g) transport Layer;

i) transport-service;

j) transport-service-access-point;

k) concatenation;

l) segmenting.

1 To be published.

3.2 Service conventions definitions

This part of ISO/IEC 10168 uses the following terms defined in ISO/IEC 10731:

a) service-provider;
b) service-user;
c) primitive;
d) request (primitive);
e) indication (primitive);
f) response (primitive);
g) confirm (primitive).

3.3 Transport service definitions

This part of ISO/IEC 10168 uses the following terms defined in ISO/IEC 8072:

a) calling transport service user;
b) called transport service user;
c) sending transport service user;
d) receiving transport service user.

3.4 Session service definitions

This part of ISO/IEC 10168 uses the following terms defined in ISO/IEC 8326:

a) calling SS-user;
b) called SS-user;
c) sending SS-user;
d) receiving SS-user;
e) requestor; requesting SS-user;
f) acceptor; accepting SS-user;
g) token;
h) conditional (parameter);
i) proposed parameter;
j) selected parameter.

3.5 Session protocol definitions

This part of ISO/IEC 10168 uses the following terms defined in ISO/IEC 8327-1:

a) Session Protocol Machine (SPM);
b) session-service-user (SS-user);
c) transport-service-provider (TS provider);
d) local matter;
e) initiator;
f) responder;
g) sending SPM;
h) receiving SPM;
i) owner (of a token);
j) proposed parameter;
k) negotiation;
l) selected parameter;
m) valid SPDU;
n) invalid SPDU;
o) protocol error;
p) transparent (data);
q) SPDU identifier (SI);
r) length indicator (LI);
s) parameter field;
t) parameter identifier (PI);
u) PI unit;
v) parameter group identifier (PGI);
w) PGI unit;
y) parameter value (PV);
z) local variable.

3.6 Conformance testing methodology and framework definitions

This part of ISO/IEC 10168 uses the following terms defined in ISO/IEC 9646-1 and ISO/IEC 9646-2:

a) basic interconnection testing;
b) behaviour testing;
c) capabilities of an IUT;
d) capability testing;
e) conformance testing;
f) conformance test suite;
g) dynamic conformance requirements;
h) implementation under test (IUT);
i) inopportune test event;
j) lower tester;
k) PICS proforma;
l) protocol implementation conformance statement (PICS);
m) static conformance requirements;
n) syntactically invalid test event;
o) system under test (SUT);
p) test group;
q) test purpose;
r) test suite.

3.7 Session test suite structure and test purposes definition

For the purposes of this part of ISO/IEC 10168, the following definitions also apply.

3.7.1 inopportune parameter: A parameter whose PGI or PI current value is defined in ISO/IEC 8327-1, but which occurs in a SPDU which is not allowed.

3.7.2 unknown parameter: A parameter whose PGI or PI current value is not defined in ISO/IEC 8327-1.

3.7.3 mislaid parameter: A parameter which does not appear in the order defined in ISO/IEC 8327-1 for a particular SPDU.

4 Abbreviations

4.1 Data units

SPDU	Session Protocol Data Unit
SSDU	Session Service Data Unit
TSDU	Transport Service Data Unit

4.2 Types of Session protocol data units

AA	ABORT ACCEPT SPDU
AB	ABORT SPDU
AC	ACCEPT SPDU
AD	ACTIVITY DISCARD SPDU
ADA	ACTIVITY DISCARD ACK SPDU
AE	ACTIVITY END SPDU
AEA	ACTIVITY END ACK SPDU
AI	ACTIVITY INTERRUPT SPDU
AIA	ACTIVITY INTERRUPT ACK SPDU
AR	ACTIVITY RESUME SPDU
AS	ACTIVITY START SPDU
CD	CAPABILITY DATA SPDU
CDA	CAPABILITY DATA ACK SPDU
CDO	CONNECT DATA OVERFLOW SPDU
CN	CONNECT SPDU
DN	DISCONNECT SPDU
DT	DATA TRASFER SPDU
ED	EXCEPTION DATA SPDU
ER	EXCEPTION REPORT SPDU
EX	EXPEDITED SPDU
FN	FINISH SPDU
GT	GIVE TOKENS SPDU
GTA	GIVE TOKENS ACK SPDU
GTC	GIVE TOKENS CONFIRM SPDU
MAA	MAJOR SYNC ACK SPDU
MAP	MAJOR SYNC POINT SPDU
MIA	MINOR SYNC ACK SPDU
MIP	MINOR SYNC POINT SPDU
NF	NOT FINISHED SPDU
OA	OVERFLOW ACCEPT SPDU
PR	PREPARE SPDU
PT	RLEASE TOKENS SPDU
RA	RESYNCHRONIZE ACK SPDU
RF	REFUSE SPDU
RS	RESYNCHRONIZE SPDU
TD	TYPED DATA SPDU

4.3 Types of Session service primitives

SACTDcnf	S-ACTIVITY-DISCARD confirm primitive
SACTDind	S-ACTIVITY-DISCARD indication primitive
SACTDreq	S-ACTIVITY-DISCARD request primitive
SACTDrsp	S-ACTIVITY-DISCARD response primitive
SACTEcnf	S-ACTIVITY-END confirm primitive
SACTEind	S-ACTIVITY-END indication primitive
SACTEreq	S-ACTIVITY-END request primitive
SACTErsp	S-ACTIVITY-END response primitive
SACTIcnf	S-ACTIVITY-INTERRUPT confirm primitive
SACTIind	S-ACTIVITY-INTERRUPT indication primitive
SACTIreq	S-ACTIVITY-INTERRUPT request primitive
SACTIrsp	S-ACTIVITY-INTERRUPT response primitive
SACTRind	S-ACTIVITY-RESUME indication primitive
SACTRreq	S-ACTIVITY-RESUME request primitive
SACTSind	S-ACTIVITY-START indication primitive
SACTSreq	S-ACTIVITY-START request primitive
SCDcnf	S-CAPABILITY-DATA confirm primitive
SCDind	S-CAPABILITY-DATA indications primitive
SCDreq	S-CAPABILITY-DATA request primitive
SCDrsp	S-CAPABILITY-DATA response primitive
SCGind	S-CONTROL-GIVE indication primitive
SCGreq	S-CONTROL-GIVE request primitive
SCONcnf	S-CONNECT confirm primitive
SCONind	S-CONNECT indication primitive
SCONreq	S-CONNECT request primitive
SCONrsp	S-CONNECT response primitive
SDTind	S-DATA indication primitive
SDTreq	S-DATA request primitive
SEXind	S-EXPEDITED-DATA indication primitive
SEXreq	S-EXPEDITED-DATA request primitive
SGTind	S-TOKEN-GIVE indication primitive
SGTreq	S-TOKEN-GIVE request primitive
SPABind	S-P-ABORT Indication primitive
SPERind	S-P-EXCEPTION-REPORT indication primitive
SPTind	S-TOKEN-PLEASE indication primitive
SPTreq	S-TOKEN-PLEASE request primitive
SRELcnf	S-RELEASE confirm primitive
SRELind	S-RELEASE indication primitive
SRELreq	S-RELEASE request primitive
SRELrsp	S-RELEASE response primitive
SRSYNcnf	S-RESYNCHRONIZE confirm primitive
SRSYNind	S-RESYNCHRONIZE indication primitive
SRSYNreq	S-RESYNCHRONIZE request primitive
SRSYNrsp	S-RESYNCHRONIZE response primitive
SRSYNcnf	S-RESYNCHRONIZE confirm primitive
SRSYNind	S-RESYNCHRONIZE indication primitive
SRSYNreq	S-RESYNCHRONIZE request primitive
SRSYNrsp	S-RESYNCHRONIZE response primitive
SSYNMcnf	S-SYNC-MAJOR confirm primitive
SSYNMind	S-SYNC-MAJOR indication primitive
SSYNMreq	S-SYNC-MAJOR request primitive
SSYNMrsp	S-SYNC-MAJOR response primitive
SSYNmcnf	S-SYNC-MINOR confirm primitive
SSYNmind	S-SYNC-MINOR indication primitive
SSYNmreq	S-SYNC-MINOR request primitive
SSYNmrsp	S-SYNC-MINOR response primitive
STDind	S-TYPED-DATA indication primitive
STDreq	S-TYPED-DATA request primitive
SUABind	S-U-ABORT indication primitive
SUABreq	S-U-ABORT request primitive
SUERind	S-U-EXCEPTION-REPORT indication primitive
SUERreq	S-U-EXCEPTION-REPORT request primitive

4.4 Other abbreviations

ACT	Activity management functional unit
CAD	Capability data exchange functional unit
EXD	Expedited data functional unit
EXCEP	Exception functional unit
FD	Duplex functional unit
FU(f)	True if and only if the functional unit f has been selected during the Session connection establishment phase.
HD	Half duplex functional unit
IUT	Implementation Under Test

LT	Lower Tester
MA	Major synchronize functional unit
NR	Negotiated release functional unit
OSI	Open Systems Interconnection
PICS	Protocol Implementation Conformance Statement
RESYN	Resynchronize functional unit
SY	Minor synchronize functional unit
TD	Typed data functional unit
TIM	Disconnection and abort timer
dk	Data token
mi	Minor synchronize token
ma	Major/activity token
tr	Release token
tk(t)	True if and only if the token t is available.
TSS & TP	Test suite structure and test purposes
TTCN	Tree and tabular combined notation

5 Compliance

A generic or abstract test suite which complies with this part of ISO/IEC 10168 shall:

a) consist of a set of test casescorresponding to the set or a subset of the test purposes specified in clauses 11 to 13;

b) identify clearly the test purposes used;

c) cover all the relevant test purposes specified in clauses 11 to 13, as appropriate to the coverage and test method chosen for that test suite;

d) use a test suite structure which is an appropriate subset (or the whole) of the test suite structure specified in clause7;

e) name its test groups and test cases using the naming conventions specified in clause 8 in such a way that the test group and test case names used in clauses 11 to 13 are used whenever relevant;

f) maintain the relationships specified in clauses 11 to 13 between the chosen test purposes and the entries in the PICS proforma to be used for test case selection;

g) comply with ISO/IEC 9646-2 .

6 Testing methodology

6.1 Introduction

The testing methodology used in this part of ISO/IEC 10168 complies with the requirements of ISO/IEC 9646-2.

6.2 Relation ship between the TSS & TP and abstract test suites

The test purposes in this part of ISO/IEC 10168 have been derived from ISO/IEC 8327-1, the Session protocol standard. This derivation has focused on identifying test purposes to test conformance aspects of the protocol. However, no consideration has been given to any test method, how such test purposes may be realized, or any practical or economic constraints may be placed upon testing.

It is intended that all test suites for the Session protocol shall include tests for all the test purposes in this part of ISO/IEC 10168, however, an abstract test suite specifier may subset the test purposes given in this part of ISO/IEC 10168, providing this is in compliance with ISO/IEC 9646-2, clause 10.

6.3 Test selection

The structure of the test suite is organized to make possible the selection of the appropriate test cases according to the contents of the PICS.

NOTE - If a PICS shows that a mandatory feature is omitted, the test cases related to that feature are not executed; the conformance test report indicates clearly any such instances of non-conformance.

6.4 Verdicts

Verdicts assigned by each abstract test case are determined on the basis of the IUT's ability to behave in accordance with the requirements of the Session protocol, and to support the capabilities and parameter values listed in the PICS. Conformance assessment is based on the individual verdicts, the Session protocol standard, and the IUT's PICS.

6.5 Test suite coverage

Test purposes are specified and structured according to ISO/IEC 9646-2, 10.2 (test group structure) and 10.3 (test purposes) to obtain the appropriate coverage of possible state/event, parameter values, and valid/invalid variations.

7 Test suite structure

The test suite for the Session protocol consists of test groups and test cases. Each test case has a narrowly defined purpose. Within the test suite, nested test groups are used to provide a logical ordering of the test cases. Test groups may be nested to an arbitrary depth. They may be used to aid planning, development, understanding or execution of a test suite.

The test suite consists of three main test groups:

a) Capability Tests, which are used to verify that the observable capabilities of Session protocol implementations are valid with respect to the static conformance requirements stated in ISO/IEC 8327-1, clause 9, the Session protocol specification and with respect to the PICS.

b) Valid Behaviour Tests, which test the extent to which the implementation meets the dynamic conformance requirements specified in ISO/IEC 8327-1, subclause 9.3.d and 9.3.e, the Session protocol specification when the tester behaves in a valid manner. These tests provide a detailed evaluation of the features which are claimed to be supported in the PICS.

c) Invalid Behaviour Tests, which test the extent to which the implementation meets the dynamic conformance requirements specified in ISO/IEC 8327-1, subclause 9.3.f, the Session protocol specification when the sends tests events which violate at least one conformance requirement of ISO/IEC 8327-1. This group of tests may be sub-divided into

1) Syntactically Invalid Tests, where the tester sends tests evens where the PDU syntax is not allowed by ISO/IEC 8327-1.

2) Semantically Invalid Tests, where the tester sends tests evens where semantics is not consistent with that allowed by ISO/IEC 8327-1.

3) Inopportune Tests, where the tester generates test events which occur when they are not allowed to by ISO/IEC 8327-1.

Each of these groups are further divided into a number of lower level test groups. The structure of the Session test suite is shown in figure 1 and the other figures reference therein.

NOTE - The numbers shown in parentheses after each item in the tree refer to the clauses of this part of ISO/IEC 10168 where the test group and test purposes may be found.

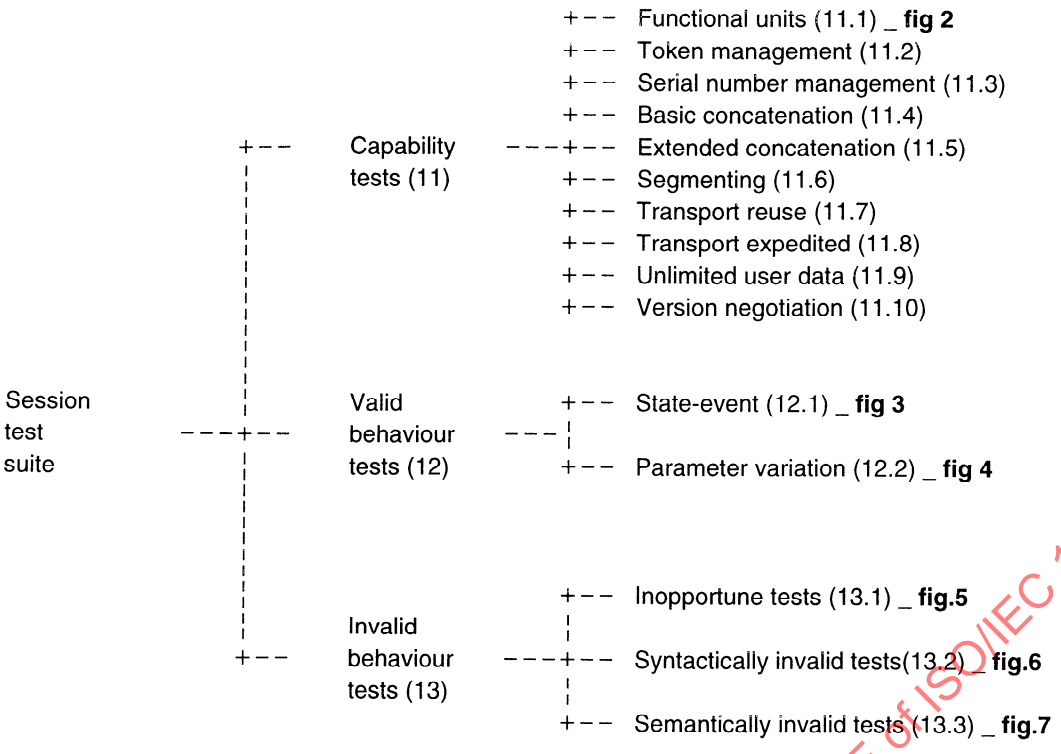

Figure 1 - Session test suite structure

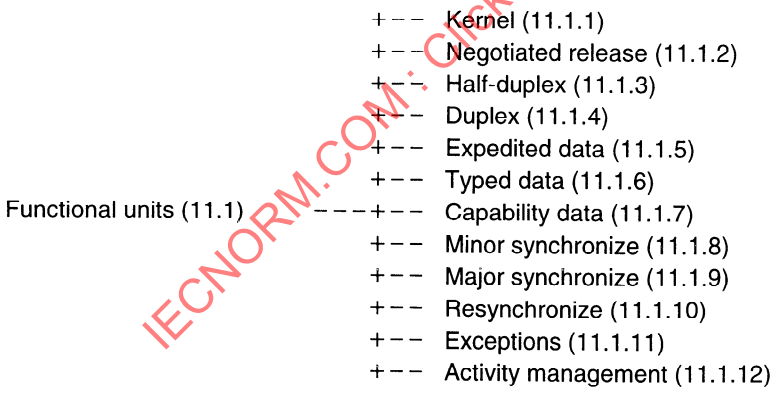

Figure 2 - Functional units capability tests

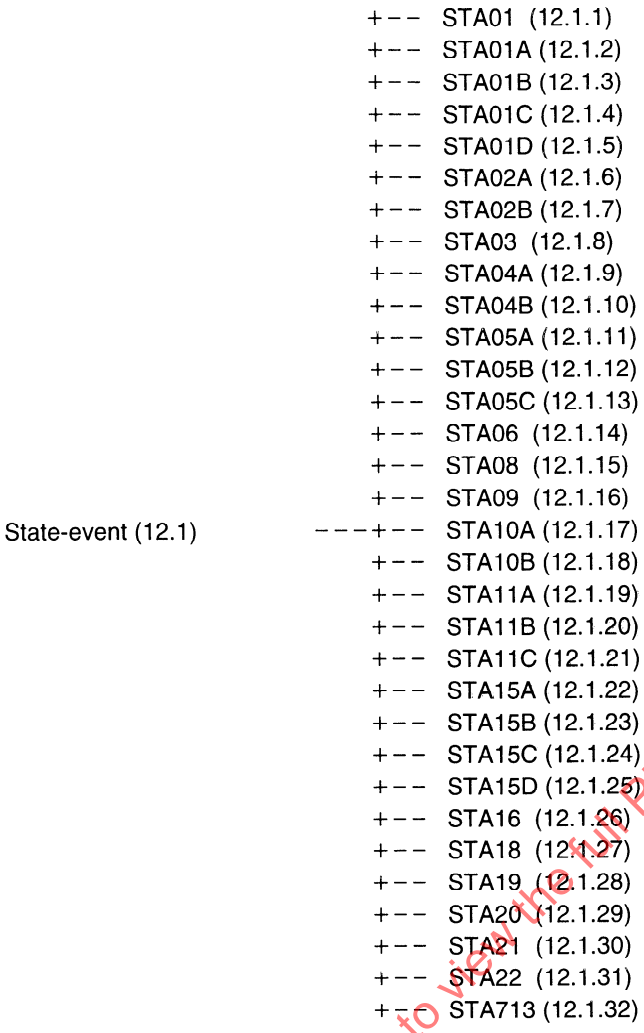

Figure 3 - State-event valid behaviour tests

Parameter variation (12.2)

- Kernel (12.2.1)
- Negotiated release (12.2.2)
- Half-duplex (12.2.3)
- Duplex (12.2.4)
- Expedited data (12.2.5)
- Typed data (12.2.6)
- Capability data (12.2.7)
- Minor synchronize (12.2.8)
- Major synchronize (12.2.9)
- Resynchronize (12.2.10)
- Exceptions (12.2.11)
- Activity management (12.2.12)

Figure 4 - Parameter variation valid behaviour tests

Inopportune behaviour tests (13.1)

- STA01 (13.11)
- STA01A (13.2)
- STA01B (13..3)
- STA01C (13..4)
- STA01D (13.1.5)
- STA02A (13.1.6)
- STA02B (13.1.7)
- STA03 (13.1.8)
- STA04A (13.1.9)
- STA04B (13.1.10)
- STA05A (13.1.11)
- STA05B (13.1.12)
- STA05C (13.1.13)
- STA06 (13.1.14)
- STA08 (13.1.15)
- STA09 (13.1.16)
- STA10A (13.1.17)
- STA10B (13.1.18)
- STA11A (13.1.19)
- STA11B (13.1.20)
- STA11C (13.1.21)
- STA15A (13.1.22)
- STA15B (13.1.23)
- STA15C (13.1.24)
- STA15D (13.1.25)
- STA16 (13.1.26)
- STA18 (13.1.27)
- STA19 (13.1.28)
- STA20 (13.1.29)
- STA21 (13.1.30)
- STA22 (13.1.31)
- STA713 (13.1.32)

Figure 5 - Inopportune behaviour tests

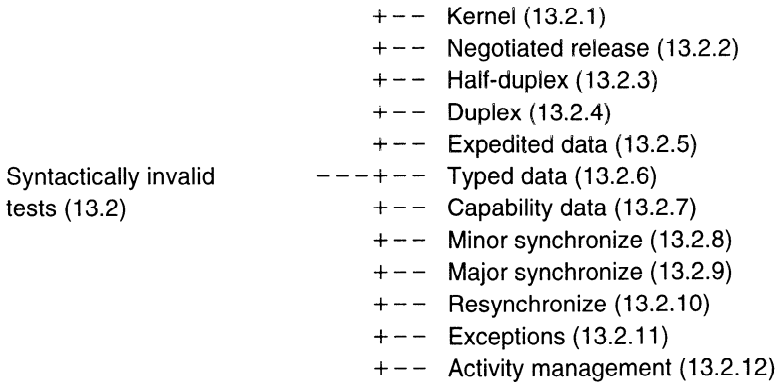

Figure 6 - Syntactically invalid behaviour tests

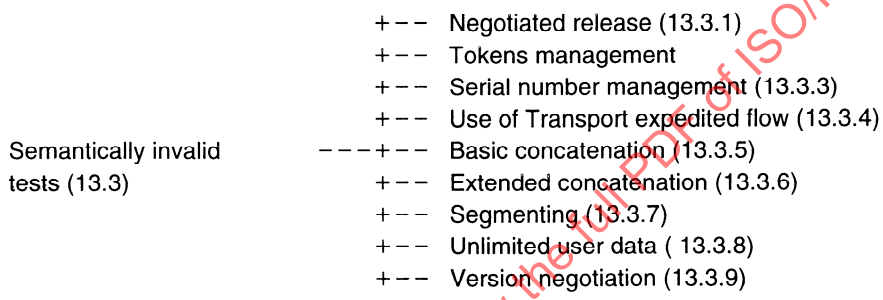

Figure 7 - Semantically invalid behaviour tests

8 Naming conventions

This clause describes the proformas that are used for test group purposes and test case purposes. Two proformas are used as described below.

a) The first proforma is used for a test group which has other test groups below it. It describes the purpose of the group and list the subgroups below it. The proforma takes the form:

V.W.X.Y AA/BB/FUNCTION (FN)

[Reference: ISO/IEC 8327-1 .....]

Test group objective: .....

Subgroups:

1 Function One (F1)

2 Function Two (F2)

n Function n (Fn)

The first item (V.W.X.Y) is mandatory and is the formal clause number of the test group in this part of ISO/IEC 10168.

The second item (AA/BB/FUNCTION (FN)) is mandatory and is the symbolic name of the test group. Note that the final component of the name is given in full, followed by an abbreviation.

The third item is an optional reference to the relevant clause in the base standard .If no such reference is appropriate for the test group this item is omitted.

The fourth item is a mandatory natural language statement of the test group purpose.

The fifth item consists of references to the subgroups contained within the group at the next level down.

b) The second proforma is used for a test group which has only test cases below it. It describes the purpose of the group and then lists the test case purposes that make up the group. The proforma takes the form:

V.W.X.Y AA/BB/FUNCTION (FN)

[Reference: ISO/IEC 8327-1 .....]

Test group objective: .....

Test purposes:

1 .....

2 .....

n .....

The first item (V.W.X.Y) is mandatory and is the formal clause number of the test group in this part of ISO/IEC 10168.

The second item (AA/BB/FUNCTION (FN)) is mandatory and is the symbolic name of the test group. Note that the final component of the name is given in full, followed by an abbreviation.

The third item is an optional reference to the relevant clause in the base standard .If no such reference is appropriate for the test group this item is omitted.

The fourth item is a mandatory natural language statement of the test group purpose.

The fifth item is a list of test case purposes in natural language that are part of the test group.

9 Precedence

This part of ISO/IEC 10168 defines test purposes for the Session protocol (ISO/IEC 8327-1). It is not intended that this part of ISO/IEC 10168 should contradict or provide an interpretation of ISO/IEC 8327-1. In the case that there is a contradiction between this part of ISO/IEC 10168 and ISO/IEC 8327-1, this is an error and ISO/IEC 8327-1 takes precedence.

NOTE - Any person who, when making use of this part of ISO/IEC 10168, encounters an inaccuracy or ambiguity, is requested to notify their National Body of ISO without delay in order that the matter may be investigated and appropriate action taken.

10 Basic interconnection tests (IT)

No basic interconnection tests are explicitly identified for the testing of ISO/IEC 8327-1. If tests are required, the following tests purposes may be used:

CA/FUN/KER/7

CA/FUN/KER/10

11 Capability tests (CA)

Reference: ISO/IEC 8327-2, annex A

Test group objective: To check that the IUT is able to manage Session functional units, features and options.

Subgroups:

1 Functional units (FUN)

2 Tokens management (TKM)

3 Serial numbers management (SNM)

4 Basic concatenation (BCO)

5 Extended concatenation (ECO)

6 Segmenting (SEG)

7 Transport reuse (TRR)

8 Transport expedited (TEX)

9 Unlimited user data (UNL)

10 Version negotiation (VN)

11.1 CA/Functional units (FUN)

Reference: ISO/IEC 8327-2, annex A

Test group objective: To check the correct Functional Units negotiation during the connection establishment phase and the correct implementation of the negotiated Functional Units.

Subgroups:

1 Kernel (KER)

2 Negotiated release (NGR)

3 Half-duplex (HDU)

4 Duplex (DUP)

5 Expedited data (EXD)

6 Typed data (TYD)

7 Capability data (CAD)

8 Minor synchronization (MIN)

9 Major synchronization (MAJ)

10 Resynchronization (RES)

11 Exceptions (EXC)

12 Activity management (AM)

11.1.1 CA/FUN/Kernel (KER)

Test group objective: Basic exchanges of the SPDUs related to the kernel in which support of the following SPDUs can be checked: AA, AB, AC, CN, CDO, DN, FN, OA, RF.

NOTE - The testing of DT is carried out in 11.1.3 and 11.1.4.

Test purposes:

1 Connection establishment by LT, abort by LT.

2 Connection establishment by LT, abort by IUT.

3 Connection establishment by IUT, abort by IUT.

4 Connection establishment by IUT, abort by LT.

5 Connection establishment by LT, refuse by IUT.

6 Connection establishment by IUT, refuse by LT.

7 Connection establishment by LT, release by LT.

8 Connection establishment by LT, release by IUT.

9 Connection establishment by IUT, release by LT.

10 Connection establishment by IUT, release by IUT.

11 IUT sends an OA SPDU and receives an CDO SPDU.

12 IUT sends a CDO SPDU after receiving an OA SPDU.

13 Connection establishment by LT, simultaneous release, creating a release collision.

11.1.2 CA/FUN/Negotiated release (NGR)

Test group objective: Basic exchanges of the SPDUs related to negotiated release in which support of the following SPDU can be checked: NF.

NOTE - The testing of GT and PT is carried out in 11.2.

Test purposes:

1 IUT refuses to release the Session connection.

2 IUT accepts that LT refuses the Session connection release.

11.1.3 CA/FUN/Half-duplex (HDU)

Test group objective: Basic exchanges of the SPDUs related to half-duplex in which support of the following SPDUs can be checked: DT, GT, PT.

NOTE - The testing of GT and PT is carried out in 11.2.

Test purposes:

1 Normal data exchanges and IUT asks for data token.

2 Normal data exchanges and LT asks for data token.

3 Normal data exchanges and IUT gives data token.

4 Normal data exchanges and LT gives data token.

11.1.4 CA/FUN/Duplex (DUP)

Test group objective: Basic exchanges of the SPDUs related to duplex in which support of the following SPDU can be checked: DT.

Test purposes:

1 Normal data exchanges in Duplex.

11.1.5 CA/FUN/Expedited data (EXD)

Test group objective: Basic exchanges of the SPDUs related to expedited data in which support of the following SPDU can be checked: EX.

Test purposes:

1 IUT sends expedited data.

2 IUT receives expedited data.

11.1.6 CA/FUN/Typed data (TYD)

Test group objective: Basic exchanges of the SPDUs related to typed data in which support of the following SPDU can be checked: TD.

Test purposes:

1 Typed data exchanges when the HD functional unit is selected.

11.1.7 CA/FUN/Capability data (CAD)

Test group objective: Basic exchanges of the SPDUs related to capability data, in which support of the following SPDUs can be checked: CD, CDA.

Test purposes:

1 IUT receives capability data.

2 IUT sends capability data.

3 Exchanges of minor synchronization SPDUs with at least one MIP SPDU being unacknowledged by a MIA SPDU.

11.1.8 CA/FUN/Minor synchronize (MIN)

Test group objective: Basic exchanges of the SPDUs related to minor synchronization in which support of the following SPDUs can be checked: MIA, MIP.

NOTE - The testing of GT and PT is carried out in 11.2.

Test purposes:

1 Exchanges of minor synchronization SPDUs without Activity Functional Unit.

2 Exchanges of minor synchronization SPDUs when an activity is in progress.

11.1.9 CA/FUN/Major synchronize (MAJ)

Test group objective: Basic exchanges of the SPDUs related to major synchronization in which support of the following SPDUs can be checked: MAA, MAP, PR.

NOTE - The testing of GT and PT is carried out in 11.2.

Test purposes:

1 IUT sets a major synchronization point.

2 IUT acknowledges a major synchronization point.

11.1.10 CA/FUN/Resynchronize (RES)

Test group objective: Basic exchanges of the SPDUs related to resynchronization, in which support of the following SPDUs can be checked: PR, RA, RS.

Test purposes:

1 LT sends RS-a or RS-r and IUT sends RA.

2 IUT sends RS-a or RS-r and LT sends RA.

3 LT sends PR-RS, then RS and IUT sends PR-RA then RA.

4 IUT sends PR-RS, then RS and LT sends PR-RA then RA.

5 LT sends RS-s and IUT sends RA.

6 IUT sends RS-s and LT sends RA.

11.1.11 CA/FUN/Exceptions (EXC)

Test group objective: Basic exchanges of the SPDUs related to exceptions, in which support of the following SPDUs can be checked: ED, ER.

Test purposes:

1 IUT sends an exception report.

2 IUT sends exception data when an activity is in progress.

3 IUT sends exception data without activity functional unit.

4 IUT receives an exception report.

5 IUT receives exception data when an activity is in progress.

6 IUT receives exception data without activity functional unit.

11.1.12 CA/FUN/Activity management (AM)

Test group objective: Basic exchanges of the SPDUs related to Activity management in which support of the following SPDUs can be checked: AD, ADA, AE, AEA, AI, AIA, AR, AS, GTA, GTC, PR.

NOTE - The testing of GT and PT is carried out in 11.2.

Test purposes:

1 LT starts an activity, LT ends it.

2 IUT starts an activity, IUT ends it.

3 LT interrupts an activity,LT resumes it, LT discards it.

4 IUT starts an activity, interrupts it, resumes and discards it.

5 IUT interrupts an activity, LT resumes it.

6 IUT interrupts an activity, IUT resumes it. LT starts and ends a second one between the interruption and the resumption.

11.2 CA/Tokens management (TKM)

Reference: ISO/IEC 8327-1, table 5 and ISO/IEC 8327-2, annex A

Test group objective: To check that the IUT correctly receives (or sends) the SPDUs which are relevant to the token(s) it owns (or not).

Test purposes:

1 tk (dk, mi, ma) not available; IUT sends FN SPDU.

2 tk (dk) available, tk (mi, ma) not available; FU (HD); IUT sends and receives PT, GT, DT SPDUs.

3 tk (dk) available, tk (mi, ma) not available; FU (HD, EXCEP); IUT sends ER SPDU.

4 tk (dk) available, tk (mi, ma) not available; FU (HD, EXCEP); IUT receives ER SPDU

5 tk (dk) available, tk (mi, ma) not available; FU (HD, EXCEP); IUT sends ED SPDU.

6 tk (dk) available, tk (mi, ma) not available; FU (HD, EXCEP); IUT receives ED SPDU.

7 tk (mi) available, tk (dk, ma) not available; FU (FD, SY); IUT sends and receives PT, GT, MIP SPDUs and receives FN SPDU.

8 tk (dk, mi) available, tk (ma) not available; FU (HD, SY); IUT sends and receives PT, GT, DT, MIP SPDUs and receives FN SPDU.

9 tk (dk, ma) available, tk (mi) not available; FU (HD, ACT); Exchanges of AS, AE SPDUs and PT, GT SPDUs when an activity is in progress; IUT receives FN SPDU.

10 tk (dk, ma) available, tk (mi) not available; FU (HD, ACT); Exchanges of AS, AI, AR, AD, GTC SPDUs and IUT sends FN SPDU.

11 tk (dk, ma) available, tk (mi) not available; FU (HD, ACT, CD); Exchanges of CD SPDU.

12 tk (dk, mi, ma) available; FU (HD, SY, ACT); Exchanges of AS, AE, SPDUs and PT, GT, MIP SPDUs when an activity is in progress; IUT receives FN SPDU.

13 tk (dk, mi, ma) available; FU (HD, SY, ACT); Exchanges of AS, AI, AR, AD, GTC SPDUs and IUT sends FN SPDU.

14 tk (dk, mi, ma) available; FU (HD, SY, ACT, EXCEP); Exchanges of AS, AI, AR, AE SPDUs; IUT sends ER SPDU.

15 tk (dk, mi, ma) available; FU (HD, SY, ACT, EXCEP); Exchanges of AS, AE SPDUs; IUT sends ED SPDUs.

16 tk (dk, mi, ma) available; FU (HD, SY, ACT, EXCEP) Exchanges of AS, AI, AR, AD SPDUs; IUT receives ER SPDU.

17 tk (dk, mi, ma) available; FU (HD, SY, ACT, EXCEP); Exchanges of AS, AI, AR, AD SPDUs; IUT receives ED SPDU.

18 tk (dk, mi, ma) available; FU (HD, SY, ACT, CD); Exchanges of CD SPDU.

19 tk (tr) available, tk (dk,mi,ma) not available; FU (NR); IUT sends and receives GT and PT SPDUs and sends NF after receiving FN.

11.3 CA/Serial number management (SNM)

Reference: ISO/IEC 8327-1, table 50 and ISO/IEC 8327-2, annex A

Test group objective: To check that the IUT correctly sends and receives MIP SPDUs or MIA SPDUs, and RS or RA SPDUs with or without preparation when resynchronization functional unit is in use (in full duplex and without activity).

Test purposes:

1 IUT sends and receives IP SPDUs (or the corresponding MIA SPDUs) without activity functional unit.

2 IUT sends some MIP SPDUs and receives the corresponding MIA SPDUs during an activity which is interrupted and resumed.

3 IUT receives some MIP SPDUs and sends the corresponding MIA SPDUs during an activity which is interrupted and resumed.

4 Exchanges of MIP and MIA SPDUs when LT starts an activity, discards it and then IUT starts another one.

5 Exchanges of MIP and MIA SPDUs when IUT starts an activity, discards it and then LT starts another one.

6 Exchanges of MIP and MIA SPDUs when LT starts and ends an activity, and IUT starts a second one after.

7 Exchanges of MIP and MIA SPDUs when IUT starts and ends an activity, and LT starts a second one after.

8 Exchanges of MIP and MIA SPDUs when IUT starts and interrupts an activity; then IUT resumes this activity on another Session connection.

9 Exchanges of MIP and MIA SPDUs when LT starts and interrupts an activity; then IUT resumes this activity on another Session connection.

10 IUT has established a Session connection without Transport expedited flow selected. IUT sends normal data and sets a minor synchronization point after LT has resynchronized with restart option and given tokens to IUT.

11 LT has established a Session connection with Transport expedited flow selected. LT sends normal data and sets a minor synchronization point after it has resynchronized with restart option.

12 IUT has established a Session connection with Transport expedited flow selected. IUT sends normal data and sets a minor synchronization point after it has resynchronized with abandon option.

13 LT has established a Session connection without Transport expedited flow selected. LT sends normal data and sets a minor synchronization point after it has resynchronized with abandon option.

14 LT has established a Session connection. After normal data transfer, contention between IUT and LT which send both a RS SPDU with abandon option.

15 Contention between IUT which sends a RS SPDU with restart option and LT which sends a RS SPDU with abandon option.

16 Contention between IUT which sends a RS SPDU with abandon option and LT which sends a RS SPDU with restart option.

17 Contention between IUT and LT which send both a RS SPDU with restart option, but LT with a lower serial number.

18 LT has established a Session connection. After normal data transfer, contention between IUT and LT which send both a RS SPDU with restart option and the same serial number.

11.4 CA/Basic concatenation (BCO)

Reference: ISO/IEC 8327-1, tables 6, 7 and ISO/IEC 8327-2, annex A

Test group objective: To check that IUT correctly accepts all the possible concatenated SPDUs with GT and PT including Token Item.

Test purposes:

1 IUT receives GT concatenated with DT.

2 IUT receives GT concatenated with MIP.

3 IUT receives PT concatenated with MIA.

4 IUT receives GT concatenated with AS.

5 IUT receives GT concatenated with AR.

6 IUT receives PT concatenated with ADA.

7 IUT receives PT concatenated with AIA.

8 IUT receives GT concatenated with AE.

9 IUT receives PT concatenated with AEA.

10 IUT receives PT concatenated with CDA.

11 IUT receives PT concatenated with ER.

12 IUT receives PT concatenated with ED.

13 IUT receives PT concatenated with RA.

14 IUT receives GT concatenated with MAP.

15 IUT receives PT concatenated with MAA.

11.5 CA/Extended concatenation (ECO)

Reference: ISO/IEC 8327-1, table 8 and ISO/IEC 8327-2, annex A

Test group objective: To check that IUT accepts a representative subset of valid extended concatenations.

Test purposes:

1 IUT receives GT SPDU concatenated with MIP and DT SPDUs.

2 IUT receives GT SPDU concatenated with MIA and DT SPDUs.

11.6 CA/Segmenting (SEG)

Reference: ISO/IEC 8327-2, annex A

Test group objective: To check that IUT accepts to negotiate and to receive segmented user data.

Test purposes:

1 LT establishes a Session connection negotiating segmenting.

2 Segmenting has been selected: LT sends segmented user data.

3 Segmenting has been selected: LT sends segmented typed data.

11.7 CA/Transport reuse (TRR)

Reference: ISO/IEC 8327-2, annex A

Test group objective: To check that a Transport connection is reused by the IUT which sends or receives RF-r, FN-r, AB-r.

Test purposes:

1 IUT sends RF-r and the Transport connection is reused.

2 IUT sends FN-r and the Transport connection is reused.

3 IUT sends AB-r and the Transport connection is reused.

4 IUT receives RF-r and the Transport connection is reused.

5 IUT receives FN-r in the data transfer state and the Transport connection is reused.

6 IUT receives AB-r in the data transfer state and the Transport connection is reused.

11.8 CA/Transport expedited (TEX)

Reference: ISO/IEC 8327-2, annex A

Test group objective: To check IUT using Transport expedited flow.

Test purposes:

1 IUT can send an AB SPDU on Transport expedited flow when it is selected.

2 IUT can accept an AB SPDU on Transport expedited flow when it is selected.

11.9 CA/Unlimited user data (UNL)

Reference: ISO/IEC 8327-1

Test group objective: To check that IUT which supports Session version 2 is able to manage unlimited user data.

Test purposes:

1 IUT receives a CN SPDU negotiating version 2 and with extended user data between 512 and 10240 octets.

2 IUT receives an AC SPDU with more than 512 octets of user data.

3 Transport expedited flow has been selected and IUT receives a PR-AB SPDU, then an AB SPDU with more than 9 octets of user data.

4 Transport expedited flow has been selected and IUT sends a PR-AB SPDU, then an AB SPDU with more than 9 octets of user data.

5 RF

6 FN

7 DN

8 GT

9 PT

10 AS, AI, AR, AE, GTC

11 AIA, AEA

12 AD

13 ADA

14 RS

15 RA

16 AB

11.10 CA/Version negotiation (VN)

Reference: ISO/IEC 8327-1

Test group objective: To check that IUT is able to negotiate Session versions

Test purposes:

1 LT offers a single Session version which is supported by the IUT. Check that is established.

2 LT offers a number of Session versions not all supported by the IUT. Check that the connection is established.

3 LT offers a Session version(s) none of which supported by the IUT. Check that the connection is not established.

12 Valid behaviour tests (BV)

Reference: ISO/IEC 8327-1

Test group objective: To check valid behaviour by the IUT in response to valid behaviour by the LT.

Subgroups:

1 State-Event (SE)

2 Parameter variation (PV)

12.1 BV/State-event (SE)

Reference: ISO/IEC 8327-1, annex A

Test group objective: For each possible state, test the IUT's reactions to valid incoming events.

NOTE - Test purposes exist for each event that causes a state transition. Representative selection of events that do not cause a state transition is included. Actions associated with events not included in the representative selection are tested in the capability tests.

Subgroups:

1 State STA01 (001)
2 State STA01A (01A)
3 State STA01B (01B)
4 State STA01C (01C)
5 State STA01D (01D)
6 State STA02A (02A)
7 State STA02B (02B)
8 State STA03 (003)
9 State STA04A (04A)
10 State STA04B (04B)
11 State STA05A (05A)
12 State STA05B (05B)
13 State STA05C (05C)
14 State STA06 (006)
15 State STA08 (008)
16 State STA09 (009)
17 State STA10A (10A)
18 State STA10B (10B)
19 State STA11A (11A)
20 State STA11B (11B)
21 State STA11C (11C)
22 State STA15A (15A)
23 State STA15B (15B)
24 State STA15C (15C)
25 State STA15D (15D)
26 State STA16 (016)
27 State STA18 (018)
28 State STA19 (019)
29 State STA20 (020)
30 State STA21 (021)
31 State STA22 (022)
32 State STA713 (713)

12.1.1 BV/SE/State STA01 (001)

Test group objective: Test valid incoming events in state STA01 (idle, no Transport connection).

Test purposes:

Refer to CA/FUN/KER (11.1.1)

12.1.2 BV/SE/State STA01A (01A)

Test group objective: Test valid incoming events in state STA01A (await AA).

Test purposes:

1 CN.
2 AB-nr, AB-r.
3 AS, DT, FN-nr, MIP. No state change is expected.

12.1.3 BV/SE/State STA01B (01B)

Test group objective: Test valid incoming events in state STA01B (await TCONconf).

Test purposes:

1 SUABreq.
2 TDISind.

12.1.4 BV/SE/State STA01C (01C)

Test group objective: Test valid incoming events in state STA01C (idle, Transport connected).

Test purposes:

1 SCONreq.
2 AB, AC, AS, DN, DT, GT, MIP, TD. All these valid events react in the same way.

12.1.5 BV/SE/State STA01D (01D)

Test group objective: Test valid incoming events in state STA01D (await CDO).

Test purposes:

1 DT.
2 AB-nr, AB-r.

12.1.6 BV/SE/State STA02A (02A)

Test group objective: Test valid incoming events in state STA02A (await AC).

Test purposes:

1 RF-nr, RF-r.
2 AB-nr, AB-r.
3 SUABreq.
4 TDISind.

12.1.7 BV/SE/State STA02B (02B)

Test group objective: Test valid incoming events in state STA02B (await OA).

Test purposes:

1 RF-nr, RF-r.

2 AB-nr, AB-r.

12.1.8 BV/SE/State STA03 (003)

Test group objective: Test valid incoming events in state STA03 (await DN).

Test purposes:

1 DT, MIA, PT, TD. No state change is expected.
2 FN-nr, FN-r.
3 ED.
4 ER.
5 AB-nr, AB-r.
6 SUABreq.
7 TDISind.
8 RS-a, RS-r.

12.1.9 BV/SE/State STA04A (04A)

Test group objective: Test valid incoming events in state STA04A (await PR or MAA).

Test purposes:

1 MIA, PT, TD. No state change is expected.
2 AB-nr, AB-r.
3 SUABreq.
4 TDISind.
5 ED.
6 ER.
7 SGTreq.
8 PR-RS.
9 RS-a, RS-r.

12.1.10 BV/SE/State STA04B (04B)

Test group objective: Test valid incoming events in state STA04B (await PR or AEA)

Test purposes:

1 DT, PT, TD. No state change is expected.
2 ED.
3 ER.
4 AB-nr, AB-r.
5 SUABreq.
6 TDISind.
7 SACTDreq.
8 SACTIreq.
9 SGTreq.
10 PR-RS.
11 RS-a, RS-r.

12.1.11 BV/SE/State STA05A (05A)

Test group objective: Test valid incoming events in state STA05A (await RA or PR-RA).

Test purposes:

1 DT, FN-nr, MIP. No state change is expected.
2 PR-RS.
3 RS-a, RS-r.
4 AB-r,AB-nr.
5 SUABreq.
6 TDISind.
7 AD.
8 AI.

12.1.12 BV/SE/State STA05B (05B)

Test group objective: Test valid incoming events in state STA05B (await PR or AIA).

Test purposes:

1 AEA, DT, GT, MIA, PT, TD. no state change is expected.
2 AB-nr, AB-r.
3 SUABreq.
4 TDISind.

12.1.13 BV/SE/State STA05C (05C)

Test group objective: Test valid incoming events in state STA05C (await PR or ADA).

Test purposes:

1 DT, GT, MIA, PT, TD. No state change is expected.
2 AB-nr, AB-r.
3 SUABreq.
4 TDISind.

12.1.14 BV/SE/State STA06 (006)

Test group objective: Test valid incoming events in state STA06 (await for RS after collision).

Test purposes:

1 DT, FN-nr, MIP, PR-RA, PR-RS. No state change is expected.
2 SUABreq.
3 AB-nr.
4 TDISind.
5 AD.
6 AI.

12.1.15 BV/SE/State STA08 (008)

Test group objective: Test valid incoming events in state STA08 (await SCONrsp).

Test purposes:

1 AB-nr, AB-r.

2 SUABreq.

3 TDISind.

12.1.16 BV/SE/State STA09 (009)

Test group objective: Test valid incoming events in state STA09 (await SRELrsp).

Test purposes:

1 DN.

2 AB-nr, AB-r.

3 SDTreq.

4 STDreq.

5 SRELreq.

6 SUABreq.

7 TDISind.

8 SSYNmrsp.

9 SPTreq.

10 SUERreq.

11 SRSYNreq-a, SRSYNreq-r.

12.1.17 BV/SE/State STA10A (10A)

Test group objective: Test valid incoming events in state STA10A (await SSYNMrsp).

Test purposes:

1 SDTreq.

2 AB-nr, AB-r.

3 SUABreq.

4 TDISind.

12.1.18 BV/SE/State STA10B (10B)

Test group objective: Test valid incoming events in state STA10B (await SACTErsp).

Test purposes:

1 AB-nr, AB-r.

2 AD.

3 AI.

4 GT.

5 STDreq.

6 SUABreq.

7 TDISind.

8 SSYNmrsp.

9 SGTreq.

10 SPTreq.

11 SUERreq.

12.1.19 BV/SE/State STA11A (11A)

Test group objective: Test valid incoming events in state STA11A (await SRSYNrsp).

Test purposes:

1 SRSYNreq-a, SRSYNreq-r.

2 AB-r, AB-nr.

3 SUABreq.

4 TDISind.

12.1.20 BV/SE/State STA11B (11B)

Test group objective: Test valid incoming events in state STA11B (await SACTIrsp).

Test purposes:

1 AB-nr, AB-r.

2 SUABreq.

3 TDISind.

12.1.21 BV/SE/State STA11C (11C)

Test group objective: Test valid incoming events in state STA11C (await SACTDrsp).

Test purposes:

1 AB-nr, AB-r.

2 SUABreq.

3 TDISind.

12.1.22 BV/SE/State STA15A (15A)

Test group objective: Test valid incoming events in state STA15A (await PR-MAA)

Test purposes:

1 MIA, PT, TD. No state change is expected.

2 AB-nr.

3 SUABreq.

4 TDISind.

12.1.23 BV/SE/State STA15B (15B)

Test group objective: Test valid incoming events in state STA15B (wait after PR-RS).

Test purposes:

1 DT, GT, MIP. No state change is expected.

2 SRSYNreq-a, SRSYNreq-r.

3 AB-nr.

4 SUABreq.

5 TDISind.

12.1.24 BV/SE/State STA15C (15C)

Test group objective: Test valid incoming events in state STA15C (await for RA after PR-RA).

Test purposes:

1 DT, FN-nr, MIP, PR. No state change is expected.

2 AB-nr.

3 SUABreq.

4 TDISind.

12.1.25 BV/SE/State STA15D (15D)

Test group objective: Test valid incoming events in state STA15D (wait after PR-AB).

Test purposes:

1 DT.

12.1.26 BV/SE/State STA16 (016)

Test group objective: Test valid incoming events in state STA16 (await TDISind).

Test purposes:

1 CN.

2 AB-nr, AB-r.

3 AA.

4 Timer out.

5 AC, AS, DT, MIP. No state change is expected.

12.1.27 BV/SE/State STA18 (018)

Test group objective: Test valid incoming events in state STA18 (await GTA).

Test purposes:

1 AB-nr, AB-r.

2 PT, TD. No state change is expected.

3 STDreq.

4 SUABreq.

5 TDISind.

12.1.28 BV/SE/State STA19 (019)

Test group objective: Test valid incoming events in state STA19 (await recovery (init)).

Test purposes:

1 AE, DT, FN-nr, MIP, TD. No state change is expected.

2 GT.

3 AD.

4 AI.

5 AB-nr, AB-r.

6 SUABreq.

7 TDISind.

8 PR-RS.

9 RS-a, RS-r.

12.1.29 BV/SE/State STA20 (020)

Test group objective: Test valid incoming events in state STA20 (await recovery).

Test purposes:

1 AE, DT, GT, MIP, PT, TD. No state change is expected.

2 GT.

3 AD.

4 AI.

5 AB-nr, AB-r.

6 SUABreq.

7 TDISind.

8 SACTDreq.

9 SACTIreq.

10 SGTreq.

11 SRSYNreq-a, SRSYNreq-r.

12 PR-RS.

13 RS-a, RS-r.

12.1.30 BV/SE/State STA21 (021)

Test group objective: Test valid incoming events in state STA21 (await CDA).

Test purposes:

1 AB-nr, AB-r.

2 PT.

3 ER.

4 SUABreq.

5 TDISind.

12.1.31 BV/SE/State STA22 (022)

Test group objective: Test valid incoming events in state STA22 (await SCDrsp).

Test purposes:

1 AB-nr, AB-r.

2 SUABreq.

3 TDISind.

4 SPTreq.

12.1.32 BV/SE/State STA713 (713)

Test group objective: Test valid incoming events in state STA713 (data transfer).

Test purposes:

1 TDISind.

2 ED.

3 ER.

12.2 BV/Parameter variation (PV)

Reference: ISO/IEC 8327-1, 7 and 8.3

Test group objective: To check IUT's behaviour when receiving SPDUs parameter variations.

Subgroups:

1 Kernel (KER)
2 Negotiated release (NGR)
3 Half-duplex (HDU)
4 Duplex (DUP)
5 Expedited data (EXD)
6 Typed data (TYD)
7 Capability data (CAD)
8 Minor synchronization (MIN)
9 Major synchronization (MAJ)
10 Resynchronization (RES)
11 Exceptions (EXC)
12 Activity management (AM)

12.2.1 BV/PV/Kernel (KER)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the kernel.

Test purposes:

1 AB in state STA713.
2 AC in state STA02A.
3 CN in state STA01C.
4 CDO in state STA01D.
5 DN in state STA03.
6 FN in state STA713.
7 OA in state STA02B.
8 RF in state STA02A.

12.2.2 BV/PV/Negotiated release (NGR)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the negotiated release.

Test purposes:

1 NF in state STA03.

12.2.3 BV/PV/Half-duplex (HDU)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the half-duplex.

Test purposes:

1 DT in state STA713.
2 GT in state STA713.
3 PT in state STA713.

12.2.4 BV/PV/Duplex (DUP)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the duplex.

Test purposes:

1 DT in state STA713.

12.2.5 BV/PV/Expedited DATA (EXD)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the expedited data.

Test purposes:

1 EX in state STA713.

12.2.6 BV/PV/Typed data (TYD)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the typed data.

Test purposes:

1 TD in state STA713.

12.2.7 BV/PV/Capability data (CAD)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the capability data.

Test purposes:

1 CD in state STA713.
2 CDA in state STA21.

12.2.8 BV/PV/Minor synchronize (MIN)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the minor synchronize.

Test purposes:

1 MIP in state STA713.
2 MIA in state STA713.

12.2.9 BV/PV/Major synchronize (MAJ)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the major synchronize.

Test purposes:

1 MAA in state STA04A.
2 MAP in state STA713.
3 PR in state STA04A.

12.2.10 BV/PV/Resynchronize (RES)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the resynchronize.

Test purposes:

1 PR in state STA05A.

2 RA in state STA05A.

3 RS in state STA713.

12.2.11 BV/PV/Exceptions (EXC)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the exceptions.

Test purposes:

1 ED in state STA713.

2 ER in state STA713.

12.2.12 BV/PV/Activity management (AM)

Test group objective: To check the behaviour of the IUT after receiving parameter variations in SPDUs related to the activity management.

Test purposes:

1 AD in state STA713.

2 AE in state STA713.

3 AEA in state STA04B.

4 AI in state STA713.

5 AR in state STA713.

7 AS in state STA713.

8 PR in state STA713.

13 Invalid behaviour tests (BI)

13.1 BI/Inopportune behaviour tests (INOP)

Reference: ISO/IEC 8327-1 annex A, A.4.1

Test group objective: To check valid behaviour by the IUT in response to inopportune behaviour by the LT.

NOTE - Since the number of possible combinations of events and timing of events is astronomical, testing of inopportune behaviour can not be exhaustive. Coverage has been selected such that the most likely inopportune events for the states are tested. This is in accordance with ISO/IEC 9646-1 and ISO/IEC 9646-2.

Subgroups:

1 State STA01 (001)

2 State STA01A (01A)

3 State STA01B (01B)

4 State STA01C (01C)

5 State STA01D (01D)

6 State STA02A (02A)

7 State STA02B (02B)

8 State STA03 (003)

9 State STA04A (04A)

10 State STA04B (04B)

11 State STA05A (05A)

12 State STA05B (05B)

13 State STA05C (05C)

14 State STA06 (006)

15 State STA08 (008)

16 State STA09 (009)

17 State STA10A (10A)

18 State STA10B (10B)

19 State STA11A (11A)

20 State STA11B (11B)

21 State STA11C (11C)

22 State STA15A (15A)

23 State STA15B (15B)

24 State STA15C (15C)

25 State STA15D (15D)

26 State STA16 (016)

27 State STA18 (018)

28 State STA19 (019)

29 State STA20 (021)

31 State STA22 (022)

32 State STA713(713)

13.1.1 BI/INOP/State STA01 (001)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA01.

No test purposes because there are no inopportune SPDUs in state STA01.

13.1.2 BI/INOP/State STA01A (01A)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA01A.

No test purposes because there are no inopportune SPDUs in state STA01A.

13.1.3 BI/INOP/State STA01B (01B)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA01B.

No test purposes because there are no inopportune SPDUs in state STA01B.

13.1.4 BI/INOP/State STA01C (01C)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA01C.

No test purposes because there are no inopportune SPDUs in state STA01C.

13.1.5 BI/INOP/State STA01D (01D)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA01D.

Test purposes:

1 CN.

2 RF-nr, RF-r.

13.1.6 BI/INOP/State STA02A (02A)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA02A.

Test purposes:

1 CN.

2 DT.

3 TD.

4 AA.

13.1.7 BI/INOP/State STA02B (02B)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA02B.

Test purposes:

1 AC.

13.1.8 BI/INOP/State STA03 (003)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA03.

Test purposes:

1 AE.

2 MIP.

3 GT.

4 GTA.

5 GTC.

6 AA.

13.1.9 BI/INOP/State STA04A (04A)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA04A.

Test purposes:

1 MIP.

2 AD.

13.1.10 BI/INOP/State STA04B (04B)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA04B.

Test purposes:

1 AE.

2 MIP.

3 AD.

4 ADA.

5 AI.

6 AIA.

7 GTA.

8 GTC.

9 AA.

13.1.11 BI/INOP/State STA05A (05A)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA05A.

Test purposes:

1 DN.

2 AA.

13.1.12 BI/INOP/State STA05B (05B)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA05B.

Test purposes:

1 AE.

2 MIP when p14 is false.

3 AD.

4 ADA.

5 AI.

6 GTA.

7 GTC.

8 AA.

13.1.13 BI/INOP/State STA05C (05C)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA05C.

Test purposes:

1 AE.

2 MIP when p14 is false.

3 AD.

4 AI.

5 AIA.

6 GTA.

7 GTC.

8 AA.

13.1.14 BI/INOP/State STA06 (006)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA06.

Test purposes:

1 RA.

2 FN-r.

3 DN.

4 AA.

5 AB-r.

13.1.15 BI/INOP/State STA08 (008)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA08.

Test purposes:

1 AC.

2 CN.

3 RF-nr.

4 AA.

13.1.16 BI/INOP/State STA09 (009)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA09.

Test purposes:

1 DT.

2 TD.

3 AE.

4 MIA.

5 MIP.

6 ED.

7 ER.

8 GT.

9 GTA.

10 GTC.

11 PT.

12 FN-nr.

13 AA.

13.1.17 BI/INOP/State STA10A (10A)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA10A.

Test purposes:

1 DT.

2 AE.

13.1.18 BI/INOP/State STA10B (10B)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA10B.

Test purposes:

1 DT.

2 TD.

3 AE.

4 MIA.

5 MIP.

6 ADA.

7 AIA.

8 ED.

9 ER.

10 GTA.

11 GTC.

12 PT.

13 AA.

13.1.19 BI/INOP/State STA11A (11A)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA11A.

Test purposes:

1 RA.

2 RS-a, RS-r.

3 AA.

13.1.20 BI/INOP/State STA11B (11B)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA11B.

Test purposes:

1 AD.

2 ADA.

3 AI.

4 AIA.

5 AA.

13.1.21 BI/INOP/state STA11C (11C)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA11C.

Test purposes:

1 AD.

2 ADA.

3 AI.

4 AIA.

5 AA.

13.1.22 BI/INOP/state STA15A (15A)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA15A.

Test purposes:

1 MIP.

2 ADA.

13.1.23 BI/INOP/State STA15B (15B)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA15B.

Test purposes:

1 PR-RA.

2 PR-RS.

3 RA.

4 DN.

5 FN-nr, FN-r.

6 AA.

7 AB-r.

13.1.24 BI/INOP/State STA15C (15C)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA15C.

Test purposes:

1 PR-RA.

2 RS-a, RS-r.

3 DN.

4 AB-r.

13.1.25 BI/INOP/State STA15D (15D)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA15D.

Test purposes:

1 PR-AB.

2 FN-r.

13.1.26 BI/INOP/State STA16 (016)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA16.

No test purposes because there are no inopportune SPDUs in state STA16.

13.1.27 BI/INOP/State STA18 (018)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA18.

Test purposes:

1 ED.

2 ER.

3 GT.

4 GTC.

5 AA.

13.1.28 BI/INOP/State STA19 (019)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA19.

Test purposes:

1 AEA.

2 ADA.

3 AIA.

4 GTA.

5 GTC.

6 DN.

7 AA.

13.1.29 BI/INOP/State STA20 (020)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA20.

Test purposes:

1 ADA.

2 AIA.

3 ED.

4 ER.

5 GTA.

6 GTC

7 AA.

13.1.30 BI/INOP/State STA21 (021)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA21.

Test purposes:

1 AR.

2 AS.

3 CD.

4 AA.

5 GTA.

6 GTC

7 ED.

13.1.31 BI/INOP/State STA22 (022)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA22.

Test purposes:

1 AR.

2 AS.
3 CD.
4 CDA.
5 ED.
6 ER.
7 GT.
8 GTA.
9 GTC.
10 PT.
11 AA.

13.1.32 BI/INOP/State STA713 (713)

Test group objective: To check response to a representative subset of inopportune incoming SPDUs in state STA713.

Test purposes:

1 AEA.
2 GTA.
3 DN.
4 AA.
5 ADA.
6 AIA.
7 CDA.

13.2 BI/Syntactically invalid test (SYN)

Reference: ISO/IEC 8327-1, 8.2 and annex A, A.4.3.2

Test group objective: The IUT receives badly encoded SPDUs

Subgroups:

1 Kernel (KER)
2 Negotiated Release (NGR)
3 Half-duplex (HDU)
4 Duplex (DUP)
5 Expedited data (EXD)
6 Typed data (TYD)
7 Capability data (CAD)
8 Minor synchronization (MIN)
9 Major synchronization (MAJ)
10 Resynchronization (RES)
11 Exceptions (EXC)
12 Activity management (AM)

13.2.1 BI/SYN/Kernel (KER)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to the kernel.

Subgroups:

1 Invalid AA (AA)
2 Invalid AB (AB)
3 Invalid AC (AC)
4 Invalid CDO (CDO)
5 Invalid CN (CN)
6 Invalid DN (DN)
7 Invalid FN (FN)
8 Invalid OA (OA)
9 Invalid RF (RF)

13.2.1.1 BI/SYN/KER/Invalid AA (AA)

Reference: ISO/IEC 8327-1, 8.3.10

Test group objective: IUT receives badly encoded AA SPDUs.

Test purposes:

1 IUT receives AA with a length greater than 0.
2 IUT receives AA with a length 0 on 3 octets encoded.
3 IUT receives AA with an inopportune parameter.

13.2.1.2 BI/SYN/KER/Invalid AB (AB)

Reference: ISO/IEC 8327-1, 8.3.9

Test group objective: IUT receives badly encoded AB SPDUs.

Test purposes:

1 IUT receives AB with a length 0.
2 IUT receives AB with a length greater than the length of all parameters.
3 IUT receives AB with a parameter length on 3 octets encoded.
4 IUT receives AB with a mandatory parameter not present.
5 IUT receives AB with an inopportune parameter.
6 IUT receives AB with a parameter length greater than that allowed by ISO/IEC 8327-1.
7 IUT receives AB with a mislaid parameter.

13.2.1.3 BI/SYN/KER/Invalid AC (AC)

Reference: ISO/IEC 8327-1, 8.3.2

Test group objective: IUT receives badly encoded AC SPDUs.

Test purposes:

1 IUT receives AC with a length 0.
2 IUT receives AC with a length greater than the length of all parameters.
3 IUT receives AC with a PGI length greater than the length of all its parameters.

4 IUT receives AC with a parameter length on 3 octets encoded, while the parameter value actual length is less than 256 octets.

5 IUT receives AC with a mandatory parameter not present.

6 IUT receives AC with an unknown parameter.

7 IUT receives AC with a parameter length greater than that allowed by ISO/IEC 8327-1.

8 IUT receives AC with a mislaid parameter.

9 IUT receives AC with an invalid parameter value.

13.2.1.4 BI/SYN/KER/Invalid CDO (CDO)

Reference: ISO/IEC 8327-1, 8.3.3

Test group objective: IUT receives badly encoded CDO SPDUs.

Test purposes:

1 IUT receives CDO with a length 0.

2 IUT receives CDO with a length greater than the length of all parameters.

3 IUT receives CDO with a parameter length on 3 octets encoded.

4 IUT receives CDO with a mandatory parameter not present.

5 IUT receives CDO with an inopportune parameter.

6 IUT receives CDO with a mislaid parameter.

13.2.1.5 BI/SYN/KER/Invalid CN (CN)

Reference: ISO/IEC 8327-1, 8.3.1

Test group objective: IUT receives badly encoded CN SPDUs.

Test purposes:

1 IUT receives CN with a length 0.

2 IUT receives CN with a length greater than the length of all parameters.

3 IUT receives CN with a PGI length greater than the length of all its parameters.

4 IUT receives CN with a parameter length on 3 octets encoded.

5 IUT receives CN with a mandatory parameter not present.

6 IUT receives CN with an inopportune parameter.

7 IUT receives CN with a parameter length greater than that allowed by ISO/IEC 8327-1.

8 IUT receives CN with a mislaid parameter.

9 IUT receives CN with an invalid parameter value.

13.2.1.6 BI/SYN/KER/Invalid DN (DN)

Reference: ISO/IEC 8327-1, 8.3.5

Test group objective: IUT receives badly encoded DN SPDUs.

Test purposes:

1 IUT receives DN with a length 0.

2 IUT receives DN with a length greater than the length of all parameters.

3 IUT receives DN with an inopportune parameter.

13.2.1.7 BI/SYN/KER/Invalid FN (FN)

Reference: ISO/IEC 8327-1, 8.3.6

Test group objective: IUT receives badly encoded FN SPDUs.

Test purposes:

1 IUT receives FN with a length 0.

2 IUT receives FN with a length greater than the length of all parameters.

3 IUT receives FN with a parameter length on 3 octets encoded.

4 IUT receives FN with an inopportune parameter.

13.2.1.8 BI/SYN/KER/Invalid OA (OA)

Reference: ISO/IEC 8327-1, 8.3.2

Test group objective: IUT receives badly encoded OA SPDUs.

Test purposes:

1 IUT receives OA with a length 0.

2 IUT receives OA with a length greater than the length of all parameters.

3 IUT receives OA with a parameter length on 3 octets encoded.

4 IUT receives OA with a mandatory parameter not present.

5 IUT receives OA with an inopportune parameter.

6 IUT receives OA with a mislaid parameter.

13.2.1.9 BI/SYN/KER/Invalid RF (RF)

Reference: ISO/IEC 8327-1, 8.3.5

Test group objective: IUT receives badly encoded RF SPDUs.

Test purposes:

1 IUT receives RF with a length 0.

2 IUT receives RF with a length greater than the length of all parameters.

3 IUT receives RF with a PGI length greater than the length of all its parameters.

4 IUT receives RF with a parameter length on 3 octets encoded, while the parameter value actual length is less than 256 octets.

5 IUT receives RF with an inopportune parameter.

6 IUT receives RF with a parameter length greater than that allowed by ISO/IEC 8327-1.

7 IUT receives RF with a mislaid parameter.

13.2.2 BI/SYN/Negotiated release (NGR)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to negotiated release.

Subgroups:

1 Invalid NF (NF)

13.2.2.1 BI/SYN/NGR/Invalid NF (NF)

Reference: ISO/IEC 8327-1, 8.3.8

Test group objective: IUT receives badly encoded NF SPDUs.

Test purposes:

1 IUT receives NF with a length 0.

2 IUT receives NF with a length greater than the length of all parameters.

3 IUT receives NF with an inopportune parameter.

13.2.3 BI/SYN/Half-duplex (HDU)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to half-duplex.

Subgroups:

1 Invalid DT (DT)

2 Invalid GT (GT)

3 Invalid PT (PT)

13.2.3.1 BI/SYN/HDU/Invalid DT (DT)

Reference: ISO/IEC 8327-1, 8.3.11

Test group objective: IUT receives badly encoded DT SPDUs.

Test purposes:

1 IUT receives DT with a length 0 without the Enclosure Item parameter and an empty User Information Field.

2 IUT receives DT with a length greater than the length of all parameters.

3 IUT receives DT with a parameter length on 3 octets encoded.

4 IUT receives DT with an inopportune parameter.

13.2.3.2 BI/SYN/HDU/Invalid GT (GT)

Reference: ISO/IEC 8327-1, 8.3.16

Test group objective: IUT receives badly encoded GT SPDUs.

Test purposes:

1 IUT receives GT with a length 0.

2 IUT receives GT with a length greater than the length of all parameters.

3 IUT receives GT with a parameter length on 3 octets encoded.

4 IUT receives GT with an inopportune parameter.

13.2.3.3 BI/SYN/HDU/Invalid PT (PT)

Reference: ISO/IEC 8327-1, 8.3.17

Test group objective: IUT receives badly encoded PT SPDUs.

Test purposes:

1 IUT receives PT with a length 0.

2 IUT receives PT with a length greater than the length of all parameters.

3 IUT receives PT with a parameter length on 3 octets encoded.

4 IUT receives PT with an inopportune parameter.

13.2.4 BI/SYN/Duplex (DUP)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to duplex.

Subgroups:

1 Invalid DT (DT)

13.2.4.1 BI/SYN/DUP/Invalid DT (DT)

Reference: ISO/IEC 8327-1, 8.3.11

Test group objective: IUT receives badly encoded DT SPDUs.

Test purposes:

Refer to clause 13.2.3.1

13.2.5 BI/SYN/Expedited data (EXD)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to expedited data.

Subgroups:

1 Invalid EX (EX)

13.2.5.1 BI/SYN/EXD/Invalid EX (EX)

Reference: ISO/IEC 8327-1, 8.3.12

Test group objective: IUT receives badly encoded EX SPDUs.

Test purposes:

1 IUT receives EX with a length 0.

2 IUT receives EX with a length greater than the length of all parameters.

3 IUT receives EX with an inopportune parameter.

13.2.6 BI/SYN/Typed data (TYD)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to typed data.

Subgroups:

1 Invalid TD (TD)

13.2.6.1 BI/TYD/Invalid TD (TD)

Reference: ISO/IEC 8327-1, 8.3.13

Test group objective: IUT receives badly encoded TD SPDUs.

Test purposes:

1 IUT receives TD with a length 0 without the Enclosure Item parameter and an empty User Information Field.

2 IUT receives TD with a length greater than the length of all parameters.

3 IUT receives TD with a parameter length on 3 octets encoded.

4 IUT receives TD with an unknown parameter.

13.2.7 BI/SYN/Capability data (CAD)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to capability data.

Subgroups:

1 Invalid CD (CD)

2 Invalid CDA (CDA)

13.2.7.1 BI/SYN/CAD/Invalid CD (CD)

Reference: ISO/IEC 8327-1, 8.3.14

Test group objective: IUT receives badly encoded CD SPDUs.

Test purposes:

1 IUT receives CD with a length 0.

2 IUT receives CD with a length greater than the length of all parameters.

3 IUT receives CD with an inopportune parameter.

13.2.7.2 BI/SYN/CAD/Invalid CDA (CDA)

Reference: ISO/IEC 8327-1, 8.3.15

Test group objective: IUT receives badly encoded CDA SPDUs.

Test purposes:

1 IUT receives CDA with a length 0.

2 IUT receives CDA with a length greater than the length of all parameters.

3 IUT receives CDA with an unknown parameter.

13.2.8 BI/SYN/Minor synchronize (MIN)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to minor synchronize.

Subgroups:

1 Invalid MIA (MIA)

2 Invalid MIP (MIP)

13.2.8.1 BI/SYN/MIN/Invalid MIA (MIA)

Reference: ISO/IEC 8327-1, 8.3.21

Test group objective: IUT receives badly encoded MIA SPDUs.

Test purposes:

1 IUT receives MIA with a length 0.

2 IUT receives MIA with a length greater than the length of all parameters.

3 IUT receives MIA with a parameter length on 3 octets encoded.

4 IUT receives MIA with a mandatory parameter not present.

5 IUT receives MIA with an inopportune parameter.

6 IUT receives MIA with a parameter length greater than that allowed by ISO/IEC 8327-1.

7 IUT receives MIA with an invalid parameter value.

13.2.8.2 BI/SYN/MIN/Invalid MIP (MIP)

Reference: ISO/IEC 8327-1, 8.3.20

Test group objective: IUT receives badly encoded MIP SPDUs.

Test purposes:

1 IUT receives MIP with a length 0.

2 IUT receives MIP with a length greater than the length of all parameters.

3 IUT receives MIP with a parameter length on 3 octets encoded.

4 IUT receives MIP with a mandatory parameter not present.

5 IUT receives MIP with an unknown parameter.

6 IUT receives MIP with a parameter length greater than that allowed by ISO/IEC 8327-1.

7 IUT receives MIP with a mislaid parameter.

8 IUT receives MIP with an invalid parameter value.

13.2.9 BI/SYN/Major synchronize (MAJ)

Reference: ISO/IEC 8327-1, 8.3

Test group objective: IUT receives badly encoded SPDUs related to major synchronize.

Subgroups:

1 Invalid MAA (MAA)

2 Invalid MAP (MAP)

3 Invalid PR (PR)

13.2.9.1 BI/SYN/MAJ/Invalid MAA (MAA)

Reference: ISO/IEC 8327-1, 8.3.23

Test group objective: IUT receives badly encoded MAA SPDUs.

Test purposes: