
**Information technology —
Telecommunications and information
exchange between systems — Transport
conformance testing for connection-mode
transport protocol —**

Part 1:

Test suite structure and test purposes for
ISO/IEC 8073:1988 classes 0, 2 over CONS
and 4 over CLNS

*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Structure de suite des essais et but des
essais pour l'ISO/CEI 8073:1988, classes 0, 2 sur CONS et 4 sur
CLNS —*

Partie 1: Principes généraux



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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees 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 JTC 1. 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 10025-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

ISO/IEC 10025 consists of the following parts, under the general title *Information technology — Telecommunications and information exchange between systems — Transport conformance testing for connection-mode transport protocol*:

- *Part 1: Test suite structure and test purposes for ISO/IEC 8073:1988 classes 0, 2 over CONS and 4 over CLNS*
- *Part 2: Test suite structure and test purposes*
- *Part 3: Transport Test Management Protocol specification*
- *Part 4: Abstract test suites and PIXIT*

Information technology – Telecommunications and information exchange between systems – Transport conformance testing for connection-mode transport protocol -

Part 1: Test suite structure and test purposes for ISO/IEC 8073:1988 classes 0, 2 over CONS and 4 over CLNS

1 Scope

This part of ISO/IEC 10025 specifies a test suite structure and test purposes for classes 0 and 2 over connection mode network service and class 4 over connectionless mode network service of the Transport Protocol as defined in ISO/IEC 8073 and ISO/IEC 8073/Add. 2.

This part of ISO/IEC 10025 applies to conformance test suites for testing Transport protocol implementations which operate classes 0 and/or 2 over the connection mode network service (ISO 8348) and which claim conformance to ISO/IEC 8073 or ISO/IEC ISP 10609-2 Group TC or ISO/IEC ISP 10609-3 Group TD and to conformance test suites for testing Transport protocol implementations which operate class 4 over the connectionless mode network service (ISO 8348/Add.1) and which claim conformance to ISO/IEC 8073 or ISO/IEC ISP 10608-1 Group TA.

This part of ISO/IEC 10025 does not specify how the conformance tests are to be realized or used, nor how the test outcome will affect the use of the protocol implementation.

The test purposes contained in this part of ISO/IEC 10025 will not yield abstract test cases which assess the performance, reliability or robustness of Transport protocol implementations.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 10025. 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 10025 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 8073:1992, *Information technology - Telecommunications and information exchange between systems - Open Systems Interconnection - Protocol for providing the connection-mode transport service.*

ISO/IEC 8348:1993, *Information technology - Open Systems Interconnection - Network Service Definition.*

NOTE – ISO/IEC 8073:1992 and ISO/IEC 8348:1993 supersede ISO/IEC 8073:1988 and ISO 8348:1987 respectively. However, this part of ISO/IEC 10025 is based on the previous editions of those standards (ISO/IEC 8073:1988 and ISO 8348:1987), which are referenced in International Standardized Profiles ISO/IEC ISP 10608-1:1992, ISO/IEC ISP 10609-2:1992 and ISO/IEC ISP 10609-3:1992. The new editions of ISO/IEC 8073 and ISO/IEC 8348 give extensions and incorporate all of the amendments and corrigenda to the previous editions, which are listed below.

ISO/IEC 8073:1988, *Information processing systems - Open Systems Interconnection - Connection oriented transport protocol specification* (plus Technical Corrigendum 1:1990, Technical Corrigendum 2:1990, Technical Corrigendum 4:1991 and Technical Corrigendum 5:1991).

ISO/IEC 8073:1988/Add.2:1989, *Information processing systems - Open Systems Interconnection - Connection oriented transport protocol specification - Addendum 2: Class four operation over connectionless network service*.

ISO 8348:1987, *Information processing systems - Data communications - Network service definition*.

ISO 8348:1987/Add.1:1987, *Information processing systems - Data communications - Network service definition - Addendum 1: Connectionless-mode transmission*.

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

ISO/IEC 9646-2:1994, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification*.

ISO/IEC 9646-3:1992, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)*.

ISO/IEC ISP 10608-1:1992, *Information technology - International Standardized Profile TAnnnn - Connection-mode Transport Service over Connectionless-mode Network Service - Part 1: General overview and subnetwork-independent requirements*.

ISO/IEC ISP 10609-2:1992, *Information technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service - Part 2: Subnetwork-type independent requirements for Group TC*.

ISO/IEC ISP 10609-3:1992, *Information technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service - Part 3: Subnetwork-type independent requirements for Group TD*.

3 Definitions

For the purposes of this part of ISO/IEC 10025, the definitions given in ISO/IEC 8073, ISO/IEC 9646-1, and ISO/IEC 9646-3 apply.

4 Abbreviations

For the purposes of this part of ISO/IEC 10025, the abbreviations given in ISO/IEC 8073, ISO/IEC 9646-1, and ISO/IEC 9646-3 and the following abbreviations apply:

AOS	Additional Option Selection
APC	Alternative Protocol Class(es)

5 Compliance

A generic or abstract test suite which complies with this part of ISO/IEC 10025 shall:

- consist of a set of test cases corresponding to the set or a subset of the test purposes specified in clause 7; it is the responsibility of the specifier of the abstract test suite to determine whether a test purpose may be realized by the test method chosen for a given test suite;
- identify clearly the test purposes used;
- include all test purposes specified in clause 7 except those excluded by the choice of test method;
- use a test suite structure which is an appropriate subset (or the whole) of the test suite structure specified in clause 6;
- name its test groups and test cases using the naming conventions specified in clause 6 in such a way that the test group and test case names used in clause 7 are used whenever relevant; and
- comply with ISO/IEC 9646-2.

6 Test suite structure

The test suite for the Transport protocol class 0 and 2 over CONS and class 4 over CLNS consists of a number of test groups and test cases arranged in a hierarchical manner. Each test case in the structure has one, narrowly defined purpose. Within the Transport test suite, nested test groups are used to provide a logical ordering of the test cases. Test groups contained in the structure may be used to aid planning, development, understanding or execution of the abstract test suites.

The Transport test suite structure follows the guidelines given in ISO/IEC 9646-2, the substructuring of the capability tests reflects the protocol functions as listed in the PICS, the behaviour tests are substructured to reflect the state oriented nature of the transport protocol. The Transport test suite structure is shown below in figures 1 - 3, TTCN conforming test group identifiers are used to identify the test groups.

Capability tests are organized into subgroups. Each of these subgroups is associated with one capability that is defined in the transport protocol specification and is listed in the PICS proforma. Only those tests contained in the subgroups associated with a capability which is claimed in the PICS as being implemented shall be selected during the test campaign.

Behaviour tests are structured into three subgroups: valid behaviour tests, invalid behaviour tests, and inopportune behaviour tests. Each of these subgroups is divided into a number of other subgroups which identify a stable state of the Transport protocol. All actions specified in the transport protocol which can be associated with these stable states are listed in the lower level of this structure. All test purposes for the behaviour tests have been written in terms of state/event combinations defined in the lowest two levels of this structure.

The following test purposes are proposed to be used during basic interconnection testing for class 0 over CONS:

T0_CP_1_1, T0_CP_1_2, T0_CP_1_3, T0_CP_1_4, T0_CP_1_5, T0_CP_1_6, T0_CP_2_1 and T0_CP_2_2.

The following test purposes are proposed to be used during basic interconnection testing for class 2 over CONS:

T2_CP_1_1, T2_CP_1_2, T2_CP_1_3, T2_CP_1_4, T2_CP_1_5, T2_CP_1_6, T2_CP_2_1 and T2_CP_2_2.

The following test purposes are proposed to be used during basic interconnection testing for class 4 over CLNS:

T4_CP_7_5_1, T4_CP_7_6_1, T4_CP_7_9, T4_CP_7_10, T4_CP_7_11, T4_CP_7_12, T4_CP_11_1, T4_CP_10_4, T4_VB_CLOSED_1.

These tests may be used to determine whether or not the IUT has sufficient functionality to enable additional conformance tests to be executed. Additional and/or other tests may be identified by the specifier of an ATS which complies with this part of ISO/IEC 10025 if the use of these tests will be more appropriate in the context of the abstract test suite and the chosen abstract test method.

CLASS 0 T0	CAPABILITY T0/CP	Assignment to network connection	
		T0/CP/F1	
		TPDU transfer	
		T0/CP/F2	
		Segmenting	
		T0/CP/F3	
		Reassembling	
		T0/CP/F4	
		Connection establishment	
		T0/CP/F5	
	BEHAVIOUR T0/BE	Connection refusal	
		T0/CP/F6	
		Error release	
		T0/CP/F7	
		TPDU association with transport connection	
		T0/CP/F8	
		Treatment of protocol errors	
		T0/CP/F9	
		Treatment of TSAP-IDs (ISP 10609-2 and -3)	
		T0/CP/F10	
		Valid Behaviour T0/BE/VB	CLOSED State
			T0/BE/VB/CLOSED
			WFTRESP State
			T0/BE/VB/WFTRESP
			WFCC State
			T0/BE/VB/WFCC
			OPEN State
			T0/BE/VB/OPEN
			CLOSED State
			T0/BE/IB/CLOSED
		Invalid Behaviour T0/BE/IB	WFCC State
			T0/BE/IB/WFCC
			OPEN State
			T0/BE/IB/OPEN
			CLOSED State
			T0/BE/IE/CLOSED
			WFTRESP State
			T0/BE/IE/WFTRESP
			WFCC State
			T0/BE/IE/WFCC
		Inopportune Events T0/BE/IE	OPEN State
			T0/BE/IE/OPEN

Figure 1 - Class 0 Test Purposes Structure

CLASS 2	CAPABILITY	Assignment to network connection
T2	T2/CP	T2/CP/F1
		TPDU transfer
		T2/CP/F2
		Segmenting
		T2/CP/F3
		Reassembling
		T2/CP/F4
		Concatenation
		T2/CP/F5
		Separation
		T2/CP/F6
		Connection establishment
		T2/CP/F7
		Connection refusal
		T2/CP/F8
		Normal release
		T2/CP/F9
		Error release
		T2/CP/F10
		TPDU association with transport connection
		T2/CP/F11
		DT TPDU numbering
		T2/CP/F12
		Expedited data
		T2/CP/F13
		Multiplexing
		T2/CP/F14
		Demultiplexing
		T2/CP/F15
		Explicit flow control (with)
		T2/CP/F16
		Explicit flow control (without)
		T2/CP/F17
		Treatment of protocol errors
		T2/CP/F18
		Treatment of TSAP-IDs (ISP 10609-2)
		T2/CP/F19

Figure 2 (1 of 2) - Class 2 Test Purposes Structure

BEHAVIOUR T2/BE	Valid Behaviour T2/BE/VB	CLOSED State T2/BE/VB/CLOSED WFTRESP State T2/BE/VB/WFTRESP WFCC State T2/BE/VB/WFCC WBCL State T2/BE/VB/WBCL OPEN State T2/BE/VB/OPEN CLOSING State T2/BE/VB/CLOSING
	Invalid Behaviour T2/BE/IB	CLOSED State T2/BE/IB/CLOSED WFCC State T2/BE/IB/WFCC WBCL State T2/BE/IB/WBCL OPEN State T2/BE/IB/OPEN CLOSING State T2/BE/IB/CLOSING
	Inopportune Events T2/BE/IE	CLOSED State T2/BE/IE/CLOSED WFTRESP State T2/BE/IE/WFTRESP WFCC State T2/BE/IE/WFCC WBCL State T2/BE/IE/WBCL OPEN State T2/BE/IE/OPEN CLOSING State T2/BE/IE/CLOSING

Figure 2 (2 of 2) - Class 2 Test Purposes Structure

CLASS 4	CAPABILITY	Segmenting
T4	T4/CP	T4/CP/F3
		Reassembling
		T4/CP/F4
		Separation
		T4/CP/F5
		Concatenation
		T4/CP/F6
		Connection establishment
		T4/CP/F7
		Connection refusal
		T4/CP/F8
		Normal release
		T4/CP/F9
		TPDU association with transport connection
		T4/CP/F10
		DT TPDU numbering
		T4/CP/F11
		Expedited data
		T4/CP/F12
		Retention until acknowledgement
		T4/CP/F13
		Explicit flow control (with)
		T4/CP/F16
		Use of checksum
		T4/CP/F18
		Non use of checksum
		T4/CP/F19
		Frozen references
		T4/CP/F20
		Retransmission on timeout
		T4/CP/F21
		Resequencing
		T4/CP/F22
		Inactivity control
		T4/CP/F23
		Treatment of protocol errors
		T4/CP/F24
		Treatment of TSAP-IDs (ISP 10608-1)
		T4/CP/F25

Figure 3 (1 of 2) - Class 4 over CLNS Test Purposes Structure

BEHAVIOUR T4/BE	Valid Behaviour T4/BE/VB	REFWAIT State T4/BE/VB/REFWAIT CLOSED State T4/BE/VB/CLOSED WFTRESP State T4/BE/VB/WFTRESP WFCC State T4/BE/VB/WFCC WBCL State T4/BE/VB/WBCL OPEN State T4/BE/VB/OPEN AKWAIT State T4/BE/VB/AKWAIT CLOSING State T4/BE/VB/CLOSING
	Invalid Behaviour T4/BE/IB	REFWAIT State T4/BE/IB/REFWAIT CLOSED State T4/BE/IB/CLOSED WFTRESP State T4/BE/IB/WFTRESP WFCC State T4/BE/IB/WFCC WBCL State T4/BE/IB/WBCL OPEN State T4/BE/IB/OPEN AKWAIT State T4/BE/IB/AKWAIT CLOSING State T4/BE/IB/CLOSING
	Inopportune Events T4/BE/IE	REFWAIT State T4/BE/IE/REFWAIT WFCC State T4/BE/IE/WFCC WBCL State T4/BE/IE/WBCL OPEN State T4/BE/IE/OPEN AKWAIT State T4/BE/IE/AKWAIT

Figure 3 (2 of 2) - Class 4 over CLNS Test Purposes Structure

7 Test purposes

7.1 Test purposes for class 0

This subclause contains a set of test purposes relevant to the class 0 Transport protocol. These test purposes provide the basis for developing abstract test suites which may be used to evaluate conformance to ISO/IEC 8073, ISO/IEC ISP 10609-2 Group TC or ISO/IEC ISP 10609-3 TD. TTCN conforming identifiers are used in this subclause to identify test purposes.

7.1.1 Capability test group

7.1.1.1 Assignment to network connection

T0_CP_1_1

Verify that the IUT can initiate the establishment of a network connection.

T0_CP_1_2

Verify that the IUT can generate a CR TPDU.

T0_CP_1_3

Verify that the IUT can send a CC TPDU on receipt of a CR TPDU

T0_CP_1_4

Verify that the IUT can initiate the release of a network connection.

T0_CP_1_5

Verify that the IUT can accept a network disconnection.

T0_CP_1_6

Verify that the IUT can disconnect and then reconnect

T0_CP_1_7

Verify that the IUT, already having established a transport connection, uses a new network connection to establish a second transport connection.

7.1.1.2 TPDU transfer

T0_CP_2_1

Verify that the IUT transfers 125 octets of transport user data (128 is the negotiated maximum TPDU size) in one or more DT TPDU.

T0_CP_2_2

Verify that the IUT can accept a DT TPDU containing 125 octets of user data (128 is the negotiated maximum TPDU size).

7.1.1.3 Segmenting

T0_CP_3_1

Verify that the IUT can segment multiple TSDUs greater than the negotiated max. TPDU size into appropriate DT TPDU.

7.1.1.4 Reassembling

T0_CP_4_1

Verify that the IUT can reassemble multiple TSDUs greater than the negotiated size from the corresponding DT TPDU.

7.1.1.5 Connection establishment

T0_CP_5_1_1

Verify that the IUT can accept a CC TPDU requesting TPDU size 128.

T0_CP_5_1_2

Verify that the IUT can accept a CC TPDU requesting TPDU size 256.

T0_CP_5_1_3

Verify that the IUT can accept a CC TPDU requesting TPDU size 512.

T0_CP_5_1_4

Verify that the IUT can accept a CC TPDU requesting TPDU size 1024.

T0_CP_5_1_5

Verify that the IUT can accept a CC TPDU requesting TPDU size 2048.

T0_CP_5_3_1

Verify that the IUT selects TPDU size 128 if receiving a CR TPDU proposing TPDU size 128.

T0_CP_5_3_2

Verify that the IUT selects TPDU size 256 if receiving a CR TPDU proposing TPDU size 256.

T0_CP_5_3_3

Verify that the IUT selects TPDU size 512 if receiving a CR TPDU proposing TPDU size 512.

T0_CP_5_3_4

Verify that the IUT selects TPDU size 1024 if receiving a CR TPDU proposing TPDU size 1024.

T0_CP_5_3_5

Verify that the IUT selects TPDU size 2048 if receiving a CR TPDU proposing TPDU size 2048.

T0_CP_5_4

IUT sends a CR TPDU to which the LT does not answer. Check if the IUT implements optional timer TS1.

7.1.1.6 Connection refusal**T0_CP_6_1**

Verify that the IUT refuses the connection by sending a DR TPDU in response to a CR TPDU.

T0_CP_6_2

IUT sends a CR. LT refuses the connection by sending a DR TPDU, the IUT shall then disconnect the network connection. LT tries to establish a new connection.

7.1.1.7 Error release**T0_CP_7_1**

During the data transfer phase, LT releases the network connection. LT tries to establish a new connection.

T0_CP_7_2

During the data transfer phase, LT resets the network connection, the IUT shall then disconnect the network connection. LT tries to establish a new connection.

7.1.1.8 TPDU association with transport connection

T0_CP_8_1

Verify that the IUT responds to a DR TPDU which cannot be associated with a transport connection and has a SRC-REF not equal zero in one of the following ways: send a DC TPDU according to ISO/IEC 8073, 6.9.4.2 a), disconnect the network connection or ignore the DR TPDU.

NOTE 1 The last two alternatives for the IUT reaction mentioned in T0_CP_8_1 are allowed due to a discrepancy in ISO/IEC 8073, 6.9.4.2 a) which mandates the use of the DC TPDU regardless of the class and ISO/IEC 8073, 13.1, Table 8 which specifies DC as non-valid in class 0. Existing implementations may have worked around this problem in any of the three ways described above.

T0_CP_8_2

Verify that the IUT, according to ISO/IEC 8073, 6.9.4.2 a), sends a DR TPDU in response to a CC TPDU with a wrong DST-REF.

T0_CP_8_3

Verify that the IUT responds to a DR TPDU which cannot be associated with a transport connection and has a SRC-REF equal zero in one of the following ways: ignore the DR TPDU according to ISO/IEC 8073, 6.9.4.2 a) or disconnect the network connection.

NOTE 2 The second alternative for the IUT reaction mentioned in T0_CP_8_3 is allowed to be consistent with T0_CP_8_1.

T0_CP_8_4

Verify that the IUT, according to ISO/IEC 8073, 6.9.4.2 a), discards an ER TPDU which cannot be associated with a transport connection.

7.1.1.9 Treatment of protocol errors

T0_CP_9_1

IUT sends a CC TPDU. LT sends an ER TPDU. Check the reaction to this ER TPDU.

T0_CP_9_2

IUT sends a DT TPDU. LT sends an ER TPDU. Check the reaction to this ER TPDU.

T0_CP_9_3

Verify that the IUT implements optional timer TS2.

7.1.1.10 Treatment of TSAP-IDs (ISO/IEC ISP 10609-2 and ISO/IEC ISP 10609-3)**T0_CP_10_1**

Verify that the IUT, in CLOSED state responds to a CR TPDU with a calling TSAP of length 0 with either: CC without calling TSAP or CC with calling TSAP of length 0.

T0_CP_10_2

Verify that the IUT, in CLOSED state responds to a CR TPDU without calling TSAP with either: CC without calling TSAP or CC with calling TSAP of length 0.

T0_CP_10_3

Verify that the IUT, in CLOSED state responds to a CR TPDU with calling TSAP of length > 0 with either: CC without calling TSAP or CC with calling TSAP = value in CR.

T0_CP_10_4

Verify that the IUT, in CLOSED state responds to a CR TPDU with an invalid called TSAP with a DR TPDU.

7.1.2 Behaviour test group**7.1.2.1 Valid Behaviour****7.1.2.1.1 CLOSED State****T0_BE_VB_CLOSED_1**

Verify that the IUT, in CLOSED state accepts a valid CR TPDU.

T0_BE_VB_CLOSED_2

Verify that the IUT, in CLOSED state selects class 0 when receiving a CR with preferred class 1 and alternative class 0.

T0_BE_VB_CLOSED_3

Verify that the IUT, in CLOSED state selects class 0 when receiving a CR with preferred class 2 and alternative class 0.

T0_BE_VB_CLOSED_4

Verify that the IUT, in CLOSED state selects class 0 when receiving a CR with preferred class 3 and alternative class 0.

T0_BE_VB_CLOSED_5

Verify that the IUT, in CLOSED state selects class 0 when receiving a CR with preferred class 4 and alternative class 0.

7.1.2.1.2 WFTRESP State**T0_BE_VB_WFTRESP_1**

Verify that the IUT, in WFTRESP state, sends a CC TPDU when the transport user accepts the transport connection.

T0_BE_VB_WFTRESP_2

Verify that the IUT, in WFTRESP state, sends a DR TPDU when the transport user refuses the transport connection.

T0_BE_VB_WFTRESP_3

Verify that the IUT, in WFTRESP state, disconnects the network connection in case of a network reset.

T0_BE_VB_WFTRESP_4

Verify that the IUT, in WFTRESP state, ignores a duplicate CR TPDU with the class parameter set to class 4.

7.1.2.1.3 WFCC State**T0_BE_VB_WFCC_1**

Verify that the IUT, in WFCC state, releases the network connection when the transport user disconnects the transport connection.

T0_BE_VB_WFCC_2

Verify that the IUT, in WFCC state, disconnects the network connection in case of a network reset.

T0_BE_VB_WFCC_3

Verify that the IUT, in WFCC state, disconnects the network connection on receipt of an ER TPDU.

T0_BE_VB_WFCC_4

Verify that the IUT, in WFCC state, disconnects the network connection on receipt of a DR TPDU.

T0_BE_VB_WFCC_5

Verify that the IUT, in WFCC state, disconnects the Network in response to a DR TPDU containing an additional information parameter.

7.1.2.1.4 OPEN State**T0_BE_VB_OPEN_1**

Verify that the IUT, in OPEN state, releases the network connection when the transport user releases the transport connection.

T0_BE_VB_OPEN_2

Verify that the IUT, in OPEN state, accepts a sequence of DT with EOT=0 and DT with EOT=1 without user data (ISO/IEC 8073, 6.3.3).

T0_BE_VB_OPEN_3

Verify that the IUT, in OPEN state, ignores a duplicate class 4 CR TPDU.

7.1.2.2 Invalid Behaviour**7.1.2.2.1 CLOSED State****T0_BE_IB_CLOSED_1**

Verify that the IUT, in CLOSED state, responds to a CR TPDU with a length indicator set to less than the actual value in one of the following ways: send an ER TPDU, send a DR TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

T0_BE_IB_CLOSED_2

Verify that the IUT, in CLOSED state, responds to a CR TPDU with a length indicator set to more than the actual value in one of the following ways: send an ER TPDU, send a DR TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

T0_BE_IB_CLOSED_3

Verify that the IUT, in CLOSED state, responds to a CR TPDU with an invalid protocol class in one of the following ways: send an ER TPDU, send a DR TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

T0_BE_IB_CLOSED_4

Verify that the IUT, in CLOSED state, accepts a CR TPDU with an unknown parameter.

TO_BE_IB_CLOSED_5

Verify that the IUT, in CLOSED state, responds to a CR TPDU with an invalid TPDU size (low) in one of the following ways: send ER TPDU, send DR TPDU, send CC with TPDU size 128 (or none), disconnect network connection, reset network connection or ignore CR TPDU.

TO_BE_IB_CLOSED_6

Verify that the IUT, in CLOSED state, responds to a CR TPDU with an invalid TPDU size (high) in one of the following ways: send ER TPDU, send DR TPDU, send CC with TPDU size 128 (or none), disconnect network connection, reset network connection or ignore CR TPDU.

TO_BE_IB_CLOSED_7

Verify that the IUT, in CLOSED state according to ISO/IEC 8073, 8.2.2 1), responds to a class 0 CR TPDU containing an alternative class parameter in one of the following ways: send ER TPDU, send DR TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

TO_BE_IB_CLOSED_8

Verify that the IUT, in CLOSED state according to ISO/IEC 8073, 8.2.2 1), responds to a class 0 CR TPDU containing an additional option selection parameter in one of the following ways: send ER TPDU, send DR TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

TO_BE_IB_CLOSED_9

Verify that the IUT, in CLOSED state, accepts a CR TPDU containing 2 TPDU Size parameters and adopts the value of the second parameter.

TO_BE_IB_CLOSED_10

Verify that the IUT, in CLOSED state according to ISO/IEC 8073, 8.2.2 1), responds to a class 0 CR TPDU containing a checksum parameter in one of the following ways: send ER TPDU, send DR TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

7.1.2.2.2 WFCC State**TO_BE_IB_WFCC_1**

Verify that the IUT, in WFCC state, responds to a CC TPDU with a length indicator set to less than the actual value in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

TO_BE_IB_WFCC_2

Verify that the IUT, in WFCC state, responds to a CC TPDU with a length indicator set to more than the actual value in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

T0_BE_IB_WFCC_3

Verify that the IUT, in WFCC state, responds to a CC TPDU with an invalid protocol class in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

T0_BE_IB_WFCC_4

Verify that the IUT, in WFCC state, responds to a CC TPDU with an unknown parameter in the variable part in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

T0_BE_IB_WFCC_5

Verify that the IUT, in WFCC state, responds to a CC TPDU with an invalid TPDU size (low) in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU

T0_BE_IB_WFCC_6

Verify that the IUT, in WFCC state, responds to a CC TPDU with an invalid TPDU size (high) in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

T0_BE_IB_WFCC_7

Verify that the IUT, in WFCC state, responds to a CC TPDU containing an alternate protocol class parameter in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

T0_BE_IB_WFCC_8

Verify that the IUT, in WFCC state, responds to a CC TPDU with a user data field present in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

T0_BE_IB_WFCC_9

Verify that the IUT, in WFCC state, responds to a CC TPDU containing an additional option selection parameter in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

T0_BE_IB_WFCC_10

Verify that the IUT, in WFCC state, responds to a DR TPDU with a length indicator less than the actual value in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore DR TPDU.

T0_BE_IB_WFCC_11

Verify that the IUT, in WFCC state, responds to a CC TPDU containing the checksum parameter in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid CC TPDU.

TO_BE_IB_WFCC_12

Verify that the IUT, in WFCC state, responds to a CC TPDU selecting class 2 in response to a class 0 CR in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid CC TPDU.

7.1.2.2.3 OPEN State

TO_BE_IB_OPEN_1

Verify that the IUT, in OPEN state, responds to a DT TPDU with a length indicator set to less than the actual value in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid DT TPDU.

TO_BE_IB_OPEN_2

Verify that the IUT, in OPEN state, responds to a DT TPDU with a length indicator set to more than the actual value in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid DT TPDU.

TO_BE_IB_OPEN_3

Verify that the IUT, in OPEN state, responds to a DT TPDU with nonzero sequence number (see ISO/IEC 8073, 13.7.3) in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid DT TPDU.

TO_BE_IB_OPEN_4

Verify that the IUT, in OPEN state, responds to a DT TPDU with EOT = 0 containing no user data (see ISO/IEC 8073, 6.3.3) in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid DT TPDU.

TO_BE_IB_OPEN_5

Verify that the IUT, in OPEN state, responds to a DT TPDU with EOT = 1 containing no user data (not in a sequence of more than 1 DT TPDU, see ISO/IEC 8073, 6.3.3) in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid DT TPDU.

TO_BE_IB_OPEN_6

Verify that the IUT, in OPEN state, responds to a DT TPDU containing the checksum parameter in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid DT TPDU.

TO_BE_IB_OPEN_7

Verify that the IUT, in OPEN state, responds to a DT TPDU with a size greater than the negotiated TPDU size in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid DT TPDU.

7.1.2.3 Inopportune events

7.1.2.3.1 CLOSED State

TO_BE_IE_CLOSED_1

Verify that the IUT, in CLOSED state, responds to an invalid TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore invalid TPDU.

TO_BE_IE_CLOSED_3

Verify that the IUT, in CLOSED state, ignores a DT TPDU.

TO_BE_IE_CLOSED_4

Verify that the IUT, in CLOSED state, ignores an ER TPDU.

TO_BE_IE_CLOSED_5

Verify that the IUT, in CLOSED state, ignores a DC TPDU.

TO_BE_IE_CLOSED_6

Verify that the IUT, in CLOSED state, ignores an AK TPDU.

TO_BE_IE_CLOSED_7

Verify that the IUT, in CLOSED state, ignores an EA TPDU.

TO_BE_IE_CLOSED_8

Verify that the IUT, in CLOSED state, ignores an ED TPDU.

7.1.2.3.2 WFTRESP State

TO_BE_IE_WFTRESP_1

Verify that the IUT, in WFTRESP state, responds to a duplicate CR TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

TO_BE_IE_WFTRESP_2

Verify that the IUT, in WFTRESP state, responds to a CC TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection, ignore CC TPDU or send DR TPDU.

TO_BE_IE_WFTRESP_3

Verify that the IUT, in WFTRESP state, responds to a DT TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore DT TPDU.

T0_BE_IE_WFTRESP_4

Verify that the IUT, in WFTRESP state, responds to an ER TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore ER TPDU.

T0_BE_IE_WFTRESP_5

Verify that the IUT, in WFTRESP state, responds to a DR TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection, ignore DR TPDU or send DC TPDU.

T0_BE_IE_WFTRESP_6

Verify that the IUT, in WFTRESP state, responds to an undefined TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore undefined TPDU.

T0_BE_IE_WFTRESP_7

Verify that the IUT, in WFTRESP state, responds to a DC TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore DC TPDU.

T0_BE_IE_WFTRESP_8

Verify that the IUT, in WFTRESP state, responds to an AK TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore AK TPDU.

T0_BE_IE_WFTRESP_9

Verify that the IUT, in WFTRESP state, responds to an EA TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore EA TPDU.

T0_BE_IE_WFTRESP_10

Verify that the IUT, in WFTRESP state, responds to an ED TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore ED TPDU.

7.1.2.3.3 WFCC State**T0_BE_IE_WFCC_1**

Verify that the IUT, in WFCC state, responds to an undefined TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore undefined TPDU.

T0_BE_IE_WFCC_2

Verify that the IUT, in WFCC state, responds to a CR TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

TO_BE_IE_WFCC_3

Verify that the IUT, in WFCC state, responds to a DT TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore DT TPDU.

TO_BE_IE_WFCC_4

Verify that the IUT, in WFCC state, responds to a DC TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore DC TPDU.

TO_BE_IE_WFCC_5

Verify that the IUT, in WFCC state, responds to an AK TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore AK TPDU.

TO_BE_IE_WFCC_6

Verify that the IUT, in WFCC state, responds to an EA TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore EA TPDU.

TO_BE_IE_WFCC_7

Verify that the IUT, in WFCC state, responds to an ED TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore ED TPDU.

7.1.2.3.4 OPEN State**TO_BE_IE_OPEN_1**

Verify that the IUT, in OPEN state, responds to an undefined TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore undefined TPDU.

TO_BE_IE_OPEN_2

Verify that the IUT, in OPEN state, responds to a CR TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CR TPDU.

TO_BE_IE_OPEN_3

Verify that the IUT, in OPEN state, responds to a CC TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore CC TPDU.

TO_BE_IE_OPEN_4

Verify that the IUT, in OPEN state, responds to a DR TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore DR TPDU.

T0_BE_IE_OPEN_5

Verify that the IUT, in OPEN state, responds to a DC TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore DC TPDU

T0_BE_IE_OPEN_6

Verify that the IUT, in OPEN state, responds to an AK TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection, ignore AK TPDU.

T0_BE_IE_OPEN_7

Verify that the IUT, in OPEN state, responds to an EA TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore EA TPDU.

T0_BE_IE_OPEN_8

Verify that the IUT, in OPEN state, responds to an ED TPDU in one of the following ways: send an ER TPDU, disconnect network connection, reset network connection or ignore ED TPDU.