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

Part 1:
Test suite structure and test purposes

Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — Suite d'essais de conformité pour le protocole OSI TP —

Partie 1: Structure de suite des essais et buts des essais

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 13650 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 13650-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 33, *Distributed application services.*

ISO/IEC 13650 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Conformance test suite for the OSI TP protocol*:

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

— *Part 2: Test management protocol specification*

Annex A of this part of ISO/IEC 13650 is for information only.

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Introduction

This part of ISO/IEC 13650 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 10026-3, the protocol for Distributed Transaction Processing.

A fundamental objective of the related standardized conformance tests is to establish uniform conformance testing and unambiguous evaluation procedures for checking the ability of an OSI TP protocol implementation to operate according to ISO/IEC 10026-3. 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 OSI TP protocol implementation.

The conformance test suites based on this part of ISO/IEC 13650 are designed for use by:

1) test laboratories that provide a conformance testing service for the OSI TP protocol;

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

3) implementers of the OSI TP 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.

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Information technology — Open Systems Interconnection — Conformance test suite for the OSI TP protocol — Part 1: Test suite structure and test purposes

1 Scope

This part of ISO/IEC 13650 specifies a test suite structure and test purposes for the whole of the OSI TP protocol, as defined in ISO/IEC 10026-3. This part of ISO/IEC 13650 does not specify how the conformance tests are to be realized or used, or how the test results are to be presented or used.

NOTE — The choice of test method may restrict the test purposes that can be realized.

This part of ISO/IEC 13650 specifies the relationship between the elements of the test suite structure (test groups and test purposes) and the Protocol Implementation Conformance Statement (PICS) proforma (ISO/IEC 10026-4), which is to be used in test case selection.

This part of ISO/IEC 13650 applies to conformance test suites for testing OSI TP protocol implementations which operate over a connection oriented presentation-service (ISO 8822) and which claim conformance to ISO/IEC 10026-3.

This part of ISO/IEC 13650 does not include a general assessment of performance, reliability, or robustness of relevant protocol implementations, or an assessment of the design of the protocol itself.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 13650. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 13650 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model.*

ITU-T Recommendation X.210 (1993) | ISO/IEC 10731:1994, *Information technology — Open Systems Interconnection — Basic Reference Model: Conventions for the definition of OSI services.*

ITU-T Recommendation X.217 (1995) | ISO/IEC 8649:1996, *Information technology — Open Systems Interconnection — Service definition for the Association Control Service Element.*

ITU-T Recommendation X.216 (1994) | ISO/IEC 8822:1994, *Information technology — Open Systems Interconnection — Presentation service definition.*

ITU-T Recommendation X.207 (1993) | ISO/IEC 9545:1994, *Information technology — Open Systems Interconnection — Application Layer structure.*

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 9646-3:1998, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 3. The Tree and Tabular Combined Notation (TTCN).*

ITU-T Recommendation X.851(1997) | ISO/IEC 9804:1998, *Information technology — Open Systems Interconnection — Service definition for the commitment Concurrency and Recovery Service element.*

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ITU-T Recommendation X.852(1997) | ISO/IEC 9805-1:1998, *Information technology — Open Systems Interconnection — Protocol for the Commitment, Concurrency and Recovery Service element: Protocol specification.*

ISO/IEC 10026-1:1992, *Information technology — Open Systems Interconnection — Distributed Transaction Processing — Part 1: OSI TP Model.*

ISO/IEC 10026-2:1996, *Information technology — Open Systems Interconnection — Distributed Transaction Processing — Part 2: OSI TP Service.*

ISO/IEC 10026-3:1996, *Information technology — Open Systems Interconnection — Distributed Transaction Processing — Part 3: Protocol specification.*

ITU-T Recommendation X.863(1994) | ISO/IEC 10026-4:1995, *Information technology — Open Systems Interconnection — Distributed Transaction Processing: Protocol Implementation Conformance Statement (PICS) proforma.*

3 Definitions

For the purposes of this part of ISO/IEC 13650, the following definitions apply.

3.1 Terms defined in other International Standards

3.1.1 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 7498-1:

a) application-service-element;
b) application-protocol-data-unit;
c) concatenation;
d) presentation-service; and
e) separation.

3.1.2 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 10731:

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

3.1.3 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 8649:

a) association control service element;
b) ACSE service-user;
c) ACSE service-provider;
d) requestor;
e) acceptor;
f) association-initiator; and
g) association-responder.

3.1.4 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 9545:

a) application-service-element;

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b) multiple association control function;
c) single association control function; and
d) single association object.

3.1.5 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 9646-1:

a) behaviour testing;
b) capabilities of an IUT;
c) capability testing;
d) conformance testing;
e) conformance test suite;
f) coordinated test method;
g) distributed test method;
h) dynamic conformance requirements;
i) implementation under test (IUT);
j) inopportune test event;
k) lower tester (LT);
l) means of testing (MOT);
m) PICS proforma;
n) protocol implementation conformance statement (PICS);
o) protocol implementation extra information for testing (PIXIT);
p) remote test method;
q) static conformance requirements;
r) semantically invalid test event;
s) syntactically invalid test event;
t) system under test (SUT);
u) test case;
v) test coordination procedures;
w) test group;
x) test management protocol (TMP);
y) test purpose;
z) test suite; and
aa) upper tester (UT).

3.1.6 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 9646-1:

a) multi-party testing methodology (MPTM).

3.1.7 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 9804:

a) atomicity;
b) consistency;
c) durability; and
d) isolation.

3.1.8 This part of ISO/IEC 13650 uses the following terms defined in ISO/IEC 10026-1:

a) Channel Protocol Machine; CPM;
b) control;

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c) coordination level;
d) dialogue;
e) distributed transaction;
f) heuristic-hazard;
g) heuristic-mix;
h) log-damage record;
i) node;
j) Protocol Machine; PM;
k) recovery;
l) shared control mode;
m) subtree;
n) transaction;
o) transaction branch;
p) Transaction Processing channel;
q) Transaction Processing Protocol Machine; TPPM;
r) Transaction Processing Service User; TPSU;
s) TPSU Invocation; TPSUI;
t) transaction recovery;
u) TPSU-title;
v) tree; and
w) user-ASE.

4. Abbreviations

For the purposes of this part of ISO/IEC 13650, the following abbreviations apply:

4.1 Data units

APDU Application-Protocol-Data-Unit

4.2 Types of TP-APDU

BDRID TP-BEGIN-DIALOGUE-RI for a dialogue
BDRIC TP-BEGIN-DIALOGUE-RI for a channel
BDRCD TP-BEGIN-DIALOGUE-RC for a dialogue
BDRCC TP-BEGIN-DIALOGUE-RC for a channel
EDRI TP-END-DIALOGUE-RI
EDRC TP-END-DIALOGUE-RC
UERI TP-U-ERROR-RI
UERC TP-U-ERROR-RC
ABRIU TP-ABORT-RI of type user
ABRIP TP-ABORT-RI of type provider
BIRI TP-BID-RI
BIRC TP-BID-RC
INRI TP-INITIALIZE-RI
INRC TP-INITIALIZE-RC

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GCRI TP-GRANT-CONTROL-RI
RCRI TP-REQUEST-CONTROL-RI
HSRI TP-HANDSHAKE-RI
HSRC TP-HANDSHAKE-RC
HGRI TP-HANDSHAKE-AND-GRANT-CONTROL-RI
HGRC TP-HANDSHAKE-AND-GRANT-CONTROL-RC
PRRI TP-PREPARE-RI
DFRI TP-DEFER-RI
HRRI TP-HEURISTIC-REPORT-RI
TGRI TP-TOKEN-GIVE-RI
TPRI TP-TOKEN-PLEASE-RI
RERI TP-RECOVER-RI

4.3 Other abbreviations

ACID: the set of Atomicity, Consistency, Isolation, and Durability properties
ACSE: Association Control Service Element
API: Application-Process Invocation
CCR: Commitment, Concurrency, and Recovery
MACF: Multiple Association Control Function
OSI: Open Systems Interconnection
PICS: Protocol Implementation Conformance Statement
SACF: Single Association Control Function
SAO: Single Association Object
TP: Transaction Processing
TPPM: Transaction Processing Protocol Machine
TPSU: Transaction Processing Service User
TPSUI: Transaction Processing Service User Invocation
U-ASE: User-Application Service Element

5. Compliance

An abstract test suite that complies with this part of ISO/IEC 13650 shall:

1) consist of a set of test cases corresponding to the set or a subset of the test purposes specified in clauses 10 to 13;
2) identify clearly the test purposes used;
3) cover all the relevant test purposes specified in clauses 10 to 13 as appropriate to the coverage and test method chosen for that test suite;
4) use a test suite structure which is an appropriate subset (or the whole) of the test suite structure specified in clause 7;
5) name its test groups and test cases using the naming conventions specified in clause 8 in such a way that the test group names used in clauses 10 to 13 are used whenever relevant;
6) maintain the relationship specified in Annex A between the chosen test purposes and the entries in the PICS or partial PIXIT proforma to be used for test case selection;
7) comply with ISO/IEC 9646-2.

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6. Testing methodology

6.1 Introduction

The testing methodology used in this part of ISO/IEC 13650 complies with the requirements of the OSI Conformance Testing Methodology and Framework — Part 2: Abstract Test Suite Specification (ISO/IEC 9646-2).

6.2 Relationship between the TSS & TP and abstract test suites

The test purposes in this part of ISO/IEC 13650 have been derived from ISO 10026-3, the OSI TP protocol standard. This derivation has focused on identifying test purposes to test conformance aspects of the protocol. However, no restriction of test purposes has been made with regard to any test method, how such test purposes may be realized, or any practical or economic constraints that may be placed upon testing.

It is intended that all test suites for the OSI TP protocol shall include tests for all the test purposes in this part of ISO/IEC 13650. However, an abstract test suite specifier may subset the test purposes given in this part of ISO/IEC 13650, providing this is in compliance with clause 10 of ISO/IEC 9646-2.

NOTE — For example, the IUT may not support processing of subsequent service primitives while awaiting a TP-BEGIN-DIALOGUE-RC. To allow for this, test cases corresponding to the following test purposes can be deselected on the basis of the answer to a PIXIT question:- 11.1.1.4.3, test purpose 2; 11.1.1.5.1 test purposes 1 and 4; 11.1.1.9.1 test purpose 1; 11.1.2.1.1 test purposes 1 and 3; and 11.1.2.6.1 test purposes 1 and 3.

6.3 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 OSI TP protocol, and to support capabilities and parameter values listed in the PICS. Conformance assessment is based on the individual verdicts, the OSI TP protocol standard (ISO 10026-3), and the IUT's PICS.

6.4 Test suite coverage

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

7. Test suite structure

The test suite for ISO/IEC 10026-3 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 test cases. Test groups may be used to aid planning, development, understanding, or execution of a test suite.

The test suite consists of four main test groups:

1) Capability Tests, which are used to verify that the observable capabilities of OSI TP protocol implementations are valid with respect to the static conformance requirements stated in 13.1 of ISO/IEC 10026-3, the OSI TP protocol specification, and with respect to the PICS (ISO/IEC 10026-4).

2) Valid Behaviour Tests, which test the extent to which the implementation meets the dynamic conformance requirements specified in 13.2 of ISO/IEC 10026-3, when the tester behaves in a valid manner. These tests provide a detailed evaluation of the features that are claimed to be supported in the PICS.

3) Inopportune Events, which are used to verify that the implementation responds correctly to an incoming PDU that arrives when not allowed to do so by the protocol specification.

4) Semantically Invalid Events, which are used to verify that the implementation reacts correctly to an incoming PDU that contains a semantic error with respect to the protocol specification (for example, a PDU containing a parameter value outside the negotiated range for that parameter).

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Inopportune Events and Semantically Invalid Events test the extent to which the implementation meets the dynamic conformance requirements specified in 13.2 of ISO/IEC 10026-3, when the tester sends invalid protocol events.

The table given below reflects the number of test purposes within this TSS&TP document subdivided into groups:

TP Test Suite:	1804			
Capability Tests:		88		
Valid Behaviour Tests:		1549		
State Event Interactions:			1386	
Dialogue:			503	
Handshake:			260	
Commitment:			243	
Rollback:			197	
CPM:			56	
SACF:			127	
Field Variations:			146	
Field Combinations:			17	
Inopportune Events:		99		
Semantically Invalid:		68		

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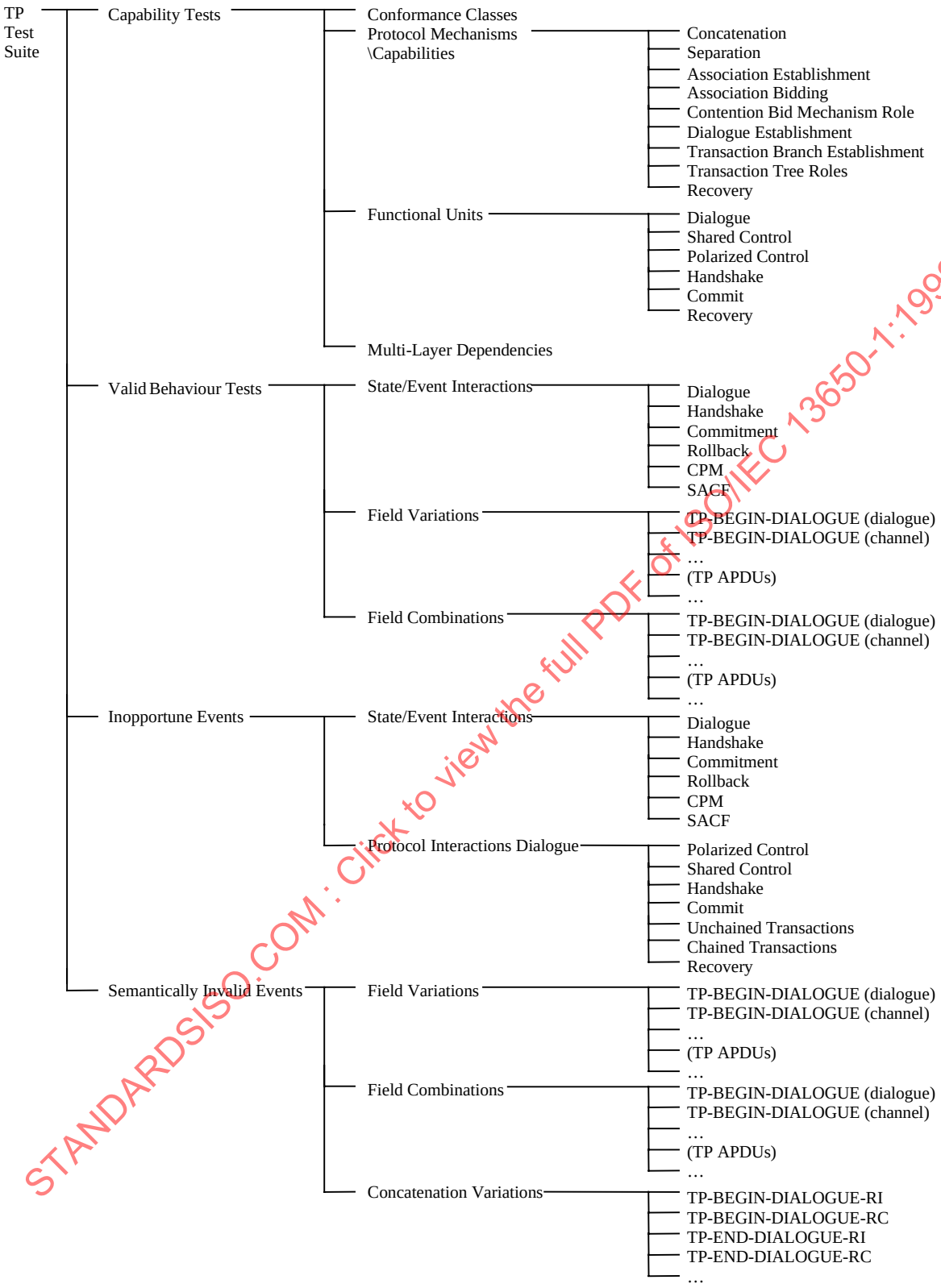

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Figure 1 TP Test Suite Structure

Each of these groups is further divided into a number of lower level test groups. An overview is given in Figure 1. The complete structure of the major test groups is given in Figure 2 and other figures referenced therein.

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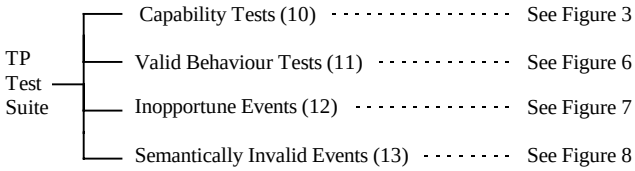

Figure 2 Top-level structure of TP Test Suite

The numbers shown in parentheses after each item in the figures refer to the clauses of this part of ISO/IEC 13650 where the test group and test purposes may be found.

7.1 Capability Tests

The Capability Tests are structured according to association establishment, conformance classes, and concatenation variations, as shown in Figure 3.

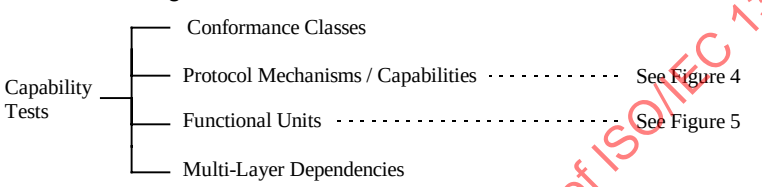

Figure 3 Top level structure of Capability Tests

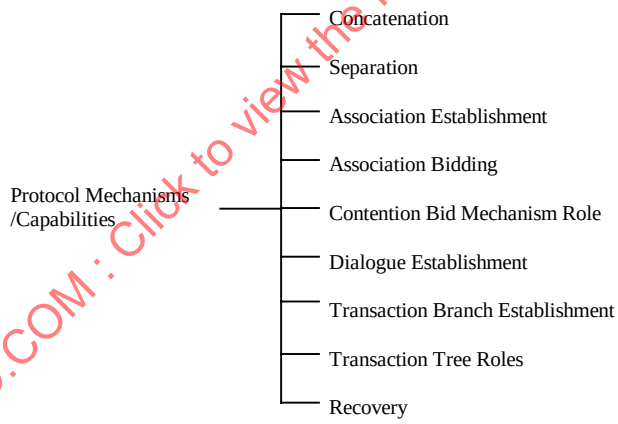

Figure 4 Protocol Mechanisms / Capabilities

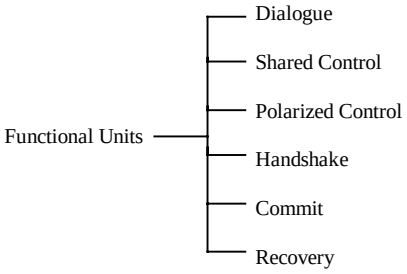

Figure 5 Functional Units

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7.2 Valid Behaviour Tests

The Valid Behaviour Tests are structured according to state/event interactions from the protocol state tables, field variations, and field combinations, as shown in Figure 6.

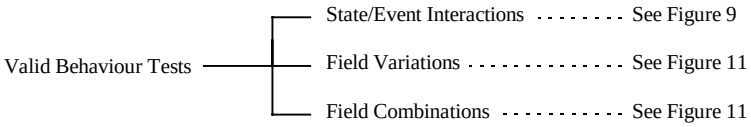

Figure 6 Top-level structure of Valid Behaviour Tests

7.3 Inopportune Events

The Inopportune Events are structured according to state/event intersections from the protocol state tables, and protocol interactions, as shown in Figure 7.

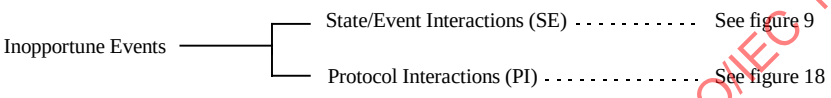

Figure 7 Top-level structure of Inopportune Event Tests

7.4 Semantically Invalid Events

The Semantically Invalid Events group is substructured according to field variations, field combinations, and concatenation variations, as shown in Figure 8.

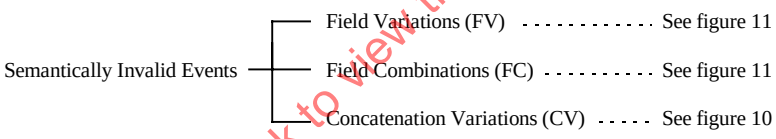

Figure 8 Top-level structure of Semantically Invalid Event Tests

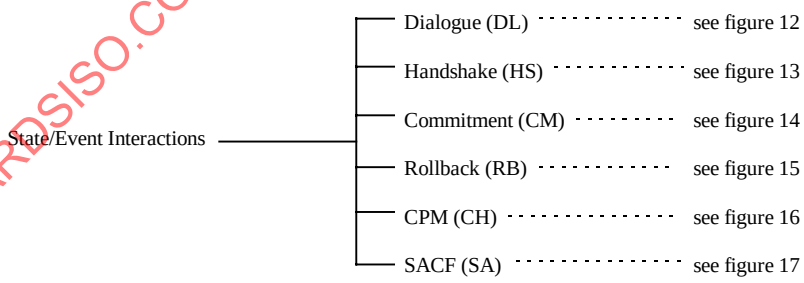

Figure 9 State/Event Interactions

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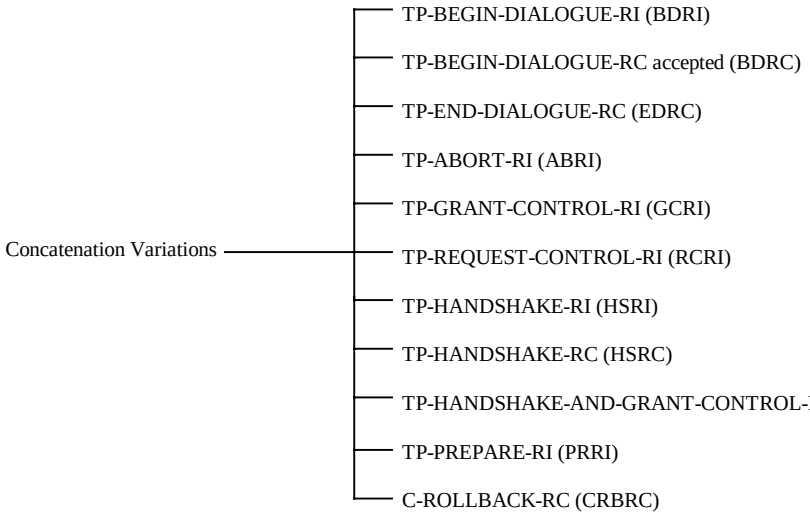

Figure 10 Concatenation Variations (Semantically Invalid Events)

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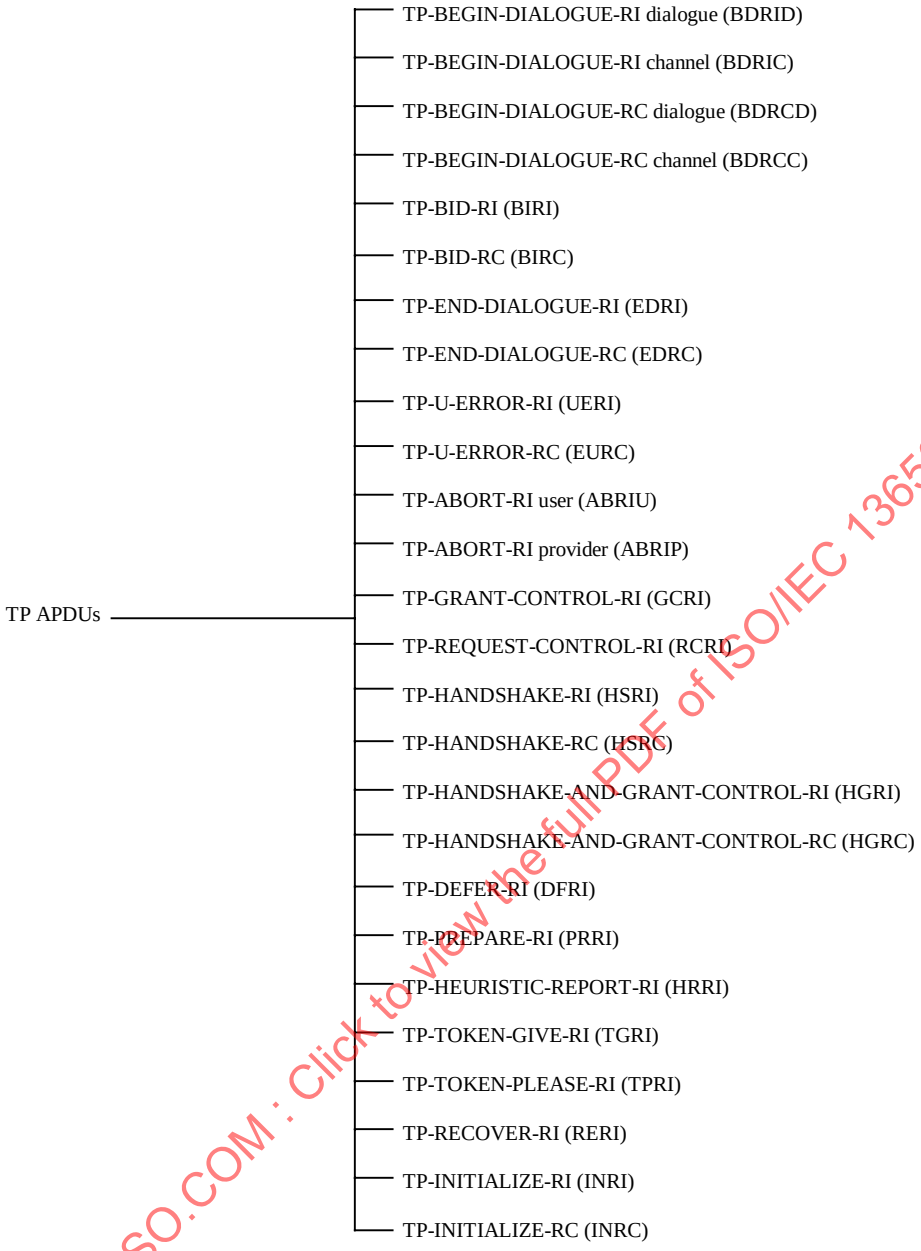

Figure 11 TP APDUs

NOTE — the name ‘TP APDUs’ is not part of the naming structure used for test purposes.

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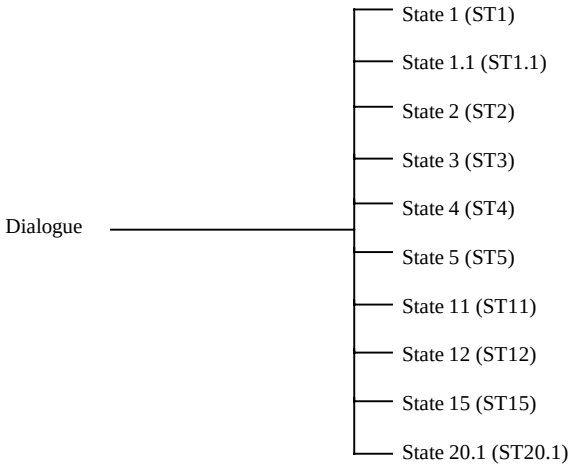

Figure 12 Dialogue

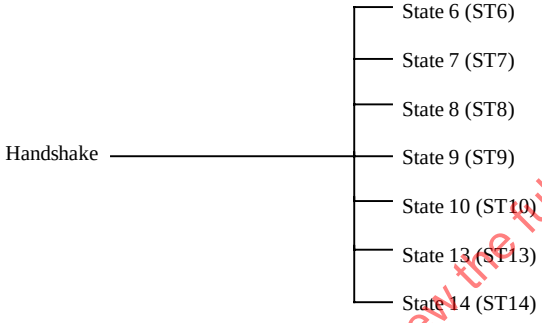

Figure 13 Handshake

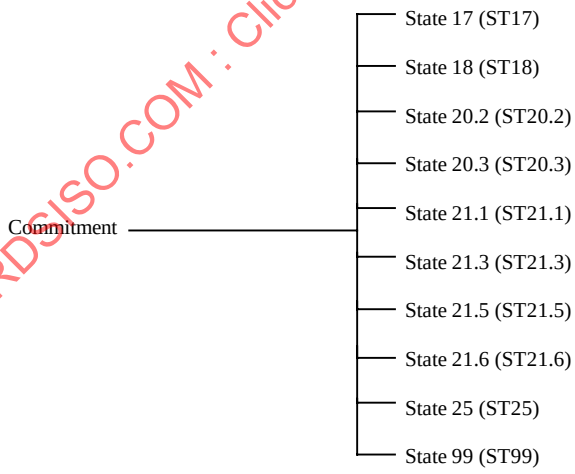

Figure 14 Commitment

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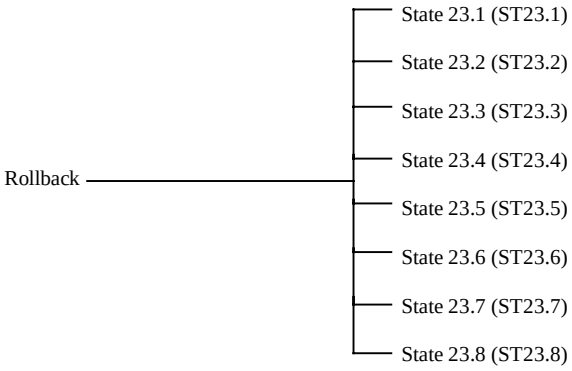

Figure 15 Rollback

Figure 16 CPM

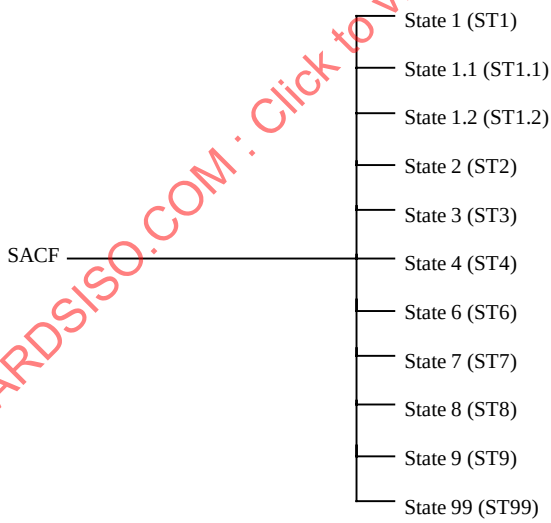

Figure 17 SACF

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8. Naming Conventions

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

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1) The first proforma is used for a test group that has other test groups below it. It describes the objective of the group and lists the subgroups below it. The proforma takes the form:

   V.W.X.Y AA/BB/FUNCTION (FN)
   [Reference: ISO 10026-3.....]
   Test Group Objective:.....
   Subgroups:
   1. <subgroup 1>.
   2. <subgroup 2>.
   …
   n) <subgroup 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 13650.

   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 its 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 objective.

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

2) The second proforma is used for a test group that has only test purposes below it. It describes the objective of the group, and then lists the test purposes that make up the group. The proforma takes the form:

   V.W.X.Y AA/BB/FUNCTION (FN)
   [Reference: ISO 10026-3.....]
   Test Group Objective:.....
   Test Purposes:
   1. <test purpose 1>.
   2. <test purpose 2>.
   …
   n) <test purpose 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 13650.

   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 its 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 objective.

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

9. Precedence

This part of ISO/IEC 13650 defines test purposes for the OSI TP protocol (ISO/IEC 10026-3). It is not intended that this part of ISO/IEC 13650 should contradict or provide an interpretation of ISO/IEC 10026-3. In the case that there is a contradiction between this part of ISO/IEC 13650 and ISO/IEC 10026-3, this is an error and ISO/IEC 10026-3 takes precedence.

NOTE — Any person who, when making use of an International Standard, encounters an inaccuracy or ambiguity, is requested to notify their National Member Body of ISO without delay in order that the matter may be investigated and appropriate action taken.

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10. Capability Tests (CA)

Reference: ISO/IEC 10026-3, 13.1.

Test group objective: Capability Tests provide limited testing of each of the static conformance requirements in the Standard, to ascertain which capabilities stated in the PICS can be observed and to check that those observable capabilities are valid with respect to the static conformance requirements.

Subgroups:

1. Conformance Classes (CC)
2. Protocol Mechanisms / Capabilities (PM)
3. Functional Units (FU)
4. Multi-Layer Dependencies (MLD)

10.1 CA/Conformance Classes (CC)

Reference: ISO/IEC 10026-3, 13.1.1.

Test group objective: Test capability of the IUT to support the conformance classes. Check that the IUT performs the correct action as stated in the Standard.

Test purpose:

1. The IUT receives a TP-BEGIN-DIALOGUE-RI with at least DIALOGUE FU selected. Ensure that the dialogue is accepted.
2. The IUT sends a TP-BEGIN-DIALOGUE-RI with at least DIALOGUE FU selected.
3. The IUT receives a TP-BEGIN-DIALOGUE-RI with at least DIALOGUE, COMMIT and CHAINED TRANSACTION FUs selected. Ensure that the dialogue is selected.
4. The IUT sends a TP-BEGIN-DIALOGUE-RI with at least DIALOGUE, COMMIT and CHAINED TRANSACTION FUs selected.
5. The IUT receives a TP-BEGIN-DIALOGUE-RI with at least DIALOGUE, COMMIT and UNCHAINED TRANSACTION FUs selected. Ensure that the dialogue is accepted.
6. The IUT sends a TP-BEGIN-DIALOGUE-RI with at least DIALOGUE, COMMIT and UNCHAINED TRANSACTION FUs selected.
7. The IUT receives a TP-BEGIN-DIALOGUE-RI with the recovery FU selected. Ensure that the channel is accepted.
8. The IUT sends a TP-BEGIN-DIALOGUE-RI with the RECOVERY FU selected.

10.2 CA/Protocol Mechanisms / Capabilities (PM)

Reference: ISO/IEC 10026-3, 13.1.2.

Test group objective: Test ability of the IUT to support protocol mechanism capabilities.

Subgroups:

1. Concatenation (CC)
2. Separation (SE)
3. Association Establishment (AE)
4. Association Bidding (AB)
5. Contention (CO)
6. Bid Mechanism Role (BM)
7. Dialogue Establishment (DE)
8. Transaction Branch Establishment (TE)
9. Transaction Tree Roles (RO)
10. Recovery (RE)

10.2.1 CA/PM/Concatenation (CC)

Reference: ISO/IEC 10026-3, 10.7.

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Test group objective: Test the ability of the IUT to perform concatenation. This subclause is included for completeness only. As it is not possible to force an implementation to perform concatenation, there are no specific tests identified.

10.2.2 CA/PM/Separation (SE)

Reference: ISO/IEC 10026-3, 10.7.
Test group objective: Test the ability of the IUT to perform separation.
Test purpose:

1. Check that the IUT can accept a TP-BEGIN-DIALOGUE-RI concatenated with a TP-U-ERROR-RI.
2. Check that the IUT can accept a TP-BEGIN-DIALOGUE-RC concatenated with a C-BEGIN-RC and a C-READY-RI.
3. Check that the IUT can accept a U-ASE APDU concatenated with a TP-END-DIALOGUE-RI.
4. Check that the IUT can accept a C-BEGIN-RI concatenated with a U-ASE-RI, a TP-DEFER(end-dialogue)-RI and a C-PREPARE-RI[TP-PREPARE-RI].

10.2.3 CA/PM/Association Establishment (AE)

Reference: ISO/IEC 10026-3, 8.5.
Test group objective: Test the capability of the IUT to support the establishment of an association.
Test purpose:

1. IUT sends a TP-INITIALIZE-RI APDU, and receives a TP-INITIALIZE(accepted)-RC. Ensure that the association can be used.
2. IUT receives a TP-INITIALIZE-RI APDU, with the fields set in accordance with values supported in the PICS. Ensure that a TP-INITIALIZE-RC is sent.

10.2.4 CA/PM/Association Bidding (AB)

Reference: ISO/IEC 10026-3, 8.5.
Test group objective: Test the capability of the IUT to support associations with bidding mandatory or optional.
Test purpose:

1. IUT sends a TP-INITIALIZE-RI with the Bid-Mandatory field set to TRUE, and receives a TP-INITIALIZE(accepted)-RC. Ensure that the contention-loser can not use the association without bidding.
2. IUT sends a TP-INITIALIZE-RI with the Bid-Mandatory field set to FALSE, and receives a TP-INITIALIZE(accepted)-RC. Ensure that the contention-loser can use the association without bidding.
3. IUT receives a TP-INITIALIZE-RI with the Bid-Mandatory field set to TRUE, and sends a TP-INITIALIZE(accepted)-RC. Ensure that the contention-loser can not use the association without bidding.
4. IUT receives a TP-INITIALIZE-RI with the Bid-Mandatory field set to FALSE, and sends a TP-INITIALIZE(accepted)-RC. Ensure that the contention-loser can use the association without bidding.

10.2.5 CA/PM/Contention (CO)

Reference: ISO/IEC 10026-3, 8.5.
Test group objective: Test the capability of the IUT in the contention winner and loser roles.
Test purpose:

1. The IUT receives a TP-INITIALIZE-RI with the Contention Winner field set to FALSE (i.e. IUT is the contention-winner), and sends a TP-INITIALIZE-RC APDU. Ensure that the association can be used.
2. The IUT sends a TP-INITIALIZE-RI with the Contention Winner field set to TRUE (i.e. IUT is the contention-winner), and receives a TP-INITIALIZE(accepted)-RC APDU. Ensure that the association can be used.
3. The IUT receives a TP-INITIALIZE-RI with the Contention Winner field set to TRUE (i.e. IUT is the contention-loser), and sends a TP-INITIALIZE-RC APDU. Ensure that the association can be used.
4. The IUT sends a TP-INITIALIZE-RI with the Contention Winner field set to FALSE (i.e. IUT is the contention-loser), and receives a TP-INITIALIZE(accepted)-RC APDU. Ensure that the association can be used.

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10.2.6 CA/PM/Bid Mechanism (BM)

Reference: ISO/IEC 10026-3, 11.3.1, 10.5.1, 10.5.6, 10.5.5, 10.5.2, and 11.3.2 .

Test group objective: Test the capability of the IUT to initiate or respond to the bid mechanism.

Test purpose:

1. The IUT receives a TP-BEGIN-DIALOGUE req and sends a TP-BID-RI. It receives a TP-BID(accepted)-RC and sends a TP-BEGIN-DIALOGUE-RI.
2. The IUT receives a TP-BID-RI APDU and sends a TP-BID(accepted)-RC. It receives a TP-BEGIN-DIALOGUE-RI. Ensure that the dialogue is accepted.

10.2.7 CA/PM/Dialogue Establishment (DE)

Reference: ISO/IEC 10026-3, 10.5.2, 11.3.2, 11.3.3, 10.5.3, 11.5.4, 11.3.1, 10.5.1, 10.5.4, and 11.3.4.

Test group objective: Test the capability of the IUT to establish a dialogue.

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE(confirmation=always)-RI on an association where it is the contention-loser, and sends a TP-BEGIN-DIALOGUE(result=accepted)-RC.
2. IUT receives a TP-BEGIN-DIALOGUE(confirmation=negative)-RI on an association where it is the contention-loser, and sends a TP-BEGIN-DIALOGUE(result=accepted)-RC.
3. IUT sends a TP-BEGIN-DIALOGUE(confirmation=always)-RI on an association where it is the contention-winner, and receives a TP-BEGIN-DIALOGUE(result=accepted)-RC.
4. IUT sends a TP-BEGIN-DIALOGUE(confirmation=negative)-RI on an association where it is the contention-winner, and receives a TP-BEGIN-DIALOGUE(result=accepted)-RC.
5. IUT receives a TP-BEGIN-DIALOGUE-RI on an association where it is the contention-loser, and rejects dialogue-establishment by sending a TP-BEGIN-DIALOGUE(result=rejected(provider/user))-RC.

10.2.8 CA/PM/Transaction Branch Establishment (TE)

Reference: ISO/IEC 10026-3, 11.3.1, 10.5.1, and 10.5.34.

Test group objective: Test the capability of the IUT to establish a transaction branch in either chained or unchained mode.

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE(transaction branch) req. Check it sends a TP-BEGIN-DIALOGUE-RI followed by a C-BEGIN-RI.
2. IUT receives a TP-BEGIN-DIALOGUE(transaction branch)-RI followed by a C-BEGIN-RI. Check the IUT issues a TP-BEGIN-DIALOGUE(transaction branch) ind.
3. IUT receives a TP-BEGIN-DIALOGUE(no transaction branch) req, and the receives a TP-BEGIN-TRANSACTION req. Check that it sends a TP-BEGIN-TRANSACTION-RI followed by a C-BEGIN-RI.

10.2.9 CA/PM/Transaction Tree Roles (RO)

Reference: ISO/IEC 10026-3, 10.5.2, 10.5.35, 11.3.2, 11.3.3, 11.5.4, 11.3.1, 10.5.1, 10.5.34, 10.5.4, 10.5.36, 11.3.4, and 11.3.36.

Test group objective: Test the ability of the IUT to be a root, intermediate or leaf node in a transaction tree.

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE(confirmation=always)-RI and a C-BEGIN-RI on an association where it is the contention-loser, and sends a TP-BEGIN-DIALOGUE(result=accepted)-RC and a C-BEGIN-RC.
2. IUT receives a TP-BEGIN-DIALOGUE(confirmation=negative)-RI and a C-BEGIN-RI on an association where it is the contention-loser, and sends a TP-BEGIN-DIALOGUE(result=accepted)-RC and a C-BEGIN-RC.
3. IUT sends a TP-BEGIN-DIALOGUE(confirmation=always)-RI and a C-BEGIN-RI on an association where it is the contention-winner, and receives a TP-BEGIN-DIALOGUE(result=accepted)-RC and a C-BEGIN-RC.
4. IUT sends a TP-BEGIN-DIALOGUE(confirmation=negative)-RI and a C-BEGIN-RI on an association where it is the contention-winner, and receives a TP-BEGIN-DIALOGUE(result=accepted)-RC and a C-BEGIN-RC.

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5. IUT receives a TP-BEGIN-DIALOGUE-RI from a contention-loser association, and rejects dialogue-establishment by sending a TP-BEGIN-DIALOGUE(result=rejected-provider/user)-RC.
6. The IUT is a leaf in a transaction tree. It receives a TP-BEGIN-DIALOGUE(transaction branch) req and sends a TP-BEGIN-DIALOGUE-RI followed by a C-BEGIN-RI. Ensure that the atomic action identifier is the same as that received on the most recently received C-BEGIN-RI.
7. The IUT is a leaf in a transaction tree. It receives a TP-BEGIN-TRANSACTION req and sends a C-BEGIN-RI. Ensure that the atomic action identifier is the same as that received on the most recently received C-BEGIN-RI.

10.2.10 CA/PM/Recovery (RE)

Reference: ISO/IEC 10026-3, 10.5.2, 11.3.2, 10.5.3, 10.5.1, 10.5.4, and 11.3.8.

Test group objective: Test the capability of the IUT to use One-Way and Two-Way recovery.

Test purpose:

1. The IUT receives a TP-BEGIN-DIALOGUE-RI with the recovery functional unit selected and the Channel Utilization field set to one-way-recovery and sends a TP-BEGIN-DIALOGUE-RC. Ensure that the channel can be used to perform a recovery.
2. The IUT sends a TP-BEGIN-DIALOGUE-RI with the recovery functional unit selected and the Channel Utilization field set to one-way-recovery and receives a TP-BEGIN-DIALOGUE-RC. Ensure that the channel can be used to perform a recovery.
3. The IUT receives a TP-BEGIN-DIALOGUE-RI with the recovery functional unit selected and the Channel Utilization field set to two-way-recovery and sends a TP-BEGIN-DIALOGUE-RC. Ensure that the channel can be used to perform a recovery and that the two-way-recovery token is passed to the peer.
4. The IUT sends a TP-BEGIN-DIALOGUE-RI with the recovery functional unit selected and the Channel Utilization field set to two-way-recovery and receives a TP-BEGIN-DIALOGUE-RC. Ensure that the channel can be used to perform a recovery and that the two-way-recovery token is passed to the peer.

10.3 CA/Functional Units (FU)

Test group objective: Test the capability of the IUT to support functional units.

Subgroups:

1. Dialogue (DL)
2. Shared Control (SC)
3. Polarized Control (PC)
4. Handshake (HS)
5. Commit (COM)
6. Recovery (RV)

10.3.1 CA/FU/Dialogue (DL)

Test group objective: Test the capability of the IUT to support the Dialogue functional unit.

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE(confirmation=always)-RI on an association where it is the contention-loser, and sends a TP-BEGIN-DIALOGUE(result=accepted)-RC.
2. IUT receives a TP-BEGIN-DIALOGUE(confirmation=negative)-RI on an association where it is the contention-loser, and sends a TP-BEGIN-DIALOGUE(result=accepted)-RC.
3. IUT receives a TP-BID-RI on an association where it is the contention-winner, and sends a TP-BID(result=accepted)-RC. After that the IUT receives a TP-BEGIN-DIALOGUE-RI, and sends a TP-BEGIN-DIALOGUE(result=accepted)-RC.
4. IUT sends a TP-BEGIN-DIALOGUE(confirmation=always)-RI on an association where it is the contention-winner, and receives a TP-BEGIN-DIALOGUE(result=accepted)-RC.
5. IUT sends a TP-BEGIN-DIALOGUE(confirmation=negative)-RI on an association where it is the contention-winner, and receives a TP-BEGIN-DIALOGUE(result=accepted)-RC.

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6. IUT sends a TP-BID-RI on a contention-loser association, and receives a TP-BID(result=accepted)-RC. After that the IUT sends a TP-BEGIN-DIALOGUE-RI, and receives a TP-BEGIN-DIALOGUE(result=accepted)-RC.
7. IUT receives a TP-BEGIN-DIALOGUE-RI on an association where it is the contention-loser, and rejects dialogue-establishment by sending a TP-BEGIN-DIALOGUE(result=rejected-provider/user)-RC.
8. IUT in “data transfer” state receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and terminates the dialogue normally.
9. IUT in “data transfer” state receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, sends a TP-END-DIALOGUE-RC, and terminates the dialogue normally.
10. IUT in “data transfer” state sends a TP-END-DIALOGUE(confirmation=FALSE)-RI, and terminates the dialogue normally.
11. IUT in “data transfer” state sends a TP-END-DIALOGUE(confirmation=TRUE)-RI, receives a TP-END-DIALOGUE-RC, and terminates the dialogue normally.
12. IUT receives a TP-U-ERROR req and sends a TP-U-ERROR-RI.
13. IUT receives a TP-U-ERROR-RI.

10.3.2 CA/FU/Shared Control (SC)

Test group objective: Test the capability of the IUT to support the Shared Control functional unit.

Test purpose:

1. IUT in “data transfer” state receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC.
2. IUT in “data transfer” state sends a TP-U-ERROR-RI, and receives a TP-U-ERROR-RC.

10.3.3 CA/FU/Polarized Control (PC)

Test group objective: Test the capability of the IUT to support the Polarized Control functional unit.

Test purpose:

1. The IUT in “data transfer with control” state receives a TP-REQUEST-CONTROL-RI, and issues a TP-REQUEST-CONTROL ind. After that the IUT receives a TP-GRANT-CONTROL req, sends a TP-GRANT-CONTROL-RI, and enters “data transfer without control” state.
2. The IUT in “data transfer without control” state sends a TP-REQUEST-CONTROL-RI, receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, and enters “data transfer with control” state.
3. IUT in “data transfer without control” state receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, and enters “data transfer with control” state.
4. IUT in “data transfer with control” state sends a TP-GRANT-CONTROL-RI, and enters “data transfer without control” state.

10.3.4 CA/FU/Handshake (HS)

Test group objective: Test the capability of the IUT to support the Handshake functional unit.

Test purpose:

1. IUT in “data transfer” state receives a TP-HANDSHAKE-RI, and issues a TP-HANDSHAKE ind. After that the IUT receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.
2. IUT in “data transfer” state sends a TP-HANDSHAKE-RI, receives a TP-HANDSHAKE-RC, and issues a TP-HANDSHAKE cnf.
3. IUT in “data transfer without control” state receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, and issues a TP-HANDSHAKE-AND-GRANT-CONTROL ind. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL rsp, sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, and enters “data transfer with control” state.
4. IUT in “data transfer with control” state sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, issues a TP-HANDSHAKE-AND-GRANT-CONTROL cnf, and enters “data transfer without control” state.

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10.3.5 CA/FU/Commit (COM)

Test group objective: Test the capability of the IUT to support the Commit functional units.

Test purpose:

NOTE — unless otherwise stated, the test purposes in this subclause are applicable to both the commit-and-chained-transactions functional unit and the commit-and-unchained-transactions functional unit.

1. Root node IUT in “ACTIVE” state receives a TP-COMMIT req, and issues a TP-PREPARE-RI. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI+C-BEGIN-RI. (commit-and-chained-transactions only)
2. Root node IUT in “ACTIVE” state receives a TP-COMMIT req, and issues a TP-PREPARE-RI. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI. (commit-and-unchained-transactions only)
3. Root node IUT in “ACTIVE” state receives a TP-PREPARE req, and sends a TP-PREPARE-RI. After that the IUT receives a C-READY-RI, and issues a TP-READY ind.
4. Root node IUT in “ACTIVE” state with multiple subordinates receives a TP-PREPARE req, and sends a TP-PREPARE-RI to the subordinate. After that the IUT receives a C-READY-RI from the subordinate, and issues a TP-READY ind.
5. Intermediate node IUT in “ACTIVE” state receives a C-PREPARE-RI, and issues a TP-PREPARE ind. After that the IUT receives a TP-COMMIT req, sends a C-PREPARE-RI to all the subordinates, receives a C-READY-RI from all the subordinates, and sends a C-READY-RI to the superior.
6. Root node IUT in “ACTIVE” state receives a TP-DEFERRED-END-DIALOGUE req, and sends a TP-DEFER(what-deferred=defer-end-dialogue)-RI. After that the IUT terminates the dialogue normally when the transaction completes commitment.
7. A leaf node IUT in “ACTIVE” state receives a TP-DEFER(what-deferred=defer-end-dialogue)-RI from the superior, and issues a TP-DEFERRED-END-DIALOGUE ind. After that the IUT terminates the dialogue normally when the transaction completes commitment.
8. Intermediate node IUT in “ACTIVE” state receives a TP-DEFERRED-END-DIALOGUE req for all the subordinates, and sends TP-DEFER(what-deferred=defer-end-dialogue)-RIs to all subordinates. After that the IUT terminates the dialogues normally, and changes to leaf node IUT when the transaction completes commitment.
9. Intermediate node IUT in “ACTIVE” state receives a TP-DEFER(what-deferred=defer-end-dialogue)-RI from the superior, and issues a TP-DEFERRED-END-DIALOGUE ind. After that the IUT terminates the dialogue normally, and becomes a Root root node IUT when the transaction completes commitment.
10. Subordinate IUT receives a TP-DEFER(what-deferred=defer-grant-control)-RI, issues a TP-DEFERRED-GRANT-CONTROL ind, and gets control when the transaction completes commitment.
11. Superior IUT sends a TP-DEFER(what-deferred=defer-grant-control)-RI, and gives control when the transaction completes commitment.
12. Root node IUT in “ACTIVE” state with multiple subordinates receives a TP-COMMIT req, and sends a TP-PREPARE-RI to all the subordinates. After that the IUT receives a C-READY-RI from all the subordinates, issues a TP-COMMIT ind, and sends a C-COMMIT-RI+C-BEGIN-RI. (commit-and-chained-transactions only)
13. Root node IUT in “ACTIVE” state with multiple subordinates receives a TP-COMMIT req, and sends a TP-PREPARE-RI to all the subordinates. After that the IUT receives a C-READY-RI from all the subordinates, issues a TP-COMMIT ind, and sends a C-COMMIT-RI. (commit-and-unchained-transactions only)
14. Root node IUT in “DECIDED(commit)” state with multiple subordinates receives a TP-DONE req, receives a C-COMMIT-RC from all the subordinates, and issues a TP-COMMIT-COMPLETE ind.
15. Intermediate node IUT in “READY” state receives a C-COMMIT-RI+C-BEGIN-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI+C-BEGIN-RI. (commit-and-chained-transactions only)
16. Intermediate node IUT in “READY” state receives a C-COMMIT-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI. (commit-and-unchained-transactions only)
17. Intermediate node IUT in “DECIDED(commit)” state receives a TP-DONE req, receives a C-COMMIT-RC from all the subordinates, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC to the superior.

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18. Intermediate node IUT in “ACTIVE” state receives a TP-PREPARE req, and sends a TP-PREPARE-RI to the subordinate. After that the IUT receives a C-READY-RI from the subordinate, and issues a TP-READY ind.
19. Root node IUT in “ACTIVE” state with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates. (commit-and-chained-transactions only)
20. Root node IUT in “ACTIVE” state with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind. (commit-and-unchained-transactions only)
21. Root node IUT in “ACTIVE” state with multiple subordinates receives a C-ROLLBACK-RI from one particular subordinate, and issues a TP-ROLLBACK ind. After that the IUT sends a C-ROLLBACK-RC to the subordinate, and sends a C-ROLLBACK-RI to other subordinates. After that the IUT receives a C-ROLLBACK-RC from other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates. (commit-and-chained-transactions only)
22. Root node IUT in “ACTIVE” state with multiple subordinates receives a C-ROLLBACK-RI from one subordinate, and issues a TP-ROLLBACK ind. After that the IUT sends a C-ROLLBACK-RC to the subordinate, and sends a C-ROLLBACK-RI to other subordinates. After that the IUT receives a C-ROLLBACK-RC from other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind. (commit-and-unchained-transactions only)
23. Intermediate node IUT in “ACTIVE” state receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to the subordinate. After that the IUT receives a C-ROLLBACK-RC from the subordinate, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind. (commit-and-unchained-transactions only)
24. Intermediate node IUT in “ACTIVE” state receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to the subordinate. After that the IUT receives a C-ROLLBACK-RC from the subordinate, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT sends a C-ROLLBACK-RC to the superior, receives a C-BEGIN-RI from the superior, sends a C-BEGIN-RI to the subordinate, and issues a TP-ROLLBACK-COMPLETE ind. (commit-and-chained-transactions only)
25. Intermediate node IUT in “ACTIVE” state receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to its only subordinate. After that the IUT receives a C-ROLLBACK-RC from the subordinate, receives a TP-DONE req, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a C-BEGIN-RI from the superior, sends a C-BEGIN-RI to the subordinate, and issues a TP-ROLLBACK-COMPLETE ind. (commit-and-chained-transactions only)
26. Intermediate node IUT in “ACTIVE” state receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to its only subordinate. After that the IUT receives a C-ROLLBACK-RC from the subordinate, receives a TP-DONE req, sends a C-ROLLBACK-RC to the superior, and issues a TP-ROLLBACK-COMPLETE ind. (commit-and-unchained-transactions only)
27. Intermediate node IUT in “ACTIVE” state receives a C-ROLLBACK-RI from its only subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RI to the subordinate, and issues a TP-ROLLBACK-COMPLETE ind. (commit-and-chained-transactions only)
28. Intermediate node IUT in “ACTIVE” state receives a C-ROLLBACK-RI from its only subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind. (commit-and-unchained-transactions only)
29. Intermediate node IUT receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one of its subordinates. It sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to its superior.
30. Intermediate node IUT receives a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] from one of its subordinates. It sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to its superior.
31. Root node IUT receives a TP-ROLLBACK req, issues a C-ROLLBACK-RI to its only subordinate, receives an ABRT APDU from the subordinate, and issues a TP-HEURISTIC-REPORT (heuristic-hazard) ind.

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10.3.6 CA/FU/Recovery (RV)

Test group objective: Test the capability of the IUT to support the Recovery functional unit.

NOTE — The value for N referenced by test purposes within this group is specified in the PIXIT and indicates the duration of retry for recovery.

Test purpose:

1. (only subordinate dialogue broken, transaction to be committed)

   An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its only subordinate and issues a TP-P-ABORT ind. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior and issues a TP-COMMIT ind.

   If no C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(commit)-RI on the channel. If a C-RECOVER(retry-later)-RC was sent, either:

   a. the IUT allocates a channel to the subordinate and sends a C-RECOVER(commit)-RI on the channel; or

   b. if the IUT cannot allocate a channel to the subordinate, the IUT receives — not earlier than N seconds after the C-RECOVER(retry-later)-RC was sent — a C-RECOVER(ready)-RI on the channel and sends a C-RECOVER(commit)-RI on the channel.

   In all cases, the IUT receives C-RECOVER(done)-RC on the channel and sends C-COMMIT-RC to the superior.

2. (only subordinate dialogue broken, transaction to be rolled back)

   An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its only subordinate and issues a TP-P-ABORT ind. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, and issues a TP-HEURISTIC-REPORT (heuristic-hazard) ind.

   If no C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(unknown)-RI on the channel; if a C-RECOVER(retry-later)-RC was sent, the IUT receives — not earlier than N seconds after that — a C-RECOVER(ready)-RI on the channel and sends a C-RECOVER(unknown)-RI on the channel.

   The IUT sends C-ROLLBACK-RC to the superior.

   NOTE — the sending of the C-ROLLBACK-RC to the superior is not dependent on the recovery from the subordinate.

3. (one out of two subordinate dialogues broken, transaction to be committed, outcome not known when first C-RECOVER-RI is received)

   An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its first subordinate and issues a TP-P-ABORT ind. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind and sends a C-COMMIT-RI to the second subordinate.

   If no C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(commit)-RI on the channel. If a C-RECOVER(retry-later)-RC was sent, the IUT either:

   a. allocates a channel to the subordinate and issues a C-RECOVER(commit)-RI on the channel; or

   b. if a channel cannot be allocated to the subordinate, receives — not earlier than N seconds after the C-RECOVER(retry-later)-RC was issued — a C-RECOVER(ready)-RI on the channel and sends a C-RECOVER(commit)-RI on the channel.

   In all cases, the IUT receives C-RECOVER(done)-RC on the channel, receives C-COMMIT-RC from the second subordinate and sends C-COMMIT-RC to the superior.

4. (one out of two subordinate dialogues broken, transaction to be rolled back, outcome known when first C-RECOVER-RI is received)

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An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its first subordinate, issues a TP-P-ABORT ind, receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, sends a C-ROLLBACK-RI to the second subordinate. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, sends C-RECOVER(unknown)-RC on the channel, receives C-ROLLBACK-RC from the second subordinate and sends C-ROLLBACK-RC to the superior.

5. (one out of two subordinate dialogues broken, transaction to be committed, outcome not known when first C-RECOVER-RI is received, recovery delayed by subordinate)

   An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its first subordinate and issues a TP-P-ABORT ind. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind and sends a C-COMMIT-RI to the second subordinate.

   If no C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(commit)-RI on the channel; if a C-RECOVER(retry-later)-RC was sent, the IUT receives — not earlier than N seconds after that — a C-RECOVER(ready)-RI on the channel and sends a C-RECOVER(commit)-RI on the channel.

   In both cases, the IUT receives C-RECOVER(retry-later)-RC on the channel, receives C-COMMIT-RC from the second subordinate, sends — not earlier than N seconds after that — C-RECOVER(commit)-RI on the channel, receives C-RECOVER(done)-RC on the channel and sends C-COMMIT-RC to the superior.

6. (only subordinate dialogue broken, transaction to be committed, outcome known when first C-RECOVER-RI is received, bi-directional collision)

   An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its only subordinate, issues a TP-P-ABORT ind, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, establishes a channel, sends C-RECOVER(commit)-RI on the channel. After a second channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the second channel, sends a C-RECOVER(retry-later)-RC on the second channel, receives a C-RECOVER(done)-RC on the first channel and sends C-COMMIT-RC to the superior.

7. (only subordinate dialogue broken, transaction to be committed, outcome not known when first C-RECOVER-RI is received, unidirectional collision, abort not seen)

   An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its only subordinate, issues a TP-P-ABORT ind. After a channel is established by the LT, the IUT receives C-RECOVER(ready)-RI on the channel. After a second channel is established by the LT, the IUT receives C-RECOVER(ready)-RI on the second channel, sends C-RECOVER(retry-later)-RC on the second channel, receives C-COMMIT-RI from the superior, sends C-RECOVER(commit)-RI on the first channel, receives C-RECOVER(done)-RC on the first channel and sends C-COMMIT-RC to the superior.

8. (only subordinate dialogue broken, transaction to be committed, outcome not known when first C-RECOVER-RI is received, bi-directional collision, abort seen)

   An intermediate IUT in the transaction tree in READY state receives an ABRT APDU from its only subordinate, issues a TP-P-ABORT ind. After a channel is established by the LT, the IUT receives C-RECOVER(ready)-RI on the channel, receives an ABRT APDU on the channel, receives C-COMMIT-RI from the superior, issues TP-COMMIT ind, establishes a new channel, sends C-RECOVER(commit)-RI on the new channel, receives C-RECOVER(done)-RC on the new channel and sends a C-COMMIT-RC to the superior.

9. A leaf IUT in the transaction tree in READY state receives an ABRT APDU from its superior, issues TP-P-ABORT ind, establishes a channel, sends C-RECOVER(ready)-RI on the channel, receives C-RECOVER(retry-later)-RC on the channel. After a second channel is established by the LT, the IUT receives C-RECOVER(commit)-RI on the second channel, and may or may not send C-RECOVER(retry-later)-RC on the second channel. If C-RECOVER(ready)-RI was sent on the first channel, the IUT receives C-RECOVER(commit)-RI on the first channel, sends C-RECOVER(done)-RC on the first channel. If no C-RECOVER(retry-later)-RC was sent on the second channel, the IUT sends C-RECOVER(done)-RC on the second channel. If no C-RECOVER(ready)-RI was sent on the first channel and a C-RECOVER(retry-later)-RC was sent on the second channel, the IUT receives — not earlier than N seconds after that — a C-RECOVER(commit)-RI on the second channel, sends C-RECOVER(done)-RC on the second channel.

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10. (rolled back)

    A leaf IUT in the transaction tree in READY state receives an ABRT APDU from its superior, issues a TP-P-ABORT ind, establishes a channel, sends C-RECOVER(ready)-RI on the channel, receives C-RECOVER(retry-later)-RC on the channel, sends — not earlier than N seconds after that — C-RECOVER(ready)-RI on the channel, receives C-RECOVER(unknown)-RC on the channel.

11. (committed, outcome known when first C-RECOVER-RI is received, bi-directional collision)

    A leaf IUT in the transaction tree in READY state receives an ABRT APDU from its superior, issues TP-P-ABORT ind, establishes a channel, sends C-RECOVER(ready)-RI on the channel. After a second channel is established by the LT, the IUT receives C-RECOVER(commit)-RI, may or may not send C-RECOVER(retry-later)-RC on the second channel, receives C-RECOVER(retry-later)-RC on the first channel.

    If no C-RECOVER(retry-later)-RC was sent on the second channel, the IUT sends C-RECOVER(done)-RC on the second channel.

    If a C-RECOVER(retry-later)-RC was sent on the second channel, the IUT either:

    a. receives — not earlier than N seconds after the C-RECOVER(retry-later)-RC was sent — a C-RECOVER(commit)-RI on the second channel; or

    b. allocates — not earlier than N seconds after the C-RECOVER(retry-later)-RC was received on the first channel — a channel to the subordinate, issues a C-RECOVER(ready)-RI, and receives a C-RECOVER(commit)-RI on the channel.

    In both cases, the IUT sends C-RECOVER(done)-RC on the channel.

12. (committed, uni- and bi-directional collision, abort seen)

    A leaf IUT in the transaction tree in READY state receives an ABRT APDU from its superior, issues a TP-P-ABORT ind, establishes a channel, sends C-RECOVER(ready)-RI on the channel. After a second channel is established by the LT, the IUT receives C-RECOVER(commit)-RI on the second channel and may or may not send C-RECOVER(retry-later)-RC on the second channel. After a third channel is established by the LT, the IUT receives C-RECOVER(commit)-RI on the third channel, may or may not send C-RECOVER(retry-later)-RC on the third channel, receives C-RECOVER(retry-later)-RC on the first channel and receives an ABRT APDU on the second channel. If no C-RECOVER(retry-later)-RC was sent on the third channel, the IUT issues C-RECOVER(done)-RC on the third channel.

    If C-RECOVER(retry-later)-RC was sent on the third channel, the IUT either:

    a. receives — not earlier than N seconds after the C-RECOVER(retry-later)-RC was sent — a C-RECOVER(commit)-RI on the third channel; or

    b. if C-RECOVER(retry-later)-RC was sent on the second channel, allocates — not earlier than N seconds after the C-RECOVER(retry-later)-RC was received on the first channel — a channel to the superior, issues a C-RECOVER(ready)-RI, and receives a C-RECOVER(commit)-RI on the channel.

    In both cases the IUT sends a C-RECOVER(done)-RC on the channel.

13. (committed, unidirectional collision, abort seen)

    A leaf IUT in the transaction tree in READY state receives an ABRT APDU from its superior, issues a TP-P-ABORT ind, establishes a channel, sends C-RECOVER(ready)-RI on the channel, receives an ABRT APDU on the channel, establishes a new channel after approximately N seconds, sends C-RECOVER(ready)-RI on the new channel, receives a C-RECOVER(commit)-RI on the new channel, and sends C-RECOVER(done)-RC on the new channel.

14. (only subordinate dialogue experiences unsignalled communications failure, transaction to be committed)

    An intermediate IUT in the transaction tree in READY state, with an attached subordinate dialogue. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, sends a TP-P-ABORT-RI (mapped to an A-ABORT-RI APDU) on the dialogue, receives a C-COMMIT-RI from the superior and issues a TP-COMMIT ind.

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If no C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(commit)-RI on the channel; if a C-RECOVER(retry-later)-RC was sent, the IUT receives — not earlier than N seconds after that — a C-RECOVER(ready)-RI on the channel and sends a C-RECOVER(commit)-RI on the channel.

In both cases, the IUT receives C-RECOVER(done)-RC on the channel and sends C-COMMIT-RC to the superior.

15. (only subordinate dialogue experiences unsignalled communications failure, transaction to be rolled back)
An intermediate IUT in the transaction tree in READY state, with an attached subordinate dialogue to its single subordinate. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, sends a TP-P-ABORT-RI (mapped to an A-ABORT-RI APDU) on the dialogue, receives a C-ROLLBACK-RI from the superior and issues a TP-ROLLBACK ind.

If not C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(unknown)-RI on the channel; if a C-RECOVER(retry-later)-RC was sent, the IUT receives — not earlier than N seconds after that — a C-RECOVER(ready)-RI on the channel and sends a C-RECOVER(unknown)-RI on the channel.

The IUT sends C-ROLLBACK-RC to the superior.

16. (one out of two subordinate dialogues experiences unsignalled communications failure, transaction to be committed, outcome not known when first C-RECOVER-RI is received)
An intermediate IUT in the transaction tree in READY state with two attached subordinate dialogues. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, sends a TP-P-ABORT-RI (mapped to an A-ABORT-RI APDU) on the dialogue, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind and sends a C-COMMIT-RI to the second subordinate.

If no C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(commit)-RI on the channel.

If a C-RECOVER(retry-later)-RC was sent, the IUT either:

a) allocates a channel to the first subordinate, issues a C-RECOVER(commit)-RI on the channel; or

b) receives — not earlier than N seconds after the C-RECOVER(retry-later)-RI was sent — a C-RECOVER(ready)-RI on a channel from the first subordinate and sends a C-RECOVER(commit)-RI on the channel.

In all cases, the IUT receives C-RECOVER(done)-RC on the channel, receives C-COMMIT-RC from the second subordinate and sends C-COMMIT-RC to the superior.

17. (one out of two subordinate dialogues experiences unsignalled communications failure, transaction to be rolled back, outcome known when first C-RECOVER-RI is received)
An intermediate IUT in the transaction tree in READY state with two attached subordinate dialogues. The IUT receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, sends a C-ROLLBACK-RI to both the subordinates. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, sends C-RECOVER(unknown)-RC on the channel, issues a TP-P-ABORT ind, sends a TP-P-ABORT-RI (mapped to an A-ABORT-RI APDU) on the dialogue, issues a TP-HEURISTIC-REPORT ind, receives C-ROLLBACK-RC from the second subordinate and sends C-ROLLBACK-RC to the superior.

18. (one out of two subordinate dialogues experiences unsignalled communications failure, transaction to be committed, outcome not known when first C-RECOVER-RI is received, recovery delayed by subordinate)
An intermediate IUT in the transaction tree in READY state with two attached subordinate dialogues. After a channel is established by the LT, the IUT receives a C-RECOVER(ready)-RI on the channel, may or may not send a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, sends a TP-P-ABORT-RI (mapped to an A-ABORT-RI APDU) on the dialogue, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind and sends a C-COMMIT-RI to the second subordinate.

If no C-RECOVER(retry-later)-RC was sent, the IUT sends a C-RECOVER(commit)-RI on the channel.

If a C-RECOVER(retry-later)-RC was sent, the IUT either:

c) allocates a channel to the first subordinate, issues a C-RECOVER(commit)-RI on the channel; or

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d) receives — not earlier than N seconds after the C-RECOVER(retry-later)-RI was sent — a C-RECOVER(ready)-RI on a channel from the first subordinate and sends a C-RECOVER(commit)-RI on the channel.

In all cases, the IUT receives C-RECOVER(retry-later)-RC on the channel, receives C-COMMIT-RC from the second subordinate, sends C-RECOVER(commit)-RI on the channel, receives C-RECOVER(done)-RC on the channel and sends C-COMMIT-RC to the superior.

19. (only subordinate dialogue experiences unsignalled communications failure, transaction to be committed, outcome not known when first C-RECOVER-RI is received, bi-directional collision, abort seen)

    An intermediate IUT in the transaction tree in READY state with a single attached subordinate dialogue. After a channel is established by the LT, the IUT receives C-RECOVER(ready)-RI on the channel, does not issue a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, sends a TP-P-ABORT-RI (mapped to an A-ABORT-RI APDU) on the dialogue, receives an ABRT APDU on the channel, receives C-COMMIT-RI from the superior, issues TP-COMMIT ind, establishes a new channel, sends C-RECOVER(commit)-RI on the new channel, receives C-RECOVER(done)-RC on the new channel and sends C-COMMIT-RC to the superior.

20. (leaf IUT experiences unsignalled communications failure whilst in READY state, transaction committed)

    leaf IUT in the transaction tree in READY state with attached dialogue from its superior. After a channel is established by the LT, the IUT Receives C-RECOVER(commit)-RI on the channel, may or may not send C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind and sends a TP-P-ABORT-RI (mapped to an A-ABORT-RI APDU) on the superior dialogue.

    If no C-RECOVER(retry-later)-RC was sent on the channel, the IUT sends C-RECOVER(done)-RC on the channel. If a C-RECOVER(retry-later)-RC was sent on the channel, the IUT receives — not earlier than N seconds after that — a C-RECOVER(commit)-RI on the channel, and sends C-RECOVER(done)-RC on the channel.

10.4 CA/Multi-Layer Dependencies (MLD)

Reference: ISO/IEC 10026-3, 13.1.4.

Test group objective: Test the capability of the IUT to support the required dependencies on other standards. This subclause is included for completeness only.

11. Valid Behaviour Tests (BV)

NOTE — Where the test purposes state “If the PICS indicates...”, this refers to the answer that can be found in a completed PICS for this IUT.

Test group objective: Behaviour tests test an implementation as thoroughly as is practical, over the full range of dynamic conformance requirements specified in the Standard. Since the possible combination of events, timing of events, and parameter variation is infinite, these tests are not exhaustive, but test a representative sample of the possible combinations.

Tests are included to check valid behaviour by the IUT in response to valid behaviour by the real (lower and, if applicable, upper) tester.

Subgroups:

1. State-Event Interactions (SE)
2. Field Variations (FV)
3. Field Combinations (FC)

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11.1 BV/State-Event Interactions (SE)

Reference: ISO/IEC 10026-3, Annex A, Tables 13-18.

Test group objective: Test valid protocol behaviour in each state. Check that the IUT performs the correct action as stated in the Standard.

Subgroups:

1. Dialogue (DL)
2. Handshake (HS)
3. Commitment (CM)
4. Rollback (RB)
5. CPM (CH)
6. SACF (SA)

NOTE — Test purposes appearing in MACF tests (i.e. groups 1-5) which assume a certain SACF state will not be repeated in the SACF group.

11.1.1 BV/SE/Dialogue (DL)

Reference: ISO/IEC 10026-3, Annex A, Table 13.

Test group objective: Test valid protocol behaviour in the “Dialogue” state table (Table 13). Check that the IUT performs the correct action as stated in the Standard.

Subgroups:

1. State 1 (S1)
2. State 1.1 (S1.1)
3. State 2 (S2)
4. State 3 (S3)
5. State 4 (S4)
6. State 5 (S5)
7. State 11 (S11)
8. State 12 (S12)
9. State 15 (S15)
10. State 20.1 (S20.1)

11.1.1.1 BV/SE/DL/State 1 (S1)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 1.

Test group objective: Test valid protocol behaviour when the IUT is in the “dialogue does not exist” state (State 1).

Subgroups:

1. TP-BEGIN-DIALOGUE req (BDRQ)
2. TP-BEGIN-DIALOGUE-RI (BDRI)

11.1.1.1.1 BV/SE/DL/S1/TP-BEGIN-DIALOGUE req (BDRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a “TP-BEGIN-DIALOGUE req” in State 1.

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE(no transaction branch) req, and sends a TP-BEGIN-DIALOGUE(no transaction branch)-RI.
2. IUT that is a root receives a TP-BEGIN-DIALOGUE(transaction branch) req, sends a TP-BEGIN-DIALOGUE(transaction branch)-RI, and sends a C-BEGIN-RI.
3. IUT that is an intermediate in the active state receives a TP-BEGIN-DIALOGUE(transaction branch) req, sends a TP-BEGIN-DIALOGUE(transaction branch)-RI, and sends a C-BEGIN-RI.

NOTE 1 The Abstract Test Cases for tests 1-3 must deal with bidding when necessary.

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NOTE 2 test purposes 1 to 3 apply to both shared and polarized control functional units.

NOTE 3 test purposes 2 and 3 apply to both chained and unchained transactions functional units.

11.1.1.1.2 BV/SE/DL/S1/TP-BEGIN-DIALOGUE-RI (BDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a “TP-BEGIN-DIALOGUE-RI” in State 1.

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE(shared control fu selected, confirmation=negative, no transaction branch)-RI on an association where it is the contention-loser, accepts it, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.
2. IUT receives a TP-BEGIN-DIALOGUE(polarized control fu selected, confirmation=negative, no transaction branch)-RI on an association where it is the contention-loser, accepts it, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.
3. IUT receives a TP-BEGIN-DIALOGUE(shared control fu selected, confirmation=negative, transaction branch)-RI and C-BEGIN-RI on an association where it is the contention-loser, accepts it, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and C-BEGIN-RC.
4. IUT receives a TP-BEGIN-DIALOGUE(polarized control fu selected, confirmation=negative, transaction branch)-RI and C-BEGIN-RI on an association where it is the contention-loser, accepts it, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and C-BEGIN-RC.

NOTE — test purposes 3 and 4 apply to both chained and unchained transactions functional units.

11.1.1.2 BV/SE/DL/State 1.1(S1.1)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 1.1.

Test group objective: Test valid protocol behaviour when the IUT is in the “C-BEGIN ind awaited” state (State 1.1).

Subgroups:

1. ABRT APDU (AABRT)

11.1.1.2.1 BV/SE/DL/S1.1/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 1.1.

Test group objective: Test valid protocol behaviour when the IUT receives a “ABRT APDU” in State 1.1.

Test purpose:

1. IUT receives an ABRT APDU and accepts it. After that a new dialogue is established over the same association.

11.1.1.3 BV/SE/DL/State 2(S2)

Test group objective: Test valid protocol behaviour when the IUT is in the “data transfer (S.C or P.C with control)” state (State 2).

Subgroups:

1. TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)
2. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
3. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
4. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
5. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
6. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected)-RC] (BDRCr-CRBRI)
7. TP-END-DIALOGUE(confirmation=FALSE) req (EDRQf)
8. TP-END-DIALOGUE(confirmation=TRUE) req (EDRQt)
9. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)
10. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)
11. TP-U-ERROR req (UERQ)
12. TP-U-ERROR-RI (UERI)

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13. TP-U-ABORT req (UARQ)
14. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
15. ABRT APDU (AABRT)
16. TP-GRANT-CONTROL req (GCRQ)
17. TP-REQUEST-CONTROL-RI (RCRI)
18. TP-HANDSHAKE req (HSRQ)
19. TP-HANDSHAKE-RI (HSRI)
20. TP-HANDSHAKE-AND-GRANT-CONTROL req (HGRQ)
21. TP-BEGIN-TRANSACTION req (BTRQ)
22. C-BEGIN-RI (CBGRI)
23. TP-DATA req (DTRQ)
24. U-ASE APDU (UAAP)
25. TP-DEFERRED-END-DIALOGUE req (DERQ)
26. TP-DEFERRED-GRANT-CONTROL req (DGRQ)
27. TP-DEFER(end-dialogue)-RI (DFRI)
28. TP-PREPARE req (PRRQ)
29. TP-COMMIT req (CMRQ)
30. C-PREPARE-RI[TP-PREPARE-RI] (PRRI)
31. TP-ROLLBACK req (RBRQ)
32. C-ROLLBACK-RI (CRBRI)
33. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
34. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.1.3.1 BV/SE/DL/S2/TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT that has received a TP-BEGIN-DIALOGUE(confirmation=always)-RI and not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(accepted) rsp" in State 2.

Test purpose:

1. When the shared control fu is selected, the coordination level is "commitment" and two TP-U-ERROR-RIs have been received, the subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends two TP-U-ERROR-RCs.
2. When the coordination level is "commitment" and no TP-U-ERROR-RIs have been received, the subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC.
3. When the shared control fu is selected, the coordination level is "none" and two TP-U-ERROR-RIs have been received, the subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends two TP-U-ERROR-RCs.
4. When the coordination level is "none" and no TP-U-ERROR-RIs have been received, the subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.

11.1.1.3.2 BV/SE/DL/S2/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT that has not sent a TP-BEGIN-DIALOGUE-RC receives "TP-BEGIN-DIALOGUE(rejected) rsp" in State 2.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a TP-BEGIN-DIALOGUE(rejected(user))-RC.
2. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC].

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11.1.1.3.3 BV/SE/DL/S2/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 2.

Test purpose:

1. When dialogue establishment confirmation has been requested and the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When dialogue establishment confirmation is not outstanding, the coordination level is "none" and the shared control fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When dialogue establishment confirmation is not outstanding, the coordination level is "none" and the polarized control fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, After that the IUT receives a TP-REQUEST-CONTROL-RI, issues a TP-REQUEST-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.
4. When dialogue establishment confirmation has been requested and the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
5. When dialogue establishment confirmation is not outstanding, the coordination level is "commitment" and the shared control fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
6. When dialogue establishment confirm has not been requested, the coordination level is "commitment" and the polarized control fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, After that the IUT receives a TP-REQUEST-CONTROL-RI, issues a TP-REQUEST-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.3.4 BV/SE/DL/S2/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 2.

Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.3.5 BV/SE/DL/S2/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 2.

Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment" and the Unchained transactions fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

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11.1.1.3.6 BV/SE/DL/S2/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT which is superior and its coordination level is "commitment" receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 2.

Test purpose:

1. Superior IUT receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE cnf, and sends a C-ROLLBACK-RC.

11.1.1.3.7 BV/SE/DL/S2/TP-END-DIALOGUE(confirmation=FALSE) req (EDRQf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is "none" and the IUT receives "TP-END-DIALOGUE(confirmation=FALSE) req" in State 2.

Test purpose:

1. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE) req, sends a TP-BEGIN-DIALOGUE(accepted)-RC to the superior, sends two TP-U-ERROR-RCs, and sends a TP-END-DIALOGUE-RI.
2. When a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE) req, sends a TP-BEGIN-DIALOGUE(accepted)-RC to the superior, and sends a TP-END-DIALOGUE-RI.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE) req, and sends a TP-END-DIALOGUE-RI to the superior.
4. Superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE) req, and sends a TP-END-DIALOGUE-RI to the subordinate.

11.1.1.3.8 BV/SE/DL/S2/TP-END-DIALOGUE(confirmation=TRUE) req (EDRQt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is "none" and the IUT receives "TP-END-DIALOGUE(confirmation=TRUE) req" in State 2.

Test purpose:

1. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE) req, sends a TP-BEGIN-DIALOGUE(accepted)-RC to the superior, sends two TP-U-ERROR-RCs, and sends a TP-END-DIALOGUE-RI.
2. When a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE) req, sends a TP-BEGIN-DIALOGUE(accepted)-RC to the superior, and sends a TP-END-DIALOGUE-RI.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE) req, and sends a TP-END-DIALOGUE-RI to the superior.
4. Superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE) req, and sends a TP-END-DIALOGUE-RI to the subordinate.

11.1.1.3.9 BV/SE/DL/S2/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 2.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that a new dialogue is established over the same association.

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2. When the coordination level is “none”, superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that a new dialogue is established over the same association.
3. When the Unchained transactions fu is selected and the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC, superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.3.10 BV/SE/DL/S2/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives “TP-END-DIALOGUE(confirmation=TRUE)-RI” in State 2.

Test purpose:

1. When the coordination level is “none”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-END-DIALOGUE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends two TP-U-ERROR-RCs, and sends a TP-END-DIALOGUE-RC.
2. When the coordination level is “none”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-END-DIALOGUE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-END-DIALOGUE-RC.
3. When the coordination level is “none” and a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.
4. When the coordination level is “none” and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.
5. When the Unchained transactions fu is selected and the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(diagnostic parameter=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.3.11 BV/SE/DL/S2/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a “TP-U-ERROR req” in State 2.

Test purpose:

1. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirm has not been requested, the coordination level is “none” and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends two TP-U-ERROR-RCs, and sends a TP-U-ERROR-RI.
2. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirm has not been requested, the coordination level is “none” and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-U-ERROR-RI.
3. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirm has not been requested, the coordination level is “commitment” and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RCs, and a TP-U-ERROR-RI.
4. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirm has not been requested, the coordination level is “commitment” and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-U-ERROR-RI.

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5. When the shared control fu is selected and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.
6. When the polarized control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirm has not been requested and the coordination level is “none”, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-U-ERROR-RI.
7. When the polarized control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirm has not been requested and the coordination level is “commitment”, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-U-ERROR-RI.
8. When the polarized control fu is selected and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.
9. When the shared control fu is selected, superior IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.
10. When the polarized control fu is selected, superior IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.

11.1.1.3.12 BV/SE/DL/S2/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a “TP-U-ERROR-RI” in State 2.

Test purpose:

1. When the shared control fu is selected and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-U-ERROR-RC, and sends a U-ASE APDU.
2. When the shared control fu is selected and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC.
3. When the shared control fu is selected and dialogue establishment confirm has not been requested, superior IUT receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC.
4. When the polarized control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent and the coordination level is “commitment”, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-GRANT-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-GRANT-CONTROL-RI.
5. When the polarized control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent and the coordination level is “none”, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-GRANT-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-GRANT-CONTROL-RI.
6. When the polarized control fu is selected, the coordination level is “none” and a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-GRANT-CONTROL req, and sends a TP-GRANT-CONTROL-RI.
7. When the polarized control fu is selected, superior IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-GRANT-CONTROL req, and sends a TP-GRANT-CONTROL-RI.

11.1.1.3.13 BV/SE/DL/S2/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a “TP-U-ABORT req” in State 2.

Test purpose:

1. When the shared control fu is selected, the coordination level is “none”, dialogue establishment confirm has not been requested, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends two TP-U-ERROR-RCs, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is “none”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives

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a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-ABORT-RI, and aborts the dialogue.

3. When the coordination level is “none”, a TP-BEGIN-DIALOGUE-RC has been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
4. When the coordination level is “none”, superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
5. When the shared control fu is selected, the coordination level is “commitment”, dialogue establishment confirm has not been requested, a TP-BEGIN-DIALOGUE-RC has not been sent, two TP-U-ERROR-RIs have been received on dialogue with superior, leaf node IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends two TP-U-ERROR-RCs. The IUT receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
6. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent, no TP-U-ERROR-RIs have been received on dialogue with superior, leaf node IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC. The IUT receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
7. When the coordination level is “commitment”, dialogue establishment confirm has not been requested, a TP-BEGIN-DIALOGUE-RC has been sent on dialogue with superior, leaf node IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
8. When the shared control fu is selected, the coordination level is “commitment”, dialogue establishment confirm has not been requested, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, two TP-U-ERROR-RIs have been received on dialogue with superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RCs, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
9. When the coordination level is “commitment”, dialogue establishment confirm has not been requested, the Chained the transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, no TP-U-ERROR-RIs have been received on dialogue with superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
10. When the coordination level is “commitment”, dialogue establishment confirm has not been requested, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent on dialogue with superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
11. When the shared control fu is selected, the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, two TP-U-ERROR-RIs have been received on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RCs, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

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12. When the coordination level is “commitment”, dialogue establishment confirm has not been requested, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, no TP-U-ERROR-RIs have been received on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
13. When the coordination level is “commitment”, dialogue establishment confirm has not been requested, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
14. When the coordination level is “commitment”, the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
15. When the coordination level is “commitment”, the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
16. When the coordination level is “commitment”, the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
17. When the coordination level is “commitment”, the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.1.3.14 BV/SE/DL/S2/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a “P-DATA[TP-ABORT(user)-RI] ind” in State 2.

Test purpose:

1. When the coordination level is “none”, subordinate IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
2. When the coordination level is “none” and dialogue establishment confirmation has not been requested, superior IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding a C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

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11.1.1.3.15 BV/SE/DL/S2/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a “ABRT APDU” in State 2.

Test purpose:

1. When the coordination level is “none”, the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is “commitment” and dialogue establishment confirmation has been requested, subordinate IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, leaf node IUT receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
4. When the coordination level is “commitment”, dialogue establishment confirm has not been requested, the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
5. When the coordination level is “commitment”, dialogue establishment confirm has not been requested, Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
6. When the coordination level is “commitment”, the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU on a dialogue with a subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the coordination level is “commitment”, the Unchained transactions fu is selected, root node IUT with one or more subordinates, receives an ABRT APDU on a dialogue with a subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
8. When the coordination level is “commitment”, the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
9. When the coordination level is “commitment”, the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.1.3.16 BV/SE/DL/S2/TP-GRANT-CONTROL req (GCRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives “TP-GRANT-CONTROL req” in State 2.

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Test purpose:

1. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-GRANT-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-GRANT-CONTROL-RI.
2. When the coordination level is “none”, dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-GRANT-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-GRANT-CONTROL-RI.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-GRANT-CONTROL req, and sends a TP-GRANT-CONTROL-RI.
4. Superior IUT receives a TP-GRANT-CONTROL req, and sends a TP-GRANT-CONTROL-RI.

11.1.1.3.17 BV/SE/DL/S2/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives “TP-REQUEST-CONTROL-RI” in State 2.

Test purpose:

1. Subordinate IUT receives a TP-REQUEST-CONTROL-RI, issues a TP-REQUEST-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.3.18 BV/SE/DL/S2/TP-HANDSHAKE req (HSRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when handshake fu is selected and the IUT receives “TP-HANDSHAKE req” in State 2.

Test purpose:

1. When the shared control fu is selected, the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RCs, and sends a TP-HANDSHAKE-RI.
2. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-HANDSHAKE-RI.
3. When the shared control fu is selected, the coordination level is “none”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends two TP-U-ERROR-RCs, and sends a TP-HANDSHAKE-RI.
4. When the coordination level is “none”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-HANDSHAKE-RI.
5. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-HANDSHAKE req, and sends a TP-HANDSHAKE-RI.
6. Superior IUT receives a TP-HANDSHAKE req, and sends a TP-HANDSHAKE-RI.

11.1.1.3.19 BV/SE/DL/S2/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, handshake fu is selected and the IUT receives “TP-HANDSHAKE-RI” in State 2.

Test purpose:

1. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, sends a

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TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RIs, and sends a TP-HANDSHAKE-RC.

2. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-HANDSHAKE-RC.
3. When the coordination level is “none”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends two TP-U-ERROR-RIs, and sends a TP-HANDSHAKE-RC.
4. When the coordination level is “none”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-HANDSHAKE-RC.
5. When the coordination level is “none”, a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.
6. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

11.1.1.3.20 BV/SE/DL/S2/TP-HANDSHAKE-AND-GRANT-CONTROL req (HGRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected, handshake fu is selected and the IUT receives “TP-HANDSHAKE-AND-GRANT-CONTROL req” in State 2.

Test purpose:

1. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
2. When the coordination level is “none”, dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
4. Superior IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.

11.1.1.3.21 BV/SE/DL/S2/TP-BEGIN-TRANSACTION req (BTRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the coordination level is “none”, transaction branch has not entered the termination phase and the IUT receives “TP-BEGIN-TRANSACTION req” in State 2.

Test purpose:

1. When IUT has the minor-synchronize-token, superior IUT receives a TP-BEGIN-TRANSACTION req, and sends a C-BEGIN-RI.

11.1.1.3.22 BV/SE/DL/S2/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the shared control fu is selected, the coordination level is “none” and the IUT receives “C-BEGIN-RI” in State 2.

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Test purpose:

1. Subordinate IUT that is a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-reject) ind, and sends a C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI]. After that the IUT receives a C-ROLLBACK-RC, and aborts the dialogue.
2. When dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT that is not a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-BEGIN-TRANSACTION ind, receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RCs, and sends a U-ASE APDU.
3. When dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT that is not a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-BEGIN-TRANSACTION ind, receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a U-ASE APDU.
4. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT that is not a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-BEGIN-TRANSACTION ind, and sends a C-BEGIN-RC.

11.1.1.3.23 BV/SE/DL/S2/TP-DATA req (DTRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a “TP-DATA req” in State 2.

Test purpose:

1. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.3.24 BV/SE/DL/S2/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives “U-ASE APDU” in State 2.

Test purpose:

1. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a U-ASE APDU, and issues a TP-DATA ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.3.25 BV/SE/DL/S2/TP-DEFERRED-END-DIALOGUE req (DERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is “commitment”, a TP-DEFERRED-END-DIALOGUE req has not been issued and the IUT receives “TP-DEFERRED-END-DIALOGUE req” in State 2.

Test purpose:

1. Superior IUT receives a TP-DEFERRED-END-DIALOGUE req, receives a TP-COMMIT req, sends a TP-DEFER(end-dialogue)-RI, and sends a C-PREPARE-RI[TP-PREPARE-RI]. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, sends a C-COMMIT-RI, receives a TP-DONE req, receives a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.1.3.26 BV/SE/DL/S2/TP-DEFERRED-GRANT-CONTROL req (DGRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is “commitment”, a TP-DEFERRED-GRANT-CONTROL req has not been issued and the IUT receives “TP-DEFERRED-GRANT-CONTROL req” in State 2.

Test purpose:

1. Superior IUT receives a TP-DEFERRED-GRANT-CONTROL req, receives a TP-COMMIT req, sends a TP-DEFER(grant-control)-RI, and sends a C-PREPARE-RI[TP-PREPARE-RI]. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, sends a C-COMMIT-RI or C-COMMIT-RI+C-BEGIN-RI, receives a

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TP-DONE req, receives a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.1.3.27 BV/SE/DL/S2/TP-DEFER(end-dialogue)-RI (DFRIe)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", a TP-DEFER(end-dialogue)-RI has not been received and the IUT receives "TP-DEFER(end-dialogue)-RI" in State 2.

Test purpose:

1. Subordinate IUT receives a TP-DEFER(end-dialogue)-RI, and issues a TP-DEFERRED-END-DIALOGUE ind. After that the IUT receives a C-PREPARE-RI[TP-PREPARE-RI], issues a TP-PREPARE ind, receives a TP-COMMIT req, sends a C-READY-RI, receives a C-COMMIT-RI, issues a TP-COMMIT ind, receives a TP-DONE req, sends a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.3.28 BV/SE/DL/S2/TP-PREPARE req (PRRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives "TP-PREPARE req" in State 2.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-PREPARE req for one subordinate, and sends a C-PREPARE-RI[TP-PREPARE-RI] to the subordinate.
2. When C-PREPARE-RI has been received from the superior, intermediate node IUT with multiple subordinates receives a TP-PREPARE req for one subordinate, and sends a C-PREPARE-RI[TP-PREPARE-RI] to the subordinate.

11.1.1.3.29 BV/SE/DL/S2/TP-COMMIT req (CMRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", dialogue establishment confirmation is not outstanding and the IUT receives "TP-COMMIT req" in State 2.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-COMMIT req, and sends a C-PREPARE-RI[TP-PREPARE-RI] to all the subordinates.
2. When C-PREPARE-RI has been received from the superior, intermediate node IUT with multiple subordinates receives a TP-COMMIT req, and sends a C-PREPARE-RI[TP-PREPARE-RI] to all the subordinates.

11.1.1.3.30 BV/SE/DL/S2/C-PREPARE-RI[TP-PREPARE-RI] (PRRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, the coordination level is "commitment" and the IUT receives "C-PREPARE-RI[TP-PREPARE-RI]" in State 2.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a C-PREPARE-RI[TP-PREPARE-RI], and issues a TP-PREPARE ind. After that the IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RCs, and sends a U-ASE APDU.
2. When dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a C-PREPARE-RI[TP-PREPARE-RI], and issues a TP-PREPARE ind. After that the IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a U-ASE APDU.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a C-PREPARE-RI[TP-PREPARE-RI], and issues a TP-PREPARE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

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11.1.1.3.31 BV/SE/DL/S2/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is “commitment” and the IUT receives “TP-ROLLBACK req” in State 2.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. When dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.1.3.32 BV/SE/DL/S2/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is “commitment” and the IUT receives “C-ROLLBACK-RI” in State 2.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT ends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.1.3.33 BV/SE/DL/S2/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, dialogue with subordinate, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" in State 2.

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Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with one subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI] from the subordinate, issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.3.34 BV/SE/DL/S2/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 2.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 2.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation has been requested, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
4. When dialogue establishment confirmation is not outstanding, intermediate node IUT with one subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the subordinate, issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.4 BV/SE/DL/State 3(S3)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT is in the "data transfer (P.C without control)" state (State 3).

Subgroups:

1. TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)
2. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
3. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
4. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
5. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
6. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)
7. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)
8. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)
9. TP-U-ERROR req (UERQ)
10. TP-U-ERROR-RI (UERI)
11. TP-U-ABORT req (UARQ)
12. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
13. ABRT APDU (AABRT)
14. TP-GRANT-CONTROL-RI (GCRI)
15. TP-REQUEST-CONTROL req (RCRQ)
16. TP-REQUEST-CONTROL-RI (RCRI)
17. TP-HANDSHAKE-RI (HSRI)
18. TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)
19. C-BEGIN-RI (CBGRI)
20. U-ASE APDU (UAAP)
21. TP-DEFER(end-dialogue)-RI (DFRIe)

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22. TP-DEFER(grant-control)-RI (DFRIg)
23. C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI] (PRRIf)
24. C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI] (PRRIt)
25. TP-ROLLBACK req (RBRQ)
26. C-ROLLBACK-RI (CRBRI)
27. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
28. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.1.4.1 BV/SE/DL/S3/TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT that has received a TP-BEGIN-DIALOGUE(confirmation=always)-RI and not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(accepted) rsp" in State 3.

Test purpose:

1. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC.
2. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.

11.1.1.4.2 BV/SE/DL/S3/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT that has not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(rejected) rsp" in State 3.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a TP-BEGIN-DIALOGUE(rejected(user))-RC.
2. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC].

11.1.1.4.3 BV/SE/DL/S3/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 3.

Test purpose:

1. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
2. When the coordination level is "commitment" and dialogue establishment confirmation has been requested, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
3. When the coordination level is "commitment" dialogue establishment confirmation is not outstanding, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.1.4.4 BV/SE/DL/S3/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 3.

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Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.4.5 BV/SE/DL/S3/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 3.

Test purpose:

1. When the coordination level is “none”, superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI.
2. When the coordination level is “commitment” and the Unchained transactions fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.4.6 BV/SE/DL/S3/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT which is superior and its coordination level is "commitment" receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 3.

Test purpose:

1. Superior IUT receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE cnf, and sends a C-ROLLBACK-RC.

11.1.1.4.7 BV/SE/DL/S3/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 3.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that a new dialogue is established over the same association.
2. When the coordination level is "none", superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.1.4.8 BV/SE/DL/S3/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE)-RI" in State 3.

Test purpose:

1. When the coordination level is "none", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-END-DIALOGUE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-END-DIALOGUE-RC.
2. When the coordination level is "none", a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.

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3. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.

11.1.1.4.9 BV/SE/DL/S3/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR req" in State 3.

Test purpose:

1. When a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirmation is not outstanding and the coordination level is "none", subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-U-ERROR-RI.
2. When a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirmation is not outstanding and the coordination level is "commitment", subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-U-ERROR-RI.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.
4. When the polarized control fu is selected, superior IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.

11.1.1.4.10 BV/SE/DL/S3/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 3.

Test purpose:

1. Subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
2. Superior IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.1.4.11 BV/SE/DL/S3/TP-U-ABORT req (UARQ)

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 3.

Test purpose:

1. When the coordination level is "none", dialogue establishment confirmation is not outstanding, and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is "none" and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
3. When the coordination level is "none", superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent, leaf node IUT receives a TP-U-ABORT req on the dialogue with the superior, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC. The IUT receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
5. When the coordination level is "commitment", a TP-BEGIN-DIALOGUE-RC has been sent, leaf node IUT receives a TP-U-ABORT req on the dialogue with the superior, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
6. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-

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ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.

7. When the coordination level is "commitment", the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
8. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
9. When the coordination level is "commitment", the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
10. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
11. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
12. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
13. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.1.4.12 BV/SE/DL/S3/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 3.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.

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2. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a TP-ROLLBACK req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.1.4.13 BV/SE/DL/S3/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 3.

Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and dialogue establishment confirmation has been requested, subordinate IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, leaf node IUT receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
5. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
6. When the coordination level is "commitment", the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the coordination level is “commitment”, the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
8. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
9. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

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11.1.1.4.14 BV/SE/DL/S3/TP-GRANT-CONTROL-RI (GCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-GRANT-CONTROL-RI" in State 3.

Test purpose:

1. When the coordination level is "none" and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-GRANT-CONTROL-RI, and issues a TP-GRANT-CONTROL ind. After that the IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a U-ASE APDU.
2. When the coordination level is "commitment" and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind. After that the IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a U-ASE APDU.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.4.15 BV/SE/DL/S3/TP-REQUEST-CONTROL req (RCRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-REQUEST-CONTROL req" in State 3.

Test purpose:

1. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
2. Superior IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.1.4.16 BV/SE/DL/S3/TP-REQUEST-CONTROL-RI (RCRI)

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-REQUEST-CONTROL-RI" in State 3.

Test purpose:

1. IUT receives a TP-REQUEST-CONTROL-RI. After that the IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.4.17 BV/SE/DL/S3/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when handshake fu is selected and the IUT receives a "TP-HANDSHAKE-RI" in State 3.

Test purpose:

1. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-HANDSHAKE-RC.
2. When the coordination level is "none", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-HANDSHAKE-RC.
3. When the coordination level is "none", a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.
4. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

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11.1.1.4.18 BV/SE/DL/S3/TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when handshake fu is selected and the IUT receives a "TP-HANDSHAKE-AND-GRANT-CONTROL-RI" in State 3.

Test purpose:

1. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, issues a TP-HANDSHAKE-AND-GRANT-CONTROL ind, receives a TP-HANDSHAKE-AND-GRANT-CONTROL rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RC.
2. When the coordination level is "none", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, issues a TP-HANDSHAKE-AND-GRANT-CONTROL ind, receives a TP-HANDSHAKE-AND-GRANT-CONTROL rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RC.
3. When the coordination level is "none", a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, issues a TP-HANDSHAKE-AND-GRANT-CONTROL rsp, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RC.
4. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, issues a TP-HANDSHAKE-AND-GRANT-CONTROL ind, receives a TP-HANDSHAKE-AND-GRANT-CONTROL rsp, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RC.

11.1.1.4.19 BV/SE/DL/S3/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the coordination level is "none" and the IUT receives a "C-BEGIN-RI" in State 3.

Test purpose:

1. Subordinate IUT that is a root node in a transaction tree receives a C-BEGIN-RI, and issues a TP-P-ABORT(diagnostic=begin-transaction-reject) ind. and sends a C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI]. After that the IUT receives a C-ROLLBACK-RC, and aborts the dialogue.
2. When dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT that is not a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-BEGIN-TRANSACTION ind, receives a TP-REQUEST-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-REQUEST-CONTROL-RI.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT that is not a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-BEGIN-TRANSACTION ind, and sends a C-BEGIN-RC.

11.1.1.4.20 BV/SE/DL/S3/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "U-ASE APDU" in State 3.

Test purpose:

1. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a U-ASE APDU, and issues a TP-DATA ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
2. When dialogue establishment confirmation is not outstanding, superior IUT receives a U-ASE APDU, and issues a TP-DATA ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

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11.1.1.4.21 BV/SE/DL/S3/TP-DEFER(end-dialogue)-RI (DFRIe)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", a TP-DEFER(end-dialogue)-RI has not been received and the IUT receives a "TP-DEFER(end-dialogue)-RI" in State 3.

Test purpose:

1. Subordinate IUT receives a TP-DEFER(end-dialogue)-RI, and issues a TP-DEFERRED-END-DIALOGUE ind. After that the IUT receives a TP-COMMIT req, sends a C-READY-RI, receives a C-COMMIT-RI, issues a TP-COMMIT ind, receives a TP-DONE req, sends a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.4.22 BV/SE/DL/S3/TP-DEFER(grant-control)-RI (DFRIg)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when TP-DEFERRED-END-DIALOGUE-RI has not been received, a TP-DEFER(GRANT-CONTROL)-RI has not been received and the IUT receives a "TP-DEFER(grant-control)-RI" in State 3.

Test purpose:

1. Subordinate IUT receives a TP-DEFER(grant-control)-RI, and issues a TP-DEFERRED-GRANT-CONTROL ind. After that the IUT receives a C-PREPARE-RI[TP-PREPARE-RI], issues a TP-PREPARE ind, receives a TP-COMMIT req, sends a C-READY-RI, receives a C-COMMIT-RI+C-BEGIN-RI, issues a TP-COMMIT ind, receives a TP-DONE req, sends a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.4.23 BV/SE/DL/S3/C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI] (PRRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI]" in State 3.

Test purpose:

1. Subordinate IUT receives a C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI], and issues a TP-PREPARE ind. After that the IUT receives a TP-COMMIT req, and sends a C-READY-RI.

11.1.1.4.24 BV/SE/DL/S3/C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI] (PRRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI]" in State 3.

Test purpose:

1. When dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI], and issues a TP-PREPARE ind. After that the IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a U-ASE APDU.
2. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI], and issues a TP-PREPARE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.4.25 BV/SE/DL/S3/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 3.

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Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. When dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.1.4.26 BV/SE/DL/S3/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 3.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.1.4.27 BV/SE/DL/S3/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" on a dialogue with a subordinate in State 3.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

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11.1.1.4.28 BV/SE/DL/S3/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 3.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 3.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation has been requested, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
4. When dialogue establishment confirmation is not outstanding, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the subordinate, issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.5 BV/SE/DL/State 4(S4)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-U-ERROR req issued (S.C or P.C without control)" state (State 4).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
3. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
4. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCru-CRBRI)
5. TP-END-DIALOGUE(confirmation=FALSE) req (EDRQf)
6. TP-END-DIALOGUE(confirmation=TRUE) req (EDRQt)
7. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIt)
8. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)
9. TP-U-ERROR req (UERQ)
10. TP-U-ERROR-RI (UERI)
11. TP-U-ERROR-RC (UERC)
12. TP-U-ABORT req (UARQ)
13. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
14. ABRT APDU (AABRT)
15. TP-GRANT-CONTROL-RI (GCRI)
16. TP-REQUEST-CONTROL-RI (RCRI)
17. TP-HANDSHAKE req (HSRQ)
18. TP-HANDSHAKE-RI (HSRI)
19. TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)
20. TP-BEGIN-TRANSACTION req (BTRQ)
21. C-BEGIN-RI (CBGRI)
22. TP-DATA req (DTRQ)
23. U-ASE APDU (UAAP)
24. TP-DEFERRED-END-DIALOGUE req (DERQ)
25. TP-DEFER(end-dialogue)-RI (DFRIe)
26. TP-DEFER(grant-control)-RI (DFRIg)
27. TP-PREPARE req (PRRQ)
28. TP-COMMIT req (CMRQ)

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29. C-PREPARE-RI[TP-PREPARE-RI] (PRRI)
30. C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI] (PRRIf)
31. C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI] (PRRIt)
32. TP-ROLLBACK req (RBRQ)
33. C-ROLLBACK-RI (CRBRI)
34. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
35. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.1.5.1 BV/SE/DL/S4/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 4.

Test purpose:

1. When dialogue establishment confirmation has been requested and the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-U-ABORT req, and sends a TP-ABORT(user)-RI.
2. When dialogue establishment confirmation has not been requested, the coordination level is "none" and the shared control fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a TP-U-ERROR-RC, receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When dialogue establishment confirmation has not been requested, the coordination level is "none" and the polarized control fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.
4. When dialogue establishment confirmation has been requested and the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-U-ABORT req, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI].
5. When dialogue establishment confirmation has not been requested, the coordination is "commitment" and the shared fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a TP-U-ERROR-RC, receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
6. When dialogue establishment confirmation has not been requested, the coordination level is "commitment" and the polarized control fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.2 BV/SE/DL/S4/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 4.

Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

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11.1.1.5.3 BV/SE/DL/S4/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 4.

Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment" and the Unchained transactions fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.5.4 BV/SE/DL/S4/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT which is superior and its coordination level is "commitment" receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 4.

Test purpose:

1. Superior IUT receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE cnf, and sends a C-ROLLBACK-RC.

11.1.1.5.5 BV/SE/DL/S4/TP-END-DIALOGUE(confirmation=FALSE) req (EDRQf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "none", the shared control fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=FALSE) req" in State 4.

Test purpose:

1. Subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE) req, and sends a TP-END-DIALOGUE-RI to the superior.
2. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE) req, and sends a TP-END-DIALOGUE-RI to the subordinate.

11.1.1.5.6 BV/SE/DL/S4/TP-END-DIALOGUE(confirmation=TRUE) req (EDRQt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "none", the shared control fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE) req" in State 4.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE) req, and sends a TP-END-DIALOGUE-RI to the superior.
2. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE) req, and sends a TP-END-DIALOGUE-RI to the subordinate.

11.1.1.5.7 BV/SE/DL/S4/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 4.

Test purpose:

1. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that a new dialogue is established over the same association.
2. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

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3. When the shared control fu is selected, the Unchained transactions fu is selected and the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC, superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.5.8 BV/SE/DL/S4/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE)-RI" in State 4.

Test purpose:

1. When the shared control fu is selected, the coordination level is “none” and a TP-U-ERROR req is outstanding, the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
2. When the shared control fu is selected, the coordination level is “none” and two TP-U-ERROR reqs are outstanding, the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a U-ASE APDU, and ignores this PDU. After a time, the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When the shared control fu is selected, the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and has a TP-U-ERROR req outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.
4. When the shared control fu is selected, the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and has a TP-U-ERROR req outstanding, the IUT receives a U-ASE APDU, ignores this PDU, and receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After a time, the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.
5. When the polarized control fu is selected, the coordination level is "none" and a TP-U-ERROR req is outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.9 BV/SE/DL/S4/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-U-ERROR req" in State 4.

Test purpose:

1. When the shared control fu is selected, subordinate IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.
2. When the shared control fu is selected, superior IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.

11.1.1.5.10 BV/SE/DL/S4/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 4.

Test purpose:

1. When the shared control fu is selected, subordinate IUT receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When the shared control fu is selected and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
3. When the polarized control fu is selected and the coordination level is "none", subordinate IUT receives a TP-U-ERROR-RI. After that the IUT receives a TP-U-ABORT req, and sends a TP-ABORT(user)-RI.

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4. When the polarized control fu is selected, dialogue establishment confirmation IUT receives a TP-U-ERROR-RI. After that the IUT receives a TP-U-ABORT req, and sends a TP-ABORT(user)-RI.

11.1.1.5.11 BV/SE/DL/S4/TP-U-ERROR-RC (UERC)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-U-ERROR-RC" in State 4.

Test purpose:

1. When a TP-U-ERROR req is outstanding, the IUT receives a TP-U-ERROR-RC. After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
2. When two TP-U-ERROR reqs are outstanding, the IUT receives a TP-U-ERROR-RC. After a time, the IUT receives a second TP-U-ERROR-RC, receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.12 BV/SE/DL/S4/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 4.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is "none", superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, leaf node IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
4. When the coordination level is "commitment", dialogue establishment confirmation has not been requested, the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
5. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
6. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues with subordinates, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues with subordinates, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
8. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with a subordinate receives a TP-U-ABORT req, and sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the

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subordinate, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, aborts the dialogue, and becomes a leaf node.

9. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
10. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.1.5.13 BV/SE/DL/S4/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 4.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
2. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a TP-ROLLBACK req and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.1.5.14 BV/SE/DL/S4/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 4.

Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment", leaf node IUT receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
4. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
5. When the coordination level is "commitment", the Chained transactions fu is selected on dialogues with all subordinates, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC

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from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.

6. When the coordination level is "commitment", the Unchained transactions fu is selected on dialogues with all subordinates, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
7. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
8. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.1.5.15 BV/SE/DL/S4/TP-GRANT-CONTROL-RI (GCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives a "TP-GRANT-CONTROL-RI" in State 4.

Test purpose:

1. Subordinate IUT receives a TP-GRANT-CONTROL-RI, and issues a TP-GRANT-CONTROL ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.16 BV/SE/DL/S4/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives a "TP-REQUEST-CONTROL-RI" in State 4.

Test purpose:

1. IUT receives a TP-REQUEST-CONTROL-RI. After that the IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.17 BV/SE/DL/S4/TP-HANDSHAKE req (HSRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when handshake fu is selected, the shared control fu is selected and the IUT receives a "TP-HANDSHAKE req" in State 4.

Test purpose:

1. Subordinate IUT receives a TP-HANDSHAKE req, and sends a TP-HANDSHAKE-RI.
2. Superior IUT receives a TP-HANDSHAKE req, and sends a TP-HANDSHAKE-RI.

11.1.1.5.18 BV/SE/DL/S4/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when handshake fu is selected and the IUT receives a "TP-HANDSHAKE-RI" in State 4.

Test purpose:

1. When the shared control fu is selected and a TP-U-ERROR req is outstanding, subordinate IUT receives a TP-HANDSHAKE-RI. After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.

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2. When the shared control fu is selected and the IUT has two TP-U-ERROR reqs outstanding, subordinate IUT receives a TP-HANDSHAKE-RI. After that the IUT receives a U-ASE APDU, and ignores this PDU. After a time, the IUT receives a TP-HANDSHAKE-RI, receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When the polarized control fu is selected and a TP-U-ERROR req is outstanding, subordinate IUT receives a TP-HANDSHAKE-RI, and issues a TP-HANDSHAKE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. When the shared control fu is selected, dialogue establishment confirmation has been requested and a TP-U-ERROR req is outstanding, superior IUT receives a TP-HANDSHAKE-RI. After that the IUT receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
5. When the shared control fu is selected, dialogue establishment confirmation is not outstanding and two TP-U-ERROR reqs are outstanding, superior IUT receives a TP-HANDSHAKE-RI. After that the IUT receives a U-ASE APDU, and ignores this PDU. After a time, the IUT receives a TP-HANDSHAKE-RI, receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
6. When the polarized control fu is selected and dialogue establishment confirmation is not outstanding and a TP-U-ERROR req is outstanding, superior IUT receives a TP-HANDSHAKE-RI, and issues a TP-HANDSHAKE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.19 BV/SE/DL/S4/TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected, handshake fu is selected and the IUT receives a "TP-HANDSHAKE-AND-GRANT-CONTROL-RI" in State 4.

Test purpose:

1. Subordinate IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, and issues a TP-HANDSHAKE-AND-GRANT-CONTROL ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, and issues a TP-HANDSHAKE-AND-GRANT-CONTROL ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.20 BV/SE/DL/S4/TP-BEGIN-TRANSACTION req (BTRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the shared control fu is selected, the coordination level is "none", transaction branch has not entered the termination phase and the IUT receives a "TP-BEGIN-TRANSACTION req" in State 4.

Test purpose:

1. When the IUT has the minor-synchronize-token, superior IUT receives a TP-BEGIN-TRANSACTION req, and sends a C-BEGIN-RI.

11.1.1.5.21 BV/SE/DL/S4/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the coordination level is "none" and the IUT receives a "C-BEGIN-RI" in State 4.

Test purpose:

1. Subordinate IUT that is a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-reject) ind, and sends a C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI]. After that the IUT receives a C-ROLLBACK-RC, and aborts the dialogue.
2. Subordinate IUT that is not a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-BEGIN-TRANSACTION ind, and sends a C-BEGIN-RC.

11.1.1.5.22 BV/SE/DL/S4/TP-DATA req (DTRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-DATA req" in State 4.

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Test purpose:

1. Subordinate IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. Superior IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.23 BV/SE/DL/S4/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "U-ASE APDU" in State 4.

Test purpose:

1. When the shared control fu is selected, superior IUT receives a U-ASE APDU. After that the IUT receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC.
2. When the polarized control fu is selected, superior IUT receives a U-ASE APDU. After that the IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.24 BV/SE/DL/S4/TP-DEFERRED-END-DIALOGUE req (DERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", a TP-DEFERRED-END-DIALOGUE req has not been issued and the IUT receives a "TP-DEFERRED-END-DIALOGUE req" in State 4.

Test purpose:

1. Superior IUT receives a TP-DEFERRED-END-DIALOGUE req, and if it does not delay deferred PDUs sends a TP-DEFER(end-dialogue)-RI. After that the IUT receives a TP-COMMIT req, sends a TP-DEFER(end-dialogue)-RI if one was not previously sent, sends a C-PREPARE-RI[TP-PREPARE-RI], receives a C-READY-RI, issues a TP-COMMIT ind, sends a C-COMMIT-RI, receives a TP-DONE req, receives a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.1.5.25 BV/SE/DL/S4/TP-DEFER(end-dialogue)-RI (DFRIe)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", a TP-DEFER(end-dialogue)-RI has not been received and the IUT receives a "TP-DEFER(end-dialogue)-RI" in State 4.

Test purpose:

1. When the shared control fu is selected, subordinate IUT receives a TP-DEFER(end-dialogue)-RI, and issues a TP-DEFERRED-END-DIALOGUE ind. After that the IUT receives two TP-U-ERROR-RCs, receives a C-PREPARE-RI[TP-PREPARE-RI], issues a TP-PREPARE ind, receives a TP-COMMIT req, sends a C-READY-RI, receives a C-COMMIT-RI, issues a TP-COMMIT ind, receives a TP-DONE req, sends a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that a new dialogue is established over the same association.
2. When the polarized control fu is selected, subordinate IUT receives a TP-DEFER(end-dialogue)-RI, and issues a TP-DEFERRED-END-DIALOGUE ind. After that the IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, receives a TP-GRANT-CONTROL req, sends a TP-GRANT-CONTROL-RI, receives a C-PREPARE-RI[TP-PREPARE-RI], issues a TP-PREPARE ind, receives a TP-COMMIT req, sends a C-READY-RI, receives a C-COMMIT-RI, issues a TP-COMMIT ind, receives a TP-DONE req, sends a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.5.26 BV/SE/DL/S4/TP-DEFER(grant-control)-RI (DFRIg)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the polarized control fu is selected, a TP-DEFER(end-dialogue)-RI has not been received, a TP-DEFER(grant-control)-RI has not been received and the IUT receives a "TP-DEFER(grant-control)-RI" in State 4.

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Test purpose:

1. Subordinate IUT receives a TP-DEFER(grant-control)-RI, and issues a TP-DEFERRED-GRANT-CONTROL ind. After that the IUT receives a TP-GRANT-CONTROL-RI, issues a TP-GRANT-CONTROL ind, receives a TP-GRANT-CONTROL req, sends a TP-GRANT-CONTROL-RI, receives a C-PREPARE-RI[TP-PREPARE-RI], issues a TP-PREPARE ind, receives a TP-COMMIT req, sends a C-READY-RI, receives a C-COMMIT-RI+C-BEGIN-RI, issues a TP-COMMIT ind, receives a TP-DONE req, sends a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.5.27 BV/SE/DL/S4/TP-PREPARE req (PRRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the shared control fu is selected and the IUT receives a "TP-PREPARE req" in State 4.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-PREPARE req for one subordinate, and sends a C-PREPARE-RI[TP-PREPARE-RI] to the subordinate.
2. When C-PREPARE-RI has been received from the superior, intermediate node IUT with multiple subordinates receives a TP-PREPARE req for one subordinate, and sends a C-PREPARE-RI[TP-PREPARE-RI] to the subordinate.

11.1.1.5.28 BV/SE/DL/S4/TP-COMMIT req (CMRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", a dialogue establishment confirmation is not outstanding, the shared control fu is selected and the IUT receives a "TP-COMMIT req" in State 4.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-COMMIT req, and sends a C-PREPARE-RI[TP-PREPARE-RI] to all the subordinates.
2. When C-PREPARE-RI has been received from the superior, intermediate node IUT with multiple subordinates receives a TP-COMMIT req, and sends a C-PREPARE-RI[TP-PREPARE-RI] to all the subordinates.

11.1.1.5.29 BV/SE/DL/S4/C-PREPARE-RI[TP-PREPARE-RI] (PRRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, the coordination level is "commitment" and the IUT receives a "C-PREPARE-RI[TP-PREPARE-RI]" in State 4.

Test purpose:

1. Subordinate IUT receives a C-PREPARE-RI[TP-PREPARE-RI], and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RI, receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.5.30 BV/SE/DL/S4/C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI] (PRRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the polarized control fu is selected and the IUT receives a "C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI]" in State 4.

Test purpose:

1. Subordinate IUT receives a C-PREPARE-RI[TP-PREPARE(data-permitted=FALSE)-RI], and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RI, receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.5.31 BV/SE/DL/S4/C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI] (PRRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

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Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the polarized control fu is selected and the IUT receives a "C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI]" in State 4.

Test purpose:

1. Subordinate IUT receives a C-PREPARE-RI[TP-PREPARE(data-permitted=TRUE)-RI], and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RI, receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.5.32 BV/SE/DL/S4/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 4.

Test purpose:

1. A leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. Intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.1.5.33 BV/SE/DL/S4/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 4.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

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11.1.1.5.34 BV/SE/DL/S4/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" on a dialogue with a subordinate in State 4.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.5.35 BV/SE/DL/S4/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 4.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 4.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.6 BV/SE/DL/State 5(S5)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-U-ERROR ind received (P.C with control)" state (State 5).

Subgroups:

1. TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)
2. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
3. TP-U-ABORT req (UARQ)
4. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
5. ABRT APDU (AABRT)
6. C-BEGIN-RC (CBGRC)
7. TP-ROLLBACK-req (RBRQ)
8. C-ROLLBACK-RI (CRBRI)
9. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
10. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.1.6.1 BV/SE/DL/S5/TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the IUT that has received a TP-BEGIN-DIALOGUE(confirmation=always)-RI and not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(accepted) rsp" in State 5.

Test purpose:

1. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC.
2. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.

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11.1.1.6.2 BV/SE/DL/S5/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the IUT that has not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(rejected) rsp" in State 5.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a TP-BEGIN-DIALOGUE(rejected(user))-RC.
2. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC].

11.1.1.6.3 BV/SE/DL/S5/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 5.

Test purpose:

1. When the coordination level is "none", dialogue establishment confirmation is not outstanding, and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is "none" and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
3. When the coordination level is "none", superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent, leaf node IUT receives a TP-U-ABORT req on the dialogue with the superior, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC. The IUT receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
5. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has been sent, leaf node IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
6. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
7. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
8. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

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9. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent on the dialogue with the superior, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
10. When the coordination level is "commitment", the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
11. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
12. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
13. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.1.6.4 BV/SE/DL/S5/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 5.

Test purpose:

1. When the coordination level is "none", the IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.6.5 BV/SE/DL/S5/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 5.

Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and dialogue establishment confirmation has been requested, subordinate IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, leaf node IUT receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a

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TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.

4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
5. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
6. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
8. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
9. When the coordination level is “commitment”, the Unchained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.1.6.6 BV/SE/DL/S5/C-BEGIN-RC (CBGRC)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-BEGIN-RC" in State 5.

Test purpose:

1. When dialogue establishment confirmation has been requested, superior IUT receives a C-BEGIN-RC. After that the IUT receives a TP-GRANT-CONTROL req, and sends a TP-GRANT-CONTROL-RI.

11.1.1.6.7 BV/SE/DL/S5/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 5.

Test purpose:

1. A leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.

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2. Intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.1.6.8 BV/SE/DL/S5/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 5.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Chained transactions fu is selected on all dialogue, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.1.6.9 BV/SE/DL/S5/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, on all dialogues, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" on a dialogue with a subordinate in State 5.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.6.10 BV/SE/DL/S5/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 5.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 5.

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Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation has been requested, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC.
3. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
4. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.7 BV/SE/DL/State 11(S11)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-END-DIALOGUE(confirmation=TRUE) req issued (S.C or P.C with control, dialogue establishment confirmation is not outstanding and the coordination level is "none")" state (State 11).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
3. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
4. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)
5. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)
6. TP-END-DIALOGUE-RC (EDRC)
7. TP-U-ERROR-RI (UERI)
8. TP-U-ERROR-RC (UERC)
9. TP-U-ABORT req (UARQ)
10. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
11. ABRT APDU (AABRT)
12. TP-REQUEST-CONTROL-RI (RCRI)
13. TP-HANDSHAKE-RI (HSRI)
14. C-BEGIN-RI (CBGRI)
15. U-ASE APDU (UAAP)

11.1.1.7.1 BV/SE/DL/S11/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 11.

Test purpose:

1. Superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a TP-END-DIALOGUE-RC, and ends the dialogue normally. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.1.7.2 BV/SE/DL/S11/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 11.

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Test purpose:

1. Superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.1.7.3 BV/SE/DL/S11/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 11.

Test purpose:

1. Superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.1.7.4 BV/SE/DL/S11/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 11.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that a new dialogue is established over the same association.

11.1.1.7.5 BV/SE/DL/S11/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE)-RI" in State 11.

Test purpose:

1. When no TP-U-ERROR reqs are outstanding, the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(end-dialogue-collision) ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When a TP-U-ERROR req is outstanding, the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(end-dialogue-collision) ind, and aborts the dialogue. After that a new dialogue is established over the same association.

11.1.1.7.6 BV/SE/DL/S11/TP-END-DIALOGUE-RC (EDRC)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-END-DIALOGUE-RC" in State 11.

Test purpose:

1. IUT receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.7.7 BV/SE/DL/S11/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 11.

Test purpose:

1. When the shared control fu is selected and no TP-U-ERROR reqs are outstanding, the IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

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2. When the shared control fu is selected and the IUT has a TP-U-ERROR req outstanding, the IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-U-ERROR-RC, receives a U-ASE APDU, issues a TP-DATA ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When the polarized control fu is selected, the IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.1.7.8 BV/SE/DL/S11/TP-U-ERROR-RC (UERC)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RC" in State 11.

Test purpose:

1. When the shared control fu is selected and a TP-U-ERROR req is outstanding, the IUT receives a TP-U-ERROR-RC. After that the IUT receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.7.9 BV/SE/DL/S11/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the coordination level is "none" and the IUT receives a "TP-U-ABORT req" in State 11.

Test purpose:

1. IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.

11.1.1.7.10 BV/SE/DL/S11/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 11.

Test purpose:

1. When the coordination level is "none", the IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.

11.1.1.7.11 BV/SE/DL/S11/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 11.

Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.

11.1.1.7.12 BV/SE/DL/S11/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-REQUEST-CONTROL-RI" in State 11.

Test purpose:

1. IUT receives a TP-REQUEST-CONTROL-RI. After that the IUT receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.7.13 BV/SE/DL/S11/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, handshake fu is selected and the IUT receives a "TP-HANDSHAKE-RI" in State 11.

Test purpose:

1. When no TP-U-ERROR reqs are outstanding, the IUT receives a TP-HANDSHAKE-RI, and issues a TP-HANDSHAKE ind. After that the IUT receives a TP-HANDSHAKE rsp, sends a TP-HANDSHAKE-RC,

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receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and ends the dialogue normally. After that a new dialogue is established over the same association.

2. When a TP-U-ERROR req is outstanding, "IUT" receives a TP-HANDSHAKE-RI. After that the IUT receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.7.14 BV/SE/DL/S11/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the shared control fu is selected and the IUT receives a "C-BEGIN-RI" in State 11.

Test purpose:

1. Subordinate IUT receives a C-BEGIN-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, and sends a C-ROLLBACK-RI. After that the IUT receives a C-ROLLBACK-RC, and aborts the dialogue.

11.1.1.7.15 BV/SE/DL/S11/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 11.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "U-ASE APDU" in State 11.

Test purpose:

1. When no TP-U-ERROR reqs are outstanding, the IUT receives a U-ASE APDU, and issues a TP-DATA ind. After that the IUT receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and ends the dialogue normally. After that a new dialogue is established over the same association.
2. When a TP-U-ERROR req is outstanding, the IUT receives a U-ASE APDU. After that the IUT receives a TP-U-ERROR-RC, receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and ends the dialogue normally. After that a new dialogue is established over the same association.

11.1.1.8 BV/SE/DL/State 12(S12)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 12.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-END-DIALOGUE(confirmation=TRUE) ind received (S.C or P.C without control, dialogue establishment confirmation is not outstanding the coordination level is "none")" state (State 12).

Subgroups:

1. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
2. TP-U-ERROR req (UERQ)
3. TP-U-ABORT req (UARQ)
4. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
5. ABRT APDU (AABRT)

11.1.1.8.1 BV/SE/DL/S12/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 12.

Test group objective: Test valid protocol behaviour when the IUT that has not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(rejected) rsp" in State 12.

Test purpose:

1. Subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a TP-BEGIN-DIALOGUE(rejected(user))-RC.

11.1.1.8.2 BV/SE/DL/S12/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 12.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR req" in State 12.

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Test purpose:

1. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends two TP-U-ERROR-RCs, and sends a TP-U-ERROR-RI.
2. When a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-U-ERROR-RI.
3. When a TP-BEGIN-DIALOGUE-RC has been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.
4. Superior IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI.

11.1.1.8.3 BV/SE/DL/S12/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 12.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 12.

Test purpose:

1. When the shared control fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent and two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends two TP-U-ERROR-RCs, sends a TP-ABORT-RI, and aborts the dialogue.
2. When a TP-BEGIN-DIALOGUE-RC has not been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-ABORT-RI, and aborts the dialogue.
3. When a TP-BEGIN-DIALOGUE-RC has been sent and no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
4. Superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.

11.1.1.8.4 BV/SE/DL/S12/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 12.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 12.

Test purpose:

1. IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.

11.1.1.8.5 BV/SE/DL/S12/ABRT APDU (AABRT)

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 12.

Test purpose:

1. IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.

11.1.1.9 BV/SE/DL/State 15(S15)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT is in the "TP-PREPARE req issued C-READY ind awaited (S.C or P.C with control, the coordination level is "commitment" dialogue with subordinate)" state (State 15).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
3. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
4. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)
5. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)
6. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

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7. TP-U-ERROR-RI (UERI)
8. TP-U-ERROR-RC (UERC)
9. TP-U-ABORT req (UARQ)
10. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
11. ABRT APDU (AABRT)
12. TP-REQUEST-CONTROL-RI (RCRI)
13. TP-HANDSHAKE-RI (HSRI)
14. U-ASE APDU (UAAP)
15. TP-COMMIT req (CMRQ)
16. C-READY-RI (CRDRI)
17. TP-ROLLBACK req (RBRQ)
18. C-ROLLBACK-RI (CRBRI)
19. C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRI)
20. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
21. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)
22. C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI] (ABHRI-CRBRI)
23. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERIRCRIr)

11.1.1.9.1 BV/SE/DL/S15/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 15.

Test purpose:

1. When dialogue establishment confirmation has been requested, root node IUT with a subordinate receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-READY-RI, issues a TP-READY ind, receives a TP-COMMIT req, and sends a C-COMMIT-RI.
2. When dialogue establishment confirmation is not outstanding, root node IUT with a subordinate receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a C-READY-RI, issues a TP-READY ind, receives a TP-COMMIT req, and sends a C-COMMIT-RI.

11.1.1.9.2 BV/SE/DL/S15/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 15.

Test purpose:

1. Root node IUT with a subordinate receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.9.3 BV/SE/DL/S15/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected and the IUT receives "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 15.

Test purpose:

1. Root node IUT with a subordinate receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.9.4 BV/SE/DL/S15/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 15.

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Test purpose:

1. Root node IUT with a subordinate receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE cnf, and sends a C-ROLLBACK-RC.

11.1.1.9.5 BV/SE/DL/S15/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and the IUT receives a "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 15.

Test purpose:

1. Root node IUT with a subordinate receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.9.6 BV/SE/DL/S15/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, the Unchained transactions fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE)-RI" in State 15.

Test purpose:

1. When the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and no TP-U-ERROR reqs were outstanding when the TP-BEGIN-TRANSACTION req was received, root node IUT with a subordinate receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation is not outstanding, a C-BEGIN-RC has not been received and no TP-U-ERROR reqs were outstanding when the TP-BEGIN-TRANSACTION req was received, root node IUT with a subordinate receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.9.7 BV/SE/DL/S15/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives a "TP-U-ERROR-RI" in State 15.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ERROR-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RI to each subordinate.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ERROR-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, receives a C-BEGIN-RI, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ERROR-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
4. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ERROR-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

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11.1.1.9.8 BV/SE/DL/S15/TP-U-ERROR-RC (UERC)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-U-ERROR-RC" in State 15.

Test purpose:

1. When the shared control fu is selected and a TP-U-ERROR req is outstanding, root node IUT with a subordinate receives a TP-U-ERROR-RC. After that the IUT receives a C-READY-RI, issues a TP-READY ind, receives a TP-COMMIT req, and sends a C-COMMIT-RI.

11.1.1.9.9 BV/SE/DL/S15/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 15.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Chained transactions fu is selected, intermediate node IUT with a subordinate receives a TP-U-ABORT req, and sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the subordinate, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, aborts the dialogue, and becomes a leaf node.
4. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
5. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.1.9.10 BV/SE/DL/S15/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding, a C-BEGIN-RC has not been received and the IUT receives "P-DATA[TP-ABORT(user)-RI] ind" in State 15.

Test purpose:

1. Superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.1.9.11 BV/SE/DL/S15/ABRT APDU (AABRT)

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 15.

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Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
3. When the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
4. When the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.1.9.12 BV/SE/DL/S15/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected, dialogue establishment confirmation is not outstanding and the IUT receives a "TP-REQUEST-CONTROL-RI" in State 15.

Test purpose:

1. IUT receives a TP-REQUEST-CONTROL-RI. After that the IUT receives a C-READY-RI, issues a TP-READY ind, receives a TP-COMMIT req, and sends a C-COMMIT-RI.

11.1.1.9.13 BV/SE/DL/S15/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, dialogue establishment confirmation is not outstanding and the IUT receives a "TP-HANDSHAKE-RI" in State 15.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RI to all the subordinates.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, receives a C-BEGIN-RI, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
4. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-

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ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.1.9.14 BV/SE/DL/S15/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives "U-ASE APDU" in State 15.

Test purpose:

1. When the shared control fu is selected, root node IUT with a subordinate receives a U-ASE APDU, and issues a TP-DATA ind. After that the IUT receives a C-READY-RI, issues a TP-READY ind, receives a TP-COMMIT req, and sends a C-COMMIT-RI.
2. When the polarized control fu is selected, a TP-PREPARE(data-permitted=TRUE)-RI has been sent, root node IUT with a subordinate receives a U-ASE APDU, and issues a TP-DATA ind. After that the IUT receives a C-READY-RI, issues a TP-READY ind, receives a TP-COMMIT req, and sends a C-COMMIT-RI.

11.1.1.9.15 BV/SE/DL/S15/TP-COMMIT req (CMRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives a "TP-COMMIT req" in State 15.

Test purpose:

1. Root node IUT with a subordinate receives a TP-COMMIT req, receives a C-READY-RI, and sends a C-COMMIT-RI.

11.1.1.9.16 BV/SE/DL/S15/C-READY-RI (CRDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives “C-READY-RI” in State 15.

Test purpose:

1. Root node IUT with a subordinate receives a C-READY-RI, and issues a TP-READY ind. After that the IUT receives a TP-COMMIT req, and sends a C-COMMIT-RI.

11.1.1.9.17 BV/SE/DL/S15/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-ROLLBACK req" in State 15.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.1.9.18 BV/SE/DL/S15/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 15.

Test purpose:

1. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the

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superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

3. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
4. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.1.9.19 BV/SE/DL/S15/C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI]" in State 15.

Test purpose:

1. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI], issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] from a subordinate, issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] from a subordinate, issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
4. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] from a subordinate, issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.1.9.20 BV/SE/DL/S15/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

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Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" in State 15.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.9.21 BV/SE/DL/S15/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 15.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.9.22 BV/SE/DL/S15/C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI] (ABHRI-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives a "C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI]" in State 15.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI], issues a TP-U-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI], issues a TP-U-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.9.23 BV/SE/DL/S15/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERIRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 15.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 15.

Test purpose:

1. Root node IUT receives a C-RECOVER(ready)-RI[TP-RECOVER-RI], sends a C-RECOVER(unknown)-RC on the channel, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU.
2. Intermediate node IUT with a subordinate receives a C-RECOVER(ready)-RI[TP-RECOVER-RI], sends a C-RECOVER(unknown)-RC on the channel, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.10 BV/SE/DL/State 20.1(S20.1)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT is in the "TP-COMMIT req received a C-READY ind awaited (S.C or P.C with control, dialogue establishment confirmation is not outstanding, the coordination level is "commitment", dialogue with subordinate)" state (State 20.1).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

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3. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
4. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)
5. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)
6. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)
7. TP-U-ERROR-RI (UERI)
8. TP-U-ERROR-RC (UERC)
9. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
10. ABRT APDU (AABRT)
11. TP-REQUEST-CONTROL-RI (RCRI)
12. TP-HANDSHAKE-RI (HSRI)
13. U-ASE APDU (UAAP)
14. C-READY-RI (CRDRI)
15. C-ROLLBACK-RI (CRBRI)
16. C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRI)
17. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
18. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)
19. C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI] (ABHRI-CRBRI)
20. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERIRCRIr)

11.1.1.10.1 BV/SE/DL/S20.1/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 20.1.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI.

11.1.1.10.2 BV/SE/DL/S20.1/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, receives a C-ROLLBACK-RI, sends a C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT sends a C-BEGIN-RI to the other subordinates.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, receives a C-ROLLBACK-RI, sends a C-ROLLBACK-RC, and sends a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RC to the superior. After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Chained transactions fu is selected, intermediate node IUT with a subordinate receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, and receives a C-ROLLBACK-RI from the subordinate. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RC to the subordinate, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and becomes a leaf node.
4. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, receives a C-ROLLBACK-RI, sends a C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to all the subordinates. After

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that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.

5. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, receives a C-ROLLBACK-RI, sends a C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.3 BV/SE/DL/S20.1/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected and the IUT receives "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 20.1.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, receives a C-ROLLBACK-RI, sends a C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
2. Intermediate node IUT with multiple subordinates receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, receives a C-ROLLBACK-RI, sends a C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.4 BV/SE/DL/S20.1/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE(rollback) cnf, sends a C-ROLLBACK-RC to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT sends a C-BEGIN-RI to the other subordinates.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] from a subordinate, issues a TP-BEGIN-DIALOGUE(rollback) cnf, sends a C-ROLLBACK-RC to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RC to the superior. After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Chained transactions fu is selected, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE(rollback) cnf, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and becomes a leaf node.
4. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE(rollback) cnf, sends a C-ROLLBACK-RC to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, and issues a TP-ROLLBACK-COMPLETE ind.

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5. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] from a subordinate, issues a TP-BEGIN-DIALOGUE(rollback) cnf, sends a C-ROLLBACK-RC to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.5 BV/SE/DL/S20.1/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the shared control fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and receives a "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 20.1.

Test purpose:

1. Root node IUT with multiple subordinates receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, issues a TP-P-ABORT(rollback, diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, sends C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
2. Intermediate node IUT with multiple subordinates receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, issues a TP-P-ABORT(rollback, diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, sends C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.6 BV/SE/DL/S20.1/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the shared control fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE)-RI" in State 20.1.

Test purpose:

1. When the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and no TP-U-ERROR reqs were outstanding when a TP-BEGIN-TRANSACTION req was received, root node IUT with multiple subordinates receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(rollback, diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, sends C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
2. When the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and TP-U-ERROR reqs were outstanding when a TP-BEGIN-TRANSACTION req was received, intermediate node IUT with multiple subordinates receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(rollback, diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, sends C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind.
3. When C-BEGIN-RC has not been received and a TP-U-ERROR req is outstanding, root node IUT with a subordinate receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI.

11.1.1.10.7 BV/SE/DL/S20.1/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-U-ERROR-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT

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receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RI to each subordinate.

2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ERROR-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, receives a C-BEGIN-RI, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Unchained transactions fu is selected, root node IUT with multiple subordinates sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
4. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-U-ERROR-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.8 BV/SE/DL/S20.1/TP-U-ERROR-RC (UERC)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RC" in State 20.1.

Test purpose:

1. When the shared control fu is selected and a TP-U-ERROR req is outstanding, root node IUT with a subordinate receives a TP-U-ERROR-RC. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI.

11.1.1.10.9 BV/SE/DL/S20.1/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the a C-BEGIN-RC has not been received and the IUT receives "P-DATA[TP-ABORT(user)-RI] ind" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-ABORT(user)-RI, issues a TP-U-ABORT(rollback) ind, receives a C-ROLLBACK-RI, sends C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT sends a C-BEGIN-RI to the other subordinates.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-ABORT(user)-RI, issues a TP-U-ABORT(rollback) ind, receives a C-ROLLBACK-RI, sends C-ROLLBACK-RC and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RC to the superior. After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Chained transactions fu is selected, intermediate node IUT with a subordinate receives a TP-ABORT(user)-RI, issues a TP-U-ABORT(rollback) ind, and receives a C-ROLLBACK-RI from the subordinate. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RC to the subordinate, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and becomes a leaf node.
4. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a TP-ABORT(user)-RI, issues a TP-U-ABORT(rollback) ind, receives a C-ROLLBACK-RI, sends C-ROLLBACK-RC, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
5. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-ABORT(user)-RI from a subordinate, issues a TP-U-ABORT(rollback) ind, receives a C-ROLLBACK-

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RI from the subordinate, sends a C-ROLLBACK-RC to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.10 BV/SE/DL/S20.1/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
3. When the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
4. When the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.1.10.11 BV/SE/DL/S20.1/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives a "TP-REQUEST-CONTROL-RI" in State 20.1.

Test purpose:

1. IUT receives a TP-REQUEST-CONTROL-RI. After that the IUT receives a C-READY-RI, issues a TP-COMMIT ind, and sends a C-COMMIT-RI.

11.1.1.10.12 BV/SE/DL/S20.1/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-HANDSHAKE-RI" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to each subordinate.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, receives a C-BEGIN-RI, issues a TP-

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ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, After that the IUT sends a C-BEGIN-RI to the other subordinates.

3. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
4. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a TP-HANDSHAKE-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.13 BV/SE/DL/S20.1/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "U-ASE APDU" in State 20.1.

Test purpose:

1. When the shared control fu is selected, the Chained transactions fu is selected, root node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to each subordinate.
2. When the shared control fu is selected, the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, receives a C-BEGIN-RI, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the shared control fu is selected, the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
4. When the shared control fu is selected, the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind.
5. When the polarized control fu is selected, a TP-PREPARE(data-permitted=TRUE)-RI has been sent, the Chained transactions fu is selected, root node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to each subordinate.
6. When the polarized control fu is selected, a TP-PREPARE(data-permitted=TRUE)-RI has been sent, the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, receives a C-BEGIN-RI, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the polarized control fu is selected, a TP-PREPARE(data-permitted=TRUE)-RI has been sent, the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind.
8. When the polarized control fu is selected, a TP-PREPARE(data-permitted=TRUE)-RI has been sent, the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a U-ASE APDU, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. The IUT

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receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC, and issues a TP-ROLLBACK-COMPLETE ind.

11.1.1.10.14 BV/SE/DL/S20.1/C-READY-RI (CRDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-READY-RI" in State 20.1.

Test purpose:

1. Root node IUT with a subordinate receives a C-READY-RI, and issues a TP-COMMIT ind. After that the IUT sends a C-COMMIT-RI.

11.1.1.10.15 BV/SE/DL/S20.1/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
4. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.1.10.16 BV/SE/DL/S20.1/C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI]" in State 20.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI], issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Chained transactions fu is selected, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] from a subordinate, issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

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3. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI], issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
4. When the Unchained transactions fu is selected, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] from a subordinate, issues a TP-ROLLBACK ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.1.10.17 BV/SE/DL/S20.1/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" in State 20.1.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.10.18 BV/SE/DL/S20.1/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 20.1.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.10.19 BV/SE/DL/S20.1/C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI] (ABHRI-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI]" in State 20.1.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI], issues a TP-U-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI], issues a TP-U-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.1.10.20 BV/SE/DL/S20.1/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERIRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 13, State 20.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 20.1.

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Test purpose:

1. Root node IUT receives a C-RECOVER(ready)-RI[TP-RECOVER-RI], sends a C-RECOVER(unknown)-RC on the channel, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends an A-ABORT[TP-ABORT(provider)-RI] req.
2. Intermediate node IUT with a subordinate receives a C-RECOVER(ready)-RI[TP-RECOVER-RI], sends a C-RECOVER(unknown)-RC on the channel, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, and sends an A-ABORT[TP-ABORT(provider)-RI] req. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2 BV/SE/Handshake(HS)

Reference: ISO/IEC 10026-3, Annex A, Table 14.

Test group objective: Test valid protocol behaviour in the "Handshake" state table (Table 14). Check that the IUT performs the correct action as stated in the Standard.

Subgroups:

1. State 6 (S6)
2. State 7 (S7)
3. State 8 (S8)
4. State 9 (S9)
5. State 10 (S10)
6. State 13 (S13)
7. State 14 (S14)

11.1.2.1 BV/SE/HS/State 6(S6)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-HANDSHAKE req issued" state (State 6).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
3. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
4. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]
5. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)
6. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)
7. TP-U-ERROR req (UERQ)
8. TP-U-ERROR-RI (UERI)
9. TP-U-ERROR-RC (UERC)
10. TP-U-ABORT req (UARQ)
11. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
12. ABRT APDU (AABRT)
13. TP-REQUEST-CONTROL-RI (RCRI)
14. TP-HANDSHAKE-RI (HSRI)
15. TP-HANDSHAKE-RC (HSRC)
16. C-BEGIN-RI (CBGRI)
17. U-ASE APDU (UAAP)
18. TP-DEFER(end-dialogue)-RI (DFRIe)
19. C-PREPARE-RI[TP-PREPARE-RI] (PRRI)
20. TP-ROLLBACK req (RBRQ)
21. C-ROLLBACK-RI (CRBRI)
22. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
23. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

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11.1.2.1.1 BV/SE/HS/S6/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa):

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 6.

Test purpose:

1. When dialogue establishment confirmation has been requested, the coordination level is “none” and no TP-U-ERROR reqs are outstanding, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. When dialogue establishment confirmation is not outstanding, the coordination level is “none” and no TP-U-ERROR reqs are outstanding, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
3. When dialogue establishment confirmation has been requested, the coordination level is "commitment" and no TP-U-ERROR reqs are outstanding, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
4. When dialogue establishment confirmation is not outstanding, the coordination level is "commitment" and no TP-U-ERROR reqs are outstanding, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.2 BV/SE/HS/S6/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 6.

Test purpose:

1. When the coordination level is “none”, superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or TP-BID-RI.
2. When the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.1.3 BV/SE/HS/S6/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 6.

Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment" and the Unchained transactions fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.1.4 BV/SE/HS/S6/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 6.

Test purpose:

1. Superior IUT receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE cnf, and sends a C-ROLLBACK-RC.

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11.1.2.1.5 BV/SE/HS/S6/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 6.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that a new dialogue is established over the same association.
2. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and no TP-U-ERROR reqs were outstanding when a TP-BEGIN-TRANSACTION req was received, superior IUT receives a TP-END-DIALOGUE(confirmation=FALSE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.1.6 BV/SE/HS/S6/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE)-RI" in State 6.

Test purpose:

1. When the coordination level is "none" and no TP-U-ERROR reqs are outstanding, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-U-ERROR req, sends a TP-U-ERROR-RI, receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. When the coordination level is "none" and a TP-U-ERROR req is outstanding, subordinate IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
3. When the coordination level is "none", dialogue establishment confirmation is not outstanding and no TP-U-ERROR req is outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, and issues a TP-END-DIALOGUE ind. After that the IUT receives a TP-U-ERROR req, sends a TP-U-ERROR-RI, receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
4. When the coordination level is "none", dialogue establishment confirmation is not outstanding and a TP-U-ERROR req is outstanding, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
5. When the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and no TP-U-ERROR reqs were outstanding when a TP-BEGIN-TRANSACTION req was received, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.
6. When the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and a TP-U-ERROR req was outstanding when a TP-BEGIN-TRANSACTION req was received, superior IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.7 BV/SE/HS/S6/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-U-ERROR req" in State 6.

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Test purpose:

1. IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-U-ERROR-RC, receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.8 BV/SE/HS/S6/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 6.

Test purpose:

1. When the shared control fu is selected and no TP-U-ERROR reqs are outstanding, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When the shared control fu is selected and a TP-U-ERROR req is outstanding, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-U-ERROR-RC, receives a TP-DATA req, and sends a U-ASE APDU.
3. When the shared control fu is selected, no TP-U-ERROR reqs are outstanding, and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. When the shared control fu is selected, a TP-U-ERROR req is outstanding and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-U-ERROR-RC, receives a TP-DATA req, and sends a U-ASE APDU.
5. When the polarized control fu is selected, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
6. When the polarized control fu is selected and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.2.1.9 BV/SE/HS/S6/TP-U-ERROR-RC (UERC)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-U-ERROR-RC" in State 6.

Test purpose:

1. When a TP-U-ERROR req is outstanding, the IUT receives a TP-U-ERROR-RC. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.10 BV/SE/HS/S6/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 6.

Test purpose:

1. When the coordination level is “none”, the IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is “commitment”, dialogue establishment IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.

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4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
5. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
6. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
8. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.2.1.11 BV/SE/HS/S6/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 6.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
2. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.1.12 BV/SE/HS/S6/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 6.

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Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment", leaf node IUT receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
4. When the coordination level is "commitment", the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
5. When the coordination level is "commitment", the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
6. When the coordination level is "commitment", the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
7. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
8. When the coordination level is “commitment”, the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.2.1.13 BV/SE/HS/S6/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives a "TP-REQUEST-CONTROL-RI" in State 6.

Test purpose:

1. IUT receives a TP-REQUEST-CONTROL-RI, and issues a TP-REQUEST-CONTROL ind. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.14 BV/SE/HS/S6/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-HANDSHAKE-RI" in State 6.

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Test purpose:

1. When no TP-U-ERROR reqs are outstanding, subordinate IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, After that the IUT receives a TP-HANDSHAKE rsp, sends a TP-HANDSHAKE-RC, receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. When a TP-U-ERROR req is outstanding, subordinate IUT receives a TP-HANDSHAKE-RI. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
3. When dialogue establishment confirmation is not outstanding and no TP-U-ERROR req is outstanding, superior IUT receives a TP-HANDSHAKE-RI, issues a TP-HANDSHAKE ind, After that the IUT receives a TP-HANDSHAKE rsp, sends a TP-HANDSHAKE-RC, receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
4. When dialogue establishment confirmation is not outstanding and a TP-U-ERROR req is outstanding, superior IUT receives a TP-HANDSHAKE-RI. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.15 BV/SE/HS/S6/TP-HANDSHAKE-RC (HSRC)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-RC" in State 6.

Test purpose:

1. When the shared control fu is selected and a TP-U-ERROR req is outstanding, the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, After that the IUT receives a TP-U-ERROR-RC, receives a TP-DATA req, and sends a U-ASE APDU.
2. When the shared control fu is selected and no TP-U-ERROR reqs are outstanding, the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
3. When the polarized control fu is selected, the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.16 BV/SE/HS/S6/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, the coordination level is "none", the shared control fu is selected, and the IUT receives a "C-BEGIN-RI" from a subordinate in State 6.

Test purpose:

1. The IUT that is a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-P-ABORT(diagnostic=begin-transaction-reject) ind, and sends a C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI]. After that the IUT receives a C-ROLLBACK-RC, and aborts the dialogue.
2. The IUT that is not a root node in a transaction tree receives a C-BEGIN-RI, issues a TP-BEGIN-TRANSACTION ind, and sends a C-BEGIN-RC. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.1.17 BV/SE/HS/S6/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives "U-ASE APDU" in State 6.

Test purpose:

1. When no TP-U-ERROR reqs are outstanding, the IUT receives a U-ASE APDU, and issues a TP-DATA ind. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. When a TP-U-ERROR req is outstanding, superior IUT receives a U-ASE APDU. After that the IUT receives a TP-U-ERROR-RC, receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

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11.1.2.1.18 BV/SE/HS/S6/TP-DEFER(end-dialogue)-RI (DFRIe)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", Shared Control fu is selected, a TP-DEFER(end-dialogue)-RI has not been received and the IUT receives a "TP-DEFER(end-dialogue)-RI" in State 6.

Test purpose:

1. Subordinate IUT receives a TP-DEFER(end-dialogue)-RI, and issues a TP-DEFERRED-END-DIALOGUE ind. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a C-PREPARE-RI[TP-PREPARE-RI], issues a TP-PREPARE ind, receives a TP-COMMIT req, sends a C-READY-RI, receives a C-COMMIT-RI, issues a TP-COMMIT ind, receives a TP-DONE req, sends a C-COMMIT-RC, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally.

11.1.2.1.19 BV/SE/HS/S6/C-PREPARE-RI[TP-PREPARE-RI] (PRRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the shared control fu is selected, the coordination level is "commitment" and the IUT receives a "C-PREPARE-RI[TP-PREPARE-RI]" in State 6.

Test purpose:

1. Subordinate IUT receives a C-PREPARE-RI[TP-PREPARE-RI], and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI.

11.1.2.1.20 BV/SE/HS/S6/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 6.

Test purpose:

1. A leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. Intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.2.1.21 BV/SE/HS/S6/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 6.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates
3. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

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4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.2.1.22 BV/SE/HS/S6/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" from a subordinate in State 6.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.1.23 BV/SE/HS/S6/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 6.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 6.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.2 BV/SE/HS/State 7(S7)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-HANDSHAKE ind received" state (State 7).

Subgroups:

1. TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)
2. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
3. TP-U-ERROR req (UERQ)
4. TP-U-ERROR-RI (UERI)
5. TP-U-ABORT req (UARQ)

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6. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
7. ABRT APDU (AABRT)
8. TP-REQUEST-CONTROL req (RCRQ)
9. TP-HANDSHAKE req (HSRQ)
10. C-BEGIN-RC (CBGRC)
11. TP-DATA req (DTRQ)
12. TP-ROLLBACK req (RBRQ)
13. C-ROLLBACK-RI (CRBRI)
14. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
15. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.2.2.1 BV/SE/HS/S7/TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT that has received a TP-BEGIN-DIALOGUE(confirmation=always)-RI and not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(accepted) rsp" in State 7.

Test purpose:

1. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC. After that the IUT receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.
2. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

11.1.2.2.2 BV/SE/HS/S7/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT that has not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(rejected) rsp" in State 7.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a TP-BEGIN-DIALOGUE(rejected(user))-RC.
2. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC].

11.1.2.2.3 BV/SE/HS/S7/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR req" in State 7.

Test purpose:

1. When a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirmation is not outstanding and the coordination level is "none", subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirmation is not outstanding and the coordination level is "commitment", subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. When the polarized control fu is selected, superior IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

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11.1.2.2.4 BV/SE/HS/S7/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 7.

Test purpose:

1. When the shared control fu is selected and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-U-ERROR-RC, and sends a U-ASE APDU.
2. When the shared control fu is selected and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC.
3. When the shared control fu is selected, superior IUT receives a TP-U-ERROR-RI, issues a TP-U-ERROR ind, and sends a TP-U-ERROR-RC.

11.1.2.2.5 BV/SE/HS/S7/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 7.

Test purpose:

1. When the coordination level is "none", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is "none" and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
3. When the coordination level is "none", superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent, leaf node IUT receives a TP-U-ABORT req, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. The IUT receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
5. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has been sent, leaf node IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
6. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and a C-BEGIN-RC and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
7. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
8. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

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9. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
10. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
11. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
12. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
13. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.2.2.6 BV/SE/HS/S7/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 7.

Test purpose:

1. When the coordination level is "none", the IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.2.7 BV/SE/HS/S7/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 7.

Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and dialogue establishment confirmation has been requested, subordinate IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.

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3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, leaf node IUT receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
5. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
6. When the coordination level is "commitment", the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the coordination level is "commitment", the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
8. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
9. When the coordination level is "commitment", the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT receive a TP-DATA req and sends a U-ASE APDU.

11.1.2.2.8 BV/SE/HS/S7/TP-REQUEST-CONTROL req (RCRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives a "TP-REQUEST-CONTROL req" in State 7.

Test purpose:

1. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-REQUEST-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-REQUEST-CONTROL-RI.
2. When the coordination level is "none", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-REQUEST-CONTROL req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-REQUEST-CONTROL-RI.
3. When TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
4. Superior IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

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11.1.2.2.9 BV/SE/HS/S7/TP-HANDSHAKE req (HSRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-HANDSHAKE req" in State 7.

Test purpose:

1. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-HANDSHAKE-RI.
2. When the coordination level is “none”, dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-HANDSHAKE req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-HANDSHAKE-RI.
3. When dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-HANDSHAKE req, and sends a TP-HANDSHAKE-RI.
4. Superior IUT receives a TP-HANDSHAKE req, and sends a TP-HANDSHAKE-RI.

11.1.2.2.10 BV/SE/HS/S7/C-BEGIN-RC (CBGRC)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-BEGIN-RC" in State 7.

Test purpose:

1. Superior IUT receives a C-BEGIN-RC. After that the IUT receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

11.1.2.2.11 BV/SE/HS/S7/TP-DATA req (DTRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-DATA req" in State 7.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, the coordination level is “commitment” and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a U-ASE APDU.
2. When dialogue establishment confirmation is not outstanding, the coordination level is “none” and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-DATA req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a U-ASE APDU.
3. When dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. Superior IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.2.12 BV/SE/HS/S7/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 7.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. When dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

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11.1.2.2.13 BV/SE/HS/S7/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 7.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.2.2.14 BV/SE/HS/S7/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" from a subordinate in State 7.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.2.15 BV/SE/HS/S7/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 7.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 7.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.

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2. When dialogue establishment confirmation has been requested, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
4. When dialogue establishment confirmation is not outstanding, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.3 BV/SE/HS/State 8(S8)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-HANDSHAKE ind received on state6 or req issued on state7 (S.C)" state (State 8).

Subgroups:

1. TP-U-ERROR req (UERQ)
2. TP-U-ERROR-RI (UERI)
3. TP-U-ABORT req (UARQ)
4. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
5. ABRT APDU (AABRT)
6. TP-HANDSHAKE-RC (HSRC)
7. C-BEGIN-RC (CBGRC)
8. TP-ROLLBACK req (RBRQ)
9. C-ROLLBACK-RI (CRBRI)
10. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
11. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.2.3.1 BV/SE/HS/S8/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR req" in State 8.

Test purpose:

1. IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.3.2 BV/SE/HS/S8/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 8.

Test purpose:

1. IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

11.1.2.3.3 BV/SE/HS/S8/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 8.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is "none", superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, leaf node IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

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4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
5. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
6. When the coordination level is “commitment”, the Chained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates
7. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
8. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
9. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.2.3.4 BV/SE/HS/S8/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 8.

Test purpose:

1. When the coordination level is "none", the IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.3.5 BV/SE/HS/S8/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 8.

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Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment", leaf node IUT receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
4. When the coordination level is "commitment", the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
5. When the coordination level is "commitment", the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
6. When the coordination level is "commitment", the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
7. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
8. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.2.3.6 BV/SE/HS/S8/TP-HANDSHAKE-RC (HSRC)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-RC" in State 8.

Test purpose:

1. IUT receives a TP-HANDSHAKE-RC, and issues a TP-HANDSHAKE cnf. After that the IUT receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

11.1.2.3.7 BV/SE/HS/S8/C-BEGIN-RC (CBGRC)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-BEGIN-RC" in State 8.

Test purpose:

1. Superior IUT receives a C-BEGIN-RC. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

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11.1.2.3.8 BV/SE/HS/S8/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 8.

Test purpose:

1. A leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. Intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.2.3.9 BV/SE/HS/S8/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 8.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates
3. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.2.3.10 BV/SE/HS/S8/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" for a subordinate in State 8.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.

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2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.3.11 BV/SE/HS/S8/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 8.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 8.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.4 BV/SE/HS/State 9(S9)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 9.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-END-DIALOGUE ind received on state 6 (S.C and the coordination level is “none”)” state (State 9).

Subgroups:

1. TP-U-ERROR req (UERQ)
2. TP-U-ERROR-RI (UERI)
3. TP-U-ABORT req (UARQ)
4. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
5. ABRT APDU (AABRT)
6. TP-HANDSHAKE-RC (HSRC)

11.1.2.4.1 BV/SE/HS/S9/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR req" in State 9.

Test purpose:

1. IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-HANDSHAKE-RC, issues a TP-HANDSHAKE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.4.2 BV/SE/HS/S9/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 9.

Test purpose:

1. IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.

11.1.2.4.3 BV/SE/HS/S9/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 9.

Test purpose:

1. IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.

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11.1.2.4.4 BV/SE/HS/S9/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 9.

Test purpose:

1. IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.

11.1.2.4.5 BV/SE/HS/S9/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 9.

Test purpose:

1. IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.

11.1.2.4.6 BV/SE/HS/S9/TP-HANDSHAKE-RC (HSRC)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-RC" in State 9.

Test purpose:

1. IUT receives a TP-HANDSHAKE-RC, and issues a TP-HANDSHAKE cnf. After that the IUT receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.

11.1.2.5 BV/SE/HS/State 10(S10)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 10.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-HANDSHAKE ind received on state 11 (S.C and the coordination level is "none")" state (State 10).

Subgroups:

1. TP-U-ERROR req (UERQ)
2. TP-U-ERROR-RI (UERI)
3. TP-U-ABORT req (UARQ)
4. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
5. ABRT APDU (AABRT)

11.1.2.5.1 BV/SE/HS/S10/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 10.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR req" in State 10.

Test purpose:

1. IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-END-DIALOGUE-RC, issues a TP-END-DIALOGUE cnf, and then a new dialogue is established over the same association.

11.1.2.5.2 BV/SE/HS/S10/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 10.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 10.

Test purpose:

1. IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-HANDSHAKE rsp, and sends a TP-HANDSHAKE-RC.

11.1.2.5.3 BV/SE/HS/S10/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 10.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 10.

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Test purpose:

1. IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.

11.1.2.5.4 BV/SE/HS/S10/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 10.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 10.

Test purpose:

1. IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.

11.1.2.5.5 BV/SE/HS/S10/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 10.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 10.

Test purpose:

1. IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.

11.1.2.6 BV/SE/HS/State 13(S13)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-HANDSHAKE-AND-GRANT-CONTROL req issued (P.C)" state (State 13).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
3. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
4. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)
5. TP-U-ERROR-RI (UERI)
6. TP-U-ABORT req (UARQ)
7. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
8. ABRT APDU (AABRT)
9. TP-REQUEST-CONTROL-RI (RCRI)
10. TP-HANDSHAKE-AND-GRANT-CONTROL-RC (HGRC)
11. TP-ROLLBACK req (RBRQ)
12. C-ROLLBACK-RI (CRBRI)
13. C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)
14. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.2.6.1 BV/SE/HS/S13/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 13.

Test purpose:

1. When dialogue establishment confirmation has been requested and the coordination level is “none”, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, issues a TP-HANDSHAKE-AND-GRANT-CONTROL cnf, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
2. When dialogue establishment confirmation is not outstanding and the coordination level is “none”, superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, issues a TP-HANDSHAKE-AND-GRANT-CONTROL cnf, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

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3. When dialogue establishment confirmation has been requested and the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, issues a TP-HANDSHAKE-AND-GRANT-CONTROL cnf, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
4. When dialogue establishment confirmation is not outstanding and the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, issues a TP-HANDSHAKE-AND-GRANT-CONTROL cnf, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.2.6.2 BV/SE/HS/S13/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 13.

Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(provider))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.6.3 BV/SE/HS/S13/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 13.

Test purpose:

1. When the coordination level is "none", superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the coordination level is "commitment" and the Unchained transactions fu is selected, superior IUT receives a TP-BEGIN-DIALOGUE(rejected(user))-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.6.4 BV/SE/HS/S13/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI

Test purpose:

1. Superior IUT receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE cnf, and sends a C-ROLLBACK-RC.

11.1.2.6.5 BV/SE/HS/S13/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 13.

Test purpose:

1. Subordinate IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
2. When dialogue establishment confirmation is not outstanding, superior IUT receives a TP-U-ERROR-RI, and issues a TP-U-ERROR ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

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11.1.2.6.6 BV/SE/HS/S13/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 13.

Test purpose:

1. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, leaf node IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
2. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected on all dialogues, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
4. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
5. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
6. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
7. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

11.1.2.6.7 BV/SE/HS/S13/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 13.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.

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2. When the coordination level is "none" and dialogue establishment confirmation is not outstanding, superior IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.6.8 BV/SE/HS/S13/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 13.

Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment", leaf node IUT receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
4. When the coordination level is "commitment", the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
5. When the coordination level is "commitment", the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
6. When the coordination level is "commitment", the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
7. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
8. When the coordination level is “commitment”, the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.2.6.9 BV/SE/HS/S13/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-REQUEST-CONTROL-RI" in State 13.

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Test purpose:

1. IUT receives a TP-REQUEST-CONTROL-RI. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, issues a TP-HANDSHAKE-AND-GRANT-CONTROL cnf, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.2.6.10 BV/SE/HS/S13/TP-HANDSHAKE-AND-GRANT-CONTROL-RC(HGRC)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-AND-GRANT-CONTROL-RC" in State 13.

Test purpose:

1. IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, issues a TP-HANDSHAKE-AND-GRANT-CONTROL cnf, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.

11.1.2.6.11 BV/SE/HS/S13/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 13.

Test purpose:

1. A leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. Intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.2.6.12 BV/SE/HS/S13/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 13.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates,

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receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.2.6.13 BV/SE/HS/S13/C-ROLLBACK-RI[TP-ABORT(provider)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment", the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider)-RI]" from a subordinate in State 13.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
2. Intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(provider)-RI], issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.6.14 BV/SE/HS/S13/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 13.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 13.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.2.7 BV/SE/HS/State 14(S14)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-HANDSHAKE-AND-GRANT-CONTROL ind received (P.C)" state (State 14).

Subgroups:

1. TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)
2. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
3. TP-U-ERROR req (UERQ)
4. TP-U-ABORT req (UARQ)
5. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
6. ABRT APDU (AABRT)
7. TP-ROLLBACK req (RBRQ)
8. C-ROLLBACK-RI (CRBRI)
9. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.2.7.1 BV/SE/HS/S14/TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the IUT that has received a TP-BEGIN-DIALOGUE(confirmation=always)-RI and not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(accepted) rsp" in State 14.

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Test purpose:

1. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL rsp, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RC.
2. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC. After that the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL rsp, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RC.

11.1.2.7.2 BV/SE/HS/S14/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the IUT that has not sent a TP-BEGIN-DIALOGUE-RC receives a "TP-BEGIN-DIALOGUE(rejected) rsp" in State 14.

Test purpose:

1. When the coordination level is "none", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a TP-BEGIN-DIALOGUE(rejected(user))-RC.
2. When the coordination level is "commitment", subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC].

11.1.2.7.3 BV/SE/HS/S14/TP-U-ERROR req (UERQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR req" in State 14.

Test purpose:

1. When a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirmation is not outstanding and the coordination level is "none", subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When a TP-BEGIN-DIALOGUE-RC has not been sent, dialogue establishment confirmation is not outstanding and the coordination level is "commitment", subordinate IUT receives a TP-U-ERROR req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
3. When a TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. When the polarized control fu is selected, superior IUT receives a TP-U-ERROR req, and sends a TP-U-ERROR-RI. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.2.7.4 BV/SE/HS/S14/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 14.

Test purpose:

1. When the coordination level is "none", dialogue establishment confirmation is not outstanding and TP-BEGIN-DIALOGUE-RC has not been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a TP-ABORT-RI, and aborts the dialogue.
2. When the coordination level is "none" and TP-BEGIN-DIALOGUE-RC has been sent, subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
3. When the coordination level is "none", superior IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and aborts the dialogue.
4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has not been sent, leaf node IUT receives a TP-U-ABORT req, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC. The IUT receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

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5. When the coordination level is “commitment”, dialogue establishment confirmation is not outstanding, a TP-BEGIN-DIALOGUE-RC has been sent, leaf node IUT receives a TP-U-ABORT req, receives a TP-DONE req, sends a C-ROLLBACK-RI[TP-ABORT-RI], receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
6. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and a C-BEGIN-RC and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
7. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates, and becomes a root node.
8. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has not been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and a C-BEGIN-RC and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
9. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, a TP-BEGIN-DIALOGUE-RC has been sent, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
10. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
11. When the coordination level is "commitment", the Chained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
12. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, root node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.
13. When the coordination level is "commitment", the Unchained transactions fu is selected on all dialogues, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates. The IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue.

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11.1.2.7.5 BV/SE/HS/S14/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 14.

Test purpose:

1. When the coordination level is "none", the IUT receives a TP-ABORT(user)-RI, and issues a TP-U-ABORT ind. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and C-BEGIN-RC has not been received, superior IUT receives a TP-ABORT(user)-RI, issues a TP-U-ABORT ind, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.2.7.6 BV/SE/HS/S14/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 14.

Test purpose:

1. When the coordination level is "none", the IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When the coordination level is "commitment" and dialogue establishment confirmation has been requested, subordinate IUT receives an ABRT APDU, issues a TP-P-ABORT ind, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, leaf node IUT receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
4. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to all the subordinates.
5. When the coordination level is "commitment", dialogue establishment confirmation is not outstanding, the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to all the subordinates.
6. When the coordination level is "commitment", the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
7. When the coordination level is "commitment", the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.
8. When the coordination level is "commitment", the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.

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9. When the coordination level is “commitment”, the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a U-ASE APDU to the other subordinates.

11.1.2.7.7 BV/SE/HS/S14/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "TP-ROLLBACK req" in State 14.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. When dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a TP-ROLLBACK req, sends a C-ROLLBACK-RI to all the subordinates, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.
3. Root node IUT with multiple subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.2.7.8 BV/SE/HS/S14/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI" in State 14.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When the Chained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding, intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When the Unchained transactions fu is selected and dialogue establishment confirmation is not outstanding, root node IUT with multiple subordinates receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding , intermediate node IUT with multiple subordinates receives a C-ROLLBACK-RI from a subordinate, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RC to the subordinate. After that the IUT sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

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11.1.2.7.9 BV/SE/HS/S14/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 14, State 14.

Test group objective: Test valid protocol behaviour when the coordination level is "commitment" and the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 14.

Test purpose:

1. When dialogue establishment confirmation is not outstanding, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and issues a TP-U-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.
2. When dialogue establishment confirmation has been requested, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC.
3. When dialogue establishment confirmation is not outstanding, root node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC.
4. When dialogue establishment confirmation is not outstanding, intermediate node IUT with a subordinate receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.3 BV/SE/Commitment(CM)

Reference: ISO/IEC 10026-3, Annex A, Table 15.

Test group objective: Test valid protocol behaviour in the "Commitment" state table (Table 15). Check that the IUT performs the correct action as stated in the Standard.

Subgroups:

1. State 17 (S17)
2. State 18 (S18)
3. State 20.2 (S20.2)
4. State 20.3 (S20.3)
5. State 21.1 (S21.1)
6. State 21.2 (S21.2)
7. State 21.3 (S21.3)
8. State 21.4 (S21.4)
9. State 21.5 (S21.5)
10. State 21.6 (S21.6)
11. State 25 (S25)

11.1.3.1 BV/SE/CM/State 17(S17)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 17.

Test group objective: Test valid protocol behaviour when the IUT is in the "C-READY ind received TP-COMMIT req awaited" state (State 17).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. ABRT APDU (AABRT)
3. TP-COMMIT req (CMRQ)
4. TP-ROLLBACK req (RBRQ)
5. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRDRIr)

11.1.3.1.1 BV/SE/CM/S17/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 17.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 17.

Test purpose:

1. Superior IUT receives a TP-U-ABORT req, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI].

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11.1.3.1.2 BV/SE/CM/S17/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 17.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 17.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
3. When the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
4. When the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.3.1.3 BV/SE/CM/S17/TP-COMMIT req (CMRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 17.

Test group objective: Test valid protocol behaviour when the IUT is an intermediate node and receives a "TP-COMMIT req" in State 17.

Test purpose:

1. When all C-READY-RCs have not been received, root node IUT with multiple subordinates receives a TP-COMMIT req, sends a C-PREPARE-RI[TP-PREPARE-RI] to the other subordinates, receives a C-READY-RI from the other subordinates, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.
2. When all C-READY-RCs have been received, root node IUT with one or more subordinates receives a TP-COMMIT req, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.
3. When all C-READY-RCs have not been received, intermediate node IUT with multiple subordinates receives a TP-COMMIT req, sends a C-PREPARE-RI[TP-PREPARE-RI] to the other subordinates, receives a C-READY-RI from the other subordinates, and sends a C-READY-RI to the superior.
4. When all C-READY-RCs have been received, intermediate node IUT with one or more subordinates receives a TP-COMMIT req, and sends a C-READY-RI to the superior.

11.1.3.1.4 BV/SE/CM/S17/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 17.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-ROLLBACK req" in State 17.

Test purpose:

1. Root node IUT with one or more subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

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11.1.3.1.5 BV/SE/CM/S17/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRDRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 17.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 17.

Test purpose:

1. Root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, sends a C-RECOVER(unknown)-RI, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, and sends a C-ROLLBACK-RI to the other subordinates.
2. Intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, sends a C-RECOVER(unknown)-RI, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, and sends a C-ROLLBACK-RI to the other subordinates.

11.1.3.2 BV/SE/CM/State 18(S18)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when the IUT is in the "C-PREPARE ind received" state (State 18).

Subgroups:

1. TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)
2. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
3. TP-U-ABORT req (UARQ)
4. ABRT APDU (AABRT)
5. TP-COMMIT req (CMRQ)
6. TP-ROLLBACK req (RBRQ)
7. C-ROLLBACK-RI (CRBRI)
8. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.3.2.1 BV/SE/CM/S18/TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation has been requested and the IUT receives “TP-BEGIN-DIALOGUE(accepted) rsp” in State 18.

Test purpose:

1. When two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends two TP-U-ERROR-RCs.
2. When no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, sends a TP-BEGIN-DIALOGUE(accepted)-RC, and sends a C-BEGIN-RC.

11.1.3.2.2 BV/SE/CM/S18/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when TP-BEGIN-DIALOGUE-RC has not been sent and the IUT receives a "TP-BEGIN-DIALOGUE(rejected) rsp" in State 18.

Test purpose:

1. Subordinate IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp, and sends a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC].

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11.1.3.2.3 BV/SE/CM/S18/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives a "TP-U-ABORT req "in State 18.

Test purpose:

1. When two TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, sends two TP-U-ERROR-RCs, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI].
2. When no TP-U-ERROR-RIs have been received, subordinate IUT receives a TP-U-ABORT req, sends a TP-BEGIN-DIALOGUE(accepted)-RC, sends a C-BEGIN-RC, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI].

11.1.3.2.4 BV/SE/CM/S18/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 18.

Test purpose:

1. A leaf node IUT receives an ABRT APDU, and issues a TP-P-ABORT(rollback) ind. After that the IUT receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
2. Intermediate node IUT with one or more subordinates receives an ABRT APDU, issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.3.2.5 BV/SE/CM/S18/TP-COMMIT req (CMRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives a "TP-COMMIT req" in State 18.

Test purpose:

1. When the minor-synchronize-token is not owned, leaf node IUT receives a TP-COMMIT req, and sends a C-READY-RI.
2. When the minor-synchronize-token is owned, leaf node IUT receives a TP-COMMIT req, sends a P-TOKEN-GIVE req, and sends a C-READY-RI.
3. Intermediate node IUT with one or more subordinates receives a TP-COMMIT req, sends a C-PREPARE-RI[TP-PREPARE-RI] to all the subordinates, receives a C-READY-RI from all the subordinates, and sends a C-READY-RI to the superior.

11.1.3.2.6 BV/SE/CM/S18/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when dialogue establishment confirmation is not outstanding and the IUT receives a "TP-ROLLBACK req" in State 18.

Test purpose:

1. A leaf node IUT receives a TP-ROLLBACK req, receives a TP-DONE req, and sends a C-ROLLBACK-RI.
2. Intermediate node IUT with one or more subordinates receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.3.2.7 BV/SE/CM/S18/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 18.

Test purpose:

1. When the Unchained transactions fu is selected and the shared control fu is selected, leaf node IUT receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

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2. When the Unchained transactions fu is selected and the polarized control fu is selected, leaf node IUT receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-ROLLBACK-RC. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP_REQUEST-CONTROL-RI.
3. When the Chained transactions fu is selected and the shared control fu is selected, leaf node IUT receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, receives a TP-DONE req, sends a C-ROLLBACK-RC. After that the IUT receives a C-BEGIN-RI, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, receives a TP-DATA req, and sends a U-ASE APDU.
4. When the Chained transactions fu is selected and the polarized control fu is selected, leaf node IUT receives a C-ROLLBACK-RI, issues a TP-ROLLBACK ind, receives a TP-DONE req, sends a C-ROLLBACK-RC. After that the IUT receives a C-BEGIN-RI, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
5. Intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.3.2.8 BV/SE/CM/S18/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 18.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 18.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT(rollback) ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-ROLLBACK-RC. After that a new dialogue is established over the same association.
2. Intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.3.3 BV/SE/CM/State 20.2(S20.2)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.2.

Test group objective: Test valid protocol behaviour when the IUT is in the "last ready awaited" state (State 20.2).

Subgroups:

1. ABRT APDU (AABRT)
2. C-ROLLBACK-RI (CRBRI)
3. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)
4. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

11.1.3.3.1 BV/SE/CM/S20.2/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.2.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 20.2.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, issues a TP-P-ABORT(rollback) ind, and sends a C-ROLLBACK-RI to all the subordinates.
2. When the Chained transactions fu is selected, root node IUT with multiple subordinates receives an ABRT APDU from one particular subordinate, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
3. When the Unchained transactions fu is selected, root node IUT with multiple subordinates receives an ABRT APDU from one particular subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

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4. When the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, receives a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT sends a C-BEGIN-RI to the other subordinates.
5. When the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends a C-ROLLBACK-RI to the other subordinates, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, and aborts the dialogue. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.3.3.2 BV/SE/CM/S20.2/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 20.2.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind and sends a C-ROLLBACK-RI to all the subordinates.

11.1.3.3.3 BV/SE/CM/S20.2/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 20.2.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.3.3.4 BV/SE/CM/S20.2/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 20.2.

Test purpose:

1. Root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, sends a C-RECOVER(unknown)-RI, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, and sends a C-ROLLBACK-RI to the other subordinates.
2. Intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, sends a C-RECOVER(unknown)-RI, issues a TP-P-ABORT(rollback) ind, issues a TP-HEURISTIC-REPORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, and sends a C-ROLLBACK-RI to the other subordinates.

11.1.3.4 BV/SE/CM/State 20.3(S20.3)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT is in the "commit indication awaited" state (State 20.3).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. ABRT APDU (AABRT)
3. C-COMMIT-RI (CCMRI)
4. C-COMMIT-RI+C-BEGIN-RI (CCMBGRI)

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5. C-COMMIT-RI[TP-ABORT(user)-RI] (ABRIu-CCMRI)
6. C-ROLLBACK-RI (CRBRI)
7. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)
8. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)
9. C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)
10. C-RECOVER(commit)-RI (CRCRIc)
11. C-RECOVER(unknown)-RC (CRCRCu)
12. C-RECOVER(retry-later)-RC (CRCRCr)
13. TP-TOKEN-PLEASE-RI (TPRI)

11.1.3.4.1 BV/SE/CM/S20.3/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 20.3.

Test purpose:

1. When the dialogue has not been and will not be detached, transaction branch has entered the termination phase and TP-U-ABORT reqs are authorized during transaction termination, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for one particular subordinate, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI[TP-ABORT(user)-RI] to the subordinate, and sends a C-COMMIT-RI to the other subordinates.
2. When the dialogue has not been and will not be detached, transaction branch has entered the termination phase and TP-U-ABORT reqs are authorized during transaction termination, intermediate node IUT with multiple subordinates receives a TP-U-ABORT req for the superior dialogue, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to all the subordinates, receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-ABORT(user)-RI] to the superior.

11.1.3.4.2 BV/SE/CM/S20.3/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 20.3.

Test purpose:

1. When the dialogue has not been and will not be detached and a recovery-context-handle was given by the superior at TP-INITIALIZE time, subordinate IUT receives an ABRT APDU, execute one of following behaviours.
   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.
   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI[TP-RECOVER-RI] on the channel.
2. When the dialogue has not been and will not be detached and no recovery-context-handle was given by the superior at TP-INITIALIZE time, subordinate IUT receives an ABRT APDU, execute one of following behaviours.
   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.
   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI on the channel.
3. When the dialogue has been or will be detached, dialogue has not been detached and a recovery-context-handle was given by the superior at TP-INITIALIZE time, subordinate IUT receives an ABRT APDU, execute one of following behaviours.

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a. The IUT is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

b. The IUT is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI[TP-RECOVER-RI] on the channel.

4. When the dialogue has been or will be detached, dialogue has not been detached and no recovery-context-handle was given by the superior at TP-INITIALIZE time, subordinate IUT receives an ABRT APDU, execute one of following behaviours.

a. The IUT is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

b. The IUT is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI on the channel.

5. When the dialogue has been or will be detached, channel attached to the IUT for recovery and a recovery-context-handle was given by the superior at TP-INITIALIZE time, subordinate IUT receives an ABRT APDU, execute one of following behaviours.

a. The IUT is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

b. The IUT is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI[TP-RECOVER-RI] on the channel.

6. When the dialogue has been or will be detached, channel attached to the IUT for recovery and no recovery-context-handle was given by the superior at TP-INITIALIZE time, subordinate IUT receives an ABRT APDU, execute one of following behaviours.

a. The IUT is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

b. The IUT is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(ready)-RI on the channel.

7. When the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

a. The IUT issues a TP-P-ABORT ind, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

b. The IUT issues a TP-P-ABORT ind, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel.

8. When the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

a. The IUT issues a TP-P-ABORT ind, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

b. The IUT issues a TP-P-ABORT ind, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel.

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9. When the dialogue has been or will be detached, dialogue has not been detached, intermediate node IUT with multiple subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.
   a. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.
   b. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel.
10. When the dialogue has been or will be detached, dialogue has not been detached, intermediate node IUT with multiple subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.
   a. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.
   b. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel.
11. When the dialogue has been or will be detached, channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.
   a. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.
   b. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel.
12. When the dialogue has been or will be detached, channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.
   a. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.
   b. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel.

11.1.3.4.3 BV/SE/CM/S20.3/C-COMMIT-RI (CCMRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-COMMIT-RI" in State 20.3.

Test purpose:

1. When the dialogue has not been and will not be detached and the dialogue with superior is not chaining, leaf node IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC. After that the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-END-DIALOGUE ind, receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.

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2. When the dialogue has not been and will not be detached and the dialogue with superior is not chaining, intermediate node IUT with one or more subordinates receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates. After that the IUT receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC to the superior. After that the IUT receives a TP-END-DIALOGUE(confirmation=TRUE)-RI, issues a TP-END-DIALOGUE ind, receives a TP-END-DIALOGUE rsp, and sends a TP-END-DIALOGUE-RC.
3. When the dialogue has not been and will not be detached and TP-DEFER(end-dialogue)-RI has been received, leaf node IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, sends a C-COMMIT-RC, and ends the dialogue normally. After that a new dialogue is established over the same association.
4. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has been received and a TP-DEFER(end-dialogue)-RI has been sent to each subordinate, intermediate node IUT with one or more subordinates receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates. After that the IUT receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, sends a C-COMMIT-RC to the superior, and ends the dialogue normally. After that the IUT accepts a new dialogue established from the superior.

11.1.3.4.4 BV/SE/CM/S20.3/C-COMMIT-RI+C-BEGIN-RI (CCMBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-COMMIT-RI+C-BEGIN-RI" in State 20.3.

Test purpose:

1. When dialogue with superior is chaining and TP-DEFER(end-dialogue)-RI has not been received, leaf node IUT receives a C-COMMIT-RI and a C-BEGIN-RI from the superior, issues a TP-COMMIT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC. After that the IUT receives a C-PREPARE-RI, issues a TP-PREPARE ind, receives a TP-COMMIT req, and sends a C-READY-RI.
2. When dialogue with superior is chaining and TP-DEFER(end-dialogue)-RI has not been received, intermediate node IUT with one or more subordinates receives a C-COMMIT-RI and a C-BEGIN-RI from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI and a C-BEGIN-RI to all the subordinates. After that the IUT receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC to the superior.

11.1.3.4.5 BV/SE/CM/S20.3/C-COMMIT-RI[TP-ABORT(user)-RI] (ABRIu-CCMRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-COMMIT-RI[TP-ABORT(user)-RI]" in State 20.3.

Test purpose:

1. When a TP-U-ABORT req has not been received, leaf node IUT receives a C-COMMIT-RI[TP-ABORT(user)-RI] from the superior, issues a TP-COMMIT ind, issues a TP-U-ABORT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, sends a C-COMMIT-RC, and aborts the dialogue. After that a new dialogue is established over the same association.
2. When a TP-U-ABORT req has not been received, intermediate node IUT with one or more subordinates receives a C-COMMIT-RI[TP-ABORT(user)-RI] from the superior, issues a TP-COMMIT ind, issues a TP-U-ABORT ind, and sends a C-COMMIT-RI to all the subordinates. After that the IUT receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, sends a C-COMMIT-RC to the superior, and aborts the dialogue. After that a new dialogue is established over the same association.
3. When a TP-U-ABORT req is received, intermediate node IUT with one or more subordinates receives a C-COMMIT-RI[TP-ABORT(user)-RI] from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates. After that the IUT receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, sends a C-COMMIT-RC to the superior, and aborts the dialogue. After that a new dialogue is established over the same association.

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11.1.3.4.6 BV/SE/CM/S20.3/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 20.3.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates.
2. When channel detached to the IUT for recovery, intermediate node IUT with one or more subordinates that has received an ABRT APDU from one particular subordinate, receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to the other subordinates.
3. When channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates that has received an ABRT APDU from one particular subordinate, receives a C-ROLLBACK-RI from the superior, issues a TP-ROLLBACK ind, sends a C-RECOVER(unknown)-RC on the channel, and sends a C-ROLLBACK-RI to the other subordinates.

11.1.3.4.7 BV/SE/CM/S20.3/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 20.3.

Test purpose:

1. When the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, issues a TP-U-ABORT(rollback) ind, and sends a C-ROLLBACK-RI to all the subordinates.
2. When the dialogue has been or will be detached, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates.

11.1.3.4.8 BV/SE/CM/S20.3/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 20.3.

Test purpose:

1. When the dialogue has not been and will not be detached and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from one particular subordinate, execute one of following.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.
   c. The IUT issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req to one subordinate.
   d. The IUT issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

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2. When the dialogue has not been and will not be detached and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI on the channel.

   c. The IUT issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channe in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

   d. The IUT issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

3. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

   c. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req to one subordinate.

   d. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

4. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI on the channel.

   c. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

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d. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU, sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

5. When the dialogue has been or will be detached, dialogue has been detached, channel detached to the IUT for recovery and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel.

   c. The IUT sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req to one subordinate.

   d. The IUT sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

6. When the dialogue has been or will be detached, dialogue has been detached, channel detached to the IUT for recovery and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI on the channel.

   c. The IUT sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI to one subordinate.

   d. The IUT sends a C-RECOVER(retry-later)-RC on the channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI to one subordinate.

7. When the dialogue has been or will be detached, dialogue has been detached, channel attached to the IUT for recovery and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI, and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a new channel, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the old channel.

   c. The IUT sends a C-RECOVER(retry-later)-RC on the old channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the new channel.

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d. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, sends a C-RECOVER(retry-later)-RC on the old channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req to one subordinate.

e. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, sends a C-RECOVER(retry-later)-RC on the old channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

8. When the dialogue has been or will be detached, dialogue has been detached, channel attached to the IUT for recovery and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI on the old channel.

   c. The IUT sends a C-RECOVER(retry-later)-RC on the old channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and sends a C-RECOVER(commit)-RI on the new channel.

   d. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, sends a C-RECOVER(retry-later)-RC on the old channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] to one subordinate.

   e. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, sends a C-RECOVER(retry-later)-RC on the old channel, receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-COMMIT-RI to the other subordinates, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI to one subordinate.

11.1.3.4.9 BV/SE/CM/S20.3/C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(commit)-RI[TP-RECOVER-RI]" in State 20.3.

Test purpose:

1. When the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   c. The IUT issues a TP-P-ABORT ind, sends an ABRT[TP-ABORT(provider)-RI] APDU, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

2. When the dialogue has been detached or will be detached but has not yet been, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel, sends an ABRT[TP-ABORT(provider)-RI] APDU, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   c. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

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3. When the dialogue has been or will be detached and channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on a new channel, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the new channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   c. The IUT issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

11.1.3.4.10 BV/SE/CM/S20.3/C-RECOVER(commit)-RI (CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(commit)-RI" in State 20.3.

Test purpose:

1. When the dialogue has been or will be detached, channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI from the superior, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC to the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   b. The IUT issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

11.1.3.4.11 BV/SE/CM/S20.3/C-RECOVER(unknown)-RC (CRCRCu)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when channel attached to the IUT for recovery and the IUT receives a "C-RECOVER(unknown)-RC" in State 20.3.

Test purpose:

1. A leaf node IUT receives a C-RECOVER(unknown)-RC on the channel with superior, issues a TP-ROLLBACK ind, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
2. Intermediate node IUT with one or more subordinates receives a C-RECOVER(unknown)-RC on the channel with superior, issues a TP-ROLLBACK ind, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.3.4.12 BV/SE/CM/S20.3/C-RECOVER(retry-later)-RC (CRCRCr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when channel attached to the IUT for recovery and the IUT receives a "C-RECOVER(retry-later)-RC" in State 20.3.

Test purpose:

1. When the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates that has sent a C-RECOVER(ready)-RI to the superior, receives a C-RECOVER(retry-later)-RC on the channel with superior, execute one of following behaviours.

   a. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   b. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

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c. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

d. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

2. When the channel is established in the two-way-recovery mode and token is not awaited, intermediate node IUT with one or more subordinates that has sent a C-RECOVER(ready)-RI to the superior, receives a C-RECOVER(retry-later)-RC on the channel with superior, execute one of following behaviours.

   a. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   b. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   c. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

   d. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, and sends a C-COMMIT-RI to all the subordinates.

3. When the channel is established in the one-way-recovery mode, leaf node IUT that has sent a C-RECOVER(ready)-RI to the superior, receives a C-RECOVER(retry-later)-RC on the channel with superior, execute one of following behaviours.

   a. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, issues a TP-COMMIT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-RECOVER(done)-RC on the channel.

   b. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.

   c. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, issues a TP-COMMIT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-RECOVER(done)-RC on the channel.

   d. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.

4. When the channel is established in the two-way-recovery mode and token is awaited, leaf node IUT that has sent a C-RECOVER(ready)-RI to the superior, receives a C-RECOVER(retry-later)-RC on the channel with superior, execute one of following behaviours.

   a. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, issues a TP-COMMIT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-RECOVER(done)-RC on the channel.

   b. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.

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c. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, issues a TP-COMMIT ind, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-RECOVER(done)-RC on the channel.

d. The IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI from the superior, sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-COMMIT ind, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.3.4.13 BV/SE/CM/S20.3/P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind (TPRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 20.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind" in State 20.3.

Test purpose:

1. When channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind from one particular subordinate, ignores it. After that the IUT receives a C-COMMIT-RI from the superior, issues a TP-COMMIT ind, sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel, and sends a C-COMMIT-RI to the other subordinates.

11.1.3.5 BV/SE/CM/State21.1(S21.1)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT is in the "commit confirm awaited" state (State 21.1).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. ABRT APDU (AABRT)
3. TP-DONE(heuristic-report) req (DNRQh)
4. C-COMMIT-RC (CCMRC)
5. C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CCMRC)
6. C-COMMIT-RC[TP-ABORT(user)-RI] (ABRIu-CCMRC)
7. C-COMMIT-RC[TP-ABORT-RI+TP-HEURISTIC-REPORT-RI] (ABHRRI-CCMRC)
8. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)
9. C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CRCRCd)
10. C-RECOVER(retry-later)-RC (CRCRCr)
11. P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind (TGRIt)
12. P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind (TPRI)

11.1.3.5.1 BV/SE/CM/S21.1/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 21.1.

Test purpose:

1. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the dialogue is chaining with a subordinate, superior IUT receives a TP-U-ABORT req. After that the IUT receives a C-COMMIT-RC, receives a TP-DONE req, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI].
2. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the dialogue is not chaining with a subordinate, superior IUT receives a TP-U-ABORT req. After that the IUT receives a C-COMMIT-RC, receives a TP-DONE req, and sends a P-DATA[TP-ABORT(user)-RI] req.

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11.1.3.5.2 BV/SE/CM/S21.1/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 21.1.

Test purpose:

1. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with one particular subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

2. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

3. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

4. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular

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subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

5. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

6. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK ind, issues a TP-COMMIT-COMPLETE ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

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7. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RI to the other subordinates, After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

8. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

9. When the dialogue has been or will be detached, dialogue has not been detached, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

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a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

10. When the dialogue has been or will be detached, dialogue has not been detached, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

    a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

    b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

11. When the dialogue has been or will be detached, dialogue has not been detached, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

    a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

    b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

12. When the dialogue has been or will be detached, dialogue has not been detached, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

    a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

    b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-

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DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

13. When channel attached to the IUT for recovery, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

    a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

    b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

14. When channel attached to the IUT for recovery, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

    a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

    b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

15. When channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

    a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

    b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

16. When channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

    a. The IUT and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-

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RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

b. The IUT and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

11.1.3.5.3 BV/SE/CM/S21.1/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when TP-DONE req is owed, first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State 21.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-COMMIT-RC from all the subordinates, issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-COMMIT-RC from all the subordinates, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
3. When dialogue with superior has not received a TP-U-ABORT req, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-COMMIT-RC from all the subordinates, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.
4. When dialogue with superior has received a TP-U-ABORT req and the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-COMMIT-RC from all the subordinates, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.
5. When dialogue with superior has received a TP-U-ABORT req and the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-COMMIT-RC from all the subordinates, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] to the superior.

11.1.3.5.4 BV/SE/CM/S21.1/C-COMMIT-RC (CCMRC)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-COMMIT-RC" in State 21.1.

Test purpose:

1. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent and the shared control fu is selected, root node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL req has been issued, root node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
3. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL req has not been issued, root node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. When abort not issued to/received from partner and TP-U-ABORT req is received, root node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, and sends a P-DATA[TP-ABORT(user)-RI] req to one subordinate. After that the IUT receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

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5. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent and the shared control fu is selected, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
6. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL req has been issued, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
7. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL-req has not been sent, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
8. When abort not issued to/received from partner and TP-U-ABORT req is received, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, and sends a P-DATA[TP-ABORT(user)-RI] req to one subordinate. After that the IUT receives a TP-DONE req, and sends a C-COMMIT-RC to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a P-BID-RI.
9. When abort issued to/received from partner, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.3.5.5 BV/SE/CM/S21.1/C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CCMRC)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a “C-COMMIT-RC[TP-HEURISTIC-REPORT-RI]” in State 21.1.

Test purpose:

1. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent and the shared control fu is selected, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL req has been issued, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
3. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL req has not been issued, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
4. When the dialogue has not been and will not be detached and TP-DEFER(end-dialogue)-RI has been sent, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

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5. When abort not issued to/received from partner and TP-U-ABORT req is received, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, and sends a P-DATA[TP-ABORT(user)-RI] req to the subordinate. After that the IUT receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
6. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent and the shared control fu is selected, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE PDU to the subordinate.
7. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL req has been issued, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI.
8. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been sent, the polarized control fu is selected and TP-DEFERRED-GRANT-CONTROL req has not been issued, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
9. When the dialogue has not been and will not be detached and TP-DEFER(end-dialogue)-RI has been sent, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
10. When abort not issued to/received from partner and TP-U-ABORT req is received, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, and sends a P-DATA[TP-ABORT(user)-RI] req to one subordinate. After that the IUT receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
11. When abort issued to/received from partner, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

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11.1.3.5.6 BV/SE/CM/S21.1/C-COMMIT-RC[TP-ABORT(user)-RI] (ABRIu-CCMRC)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-COMMIT-RC[TP-ABORT(user)-RI]" in State 21.1.

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Test purpose:

1. When the dialogue has not been and will not be detached and the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-ABORT(user)-RI] from one particular subordinate, issues a TP-U-ABORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, the Unchained transactions fu is selected and abort not issued to/received from partner, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-ABORT(user)-RI] from one particular subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BIDRI.
3. When the dialogue has not been and will not be detached and the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-ABORT(user)-RI] from one particular subordinate, issues a TP-U-ABORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGN-DIALOGUE-RI or a TP-BID-RI.
4. When the dialogue has been or will be detached, the Unchained transactions fu is selected and abort not issued to/received from partner, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-ABORT(user)-RI] from one particular subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.3.5.7 BV/SE/CM/S21.1/C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] (ABHRRI-CCMRC)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI]" in State 21.1.

Test purpose:

1. When the dialogue has not been and will not be detached and the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] from one particular subordinate, issues a TP-U-ABORT ind, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, the Unchained transactions fu is selected and abort not issued to/received from partner, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the dialogue has not been and will not be detached and the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] from one particular subordinate, issues a TP-U-ABORT ind, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
4. When the dialogue has been or will be detached, the Unchained transactions fu is selected and abort not issued to/received from partner, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT issues a

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TP-COMMIT-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.3.5.8 BV/SE/CM/S21.1/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI- CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 21.1.

Test purpose:

1. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from one particular subordinate, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind and a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate and the channel is established in the one-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC from the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
4. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from one particular subordinate, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a channel to the subordinate, receives a C-RECOVER(done)-RC from the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates.

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5. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind and a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates.

6. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate and the channel is established in the one-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates.

7. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

8. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind and a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

9. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the one-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

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a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

10. When the dialogue has been or will be detached, dialogue has been detached and channel attached to the IUT for recovery, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, sends a C-RECOVER(retry-later)-RC on the new channel.
11. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from the subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

12. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind and a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

13. When the dialogue has not been and will not be detached, the dialogue is not chaining with a subordinate and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

14. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the

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other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and sends a C-BEGIN-RI to the other subordinates.

15. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind and a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and sends a C-BEGIN-RI to the other subordinates.

16. When the dialogue has not been and will not be detached, the dialogue is chaining with a subordinate and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and sends a C-BEGIN-RI to the other subordinates.

17. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

18. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

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b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind and a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

19. When the dialogue has been or will be detached, dialogue has not been detached and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

    a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

    b. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a T-BID-RI.

20. When the dialogue has been or will be detached, dialogue has been detached and channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, sends a C-RECOVER(retry-later)-RC on the new channel.

11.1.3.5.9 BV/SE/CM/S21.1/C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CRCRCd)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI]" in State 21.1.

Test purpose:

1. When the channel is established in the one-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the channel is established in the two-way-recovery mode and token is not awaited, root node IUT with one or more subordinates receives a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.
4. When the channel is established in the two-way-recovery mode and token is not awaited, intermediate node IUT with one or more subordinates receives a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, receives a C-COMMIT-RC from the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.

11.1.3.5.10 BV/SE/CM/S21.1/C-RECOVER(retry-later)-RC (CRCRCr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when channel attached to the IUT for recovery and the IUT receives a "C-RECOVER(retry-later)-RC" in State 21.1.

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Test purpose:

1. When the channel is established in the two-way-recovery mode, token is not awaited, superior IUT receives a C-RECOVER(retry-later)-RC on the channel with subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a new channel, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the new channel.
   b. The IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the new channel.
2. When the channel is established in the two-way-recovery mode, token is not awaited, superior IUT receives a C-RECOVER(retry-later)-RC on the channel with subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] on a new channel, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the new channel.
   b. The IUT sends a C-RECOVER(commit)-RI on the new channel.
3. When the channel is established in the two-way-recovery mode, token is not awaited, superior IUT receives a C-RECOVER(retry-later)-RC on the channel with subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, receives a C-RECOVER(ready)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on a new channel, and sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the new channel.
4. When the channel is established in the two-way-recovery mode, token is not awaited, superior IUT receives a C-RECOVER(retry-later)-RC on the channel with subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, receives a C-RECOVER(ready)-RI on a new channel, and sends a C-RECOVER(commit)-RI on the new channel.
5. When the channel is established in the one-way-recovery mode, superior IUT receives a C-RECOVER(retry-later)-RC on the channel with subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] on a new channel, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the new channel.
   b. The IUT sends a C-RECOVER(commit)-RI on the new channel.
6. When the channel is established in the one-way-recovery mode, superior IUT receives a C-RECOVER(retry-later)-RC on the channel with subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, receives a C-RECOVER(ready)-RI on a new channel, and sends a C-RECOVER(commit)-RI on the new channel.

11.1.3.5.11 BV/SE/CM/S21.1/P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind (TGRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a “P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind” in State 21.1.

Test purpose:

1. When the channel is established in the two-way-recovery mode, token is awaited and channel attached to the IUT for recovery, superior IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind on the channel with subordinate, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on a channel to the subordinate.

11.1.3.5.12 BV/SE/CM/S21.1/P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind (TPRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind" in State 21.1.

Test purpose:

1. When channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind from one particular subordinate, ignores it. After

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that the IUT receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC to the superior.

2. When channel attached to the IUT for recovery, root node IUT with one or more subordinates receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind from one particular subordinate, ignores it. After that the IUT receives a C-COMMIT-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.3.6 BV/SE/CM/State21.2(S21.2)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.2.

Test group objective: Test valid protocol behaviour when the IUT is in the "commit confirm awaited need to rollback" state (State 21.2).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. ABRT APDU (AABRT)
3. TP-DONE(heuristic-report) req (DNRQh)
4. C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CCMRC)
5. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

11.1.3.6.1 BV/SE/CM/S21.2/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 21.2.

Test purpose:

1. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination, superior IUT receives a TP-U-ABORT req. After that the IUT receives a C-COMMIT-RC, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI].

11.1.3.6.2 BV/SE/CM/S21.2/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.2.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 21.2.

Test purpose:

1. Root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

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2. Root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

3. Intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which a recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RI to the other subordinates, After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

   b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

4. Intermediate node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate for which no recovery-context-handle was received at TP-INITIALIZE time, execute one of following behaviours.

   a. The IUT issues a TP-P-ABORT ind, and is assigned a channel in two-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-

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ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

b. The IUT issues a TP-P-ABORT ind, and is assigned a channel in one-way-recovery mode. After that the IUT sends a C-RECOVER(commit)-RI on the channel. After that the IUT receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, sends a C-COMMIT-RC to the superior, receives a TP-DONE req, receives a C-ROLLBACK-RC from the other subordinates, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

11.1.3.6.3 BV/SE/CM/S21.2/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.2.

Test group objective: Test valid protocol behaviour when TP-DONE req is not owed, first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State 21.2.

Test purpose:

1. Root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-COMMIT-RC from all the subordinates, sends a C-ROLLBACK-RI to all the subordinates, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. Intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-COMMIT-RC from all the subordinates, sends a C-ROLLBACK-RI to all the subordinates, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.

11.1.3.6.4 BV/SE/CM/S21.2/C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CCMRC)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-COMMIT-RC[TP-HEURISTIC-REPORT-RI]" in State 21.2.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RI to the subordinate. After that the IUT receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and issues a TP-ROLLBACK ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When abort not issued to/received from partner and TP-U-ABORT req is received, root node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI] to the subordinate. After that the IUT receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and issues a TP-ROLLBACK ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates.
3. When the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RI to the subordinate. After that the IUT receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK

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ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from one particular subordinate, sends a C-BEGIN-RC to the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

4. When abort not issued to/received from partner and TP-U-ABORT req is received, intermediate node IUT with one or more subordinates receives a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI] to the subordinate. After that the IUT receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from one particular subordinate, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and sends a C-BEGIN-RI to the other subordinates.

11.1.3.6.5 BV/SE/CM/S21.2/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 21.2.

Test purpose:

1. When the dialogue has not been and will not be detached and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates.

2. When the dialogue has not been and will not be detached and the channel is established in the two-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates.

3. When the dialogue has not been and will not be detached and the channel is established in the one-way-recovery mode, root node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, issues a TP-COMMIT-

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COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates.

4. When the dialogue has not been and will not be detached and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and sends a C-BEGIN-RI to the other subordinates.

5. When the dialogue has not been and will not be detached and the channel is established in the two-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and sends a C-BEGIN-RI to the other subordinates.

6. When the dialogue has not been and will not be detached and the channel is established in the one-way-recovery mode, intermediate node IUT with one or more subordinates receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from one particular subordinate, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU. After that the IUT sends a C-RECOVER(commit)-RI on a channel to the subordinate, receives a C-RECOVER(done)-RC on the channel with the subordinate, receives a C-COMMIT-RC from the other subordinates, sends a C-ROLLBACK-RI to the other subordinates, receives a TP-DONE req, sends a C-COMMIT-RC to the superior, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RC to the superior, and sends a C-BEGIN-RI to the other subordinates.

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11.1.3.7 BV/SE/CM/State21.3(S21.3)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.3.

Test group objective: Test valid protocol behaviour when the IUT is in the "commit confirm received" state (State 21.3).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. TP-DONE(heuristic-report) req (DNRQh)
3. TP-DONE req (DNRQ)

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11.1.3.7.1 BV/SE/CM/S21.3/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 21.3.

Test purpose:

1. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination, the dialogue is chaining with a subordinate, superior IUT receives a TP-U-ABORT req for one subordinate, sends a C-ROLLBACK-RI[TP-ABORT(user)-RI] to the subordinate, and sends a C-ROLLBACK-RI to the other subordinates.
2. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination, the dialogue is not chaining with a subordinate, superior IUT receives a TP-U-ABORT req, and sends a P-DATA[TP-ABORT(user)-RI] req.

11.1.3.7.2 BV/SE/CM/S21.3/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.3.

Test group objective: Test valid protocol behaviour when TP-DONE req is owed, first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State21.3.

Test purpose:

1. Root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, and issues a TP-COMMIT-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When dialogue with superior has not received a TP-U-ABORT req, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.
3. When dialogue with superior has received a TP-U-ABORT req and the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.
4. When dialogue with superior has received a TP-U-ABORT req and the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] to the superior.

11.1.3.7.3 BV/SE/CM/S21.3/TP-DONE req (DNRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.3.

Test group objective: Test valid protocol behaviour when TP-DONE req is owed and the IUT receives a "TP-DONE req" in State 21.3.

Test purpose:

1. When the dialogue has been or will be detached and rollback not pending, root node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has been sent and rollback not pending, root node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and ends the dialogue normally. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the dialogue has been or will be detached and rollback not pending, intermediate node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC to the superior. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
4. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has been sent and rollback not pending, intermediate node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC to the superior. and ends the dialogue normally. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

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11.1.3.8 BV/SE/CM/State21.4(S21.4)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.4.

Test group objective: Test valid protocol behaviour when the IUT is in the "commit confirm received rollback initiated" state (State 21.4).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. TP-DONE(heuristic-report) req (DNRQh)

11.1.3.8.1 BV/SE/CM/S21.4/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 21.4.

Test purpose:

1. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination, superior IUT receives a TP-U-ABORT req. After that the IUT receives a TP-DONE req, receives a C-ROLLBACK-RC from the subordinate, and sends a P-DATA[TP-ABORT(user)-RI] req.

11.1.3.8.2 BV/SE/CM/S21.4/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.4.

Test group objective: Test valid protocol behaviour when TP-DONE req is not owed, first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State 21.4.

Test purpose:

1. Root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. Intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.

11.1.3.9 BV/SE/CM/State21.5(S21.5)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.5.

Test group objective: Test valid protocol behaviour when the IUT is in the "last commit confirm awaited" state (State 21.5).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. ABRT APDU (AABRT)
3. TP-DONE(heuristic-report) req (DNRQh)
4. TP-DONE req (DNRQ)
5. C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)
6. P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind (TPRI)

11.1.3.9.1 BV/SE/CM/S21.5/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.5.

Test group objective: Test valid protocol behaviour when the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the IUT receives a "TP-U-ABORT req" in State 21.5.

Test purpose:

1. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the dialogue with superior is chaining, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-COMMIT-RC to the superior.

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2. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the dialogue with superior is chaining, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI to all the subordinates. After that the IUT receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.
3. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the dialogue with superior is not chaining, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-ABORT(user)-RI] to the superior.
4. When the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the dialogue with superior is not chaining, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT(user)-RI] to the superior.

11.1.3.9.2 BV/SE/CM/S21.5/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.5.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 21.5.

Test purpose:

1. When the dialogue has not been and will not be detached, dialogue with superior is not chaining and rollback not pending, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.
2. When the dialogue has not been and will not be detached and the dialogue with superior is chaining, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the dialogue has been or will be detached, dialogue has not been detached and rollback not pending, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.
4. When the dialogue has been or will be detached, dialogue has not been detached and rollback pending, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
5. When channel attached to the IUT for recovery and rollback not pending, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.
6. When channel attached to the IUT for recovery and rollback pending, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
7. When the dialogue has not been and will not be detached, dialogue with superior is not chaining and rollback not pending, leaf node IUT receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.
8. When the dialogue has been or will be detached, dialogue has not been detached and rollback not pending, leaf node IUT receives an ABRT APDU from the superior, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.

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9. When channel attached to the IUT for recovery and rollback not pending, leaf node IUT receives an ABRT APDU from the superior, receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind. After that a new dialogue is established over the same association.
10. When channel attached to the IUT for recovery and rollback pending, leaf node IUT receives an ABRT APDU from the superior, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.3.9.3 BV/SE/CM/S21.5/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.5.

Test group objective: Test valid protocol behaviour when TP-DONE req is not owed, first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State 21.5.

Test purpose:

1. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has been received and rollback not pending, leaf node IUT receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that a new dialogue is established over the same association.
2. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been received and the shared control fu is selected, leaf node IUT receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DATA req for the superior dialogue, and sends a U-ASE APDU to the superior.
3. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been received, the polarized control fu is selected and TP-DEFER(grant-control)-RI has been received, leaf node IUT receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DATA req for the superior dialogue, and sends a U-ASE APDU to the superior.
4. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been received, the polarized control fu is selected and TP-DEFER(grant-control)-RI has not been received, leaf node IUT receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-REQUEST-CONTROL req for the superior dialogue, and sends a TP-REQUEST-CONTROL-RI to the superior.
5. When the dialogue has been or will be detached, dialogue has not been detached, dialogue with superior is chaining and rollback pending, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
6. When the dialogue has been or will be detached, dialogue has been detached, channel attached to the IUT for recovery and rollback not pending, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] on a channel to the superior. After that a new dialogue is established over the same association.
7. When the dialogue has been or will be detached, dialogue has been detached, channel attached to the IUT for recovery and rollback pending, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI] on a channel to the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
8. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has been received and rollback not pending, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that a new dialogue is established over the same association.

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9. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been received and the shared control fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DATA req for the superior dialogue, and sends a U-ASE APDU to the superior.
10. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been received, the polarized control fu is selected and TP-DEFER(grant-control)-RI has been received, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DATA req for the superior dialogue, and sends a U-ASE APDU to the superior.
11. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has not been received, the polarized control fu is selected and TP-DEFER(grant-control)-RI has not been received, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-REQUEST-CONTROL req for the superior dialogue, and sends a TP-REQUEST-CONTROL-RI to the superior.

11.1.3.9.4 BV/SE/CM/S21.5/TP-DONE req (DNRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.5.

Test group objective: Test valid protocol behaviour when a TP-DONE req is owed and the IUT receives a "TP-DONE req" in State 21.5.

Test purpose:

1. When the dialogue has been or will be detached, dialogue has been detached, channel attached to the IUT for recovery and rollback not pending, intermediate node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-RECOVER(done)-RC on a channel to the superior. After that a new dialogue is established over the same association.
2. When the dialogue has been or will be detached, dialogue has been detached, channel attached to the IUT for recovery and rollback pending, intermediate node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-RECOVER(done)-RC on a channel to the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the dialogue has not been and will not be detached, a TP-DEFER(end-dialogue)-RI has been received and rollback not pending, intermediate node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-COMMIT-RC to the superior. After that a new dialogue is established over the same association.

11.1.3.9.5 BV/SE/CM/S21.5/C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.5.

Test group objective: Test valid protocol behaviour when the IUT receives a “C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI” in State 21.5.

Test purpose:

1. When dialogue with superior is chaining and the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a C-COMMIT-RC from all the subordinates, sends a C-ROLLBACK-RI to all subordinates, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

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c. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a C-COMMIT-RC from all subordinates, sends a C-ROLLBACK-RI to all the subordinates, receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.

2. When dialogue with superior is not chaining and the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a C-RECOVER-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind. receives a TP-DATA req, and sends a U-ASE APDU to all the subordinates.

   c. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.

3. When the dialogue has been detached or will be detached but has not yet been, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a C-RECOVER-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind. receives a TP-DATA req, and sends a U-ASE APDU to all the subordinates.

   c. The IUT sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.

4. When the dialogue has been or will be detached, dialogue has been detached and channel detached to the IUT for recovery, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel. After that the IUT receives a C-RECOVER-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind. receives a TP-DATA req, and sends a U-ASE APDU to all the subordinates.

   c. The IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.

5. When the dialogue has been or will be detached, dialogue has been detached and channel attached to the IUT for recovery, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on a new channel, execute one of following behaviours.

   a. The IUT sends a C-RECOVER(retry-later)-RC on the new channel.

   b. The IUT sends a C-RECOVER(retry-later)-RC on the old channel. After that the IUT receives a C-RECOVER-RC from all the subordinates, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind. receives a TP-DATA req, and sends a U-ASE APDU to all the subordinates.

   c. The IUT sends a C-RECOVER(retry-later)-RC on the new channel. After that the IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the old channel.

   d. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, and sends a C-RECOVER(retry-later)-RC on the old channel. After that the IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.

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6. When the dialogue has not been and will not be detached, leaf node IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
   c. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.
7. When the dialogue has been or will be detached, dialogue has been detached and channel detached to the IUT for recovery, leaf node IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel. After that the IUT receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.
   c. The IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.
8. When the dialogue has been or will be detached, dialogue has been detached and channel attached to the IUT for recovery, leaf node IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on a new channel, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the new channel.
   b. The IUT sends a C-RECOVER(retry-later)-RC on the old channel. After that the IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the new channel.
   c. The IUT sends a C-RECOVER(retry-later)-RC on the new channel. After that the IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the old channel.
   d. The IUT sends a C-RECOVER(retry-later)-RC on the new channel, and sends a C-RECOVER(retry-later)-RC on the old channel. After that the IUT receives a TP-DONE req, and issues a TP-COMMIT-COMPLETE ind, and aborts the dialogue. After that a new dialogue is established over the same association.

11.1.3.9.6 BV/SE/CM/S21.5/P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind (TPRI)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.5.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind" in State 21.5.

Test purpose:

1. When channel attached to the IUT for recovery and the dialogue with superior is chaining, subordinate IUT receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind from the superior, ignores it. After that the IUT receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-RECOVER(done)-RC on the channel.
2. When channel attached to the IUT for recovery and the dialogue with superior is not chaining, subordinate IUT receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind from the superior, ignores it. After that the IUT receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, and sends a C-RECOVER(done)-RC on the channel.

11.1.3.10 BV/SE/CM/State21.6(S21.6)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.6.

Test group objective: Test valid protocol behaviour when the IUT is in the "last commit confirm awaited need to rollback" state (State 21.6).

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Subgroups:

1. TP-U-ABORT req (UARQ)
2. ABRT APDU (AABRT)
3. TP-DONE(heuristic-report) req (DNRQh)
4. TP-DONE req (DNRQ)
5. C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)

11.1.3.10.1 BV/SE/CM/S21.6/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.6.

Test group objective: Test valid protocol behaviour when the dialogue has not been and will not be detached, TP-U-ABORT reqs are authorized during transaction termination and the IUT receives a "TP-U-ABORT req" in State 21.6.

Test purpose:

1. When the dialogue has not been and will not be detached and TP-U-ABORT reqs are authorized during transaction termination, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-COMMIT-RC to the superior.
2. When the dialogue has not been and will not be detached and TP-U-ABORT reqs are authorized during transaction termination, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.

11.1.3.10.2 BV/SE/CM/S21.6/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.6.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 21.6.

Test purpose:

1. When the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the dialogue has been detached or will be detached but has not yet been, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind, issues a TP-ROLLBACK ind, receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

11.1.3.10.3 BV/SE/CM/S21.6/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.6.

Test group objective: Test valid protocol behaviour when TP-DONE req is not owed, first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State 21.6.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-COMMIT-RC[TP-HEURISTIC-REPORT-RI] to the superior.

11.1.3.10.4 BV/SE/CM/S21.6/TP-DONE req (DNRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.6.

Test group objective: Test valid protocol behaviour when a TP-DONE req is owed and the IUT receives a "TP-DONE req" in State 21.6.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives a TP-DONE req, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, and sends a C-COMMIT-RC to the superior.

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11.1.3.10.5 BV/SE/CM/S21.6/C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 21.6.

Test group objective: Test valid protocol behaviour when the dialogue has not been and will not be detached and the IUT receives a "C-RECOVER(commit)-RI[TP-RECOVER-RI]" in State 21.6.

Test purpose:

1. When dialogue with superior is chaining and the dialogue has not been and will not be detached, intermediate node IUT with one or more subordinates receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] or C-RECOVER(commit)-RI on the channel with superior, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT sends a C-RECOVER(retry-later)-RC on the channel, issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a C-COMMIT-RC from all the subordinates, sends a C-ROLLBACK-RI to all subordinates, issues a TP-COMMIT-COMPLETE ind and a TP-ROLLBACK ind, receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
   c. The IUT issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU to the superior. After that the IUT receives a TP-DONE req, and sends a C-RECOVER(done)-RC on the channel.

11.1.3.11 BV/SE/CM/State25(S25)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 25.

Test group objective: Test valid protocol behaviour when the IUT is in the "zombie still born transaction branch" state (State 25).

Subgroups:

1. TP-COMMIT req (CMRQ)
2. TP-ROLLBACK req (RBRQ)

11.1.3.11.1 BV/SE/CM/S25/TP-COMMIT req (CMRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 25.

Test group objective: Test valid protocol behaviour when the IUT receives a “TP-COMMIT req” in State 25.

Test purpose:

1. Root node IUT with one or more subordinates receives a TP-COMMIT req sends a C-PREPARE-RI to the other subordinates, receives a C-READY-RI from the other subordinates, issues a TP-COMMIT ind, and sends a C-COMMIT-RI or a C-COMMIT-RI+C-BEGIN-RI to the other subordinates.
2. Intermediate node IUT with one or more subordinates receives a TP-COMMIT req, and sends a C-READY-RI to the superior.

11.1.3.11.2 BV/SE/CM/S25/TP-ROLLBACK req (RBRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 15, State 25.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-ROLLBACK req" in State 25.

Test purpose:

1. Superior IUT receives a TP-ROLLBACK req, and sends a C-ROLLBACK-RI to the other subordinates.

11.1.4 BV/SE/Rollback(RB)

Reference: ISO/IEC 10026-3, Annex A, Table 16.

Test group objective: Test valid protocol behaviour in the "Rollback" state table (Table 16). Check that the IUT performs the correct action as stated in the Standard.

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Subgroups:

1. State 23.1 (S23.1)
2. State 23.2 (S23.2)
3. State 23.3 (S23.3)
4. State 23.4 (S23.4)
5. State 23.5 (S23.5)
6. State 23.6 (S23.6)
7. State 23.7 (S23.7)
8. State 23.8 (S23.8)

11.1.4.1 BV/SE/RB/State 23.1(S23.1)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT is in the "rollback req issued rollback confirm awaited" state (State 23.1).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] (BDRCaRBRC)
3. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
4. P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)
5. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)
6. C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRC)
7. TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)
8. TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)
9. TP-U-ERROR-RI (UERI)
10. TP-U-ERROR-RC (UERC)
11. TP-U-ABORT req (UARQ)
12. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
13. ABRT APDU (AABRT)
14. TP-GRANT-CONTROL-RI (GCRI)
15. TP-REQUEST-CONTROL-RI (RCRI)
16. TP-HANDSHAKE-RI (HSRI)
17. TP-HANDSHAKE-RC (HSRC)
18. TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)
19. TP-HANDSHAKE-AND-GRANT-CONTROL-RC (HGRC)
20. U-ASE APDU (UAAP)
21. TP-DONE(heuristic-report) req (DNRQh)
22. TP-DONE req (DNRQ)
23. C-ROLLBACK-RI (CRBRI)
24. C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRI)
25. C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI] (ABRIp-CRBRI)
26. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)
27. C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] (ABHR-CRBRI)
28. C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRC)
29. C-ROLLBACK-RC[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI] (ABRIp-CRBRC)
30. C-ROLLBACK-RC[TP-ABORT(user)-RI] (ABRIu-CRBRC)
31. C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] (ABHR-CRBRC)
32. C-RECOVER(ready)-RI[TP-RECOVER-RI] (CRCRIr)

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11.1.4.1.1 BV/SE/RB/S23.1/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, dialogue establishment confirmation has been requested and the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, dialogue establishment confirmation has been requested and the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When dialogue establishment confirmation has been requested and the dialogue has been or will be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
4. When the Chained transactions fu is selected, dialogue establishment confirmation is not outstanding and the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
5. When the Unchained transactions fu is selected, dialogue establishment confirmation is not outstanding and the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.2 BV/SE/RB/S23.1/C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] (BDRCaRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC]" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, a TP-U-ABORT req has not been received and dialogue establishment confirmation has been requested, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] from one particular subordinate, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, a TP-U-ABORT req has not been received and dialogue establishment confirmation has been requested, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] from one particular subordinate, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When a TP-U-ABORT req is received, superior IUT receives a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC], and sends a P-DATA[TP-ABORT-RI] req.

11.1.4.1.3 BV/SE/RB/S23.1/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

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Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind from one particular subordinate, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.4 BV/SE/RB/S23.1/P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind (BDRCru)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected and the IUT receives "P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind" in State 23.1.

Test purpose:

1. When the Unchained transactions fu is selected and the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind from one particular subordinate, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the Unchained transactions fu is selected and the dialogue has been or will be detached, root node IUT with one or more subordinates receives a P-DATA[TP-BEGIN-DIALOGUE(rejected(user))-RC] ind from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.5 BV/SE/RB/S23.1/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], issues a TP-BEGIN-DIALOGUE cnf, and sends a C-ROLLBACK-RC.
2. When the dialogue has been or will be detached, root node IUT receives a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], and sends a C-ROLLBACK-RC.

11.1.4.1.6 BV/SE/RB/S23.1/C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(rejected(user))-RC] (BDRCr-CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(rejected(user))-RC]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(rejected(user))-RC] from one particular subordinate, and issues a TP-BEGIN-DIALOGUE cnf. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

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2. When the dialogue has been or will be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(rejected(user))-RC] from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.7 BV/SE/RB/S23.1/TP-END-DIALOGUE(confirmation=FALSE)-RI (EDRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and the IUT receives a "TP-END-DIALOGUE(confirmation=FALSE)-RI" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a TP-END-DIALOGUE(confirmation=FALSE)-RI from one particular subordinate, and issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, root node IUT with one or more subordinates receives a TP-END-DIALOGUE(confirmation=FALSE)-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.8 BV/SE/RB/S23.1/TP-END-DIALOGUE(confirmation=TRUE)-RI (EDRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and the IUT receives a "TP-END-DIALOGUE(confirmation=TRUE)-RI" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached and no TP-U-ERROR req was outstanding before a TP-BEGIN-TRANSACTION req is received, root node IUT with one or more subordinates receives a TP-END-DIALOGUE(confirmation=TRUE)-RI from one particular subordinate, and issues a TP-P-ABORT(diagnostic=begin-transaction-end-dialogue-collision) ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached and no TP-U-ERROR req was outstanding before a TP-BEGIN-TRANSACTION req is received, root node IUT with one or more subordinates receives a TP-END-DIALOGUE(confirmation=TRUE)-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When a dialogue has been or will be detached and an TP-U-ERROR req was outstanding before a TP-BEGIN-TRANSACTION req is received, root node IUT with multiple subordinates receives a TP-END-DIALOGUE(confirmation=TRUE)-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.9 BV/SE/RB/S23.1/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-U-ERROR-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

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2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-U-ERROR-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.10 BV/SE/RB/S23.1/TP-U-ERROR-RC (UERC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives “TP-U-ERROR-RC” in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected and a TP-U-ERROR req is outstanding, root node IUT with one or more subordinates receives a TP-U-ERROR-RC from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected and a TP-U-ERROR req is outstanding, root node IUT with one or more subordinates receives a TP-U-ERROR-RC from one particular subordinate, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.11 BV/SE/RB/S23.1/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when TP-U-ABORT reqs are authorized during transaction termination, dialogue has not been and will not be detached and the IUT receives a "TP-U-ABORT req" in State 23.1.

Test purpose:

1. Superior IUT receives a TP-U-ABORT req. After that the IUT receives a C-ROLLBACK-RC, and sends a P-DATA[TP-ABORT-RI] req.

11.1.4.1.12 BV/SE/RB/S23.1/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and the IUT receives "P-DATA[TP-ABORT(user)-RI] ind" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a P-DATA[TP-ABORT(user)-RI] ind from one particular subordinate, and issues a TP-U-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, root node IUT with one or more subordinates receives a P-DATA[TP-ABORT(user)-RI] ind from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.13 BV/SE/RB/S23.1/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, dialogue has not been and will not be detached and C-PREPARE-RI has not been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, and issues a TP-P-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

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2. When the Unchained transactions fu is selected, dialogue has not been and will not be detached and C-PREPARE-RI has not been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, and issues a TP-P-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the Chained transactions fu is selected, dialogue has been or will be detached and C-PREPARE-RI has not been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
4. When the Unchained transactions fu is selected, dialogue has been or will be detached and C-PREPARE-RI has not been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
5. When the Chained transactions fu is selected, dialogue has not been and will not be detached and C-PREPARE-RI has been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, and issues a TP-P-ABORT ind and a TP-HEURISTIC-REPORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
6. When the Unchained transactions fu is selected, dialogue has not been and will not be detached and C-PREPARE-RI has been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, and issues a TP-P-ABORT ind and a TP-HEURISTIC-REPORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
7. When the Chained transactions fu is selected, dialogue has been or will be detached and C-PREPARE-RI has been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, and issues a TP-HEURISTIC-REPORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
8. When the Unchained transactions fu is selected, dialogue has been or will be detached and C-PREPARE-RI has been sent, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, and issues a TP-HEURISTIC-REPORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.14 BV/SE/RB/S23.1/TP-GRANT-CONTROL-RI (GCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives a "TP-GRANT-CONTROL-RI" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-GRANT-CONTROL-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-GRANT-CONTROL-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

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11.1.4.1.15 BV/SE/RB/S23.1/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the polarized control fu is selected and the IUT receives a "TP-REQUEST-CONTROL-RI" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-REQUEST-CONTROL-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-REQUEST-CONTROL-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.16 BV/SE/RB/S23.1/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when handshake fu is selected and the IUT receives a "TP-HANDSHAKE-RI" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.17 BV/SE/RB/S23.1/TP-HANDSHAKE-RC (HSRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when handshake fu is selected and the IUT receives a "TP-HANDSHAKE-RC" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-RC from one particular subordinate, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-RC from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.18 BV/SE/RB/S23.1/TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when handshake fu is selected, the polarized control fu is selected and the IUT receives a "TP-HANDSHAKE-AND-GRANT-CONTROL-RI" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.

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2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.19 BV/SE/RB/S23.1/TP-HANDSHAKE-AND-GRANT-CONTROL-RC (HGRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when handshake fu is selected, the polarized control fu is selected and the IUT receives a "TP-HANDSHAKE-AND-GRANT-CONTROL-RC" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.20 BV/SE/RB/S23.1/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "U-ASE APDU" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a U-ASE APDU from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a U-ASE APDU from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.21 BV/SE/RB/S23.1/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when TP-DONE req is owed, first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected, root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
3. When C-PREPARE-RI has been received from a superior and the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, sends a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RC and then a C-BEGIN-RI from the superior, and sends a C-BEGIN-RI to all subordinates.
4. When C-PREPARE-RI has been received from a superior and the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

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11.1.4.1.22 BV/SE/RB/S23.1/TP-DONE req (DNRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when TP-DONE req is owed and the IUT receives a "TP-DONE req" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected and the IUT has control at the beginning of transaction branch, root node IUT with one or more subordinates receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
2. When the Chained transactions fu is selected and the IUT did not have control at the beginning of transaction branch, root node IUT with one or more subordinates receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates. After that the IUT receives a TP-REQUEST-CONTROL req and sends a TP-REQUEST-CONTROL-RI.
3. When the Unchained transactions fu is selected and the IUT has control at the beginning of transaction branch, root node IUT with one or more subordinates receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.
4. When the Chained transactions fu is selected and the IUT has control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
5. When the Chained transactions fu is selected and the IUT did not have control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates. After that the IUT receives a TP-REQUEST-CONTROL req and sends a TP-REQUEST-CONTROL-RI.
6. When the Unchained transactions fu is selected and the IUT has control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a TP-DONE req, receives aC-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.1.23 BV/SE/RB/S23.1/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, superior IUT receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.
2. When the dialogue has been or will be detached, superior IUT receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC[TP-ABORT(user)-RI].

11.1.4.1.24 BV/SE/RB/S23.1/C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, superior IUT receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI], issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC.

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2. When the dialogue has been or will be detached, superior IUT receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI], issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC[TP-ABORT(user)-RI].

11.1.4.1.25 BV/SE/RB/S23.1/C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI] (ABRIp-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, superior IUT receives a C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI], issues a TP-P-ABORT ind, and sends a C-ROLLBACK-RC.
2. When the dialogue has been or will be detached, superior IUT receives a C-ROLLBACK-RI[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI], and sends a C-ROLLBACK-RC.

11.1.4.1.26 BV/SE/RB/S23.1/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, superior IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC.
2. When the dialogue has been or will be detached, superior IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI], and sends a C-ROLLBACK-RC.

11.1.4.1.27 BV/SE/RB/S23.1/C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] (ABHR-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, superior IUT receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI], issues a TP-HEURISTIC-REPORT ind, issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC.
2. When the dialogue has been or will be detached, superior IUT receives a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI], issues a TP-HEURISTIC-REPORT ind, and sends a C-ROLLBACK-RC.

11.1.4.1.28 BV/SE/RB/S23.1/C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] (HRRI-CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI]" in State 23.1.

Test purpose:

1. When the Chained transactions fu is selected and the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, and issues a TP-HEURISTIC-REPORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected and the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] from one particular subordinate, and issues a TP-HEURISTIC-REPORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-DATA req, and sends a U-ASE APDU.

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3. When a TP-U-ABORT req is received, superior IUT receives a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI], issues a TP-HEURISTIC-REPORT ind, and sends a P-DATA[TP-ABORT(user)-RI] req.

11.1.4.1.29 BV/SE/RB/S23.1/C-ROLLBACK-RC[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI] (ABRIp-CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the Unchained transactions fu is selected, a C-BEGIN-RC has not been received and the IUT receives a "C-ROLLBACK-RC[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI] from one particular subordinate, and issues a TP-P-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(provider, diagnostic=begin-transaction-reject)-RI] from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.30 BV/SE/RB/S23.1/C-ROLLBACK-RC[TP-ABORT(user)-RI] (ABRIu-CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC[TP-ABORT(user)-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from one particular subordinate, and issues a TP-U-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
3. When the dialogue has not been and will not be detached, and the dialogue with superior is chaining. intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from one particular subordinate, and issues a TP-U-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a C-BEGIN-RI to the other subordinates, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
4. When the dialogue has not been and will not be detached, and the dialogue with superior is not chaining. intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from one particular subordinate, and issues a TP-U-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
5. When the dialogue has been or will be detached, and the dialogue with superior is chaining. intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, sends a

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C-BEGIN-RI to the other subordinates, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

6. When the dialogue has been or will be detached, and the dialogue with superior is not chaining. intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from one particular subordinate. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior. After that the IUT receives a C-ROLLBACK-RC from the superior, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.31 BV/SE/RB/S23.1/C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] (ABHR-CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] from one particular subordinate, issues a TP-HEURISTIC-REPORT ind, and issues a TP-U-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.
2. When the dialogue has been or will be detached, root node IUT with one or more subordinates receives a C-ROLLBACK-RC from one particular subordinate, and issues a TP-HEURISTIC-REPORT ind. After that the IUT receives a C-ROLLBACK-RC from the other subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.1.32 BV/SE/RB/S23.1/C-RECOVER(ready)-RI[TP-RECOVER-RI] (CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI" or "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 23.1.

Test purpose:

1. When the dialogue has not been and will not be detached, superior IUT receives a C-RECOVER(ready)-RI or C-RECOVER(ready)-RI[TP-RECOVER-RI], execute one of the following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT sends a C-RECOVER(unknown)-RC, issues a TP-HEURISTIC-REPORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU.
2. When the dialogue has been or will be detached, superior IUT receives a C-RECOVER(ready)-RI or C-RECOVER(ready)-RI[TP-RECOVER-RI], execute one of the following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT sends a C-RECOVER(unknown)-RC, issues a TP-HEURISTIC-REPORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU.

11.1.4.2 BV/SE/RB/State23.2(S23.2)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.2.

Test group objective: Test valid protocol behaviour when the IUT is in the "rollback ind/cnf received rollback complete awaited" state (State 23.2).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

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3. ABRT APDU (AABRT)
4. TP-DONE(heuristic-report) req (DNRQh)
5. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

11.1.4.2.1 BV/SE/RB/S23.2/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 23.2.

Test purpose:

1. When a TP-U-ABORT reqs are authorized during transaction termination and the dialogue has not been and will not be detached, superior IUT receives a TP-U-ABORT req for one particular subordinate, and sends a P-DATA[TP-ABORT(user)-RI] req.

11.1.4.2.2 BV/SE/RB/S23.2/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 23.2.

Test purpose:

1. When the dialogue is chaining with a subordinate, root node IUT with one or more subordinates receives a P-DATA[TP-ABORT(user)-RI] ind from one particular subordinate, issues a TP-U-ABORT ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.
2. When the dialogue is chaining with a subordinate, intermediate node IUT with one or more subordinates that has sent a C-ROLLBACK-RI to the superior, receives a P-DATA[TP-ABORT(user)-RI] ind from one particular subordinate, issues a TP-U-ABORT ind, receives a TP-DONE req, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

11.1.4.2.3 BV/SE/RB/S23.2/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.2.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 23.2.

Test purpose:

1. When the dialogue has not been and will not be detached, root node IUT with one or more subordinates receives an ABRT APDU from one particular subordinate, issues a TP-P-ABORT ind, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to the other subordinates. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the subordinate.

11.1.4.2.4 BV/SE/RB/S23.2/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.2.

Test group objective: Test valid protocol behaviour when first TP-DONE req has not been received, a TP-DONE req is owed and the IUT receives a "TP-DONE(heuristic-report) req" in State 23.2.

Test purpose:

1. When not a root node in transaction branch, a C-PREPARE-RI has been received from the superior and the dialogue with superior is chaining, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When not a root node in transaction branch, a C-PREPARE-RI has been received from the superior and the dialogue with superior is not chaining, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

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3. When a root node in transaction branch and the dialogue is chaining with a subordinate, root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
4. When a root node in transaction branch and the dialogue is not chaining with a subordinate, root node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.2.5 BV/SE/RB/S23.2/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 23.2.

Test purpose:

1. When the dialogue has not been and will not be detached, superior IUT receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT sends a C-RECOVER(unknown)-RC on the channel, issues a TP-P-ABORT ind, and sends an ABRT[TP-ABORT(provider)-RI] APDU.
2. When the dialogue has been detached, superior IUT receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] or C-RECOVER(ready)-RI, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC on the channel.
   b. The IUT sends a C-RECOVER(unknown)-RC on the channel.

11.1.4.3 BV/SE/RB/State23.3(S23.3)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT is in the "rollback not received from superior report to superior awaited" state (State 23.3).

Subgroups:

1. TP-U-ERROR-RI (UERI)
2. TP-U-ERROR-RC (UERC)
3. TP-U-ABORT req (UARQ)
4. ABRT APDU (AABRT)
5. TP-GRANT-CONTROL-RI (GCRI)
6. TP-REQUEST-CONTROL-RI (RCRI)
7. TP-HANDSHAKE-RI (HSRI)
8. TP-HANDSHAKE-RC (HSRC)
9. TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)
10. TP-HANDSHAKE-AND-GRANT-CONTROL-RC (HGRC)
11. U-ASE APDU (UAAP)
12. TP-DEFER-RI (DFRI)
13. TP-PREPARE-RI (PRRI)
14. TP-DONE(heuristic-report) req (DNRQh)
15. C-ROLLBACK-RI (CRBRI)
16. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

11.1.4.3.1 BV/SE/RB/S23.3/TP-U-ERROR-RI (UERI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ERROR-RI" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-U-ERROR-RI from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

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11.1.4.3.2 BV/SE/RB/S23.3/TP-U-ERROR-RC (UERC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the shared control fu is selected and the IUT receives a "TP-U-ERROR-RC" in State 23.3.

Test purpose:

1. When a TP-U-ERROR req is outstanding, leaf node IUT receives a TP-U-ERROR-RC from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.3 BV/SE/RB/S23.3/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when TP-U-ABORT reqs are authorized during transaction termination, dialogue has not been and will not be detached and the IUT receives a "TP-U-ABORT req" in State 23.3.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI] to the superior.

11.1.4.3.4 BV/SE/RB/S23.3/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 23.3.

Test purpose:

1. When the dialogue has not been and will not be detached, leaf node IUT receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
2. When the dialogue has been or will be detached, leaf node IUT receives an ABRT APDU from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.4.3.5 BV/SE/RB/S23.3/TP-GRANT-CONTROL-RI (GCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-GRANT-CONTROL-RI" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-GRANT-CONTROL-RI from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.6 BV/SE/RB/S23.3/TP-REQUEST-CONTROL-RI (RCRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-REQUEST-CONTROL-RI" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-REQUEST-CONTROL-RI from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.7 BV/SE/RB/S23.3/TP-HANDSHAKE-RI (HSRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-RI" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-HANDSHAKE-RI from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

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11.1.4.3.8 BV/SE/RB/S23.3/TP-HANDSHAKE-RC (HSRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-RC" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-HANDSHAKE-RC from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.9 BV/SE/RB/S23.3/TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-AND-GRANT-CONTROL-RI" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RI from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.10 BV/SE/RB/S23.3/TP-HANDSHAKE-AND-GRANT-CONTROL-RC (HGRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-HANDSHAKE-AND-GRANT-CONTROL-RC" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL-RC from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.11 BV/SE/RB/S23.3/U-ASE APDU (UAAP)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "U-ASE APDU" in State 23.3.

Test purpose:

1. A leaf node IUT receives a U-ASE APDU from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.12 BV/SE/RB/S23.3/TP-DEFER-RI (DFRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-DEFER-RI" in State 23.3.

Test purpose:

1. A leaf node IUT receives a TP-DEFER-RI from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.13 BV/SE/RB/S23.3/C-PREPARE-RI[TP-PREPARE-RI] (PRRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-PREPARE-RI[TP-PREPARE-RI]" in State 23.3.

Test purpose:

1. A leaf node IUT receives a C-PREPARE-RI[TP-PREPARE-RI] from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RI to the superior.

11.1.4.3.14 BV/SE/RB/S23.3/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the first TP-DONE req has not been received, a TP-DONE req is owed, a C-PREPARE-RI has been received from the superior and the IUT receives a "TP-DONE(heuristic-report) req" in State 23.3.

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Test purpose:

1. When a TP-U-ABORT req has not been received, leaf node IUT receives a TP-DONE(heuristic-report) req, and sends a C-ROLLBACK-RI to the superior.
2. When a TP-U-ABORT req is received, leaf node IUT receives a TP-DONE(heuristic-report) req, and sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior.
3. When a TP-U-ABORT req has not been received, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RI to the superior.
4. When a TP-U-ABORT req is received, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RI[TP-ABORT-RI] to the superior.

11.1.4.3.15 BV/SE/RB/S23.3/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 23.3.

Test purpose:

1. A leaf node IUT receives a C-ROLLBACK-RI from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC to the superior.

11.1.4.3.16 BV/SE/RB/S23.3/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIU-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 23.3.

Test purpose:

1. When the dialogue has not been and will not be detached, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, and issues a TP-U-ABORT ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC to the superior.
2. When the dialogue has been or will be detached, leaf node IUT receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC to the superior.

11.1.4.4 BV/SE/RB/State23.4(S23.4)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.4.

Test group objective: Test valid protocol behaviour when the IUT is in the "rollback ind received from superior report to superior awaited" state (State 23.4).

Subgroups:

1. TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)
2. TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)
3. TP-U-ABORT req (UARQ)
4. ABRT APDU (AABRT)
5. TP-DONE(heuristic-report) req (DNRQh)
6. TP-DONE req (DNRQ)

11.1.4.4.1 BV/SE/RB/S23.4/TP-BEGIN-DIALOGUE(accepted) rsp (BDRSa)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE(accepted) rsp" in State 23.4.

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Test purpose:

1. When dialogue establishment confirmation has been requested, dialogue with superior is not chaining and the IUT had control at the beginning of transaction branch, leaf node IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
2. When dialogue establishment confirmation has been requested, dialogue with superior is not chaining and the IUT did not have control at the beginning of transaction branch, leaf node IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
3. When dialogue establishment confirmation has been requested, dialogue with superior is chaining and the IUT had control at the beginning of transaction branch, leaf node IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] to the superior, receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
4. When dialogue establishment confirmation has been requested, dialogue with superior is chaining and the IUT did not have control at the beginning of transaction branch, leaf node IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp. After that the IUT receives a TP-DONE req, sends a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(accepted)-RC] to the superior, receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.

11.1.4.4.2 BV/SE/RB/S23.4/TP-BEGIN-DIALOGUE(rejected) rsp (BDRSr)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE(rejected) rsp" in State 23.4.

Test purpose:

1. When reject allowed and TP-BEGIN-DIALOGUE-RC has not been sent, leaf node IUT receives a TP-BEGIN-DIALOGUE(rejected) rsp. After that the IUT sends a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(rejected(user))-RC] to the superior, After that a new dialogue is established over the same association.

11.1.4.4.3 BV/SE/RB/S23.4/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.4.

Test group objective: Test valid protocol behaviour when TP-U-ABORT reqs are authorized during transaction termination, dialogue has not been and will not be detached and the IUT receives a "TP-U-ABORT req" in State 23.4.

Test purpose:

1. Intermediate node IUT with one or more subordinates receives a TP-U-ABORT req. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and sends a C-ROLLBACK-RC[TP-ABORT(user)-RI] to the superior.

11.1.4.4.4 BV/SE/RB/S23.4/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.4.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 23.4.

Test purpose:

1. When the dialogue has not been and will not be detached and dialogue establishment confirmation is not outstanding, leaf node IUT receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

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2. When the dialogue has not been and will not be detached and dialogue establishment confirmation has been requested, leaf node IUT receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that a new dialogue is established over the same association.
3. When the dialogue has been or will be detached, leaf node IUT receives an ABRT APDU from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
4. When the dialogue has not been and will not be detached and the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
5. When the dialogue has been or will be detached and the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
6. When the dialogue has not been and will not be detached and the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.
7. When the dialogue has been or will be detached and the Unchained transactions fu is selected, intermediate node IUT with one or more subordinates receives an ABRT APDU from the superior. After that the IUT receives a C-ROLLBACK-RC from all the subordinates, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU.

11.1.4.4.5 BV/SE/RB/S23.4/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.4.

Test group objective: Test valid protocol behaviour when first TP-DONE req has not been received, a TP-DONE req is owed, a C-PREPARE-RI has been received from the superior, dialogue establishment confirmation is not outstanding and the IUT receives a "TP-DONE(heuristic-report) req" in State 23.4.

Test purpose:

1. When a TP-U-ABORT req has not been received, leaf node IUT receives a TP-DONE(heuristic-report) req, and sends a C-ROLLBACK-RC to the superior.
2. When a TP-U-ABORT req is received, leaf node IUT receives a TP-DONE(heuristic-report) req, and sends a C-ROLLBACK-RC[TP-ABORT-RI] to the superior.
3. When a TP-U-ABORT req has not been received, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RC to the superior.
4. When a TP-U-ABORT req is received, intermediate node IUT with one or more subordinates receives a TP-DONE(heuristic-report) req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RC[TP-ABORT-RI] to the superior.

11.1.4.4.6 BV/SE/RB/S23.4/TP-DONE req (DNRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.4.

Test group objective: Test valid protocol behaviour when TP-DONE req is owed, dialogue establishment confirmation is not outstanding and the IUT receives a "TP-DONE req" in State 23.4.

Test purpose:

1. A leaf node IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC to the superior.
2. Intermediate node IUT with one or more subordinates receives a TP-DONE req, receives a C-ROLLBACK-RC from all the subordinates, and sends a C-ROLLBACK-RC to the superior.

11.1.4.5 BV/SE/RB/State23.5(S23.5)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

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Test group objective: Test valid protocol behaviour when the IUT is in the "rollback req issued rollback confirm from superior awaited" state (State 23.5).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. ABRT APDU (AABRT)
3. TP-DONE req (DNRQ)
4. C-ROLLBACK-RI (CRBRI)
5. C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)
6. C-ROLLBACK-RC (CRBRC)
7. C-ROLLBACK-RC[TP-ABORT(user)-RI] (ABRIu-CRBRC)

11.1.4.5.1 BV/SE/RB/S23.5/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

Test group objective: Test valid protocol behaviour when TP-U-ABORT reqs are authorized during transaction termination, dialogue has not been and will not be detached and the IUT receives a "TP-U-ABORT req" in State 23.5.

Test purpose:

1. When a TP-DONE req is owed and the dialogue is chaining with a subordinate, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior. After that the IUT receives a C-ROLLBACK-RC from the superior, sends a P-DATA[TP-ABORT(user)-RI] req to the superior, receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When a TP-DONE req is owed, the dialogue is not chaining with a subordinate and the IUT had control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior. After that the IUT receives a C-ROLLBACK-RC from the superior, sends a P-DATA[TP-ABORT(user)-RI] req to the superior, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to all the subordinates.

11.1.4.5.2 BV/SE/RB/S23.5/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 23.5.

Test purpose:

1. When the dialogue has not been and will not be detached, leaf node IUT receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
2. When the dialogue has been or will be detached and TP-DONE req is not owed, leaf node IUT receives an ABRT APDU from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
3. When the dialogue has been or will be detached and TP-DONE req is owed, leaf node IUT receives an ABRT APDU from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.4.5.3 BV/SE/RB/S23.5/TP-DONE req (DNRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

Test group objective: Test valid protocol behaviour when transaction branch has entered the termination phase, a TP-DONE req is owed and the IUT receives a "TP-DONE req" in State 23.5.

Test purpose:

1. When the Chained transactions fu is selected, intermediate node IUT with one or more subordinates receives a TP-DONE req. After that the IUT receives a C-ROLLBACK-RC and a C-BEGIN-RI from the superior, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
2. When the Unchained transactions fu is selected and the IUT had control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a TP-DONE req. After that the IUT

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receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.

3. When the Unchained transactions fu is selected and the IUT did not have control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a TP-DONE req. After that the IUT receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.

11.1.4.5.4 BV/SE/RB/S23.5/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 23.5.

Test purpose:

1. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is not owed and the IUT had control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
2. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is not owed and the IUT did not have control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
3. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is owed and the IUT had control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a C-BEGIN-RI from the superior, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
4. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is owed and the IUT did not have control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a C-BEGIN-RI from the superior, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
5. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is not owed and the IUT had control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
6. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is not owed and the IUT did not have control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
7. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is owed and the IUT had control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a C-BEGIN-RI from the superior, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.

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8. When the dialogue has not been and will not be detached, dialogue with superior is chaining, a TP-DONE req is owed and the IUT did not have control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a C-BEGIN-RI from the superior, receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
9. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is not owed and the IUT had control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, sends a C-ROLLBACK-RC to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
10. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is not owed and the IUT did not have control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, sends a C-ROLLBACK-RC to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
11. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is owed and the IUT had control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
12. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is owed and the IUT did not have control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
13. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is not owed and the IUT had control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
14. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is not owed and the IUT did not have control at the beginning of transaction branch, leaf node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
15. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is owed and the IUT had control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
16. When the dialogue has not been and will not be detached, dialogue with superior is not chaining, a TP-DONE req is owed and the IUT did not have control at the beginning of transaction branch, intermediate node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.

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17. When the dialogue has been or will be detached and TP-DONE req is not owed, leaf node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, sends a C-ROLLBACK-RC[TP-ABORT-RI] to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
18. When the dialogue has been or will be detached and TP-DONE req is not owed, leaf node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
19. When the dialogue has been or will be detached and TP-DONE req is owed, intermediate node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-ABORT-RI] to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
20. When the dialogue has been or will be detached and TP-DONE req is owed, intermediate node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI+TP-ABORT-RI] to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.4.5.5 BV/SE/RB/S23.5/C-ROLLBACK-RI[TP-ABORT(user)-RI] (ABRIu-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT(user)-RI]" in State 23.5.

Test purpose:

1. When the dialogue has not been and will not be detached, leaf node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
2. When the dialogue has not been and will not be detached, leaf node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, issues a TP-U-ABORT ind, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
3. When the dialogue has been or will be detached, dialogue with superior is chaining and TP-DONE req is owed, intermediate node IUT with one or more subordinates that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT sends a C-BEGIN-RI to all the subordinates.
4. When the dialogue has been or will be detached, dialogue with superior is not chaining and TP-DONE req is owed, intermediate node IUT with one or more subordinates that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, and sends a C-ROLLBACK-RC to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT sends a U-ASE APDU.
5. When the dialogue has been or will be detached, dialogue with superior is chaining and TP-DONE req is owed, intermediate node IUT with one or more subordinates that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT sends a C-BEGIN-RI to all the subordinates.
6. When the dialogue has been or will be detached, dialogue with superior is not chaining and TP-DONE req is owed, intermediate node IUT with one or more subordinates that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, and sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT sends a U-ASE APDU.

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7. When the dialogue has been or will be detached and TP-DONE req is not owed, leaf node IUT that has sent a C-ROLLBACK-RI to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, sends a C-ROLLBACK-RC to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
8. When the dialogue has been or will be detached and TP-DONE req is not owed, leaf node IUT that has sent a C-ROLLBACK-RI[TP-HEURISTIC-REPORT-RI] to the superior, receives a C-ROLLBACK-RI[TP-ABORT(user)-RI] from the superior, sends a C-ROLLBACK-RC[TP-HEURISTIC-REPORT-RI] to the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.4.5.6 BV/SE/RB/S23.5/C-ROLLBACK-RC (CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC" in State 23.5.

Test purpose:

1. When the dialogue has not been and will not be detached, the Chained transactions fu is selected, a TP-DONE req is not owed and the IUT had control at the beginning of transaction branch, leaf node IUT receives a C-ROLLBACK-RC from the superior. After that the IUT receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
2. When the dialogue has not been and will not be detached, the Chained transactions fu is selected, a TP-DONE req is not owed and the IUT did not have control at the beginning of transaction branch, leaf node IUT receives a C-ROLLBACK-RC from the superior. After that the IUT receives a C-BEGIN-RI from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
3. When the dialogue has not been and will not be detached, the Chained transactions fu is selected, a TP-DONE req is owed and the IUT had control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC from the superior. After that the IUT receives a TP-DONE req, receives a C-BEGIN-RI from the superior, sends a C-BEGIN-RI to all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
4. When the dialogue has not been and will not be detached, the Chained transactions fu is selected, a TP-DONE req is owed and the IUT did not have control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC from the superior. After that the IUT receives a TP-DONE req, receives a C-BEGIN-RI from the superior, sends a C-BEGIN-RI to all the subordinates, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
5. When the dialogue has not been and will not be detached, the Unchained transactions fu is selected, a TP-DONE req is not owed and the IUT had control at the beginning of transaction branch, leaf node IUT receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
6. When the dialogue has not been and will not be detached, the Unchained transactions fu is selected, a TP-DONE req is not owed and the IUT did not have control at the beginning of transaction branch, leaf node IUT receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.
7. When the dialogue has not been and will not be detached, the Unchained transactions fu is selected, a TP-DONE req is owed and the IUT had control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE APDU to the superior.
8. When the dialogue has not been and will not be detached, the Unchained transactions fu is selected, a TP-DONE req is owed and the IUT did not have control at the beginning of transaction branch, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-REQUEST-CONTROL req, and sends a TP-REQUEST-CONTROL-RI to the superior.

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9. When abort issued to/received from partner and TP-DONE req is owed, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
10. When abort issued to/received from partner and TP-DONE req is not owed, leaf node IUT receives a C-ROLLBACK-RC from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.4.5.7 BV/SE/RB/S23.5/C-ROLLBACK-RC[TP-ABORT(user)-RI] (ABRIu-CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.5.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC[TP-ABORT(user)-RI]" in State 23.5.

Test purpose:

1. When the dialogue has not been and will not be detached, leaf node IUT receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from the superior, and issues a TP-U-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
2. When the dialogue has been or will be detached, dialogue with superior is chaining and TP-DONE req is owed, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI to all the subordinates.
3. When the dialogue has been or will be detached, dialogue not is chaining with a subordinate and TP-DONE req is owed, intermediate node IUT with one or more subordinates receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.
4. When the dialogue has been or will be detached and TP-DONE req is not owed, leaf node IUT receives a C-ROLLBACK-RC[TP-ABORT(user)-RI] from the superior, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.

11.1.4.6 BV/SE/RB/State23.6(S23.6)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.6.

Test group objective: Test valid protocol behaviour when the IUT is in the "report to superior done C-BEGIN awaited" state (State 23.6).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. P-DATA[TP-ABORT(user)-RI] ind (ABRIu)
3. ABRT APDU (AABRT)

11.1.4.6.1 BV/SE/RB/S23.6/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.6.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 23.6.

Test purpose:

1. When TP-U-ABORT reqs are authorized during transaction termination and the dialogue is chaining with a subordinate, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req, and sends a P-DATA[TP-ABORT(user)-RI] req to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind and sends a C-BEGIN-RI to all subordinates.

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11.1.4.6.2 BV/SE/RB/S23.6/P-DATA[TP-ABORT(user)-RI] ind (ABRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.6.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 23.6.

Test purpose:

1. A leaf node IUT receives a P-DATA[TP-ABORT(user)-RI] req from the superior, and issues a TP-U-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.6.3 BV/SE/RB/S23.6/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.6.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 23.6.

Test purpose:

1. A leaf node IUT receives an ABRT APDU from the superior, and issues a TP-P-ABORT ind. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.4.7 BV/SE/RB/State23.7(S23.7)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.7.

Test group objective: Test valid protocol behaviour when the IUT is in the "report to superior done TP-DONE req awaited" state (State 23.7).

Subgroups:

1. TP-U-ABORT req (UARQ)

11.1.4.7.1 BV/SE/RB/S23.7/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.7.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 23.7.

Test purpose:

1. When dialogue with superior is chaining, leaf node IUT receives a TP-U-ABORT req, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI]. After that the IUT receives a TP-DONE req, issues a TP-ROLLBACK-COMPLETE ind, and receives a C-ROLLBACK-RC. After that a new dialogue is established over the same association.
2. When dialogue with superior is not chaining and the dialogue is not chaining with a subordinate, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a P-DATA[TP-ABORT(user)-RI] req to the superior. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req, and sends a U-ASE-APDU.
3. When dialogue with superior is chaining and the dialogue is chaining with a subordinate, intermediate node IUT with one or more subordinates receives a TP-U-ABORT req for the superior dialogue, and sends a C-ROLLBACK-RI[TP-ABORT(user)-RI]. After that the IUT receives a TP-DONE req, and issues a TP-ROLLBACK-COMPLETE ind. receives a C-ROLLBACK-RC from the superior, and sends a C-BEGIN-RI to all the subordinates.

11.1.4.8 BV/SE/RB/State23.8(S23.8)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.8.

Test group objective: Test valid protocol behaviour when the IUT is in the "rollback not complete" state (State 23.8).

Subgroups:

1. TP-DONE(heuristic-report) req (DNRQh)

11.1.4.8.1 BV/SE/RB/S23.8/TP-DONE(heuristic-report) req (DNRQh)

Reference: ISO/IEC 10026-3, Annex A, Table 16, State 23.8.

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Test group objective: Test valid protocol behaviour when a TP-DONE req is owed, the first TP-DONE req has not been received and the IUT receives a "TP-DONE(heuristic-report) req" in State 23.8.

Test purpose:

1. Intermediate node IUT that has received an ABRT APDU from the superior, receives a TP-DONE(heuristic-report) req, and issues a TP-ROLLBACK-COMPLETE ind. After that a new dialogue is established over the same association.
2. When the dialogue is chaining with a subordinate, intermediate node IUT that has received an ABRT APDU from the superior, receives a TP-DONE(heuristic-report) req, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI.
3. When the dialogue is not chaining with a subordinate, leaf node IUT that has received an ABRT APDU from the superior, receives a TP-DONE(heuristic-report) req, and issues a TP-ROLLBACK-COMPLETE ind. After that the IUT receives a TP-DATA req for one subordinate, and sends a U-ASE APDU to the subordinate.

11.1.5 BV/SE/CPM (CH)

Reference: ISO/IEC 10026-3, Annex A, Table 17.

Test group objective: Test valid protocol behaviour when the IUT is in the "CPM" state table.

Subgroups:

1. State 1 (S1)
2. State 2 (S2)
3. State 3 (S3)
4. State 4 (S4)
5. State 5 (S5)
6. State 6 (S6)
7. State 7 (S7)

11.1.5.1 BV/SE/CH/State1(S1)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 1.

Test group objective: Test valid protocol behaviour when the IUT is in the "channel does not exist" state (State 1).

Subgroups:

1. TP-BEGIN-DIALOGUE(Recovery fu selected)-RI (BDRIct)
2. ABRT APDU (AABRT)

11.1.5.1.1 BV/SE/CH/S1/TP-BEGIN-DIALOGUE(Recovery fu selected)-RI (BDRIct)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE(Recovery fu selected)-RI" in State

1.

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE(Recovery fu selected)-RI, and sends a TP-BEGIN-DIALOGUE-RC.

11.1.5.1.2 BV/SE/CH/S1/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 1.

Test purpose:

1. A superior awaiting a commit confirm or a subordinate awaiting a commit indication receives an ABRT APDU, and sends a TP-BEGIN-DIALOGUE(Recovery fu selected, one-way-recovery)-RI or a TP-BEGIN-DIALOGUE(Recovery fu selected, two-way-recovery)-RI on the channel.

11.1.5.2 BV/SE/CH/State2(S2)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 2.

Test group objective: Test valid protocol behaviour when the IUT is in the "free channel available" state (State 2).

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Subgroups:

1. P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind (TPRI)
2. ABRT APDU (AABRT)

11.1.5.2.1 BV/SE/CH/S2/P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind (TPRI)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind" in State 2.

Test purpose:

1. When the channel is established in the two-way-recovery mode and the minor-synchronize-token is owned, the IUT receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.

11.1.5.2.2 BV/SE/CH/S2/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 2.

Test purpose:

1. A superior awaiting a commit confirm or a subordinate awaiting a commit indication receives an ABRT APDU, and sends a C-RECOVER-RI[TP-RECOVER(commit)-RI] or a C-RECOVER-RI[TP-RECOVER(ready)-RI] on the channel.

11.1.5.3 BV/SE/CH/State3(S3)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

Test group objective: Test valid protocol behaviour when the IUT is in the "free channel not available" state (State 3).

Subgroups:

1. TP-END-DIALOGUE-RI (EDRI)
2. C-RECOVER(ready)-RI (CRCRIr)
3. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)
4. C-RECOVER(commit)-RI (CRCRIc)
5. C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)
6. P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind (TGRIt)
7. ABRT APDU (AABRT)

11.1.5.3.1 BV/SE/CH/S3/TP-END-DIALOGUE-RI (EDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-END-DIALOGUE-RI" in State 3.

Test purpose:

1. IUT receives a TP-END-DIALOGUE-RI. After that the IUT receives a TP-BEGIN-DIALOGUE(Recovery fu selected)-RI, and sends a TP-BEGIN-DIALOGUE-RC.

11.1.5.3.2 BV/SE/CH/S3/C-RECOVER(ready)-RI (CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI" in State 3.

Test purpose:

1. When token is not awaited, the IUT receives a C-RECOVER(ready)-RI for a transaction branch for which the IUT has no element in node data, and sends a C-RECOVER(unknown)-RC.

11.1.5.3.3 BV/SE/CH/S3/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

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Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 3.

Test purpose:

1. When token is not awaited, the IUT receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] for a transaction branch that there is no element for in the IUTs node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC.
   b. The IUT sends a C-RECOVER(unknown)-RC.

11.1.5.3.4 BV/SE/CH/S3/C-RECOVER(commit)-RI (CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(commit)-RI" in State 3.

Test purpose:

1. When token is not awaited, the IUT receives a C-RECOVER(commit)-RI for a transaction branch for which the IUT has no log-damage-record and for which the IUT has no element in node data, and sends a C-RECOVER(done)-RC.
2. When token is not awaited, the IUT receives a C-RECOVER(commit)-RI for a transaction branch for which the IUT has a log-damage-record but for which the IUT has no element in node data, and sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI].

11.1.5.3.5 BV/SE/CH/S3/C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(commit)-RI[TP-RECOVER-RI]" in State 3.

Test purpose:

1. When token is not awaited, the IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] for a transaction branch for which the IUT has no log-damage-record and for which the IUT has no element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC.
   b. The IUT sends a C-RECOVER(done)-RC.
2. When token is not awaited, the IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] for a transaction branch for which the IUT has a log-damage-record but for which the IUT has no element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC.
   b. The IUT sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI].

11.1.5.3.6 BV/SE/CH/S3/P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind (TGRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

Test group objective: Test valid protocol behaviour when the channel is established in the two-way-recovery mode and the IUT receives "P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind" in State 3.

Test purpose:

1. When token is awaited, a superior awaiting a commit confirm or a subordinate awaiting a commit indication receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind. After that the IUT receives an ABRT APDU, and sends a C-RECOVER-RI[TP-RECOVER(ready)-RI] or a C-RECOVER-RI[TP-RECOVER(ready)-RI] on the channel.
2. When token is not awaited, a superior awaiting a commit confirm or a subordinate awaiting a commit indication receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind. After that the IUT receives an ABRT APDU, and sends a C-RECOVER-RI[TP-RECOVER(ready)-RI] or a C-RECOVER-RI[TP-RECOVER(ready)-RI] on the channel.

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11.1.5.3.7 BV/SE/CH/S3/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 3.

Test purpose:

1. When the channel is established in the two-way-recovery mode and token is not awaited, the IUT receives an ABRT APDU, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.

11.1.5.4 BV/SE/CH/State4(S4)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 4.

Test group objective: Test valid protocol behaviour when the IUT is in the “channel owned by TPPM” state (State 4).

Subgroups:

1. C-RECOVER(done)-RC (CRCRCd)
2. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRlr)
3. C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRlc)

11.1.5.4.1 BV/SE/CH/S4/C-RECOVER(done)-RC (CRCRCd)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(done)-RC" in State 4.

Test purpose:

1. When the channel is established in the two-way-recovery mode and the minor-synchronize-token is owned, the IUT receives a C-RECOVER(done)-RC. After that the IUT receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.
2. When the channel is established in the two-way-recovery mode and the minor-synchronize-token is not owned, the IUT receives a C-RECOVER(done)-RC. After that the IUT receives a C-RECOVER(ready)-RI for a transaction branch that there is no element for in the IUTs node data, and sends a C-RECOVER(unknown)-RC.
3. When the channel is established in the one-way-recovery mode and channel initiator side, the IUT receives a C-RECOVER(done)-RC. After that the IUT receives an ABRT APDU for a subordinate dialogue of a node in decided commit state, and sends a C-RECOVER-RI.
4. When the channel is established in the one-way-recovery mode and channel acceptor side, the IUT receives a C-RECOVER(done)-RC. After that the IUT receives a C-RECOVER(ready)-RI for a transaction branch that there is no element for in the IUTs node data, and sends a C-RECOVER(unknown)-RC.

11.1.5.4.2 BV/SE/CH/S4/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRlr)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 4.

Test purpose:

1. When the channel is established in the two-way-recovery mode, the IUT that has sent a TP-BEGIN-DIALOGUE(Recovery fu selected, two-way-recovery)-RI to a subordinate, receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] from new channel, and sends a C-RECOVER(commit)-RI on the new channel. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC from old channel, receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind from old channel, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.
2. IUT that has sent a TP-BEGIN-DIALOGUE(Recovery fu selected, one-way-recovery)-RI to a subordinate, receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] on a new channel, and sends a C-RECOVER(commit)-RI on the new channel. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC from old channel, receives an ABRT APDU on a new channel, and sends a C-RECOVER-RI on the old channel.

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11.1.5.4.3 BV/SE/CH/S4/C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(commit)-RI[TP-RECOVER-RI]" in State 4.

Test purpose:

1. When the channel is established in the two-way-recovery mode, the IUT that has sent a TP-BEGIN-DIALOGUE(Recovery fu selected, two-way-recovery)-RI to the superior, receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] on a new channel, and sends a C-RECOVER(done)-RC on the new channel. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC from old channel, receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind from old channel, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.
2. IUT that has sent a TP-BEGIN-DIALOGUE(Recovery fu selected, one-way-recovery)-RI to the superior, receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] on a new channel, and sends a C-RECOVER(done)-RC on the new channel. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC from old channel, receives an ABRT APDU on a new channel, and sends a C-RECOVER-RI on the old channel.
3. When the channel is established in the two-way-recovery mode and channel attached to the IUT for recovery, the IUT that has sent a C-RECOVER(ready)-RI to the superior, receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] on a new channel, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(done)-RC on the new channel. After that the IUT receives a C-RECOVER(retry-later)-RC from old channel, receives a C-RECOVER(commit)-RI for a transaction branch that there is no element for in the IUTs node data, and sends a C-RECOVER(unknown)-RC.
   b. The IUT sends a C-RECOVER(retry-later)-RC on the new channel. After that the IUT receives a C-RECOVER(retry-later)-RC from old channel, receives a C-RECOVER(commit)-RI for a transaction branch that there is no element for in the IUTs node data, and sends a C-RECOVER(unknown)-RC.
4. When the channel is established in the one-way-recovery mode and channel attached to the IUT for recovery, the IUT that has sent a C-RECOVER(ready)-RI to the superior, receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] on a new channel, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(done)-RC on the new channel. After that the IUT receives a C-RECOVER(retry-later)-RC from old channel, receives an ABRT APDU for a subordinate dialogue of a node in decided commit state, and sends a C-RECOVER-RI.
   b. The IUT sends a C-RECOVER(retry-later)-RC on the new channel. After that the IUT receives a C-RECOVER(retry-later)-RC from old channel, receives an ABRT APDU for a subordinate dialogue of a node in decided commit state, and sends a C-RECOVER-RI.

11.1.5.5 BV/SE/CH/State5(S5)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when the IUT is in the "token awaited CAF-PLEASE req outstanding" state (State 5).

Subgroups:

1. TP-END-DIALOGUE-RI (EDRI)
2. ABRT APDU (AABRT)
3. C-RECOVER(ready)-RI (CRCRIr)
4. C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)
5. C-RECOVER(commit)-RI (CRCRIc)
6. C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)
7. P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind (TGRIt)

11.1.5.5.1 BV/SE/CH/S5/TP-END-DIALOGUE-RI (EDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-END-DIALOGUE-RI" in State 5.

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Test purpose:

1. IUT receives a TP-END-DIALOGUE-RI. After that the IUT receives a TP-BEGIN-DIALOGUE(Recovery fu selected)-RI, and sends a TP-BEGIN-DIALOGUE-RC.

11.1.5.5.2 BV/SE/CH/S5/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 5.

Test purpose:

1. IUT that awaits the token receives an ABRT APDU. After that the IUT establish new channel.

11.1.5.5.3 BV/SE/CH/S5/C-RECOVER(ready)-RI (CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when token is not awaited and the IUT receives a "C-RECOVER(ready)-RI" in State 5.

Test purpose:

1. IUT that awaits the token receives a C-RECOVER(ready)-RI for a transaction branch that there is no element for in the IUTs node data, sends a C-RECOVER(unknown)-RC, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
2. IUT that awaits the token receives a C-RECOVER(ready)-RI for a transaction branch that there is no element for in the IUTs node data, and sends a C-RECOVER(unknown)-RC.
3. IUT receives a C-RECOVER(ready)-RI for a transaction branch for which the IUT has an element in node data, and sends a C-RECOVER(commit)-RI.

11.1.5.5.4 BV/SE/CH/S5/C-RECOVER(ready)-RI[TP-RECOVER-RI] (RERI-CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when token is not awaited and the IUT receives a "C-RECOVER(ready)-RI[TP-RECOVER-RI]" in State 5.

Test purpose:

1. IUT that awaits the token receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] for a transaction branch that there is no element for in the IUTs node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
   b. The IUT sends a C-RECOVER(unknown)-RC, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
2. IUT that awaits the token receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] for a transaction branch that there is no element for in the IUTs node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC.
   b. The IUT sends a C-RECOVER(unknown)-RC.
3. IUT receives a C-RECOVER(ready)-RI[TP-RECOVER-RI] for a transaction branch for which the IUT has an element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC.
   b. The IUT sends a C-RECOVER(commit)-RI.

11.1.5.5.5 BV/SE/CH/S5/C-RECOVER(commit)-RI (CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when token is not awaited and the IUT receives a "C-RECOVER(commit)-RI" in State 5.

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Test purpose:

1. IUT that awaits the token receives a C-RECOVER(commit)-RI for a transaction branch for which the IUT has no log-damage-record and for which the IUT has no element in node data, sends a C-RECOVER(done)-RC, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
2. IUT that awaits the token receives a C-RECOVER(commit)-RI for a transaction branch for which the IUT has no log-damage-record and for which the IUT has no element in node data, and sends a C-RECOVER(done)-RC.
3. IUT that awaits the token receives a C-RECOVER(commit)-RI for a transaction branch for which the IUT has a log-damage-record but for which the IUT has no element in node data, sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI], and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
4. IUT that awaits the token receives a C-RECOVER(commit)-RI for a transaction branch for which the IUT has a log-damage-record but for which the IUT has no element in node data, and sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI].
5. IUT receives a C-RECOVER(commit)-RI for a transaction branch for which the IUT has an element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(retry-later)-RC.
   b. The IUT sends a C-RECOVER(done)-RC.

11.1.5.5.6 BV/SE/CH/S5/C-RECOVER(commit)-RI[TP-RECOVER-RI] (RERI-CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when token is not awaited and the IUT receives a "C-RECOVER(commit)-RI[TP-RECOVER-RI]" in State 5.

Test purpose:

1. IUT that awaits the token receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] for a transaction branch for which the IUT has no log-damage-record and for which the IUT has no element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(done)-RC, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
   b. The IUT sends a C-RECOVER(retry-later)-RC, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
2. IUT that awaits the token receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] for a transaction branch for which the IUT has no log-damage-record and for which the IUT has no element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(done)-RC.
   b. The IUT sends a C-RECOVER(retry-later)-RC.
3. IUT that awaits the token receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] for a transaction branch for which the IUT has a log-damage-record but for which the IUT has no element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI], and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
   b. The IUT sends a C-RECOVER(retry-later)-RC, and sends a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] req.
4. IUT that awaits the token receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] for a transaction branch for which the IUT has a log-damage-record but for which the IUT has no element in node data, execute one of following behaviours.
   a. The IUT sends a C-RECOVER(done)-RC[TP-HEURISTIC-REPORT-RI].
   b. The IUT sends a C-RECOVER(retry-later)-RC.
5. IUT receives a C-RECOVER(commit)-RI[TP-RECOVER-RI] from for a transaction branch for which the IUT has an element in node data, execute one of following behaviours.

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a. The IUT sends a C-RECOVER(retry-later)-RC.

b. The IUT sends a C-RECOVER(done)-RC.

11.1.5.5.7 BV/SE/CH/S5/P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind (TGRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 5.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind" in State 5.

Test purpose:

1. A superior awaiting a commit confirm or a subordinate awaiting a commit indication that has received an ABRT APDU from its subordinate or superior respectively, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind, and sends a C-RECOVER(commit)-RI[TP-RECOVER-RI] or a C-RECOVER(ready)-RI[TP-RECOVER-RI].
2. IUT that awaits the token receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind. After that the IUT receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.

11.1.5.6 BV/SE/CH/State6(S6)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 6.

Test group objective: Test valid protocol behaviour when the IUT is in the "AF-BEGIN-DIALOGUE cnf awaited" state (State 6).

Subgroups:

1. P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)
2. P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)
3. ABRT APDU (AABRT)

11.1.5.6.1 BV/SE/CH/S6/P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind (BDRCa)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind" in State 6.

Test purpose:

1. IUT that awaits a TP-BEGIN-DIALOGUE-RC from node that is included in node data receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind, and sends a C-RECOVER-RI.
2. When the channel is established in the two-way-recovery mode, the IUT that awaits a TP-BEGIN-DIALOGUE-RC from node that is not included in node data receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind, receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind.
3. When the channel is established in the one-way-recovery mode, the IUT that awaits a TP-BEGIN-DIALOGUE-RC from node that is not included in node data receives a P-DATA[TP-BEGIN-DIALOGUE(accepted)-RC] ind. After that other recovery event occurs, the IUT sends a C-RECOVER-RI.

11.1.5.6.2 BV/SE/CH/S6/P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind (BDRCrp)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind" in State 6.

Test purpose:

1. IUT that awaits a TP-BEGIN-DIALOGUE-RC from node that is included in node data receives a P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind, and sends a P-DATA[TP-BEGIN-DIALOGUE(Recovery fu selected)-RI] req.
2. IUT that awaits a TP-BEGIN-DIALOGUE-RC from node that is not included in node data receives a P-DATA[TP-BEGIN-DIALOGUE(rejected(provider))-RC] ind, receives a P-DATA[TP-BEGIN-DIALOGUE(Recovery fu selected)-RI] ind, and sends a P-DATA[TP-BEGIN-DIALOGUE-RC] req.

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11.1.5.6.3 BV/SE/CH/S6/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 6.

Test purpose:

1. IUT that awaits a TP-BEGIN-DIALOGUE-RC from node that is included in node data receives an ABRT APDU. After that the IUT establish new channel.

11.1.5.7 BV/SE/CH/State7(S7)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 7.

Test group objective: Test valid protocol behaviour when the IUT is in the "clean-up" state (State 7).

Subgroups:

1. C-RECOVER(commit)-RI (CRCRIc)
2. C-RECOVER(retry-later)-RC (CRCRCr)
3. C-RECOVER(unknown)-RC (CRCRCu)

11.1.5.7.1 BV/SE/CH/S7/C-RECOVER(commit)-RI (CRCRIc)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(commit)-RI" in State 7.

Test purpose:

1. When the channel is established in the two-way-recovery mode, the IUT receives a C-RECOVER(commit)-RI, and sends a C-RECOVER(retry-later)-RC. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind, receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.
2. When the channel is established in the one-way-recovery mode, the IUT receives a C-RECOVER(commit)-RI, and sends a C-RECOVER(retry-later)-RC. After that other recovery event occurs, the IUT sends a C-RECOVER-RI.

11.1.5.7.2 BV/SE/CH/S7/C-RECOVER(retry-later)-RC (CRCRIr)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(retry-later)-RC" in State 7.

Test purpose:

1. When the channel is established in the two-way-recovery mode, the IUT receives a C-RECOVER(retry-later)-RC. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind, receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.
2. When the channel is established in the one-way-recovery mode, the IUT receives a C-RECOVER(retry-later)-RC, After that other recovery event occurs, the IUT sends a C-RECOVER-RI.

11.1.5.7.3 BV/SE/CH/S7/C-RECOVER(unknown)-RC (CRCRIu)

Reference: ISO/IEC 10026-3, Annex A, Table 17, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-RECOVER(unknown)-RC" in State 7.

Test purpose:

1. When the channel is established in the two-way-recovery mode, the IUT receives a C-RECOVER(unknown)-RC. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] ind, receives a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(two-way-recovery)-RI] req.
2. When the channel is established in the one-way-recovery mode, the IUT receives a C-RECOVER(unknown)-RC, After that other recovery event occurs, the IUT sends a C-RECOVER-RI.

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11.1.6 BV/SE/SACF (SA)

Reference: ISO/IEC 10026-3, Annex A, Table 18.

Test group objective: Test valid protocol behaviour in the "SACF" state table (Table 18). Check that the IUT performs the correct action as stated in the Standard.

Subgroups:

1. State 1 (S1)
2. State 1.2 (S1.2)
3. State 2 (S2)
4. State 3 (S3)
5. State 4 (S4)
6. State 6 (S6)
7. State 7 (S7)
8. State 9 (S9)

11.1.6.1 BV/SE/SA/State 1(S1)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-FREE" state (State 1).

Subgroups:

1. TP-BEGIN-DIALOGUE req (BDRQ)
2. TP-BEGIN-DIALOGUE-RI (BDRI)
3. TP-BID(token-requested=FALSE)-RI (BIRIf)
4. TP-BID(token-requested=TRUE)-RI (BIRIt)
5. Ignored PDUs (PDU)
6. C-BEGIN-RI (CBGRI)
7. P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)
8. P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind (PTGINk)
9. P-TOKEN-GIVE(sync-minor)-RI (PTGINs)

11.1.6.1.1 BV/SE/SA/S1/TP-BEGIN-DIALOGUE req (BDRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE req" in State 1.

Test purpose:

1. When bid-mandatory, the IUT receives a TP-BEGIN-DIALOGUE(Commit and Recovery fu not selected) req, and sends a TP-BID(token-requested=FALSE)-RI on a contention-loser association.
2. When bid-mandatory, the IUT receives a TP-BEGIN-DIALOGUE(Commit and Recovery fu selected) req, and sends a TP-BID(token-requested=TRUE)-RI on a contention-loser association.
3. When C-BEGIN-RI may be received and bid-not-mandatory, the IUT receives a TP-BEGIN-DIALOGUE(Commit and Recovery fu selected) req, and sends a TP-BID(token-requested=TRUE)-RI on a contention-loser association.
4. When C-BEGIN-RI must not be received and bid-not-mandatory, the IUT receives a TP-BEGIN-DIALOGUE(Commit and Recovery fu not selected) req, and sends a TP-BID(token-requested=FALSE)-RI or a TP-BEGIN-DIALOGUE-RI on a contention-loser association.
5. When C-BEGIN-RI must not be received, the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI on an association where it is the contention-winner.
6. When C-BEGIN-RI must not be received, and bid-not-mandatory, the IUT receives a TP-BEGIN-DIALOGUE(Commit and Recovery fu selected) req, and sends a TP-BID(token-requested=TRUE)-RI or a TP-BEGIN-DIALOGUE-RI on a contention-loser association.
7. When C-BEGIN-RI may be received, the IUT receives a TP-BEGIN-DIALOGUE req, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on an association where it is the contention-winner, and sends a TP-BEGIN-DIALOGUE-RI on an association where it is the contention-winner.

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11.1.6.1.2 BV/SE/SA/S1/TP-BEGIN-DIALOGUE-RI (BDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE-RI" in State 1.

Test purpose:

1. When not the first dialogue on association and bid-not-mandatory, and the minor-synchronize-token is owned, the IUT receives a TP-BEGIN-DIALOGUE(Commit or Recovery fu selected)-RI with valid last-partner-identifier on an association where it is the contention-winner, sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] req on an association where it is the contention-winner, and issues a TP-BEGIN-DIALOGUE ind.
2. When not the first dialogue on association and bid-not-mandatory, and the minor-synchronize-token is not owned, the IUT receives a TP-BEGIN-DIALOGUE(Commit or Recovery fu selected)-RI with valid last-partner-identifier on an association where it is the contention-winner, receives a C-BEGIN-RI, and issues a TP-BEGIN-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC.
3. When not the first dialogue on association and bid-not-mandatory, the IUT receives a TP-BEGIN-DIALOGUE(Commit and Recovery fu not selected)-RI with valid last-partner-identifier on an association where it is the contention-winner, and issues a TP-BEGIN-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.
4. When not the first dialogue on association and bid-not-mandatory, the IUT receives a TP-BEGIN-DIALOGUE-RI without valid last-partner-identifier on an association where it is the contention-winner, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(Commit and Recovery fu not selected)-RI with valid last-partner-identifier on the association, and issues a TP-BEGIN-DIALOGUE ind, receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.
5. When the first dialogue on association, bid-not-mandatory, and the minor-synchronize-token is owned, the IUT receives a TP-BEGIN-DIALOGUE(Commit or Recovery fu selected)-RI on an association where it is the contention-winner, sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] req on an association where it is the contention-winner, and issues a TP-BEGIN-DIALOGUE ind.
6. When the first dialogue on association, bid-not-mandatory, and the minor-synchronize-token is not owned, the IUT receives a TP-BEGIN-DIALOGUE(Commit or Recovery fu selected)-RI on an association where it is the contention-winner, receives a C-BEGIN-RI, and issues a TP-BEGIN-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC.
7. When not the first dialogue on association and bid-not-mandatory, the IUT receives a TP-BEGIN-DIALOGUE(Commit or Recovery fu not selected)-RI on an association where it is the contention-winner, and issues a TP-BEGIN-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.

11.1.6.1.3 BV/SE/SA/S1/TP-BID(token-requested=FALSE)-RI (BIRIf)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BID(token-requested=FALSE)-RI" in State 1.

Test purpose:

1. When not the first dialogue on association, the IUT receives a TP-BID(token-requested=FALSE)-RI with valid last-partner-identifier on an association where it is the contention-winner, and sends a TP-BID(accepted)-RC.
2. When not the first dialogue on association, the IUT receives a TP-BID(token-requested=FALSE)-RI without valid last-partner-identifier on an association where it is the contention-winner, ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(Commit or Recovery fu not selected)-RI with valid last-partner-identifier on the association, issues a TP-BEGIN-DIALOGUE ind receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.
3. When the first dialogue on association, the IUT receives a TP-BID(token-requested=FALSE)-RI on an association where it is the contention-winner, and sends a TP-BID(accepted)-RC.

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11.1.6.1.4 BV/SE/SA/S1/TP-BID(token-requested=TRUE)-RI (BIRIt)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT is contention-winner and receives a "TP-BID(token-requested=TRUE)-RI" in State 1.

Test purpose:

1. When not the first dialogue on association and the the minor-synchronize-token is owned, the IUT receives a TP-BID(token-requested=TRUE)-RI with valid last-partner-identifier on an association where it is the contention-winner, and sends a TP-BID(accepted)-RC, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.
2. When not the first dialogue on association and the minor-synchronize-token is not owned, the IUT receives a TP-BID(token-requested=TRUE)-RI and a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind with valid last-partner-identifier on an association where it is the contention-winner, and sends a TP-BID(accepted)-RC and a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.
3. When not the first dialogue on association, the IUT receives a TP-BID(token-requested=TRUE)-RI without valid last-partner-identifier on an association where it is the contention-winner, ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE-RI with valid last-partner-identifier on the association, receives a C-BEGIN-RI, issues a TP-BEGIN-DIALOGUE ind receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC.
4. When the first dialogue on association and the minor-synchronize-token is owned, the IUT receives a TP-BID(token-requested=TRUE)-RI on an association where it is the contention-winner, and sends a TP-BID(accepted)-RC, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req

11.1.6.1.5 BV/SE/SA/S1/Ignored PDUs(PDU)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a following PDUs in State 1.

P-DATA[TP-BEGIN-DIALOGUE-RC] ind
TP-END-DIALOGUE-RI
TP-END-DIALOGUE-RC
TP-U-ERROR-RC
TP-GRANT-CONTROL-RI
TP-REQUEST-CONTROL-RI
TP-HANDSHAKE-RI
TP-HANDSHAKE-RC
TP-HANDSHAKE-AND-GRANT-CONTROL-RI
TP-HANDSHAKE-AND-GRANT-CONTROL-RC
TP-U-ERROR-RI
P-DATA[TP-ABORT-RI] ind
P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE-RC, a TP-END-DIALOGUE-RI, a TP-END-DIALOGUE-RC, a TP-U-ERROR-RC, a TP-GRANT-CONTROL-RI, a TP-REQUEST-CONTROL-RI, a TP-HANDSHAKE-RI, a TP-HANDSHAKE-RC, a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, a TP-U-ERROR-RI, and a P-DATA[TP-ABORT-RI] ind. The IUT ignores these PDUs. After that the IUT receives a TP-BEGIN-DIALOGUE(Commit or Recovery fu not selected)-RI, issues a TP-BEGIN-DIALOGUE ind receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.

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2. IUT receives a TP-BEGIN-DIALOGUE-RC, a TP-END-DIALOGUE-RI, a TP-END-DIALOGUE-RC, a TP-U-ERROR-RC, a TP-GRANT-CONTROL-RI, a TP-REQUEST-CONTROL-RI, a TP-HANDSHAKE-RI, a TP-HANDSHAKE-RC, a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, a TP-U-ERROR-RI, a P-DATA[TP-ABORT-RI] ind and a TP-TOKEN-PLEASE-RI. The IUT ignores these PDUs. After that the IUT receives a TP-BEGIN-DIALOGUE-RI and a C-BEGIN-RI, issues a TP-BEGIN-DIALOGUE ind, receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC.

11.1.6.1.6 BV/SE/SA/S1/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-BEGIN-RI" in State 1.

Test purpose:

1. When C-BEGIN-RI may be received, the IUT receives a C-BEGIN-RI, and sends a C-ROLLBACK-RI.

11.1.6.1.7 BV/SE/SA/S1/P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind" in State 1.

Test purpose:

1. IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on an association where it is the contention-winner, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE-RI and a C-BEGIN-RI, issues a TP-BEGIN-DIALOGUE ind, receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC.
2. IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on an association where it is the contention-loser, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.1.8 BV/SE/SA/S1/P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind (PTGINk)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind" in State 1.

Test purpose:

1. IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind on an association where it is the contention-loser, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.1.9 BV/SE/SA/S1/TP-TOKEN-GIVE(sync-minor)-RI (PTGINs)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-TOKEN-GIVE(sync-minor)-RI" in State 1.

Test purpose:

1. IUT receives a P-TOKEN-GIVE(sync-minor) ind on an association where it is the contention-winner, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE-RI, issues a TP-BEGIN-DIALOGUE ind, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] req.
2. IUT receives a P-TOKEN-GIVE(sync-minor) ind on an association where it is the contention-loser, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.2 BV/SE/SA/State 1.2(S1.2)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.2.

Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-BID-INDICATION-RECEIVED-AND-ACCEPTED" state (State 1.2).

Subgroups:

1. TP-BEGIN-DIALOGUE-RI (BDRI)

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11.1.6.2.1 BV/SE/SA/S1.2/TP-BEGIN-DIALOGUE-RI (BDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE-RI" in State 1.2.

Test purpose:

1. When the Chained transactions fu not selected IUT receives a TP-BEGIN-DIALOGUE(no transaction branch confirmation=always)-RI on an association where it is the contention-winner, and issues a TP-BEGIN-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.
2. When the Chained transactions fu is selected IUT receives a TP-BEGIN-DIALOGUE(transaction branch, confirmation=always)-RI and a C-BEGIN-RI from a contention-winner association, and issues a TP-BEGIN-DIALOGUE ind. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC.

11.1.6.2.2 BV/SE/SA/S1.2/P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 1.2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind" in State 1.2.

Test purpose:

1. When token is not requested and the Chained transactions fu not selected, the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on an association where it is the contention-winner, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI on an association where it is the contention-winner, issues a TP-BEGIN-DIALOGUE ind, receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.

11.1.6.3 BV/SE/SA/State 2(S2)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-STRAY" state (State 2).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. TP-BEGIN-DIALOGUE-RI (BDRI)
3. P-DATA[TP-BEGIN-DIALOGUE(diagnostic=association-reserved)-RC] ind (BDRCr)
4. P-DATA[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] ind (BDRCnr)
5. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] (BDRC-CRBRI)
6. C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] (BDRC-CRBRC)
7. TP-BID-RI (BIRI)
8. Service Primitives (SERV)
9. Ignored PDUs (PDU)
10. ABRT APDU (AABRT)
11. C-BEGIN-RI (CBGRI)
12. C-ROLLBACK-RI (CRBRI)
13. C-ROLLBACK-RC (CRBRC)
14. P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)
15. P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind (PTGINk)
16. P-TOKEN-GIVE(sync-minor) ind (PTGINs)

11.1.6.3.1 BV/SE/SA/S2/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 2.

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Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch)-RI on an association where it is the contention-winner, receives a TP-U-ABORT req, and sends a TP-ABORT-RI. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI to the association.
2. When the minor-synchronize-token is owned, the IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch)-RI on a contention-loser association without first bidding for the association, receives a TP-U-ABORT req, sends a TP-ABORT-RI, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI to the association.

11.1.6.3.2 BV/SE/SA/S2/TP-BEGIN-DIALOGUE-RI (BDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE-RI" in State 2.

Test purpose:

1. When the Chained transactions fu not selected, the IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI on an association where it is the contention-winner, receives a TP-BEGIN-DIALOGUE-RI on the association, ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. When the Chained transactions fu is selected, the IUT that has sent a TP-BEGIN-DIALOGUE(transaction branch, confirmation=always)-RI and a C-BEGIN-RI on a contention-winner association, receives a TP-BEGIN-DIALOGUE-RI on the association, ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RI, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.
3. When the chained transactions fu not selected, the IUT that has sent a TP-BEGIN-DIALOGUE-RI on a contention-loser association, receives a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI on the association, and issues a TP-BEGIN-DIALOGUE(reject(provider)) cnf. After that the IUT issues a TP-BEGIN-DIALOGUE ind, receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC.
4. When the Chained transactions fu is selected and the minor-synchronize-token is not owned, the IUT that has sent a TP-BEGIN-DIALOGUE-RI on a contention-loser association, receives a TP-BEGIN-DIALOGUE(transaction branch, confirmation=always)-RI and a C-BEGIN-RI on the association, and issues a TP-BEGIN-DIALOGUE(reject(provider)) cnf. After that the IUT issues a TP-BEGIN-DIALOGUE ind, receives a TP-BEGIN-DIALOGUE(accepted) rsp, and sends a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC.

11.1.6.3.3 BV/SE/SA/S2/P-DATA[TP-BEGIN-DIALOGUE(diagnostic=association-reserved)-RC] ind (BDRCr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(diagnostic=association-reserved)-RC] ind" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI, receives TP-BEGIN-DIALOGUE(diagnostic=association-reserved)-RC that value of its correlator parameter is different from current correlator, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. IUT that has sent a TP-BEGIN-DIALOGUE-RI on a contention-loser association, receives TP-BEGIN-DIALOGUE(diagnostic=association-reserved)-RC that value of its correlator parameter is the same as current correlator, and issues a TP-BEGIN-DIALOGUE(reject(provider), diagnostic=association-reserved) cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI on a contention-loser association.

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11.1.6.3.4 BV/SE/SA/S2/P-DATA[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] ind (BDRCnr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] ind" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI, receives TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC that value of its correlator parameter is different from current correlator, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. IUT that has sent a TP-BEGIN-DIALOGUE-RI, receives TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC that value of its correlator parameter is the same as current correlator, and issues a TP-BEGIN-DIALOGUE(reject(provider), diagnostic^=association-reserved) cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI.

11.1.6.3.5 BV/SE/SA/S2/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] (BDRC-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC]" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE-RI, receives C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] that value of its correlator parameter is the same as current correlator, and issues a TP-BEGIN-DIALOGUE(reject(user), diagnostic^=association-reserved) cnf. After that the IUT sends a C-ROLLBACK-RC.

11.1.6.3.6 BV/SE/SA/S2/C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] (BDRC-CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC]" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE-RI, receives C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] that value of its correlator parameter is the same as current correlator, and issues a TP-BEGIN-DIALOGUE(reject(user), diagnostic^=association-reserved) cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI.

11.1.6.3.7 BV/SE/SA/S2/TP-BID-RI (BIRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BID-RI" in State 2.

Test purpose:

1. When the Chained transactions fu not selected, the IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI on an association where it is the contention-winner, receives a TP-BID-RI on the association, ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. When the Chained transactions fu is selected, the IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI and C-BEGIN-RI on an association where it is the contention-winner, receives a TP-BID-RI on the association, ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC and a C-BEGIN-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.

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11.1.6.3.8 BV/SE/SA/S2/Service Primitives(SERV)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a following service primitives in State 2.

TP-END-DIALOGUE req
TP-U-ERROR req
TP-U-ABORT req
TP-GRANT-CONTROL req
TP-HANDSHAKE req
TP-HANDSHAKE-AND-GRANT-CONTROL req
TP-DEFERRED-END-DIALOGUE req
TP-DEFERRED-GRANT-CONTROL req
TP-COMMIT req
TP-PREPARE req
TP-DATA req
TP-ROLLBACK req

Test purpose:

1. IUT that has received a TP-BEGIN-DIALOGUE(no transaction branch) req for a contention-winner association where a C-BEGIN-RI may be received, receives a TP-END-DIALOGUE req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a TP-BEGIN-DIALOGUE-RI and a TP-END-DIALOGUE-RI.
2. IUT that has received a TP-BEGIN-DIALOGUE(handshake fu selected, no transaction branch) req for a contention-winner association where a C-BEGIN-RI may be received, receives a TP-DATA req, a TP-U-ERROR req, a TP-HANDSHAKE req and a TP-U-ABORT req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a TP-BEGIN-DIALOGUE-RI, a U-ASE APDU, a TP-U-ERROR-RI, a TP-HANDSHAKE-RI and a TP-ABORT-RI.
3. IUT that has received a TP-BEGIN-DIALOGUE(polarized control fu selected, no transaction branch) req for a contention-winner association where a C-BEGIN-RI may be received, receives a TP-GRANT-CONTROL req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a TP-BEGIN-DIALOGUE-RI and a TP-GRANT-CONTROL-RI.
4. IUT that has received a TP-BEGIN-DIALOGUE(polarized control fu selected, handshake fu selected, no transaction branch) req for a contention-winner association where a C-BEGIN-RI may be received, receives a TP-HANDSHAKE-AND-GRANT-CONTROL req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a TP-BEGIN-DIALOGUE-RI and a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
5. IUT that has received a TP-BEGIN-DIALOGUE(chained-transactions fu selected, transaction branch) req for a contention-winner association where a C-BEGIN-RI may be received, receives a TP-DEFERRED-END-DIALOGUE req and a TP-COMMIT req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a TP-BEGIN-DIALOGUE-RI, a C-BEGIN-RI, a TP-DEFER(end-dialogue)-RI and a C-PREPARE-RI[TP-PREPARE-RI].
6. IUT that has received a TP-BEGIN-DIALOGUE(chained-transactions fu selected, polarized control fu selected, transaction branch) req for a contention-winner association where a C-BEGIN-RI may be received, receives a TP-DEFERRED-GRANT-CONTROL req and a TP-PREPARE req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a TP-BEGIN-DIALOGUE-RI, a C-BEGIN-RI, a TP-DEFER(grant-control)-RI and a C-PREPARE-RI[TP-PREPARE-RI].
7. IUT that has received a TP-BEGIN-DIALOGUE(transaction branch) req for a contention-winner association where a C-BEGIN-RI may be received, receives a TP-ROLLBACK req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a TP-BEGIN-DIALOGUE-RI, a C-BEGIN-RI and a C-ROLLBACK-RI.

11.1.6.3.9 BV/SE/SA/S2/Ignored PDUs(PDU)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a following PDUs in State 2.

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TP-END-DIALOGUE-RI
TP-END-DIALOGUE-RC
TP-U-ERROR-RC
TP-GRANT-CONTROL-RI
TP-REQUEST-CONTROL-RI
TP-HANDSHAKE-RI TP-HANDSHAKE-RC
TP-HANDSHAKE-AND-GRANT-CONTROL-RI
TP-HANDSHAKE-AND-GRANT-CONTROL-RC
TP-U-ERROR-RI
P-DATA[TP-ABORT-RI] ind
TP-TOKEN-GIVE ind

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(no transaction branch, confirmation=always)-RI on an association where it is the contention-winner, receives a TP-END-DIALOGUE-RI, a TP-END-DIALOGUE-RC, a TP-U-ERROR-RC, a TP-GRANT-CONTROL-RI, a TP-REQUEST-CONTROL-RI, a TP-HANDSHAKE-RI, a TP-HANDSHAKE-RC, a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, a TP-U-ERROR-RI, and a P-DATA[TP-ABORT-RI] ind. The IUT ignores these PDUs. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. When the Chained transactions fu is selected or the Unchained transactions fu is selected, the IUT that has sent a TP-BEGIN-DIALOGUE(transaction branch, confirmation=always)-RI and a C-BEGIN-RI on an association where it is the contention-winner, receives a TP-END-DIALOGUE-RI, a TP-END-DIALOGUE-RC, a TP-U-ERROR-RC, a TP-GRANT-CONTROL-RI, a TP-REQUEST-CONTROL-RI, a TP-HANDSHAKE-RI, a TP-HANDSHAKE-RC, a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, a TP-U-ERROR-RI, a P-DATA[TP-ABORT-RI] ind and a P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind. The IUT ignores these PDUs. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, receives a C-BEGIN-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.6.3.10 BV/SE/SA/S2/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(confirmation=always)-RI on a contention-winner association, receives an ABRT APDU, and issues a TP-P-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.6.3.11 BV/SE/SA/S2/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-BEGIN-RI" in State 2.

Test purpose:

1. IUT that has received a TP-BEGIN-DIALOGUE req for a contention-winner association where a C-BEGIN-RI may be received, receives a C-BEGIN-RI, issues a TP-BEGIN-DIALOGUE(rejected(provider)) cnf, and sends a C-ROLLBACK-RI.

11.1.6.3.12 BV/SE/SA/S2/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(transaction branch, confirmation=negative)-RI and a C-BEGIN-RI on an association where it is the contention-winner, receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.

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11.1.6.3.13 BV/SE/SA/S2/C-ROLLBACK-RC (CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(chained-transactions fu selected, confirmation=negative)-RI, a C-BEGIN-RI and a C-ROLLBACK-RI on an association where it is the contention-winner, receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI.

11.1.6.3.14 BV/SE/SA/S2/P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE(confirmation=always)-RI on an association where it is the contention-winner, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE-RC on the association, issues a TP-BEGIN-DIALOGUE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
2. IUT that has received a TP-BEGIN-DIALOGUE(no transaction branch) req for a contention-loser association, receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.3.15 BV/SE/SA/S2/P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind (PTGINk)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind" in State 2.

Test purpose:

1. IUT that has sent a TP-BEGIN-DIALOGUE-RI on a contention-loser association, receives TP-TOKEN-GIVE(keep)-RI that value of its correlator parameter is different from current correlator, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.
2. IUT that has sent a TP-BEGIN-DIALOGUE(confirmation=always)-RI on a contention-loser association, receives TP-BEGIN-DIALOGUE(diagnostic=association-reserved)-RC that value of its correlator parameter is the same as current correlator. After that the IUT receives a TP-BEGIN-DIALOGUE(accepted)-RC, issues a TP-BEGIN-DIALOGUE(accepted) cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.6.3.16 BV/SE/SA/S2/P-TOKEN-GIVE(sync-minor) ind (PTGINs)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 2.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE(sync-minor) ind" in State 2.

Test purpose:

1. IUT that has received a TP-BEGIN-DIALOGUE req for a contention-winner association where a C-BEGIN-RI may be received, receives a P-TOKEN-GIVE(sync-minor) ind on the association, and sends a TP-BEGIN-DIALOGUE-RI.
2. IUT that has sent a TP-BEGIN-DIALOGUE(confirmation=always)-RI on an association where it is the contention-winner, receives a P-TOKEN-GIVE(sync-minor) ind on the association, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE-RC on the association, issues a TP-BEGIN-DIALOGUE cnf, receives a TP-DATA req, and sends a U-ASE APDU.
3. IUT that has sent a TP-BEGIN-DIALOGUE(confirmation=always)-RI on a contention-loser association, receives a P-TOKEN-GIVE(sync-minor) ind on the association, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.4 BV/SE/SA/State 3(S3)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

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Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-BIDDING" state (State 3).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. TP-BEGIN-DIALOGUE-RI (BDRI)
3. TP-BID(rejected)-RC (BIRCr)
4. Service Primitives (SERV)
5. Ignored PDUs (PDU)
6. ABRT APDU (AABRT)
7. TP-BEGIN-TRANSACTION req (BTRQ)
8. C-BEGIN-RI (CBGRI)
9. P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)
10. P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind (PTGINk)
11. P-TOKEN-GIVE(sync-minor) ind (PTGINs)

11.1.6.4.1 BV/SE/SA/S3/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 3.

Test purpose:

1. IUT receives a TP-U-ABORT req, receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE-RI and a TP-ABORT-RI to the association.

11.1.6.4.2 BV/SE/SA/S3/TP-BEGIN-DIALOGUE-RI (BDRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-DIALOGUE-RI" in State 3.

Test purpose:

1. When the Chained transactions fu not selected, the IUT receives a TP-BEGIN-DIALOGUE(confirmation=always)-RI on the association, issues a TP-BEGIN-DIALOGUE(rejected(provider)) cnf, and issues a TP-BEGIN-DIALOGUE(confirmation=always) ind. After that the IUT receives a TP-BEGIN-DIALOGUE rsp, and sends a TP-BEGIN-DIALOGUE-RC.
2. When the Chained transactions fu is selected, the IUT receives a TP-BEGIN-DIALOGUE(confirmation=always)-RI and a C-BEGIN-RI on the association, issues a TP-BEGIN-DIALOGUE(rejected(provider)) cnf, and issues a TP-BEGIN-DIALOGUE(confirmation=always) ind. After that the IUT receives a TP-BEGIN-DIALOGUE rsp, and sends a TP-BEGIN-DIALOGUE-RC and a C-BEGIN-RC.
3. IUT receives a TP-U-ABORT req, receives a TP-BEGIN-DIALOGUE(confirmation=always)-RI on the association, and issues a TP-BEGIN-DIALOGUE(confirmation=always) ind. After that the IUT receives a TP-BEGIN-DIALOGUE rsp, and sends a TP-BEGIN-DIALOGUE-RC.

11.1.6.4.3 BV/SE/SA/S3/TP-BID(rejected)-RC (BIRCr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BID(rejected)-RC" in State 3.

Test purpose:

1. IUT receives a TP-U-ABORT req, receives a TP-BID(rejected)-RC on the association, and accepts this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BID-RI to the association.
2. IUT receives a TP-BID(rejected)-RC on the association, and issues a TP-BEGIN-DIALOGUE(rejected(provider)) cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BID-RI to the association.

11.1.6.4.4 BV/SE/SA/S3/Service Primitives (SERV)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

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Test group objective: Test valid protocol behaviour when the IUT receives a following service primitives in State 3.

TP-END-DIALOGUE req
TP-U-ERROR req
TP-U-ABORT req
TP-GRANT-CONTROL req
TP-HANDSHAKE req
TP-HANDSHAKE-AND-GRANT-CONTROL req
TP-DEFERRED-END-DIALOGUE req
TP-DEFERRED-GRANT-CONTROL req
TP-COMMIT req TP-PREPARE req
TP-DATA req TP-ROLLBACK req

Test purpose:

1. IUT receives a TP-END-DIALOGUE req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(no transaction branch)-RI and a TP-END-DIALOGUE-RI.
2. IUT receives a TP-DATA req, a TP-U-ERROR req, a TP-HANDSHAKE req and a TP-U-ABORT req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(handshake fu selected, no transaction branch)-RI, a U-ASE APDU a TP-U-ERROR-RI, a TP-HANDSHAKE-RI and a TP-ABORT-RI.
3. IUT receives a TP-GRANT-CONTROL req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(polarized fu selected, no transaction branch)-RI and a TP-GRANT-CONTROL-RI.
4. IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(polarized fu selected, handshake fu selected, no transaction branch)-RI and a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
5. IUT receives a TP-DEFERRED-END-DIALOGUE req and a TP-COMMIT req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(chained-transactions fu selected, transaction branch)-RI. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, a TP-DEFER(end-dialogue)-RI and a C-PREPARE-RI[TP-PREPARE-RI].
6. IUT receives a TP-DEFERRED-GRANT-CONTROL req and a TP-PREPARE req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(chained-transactions fu selected, polarized control fu selected, transaction branch)-RI. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, a TP-DEFER(grant-control)-RI and a C-PREPARE-RI[TP-PREPARE-RI].
7. IUT receives a TP-ROLLBACK req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(transaction branch)-RI. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI and a C-ROLLBACK-RI.

11.1.6.4.5 BV/SE/SA/S3/Ignored PDUs(PDU)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a following PDUs in State 3.

TP-BEGIN-DIALOGUE-RC
TP-END-DIALOGUE-RI
TP-END-DIALOGUE-RC
TP-U-ERROR-RC
TP-GRANT-CONTROL-RI
TP-REQUEST-CONTROL-RI
TP-HANDSHAKE-RI
TP-HANDSHAKE-RC
TP-HANDSHAKE-AND-GRANT-CONTROL-RI
TP-HANDSHAKE-AND-GRANT-CONTROL-RC

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TP-U-ERROR-RI

P-DATA[TP-ABORT-RI] ind

P-TOKEN-PLEASE[TP-TOKEN-PLEASE-RI] ind

Test purpose:

1. IUT receives a TP-BEGIN-DIALOGUE-RC, a TP-END-DIALOGUE-RI, a TP-REQUEST-CONTROL-RI, a TP-HANDSHAKE-RI, a TP-HANDSHAKE-RC, a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, a TP-U-ERROR-RI, and a P-DATA[TP-ABORT-RI] ind. The IUT ignores these PDUs. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE-RI.
2. When the Chained transactions fu is selected or the Unchained transactions fu is selected, the IUT receives a TP-BEGIN-DIALOGUE-RC, a TP-END-DIALOGUE-RI, a TP-END-DIALOGUE-RC, a TP-UERROR-RC, a TP-GRANT-CONTROL-RI, a TP-REQUEST-CONTROL-RI, a TP-HANDSHAKE-RI, a TP-HANDSHAKE-RC, a TP-HANDSHAKE-AND-GRANT-CONTROL-RI, a TP-HANDSHAKE-AND-GRANT-CONTROL-RC, a TP-U-ERROR-RI, a P-DATA[TP-ABORT-RI] ind and a TP-TOKEN-PLEASE-RI. The IUT ignores these PDUs. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE-RI.

11.1.6.4.6 BV/SE/SA/S3/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 3.

Test purpose:

1. IUT receives an ABRT APDU, and issues a TP-P-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.6.4.7 BV/SE/SA/S3/TP-BEGIN-TRANSACTION req (BTRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-TRANSACTION req" in State 3.

Test purpose:

1. IUT receives a TP-BEGIN-TRANSACTION req. After that the IUT receives a TP-BID(accepted)-RC on the association, and sends a TP-BEGIN-DIALOGUE(no transaction branch)-RI. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI.

11.1.6.4.8 BV/SE/SA/S3/C-BEGIN-RI (CBGRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-BEGIN-RI" in State 3.

Test purpose:

1. IUT receives a C-BEGIN-RI on the association, and sends a C-ROLLBACK-RI.
2. IUT receives a TP-U-ABORT req, receives a C-BEGIN-RI on the association, and sends a C-ROLLBACK-RI.

11.1.6.4.9 BV/SE/SA/S3/P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind" in State 3.

Test purpose:

1. IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

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11.1.6.4.10 BV/SE/SA/S3/P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind (PTGINk)

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind" in State 3.

Test purpose:

1. IUT receives P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind that value of its correlator parameter is different from current correlator, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.4.11 BV/SE/SA/S3/P-TOKEN-GIVE(sync-minor) ind (PTGINs)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 3.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE(sync-minor) ind" in State 3.

Test purpose:

1. IUT receives a P-TOKEN-GIVE(sync-minor) ind on the association, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.5 BV/SE/SA/State 4(S4)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-BID-CONFIRM-RECEIVED" state (State 4).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. P-DATA[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] ind (BDRCnr)
3. C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] (BDRC-CRBRI)
4. Service Primitives (SERV)
5. ABRT APDU (AABRT)
6. TP-BEGIN-TRANSACTION req (BTRQ)
7. C-ROLLBACK-RI (CRBRI)
8. C-ROLLBACK-RC (CRBRC)
9. P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)

11.1.6.5.1 BV/SE/SA/S4/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 4.

Test purpose:

1. When the minor-synchronize-token is owned, the IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or TP-BID-RI to the association.
2. When the minor-synchronize-token is not owned, the IUT receives a TP-U-ABORT req, and sends a TP-ABORT-RI. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or TP-BID-RI to the association.

11.1.6.5.2 BV/SE/SA/S4/P-DATA[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] ind (BDRCnr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] ind"

Test purpose:

1. IUT receives TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC that value of its correlator parameter is the same as current correlator, and issues a TP-BEGIN-DIALOGUE(reject(provider), diagnostic^=association-reserved) cnf. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BID-RI.

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11.1.6.5.3 BV/SE/SA/S4/C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] (BDRC-CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC]" in State 4.

Test purpose:

1. IUT receives C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(diagnostic^=association-reserved)-RC] that value of its correlator parameter is the same as current correlator, and issues a TP-BEGIN-DIALOGUE(reject(provider), diagnostic^=association-reserved) cnf. After that the IUT sends a C-ROLLBACK-RC.

11.1.6.5.4 BV/SE/SA/S4/Service Primitives(SERV)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a following service primitives in State 4.

TP-END-DIALOGUE req
TP-U-ERROR req
TP-U-ABORT req
TP-GRANT-CONTROL req
TP-HANDSHAKE req
TP-HANDSHAKE-AND-GRANT-CONTROL req
TP-DEFERRED-END-DIALOGUE req
TP-DEFERRED-GRANT-CONTROL req
TP-COMMIT req
TP-PREPARE req
TP-DATA req
TP-ROLLBACK req

Test purpose:

1. IUT receives a TP-END-DIALOGUE req, and sends a TP-END-DIALOGUE-RI.
2. When queue is not established, the IUT receives a TP-DATA req, a TP-U-ERROR req, a TP-HANDSHAKE req and a TP-U-ABORT req, and sends a U-ASE APDU, a TP-U-ERROR-RI, a TP-HANDSHAKE-RI and a P-DATA[TP-ABORT-RI] req.
3. When a queue exists, the IUT receives a TP-DATA req, a TP-U-ERROR req, a TP-HANDSHAKE req and a TP-U-ABORT req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs, a U-ASE APDU, a TP-U-ERROR-RI, a TP-HANDSHAKE-RI and a C-ROLLBACK-RI[TP-ABORT-RI].
4. When queue is not established, the IUT receives a TP-GRANT-CONTROL req, and sends a TP-GRANT-CONTROL-RI.
5. When a queue exists, the IUT receives a TP-GRANT-CONTROL req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs and a TP-GRANT-CONTROL-RI.
6. When queue is not established, the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req, and sends a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
7. When a queue exists, the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs and a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
8. IUT receives a TP-DEFERRED-END-DIALOGUE req and a TP-COMMIT req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs, a TP-DEFER(end-dialogue)-RI and a C-PREPARE-RI[TP-PREPARE-RI].
9. IUT receives a TP-DEFERRED-GRANT-CONTROL req and a TP-PREPARE req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs, a TP-DEFER(grant-control)-RI and a C-PREPARE-RI[TP-PREPARE-RI].

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10. IUT receives a TP-ROLLBACK req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs and a C-ROLLBACK-RI.

11.1.6.5.5 BV/SE/SA/S4/ABRT APDU (AABRT)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives an "ABRT APDU" in State 4.

Test purpose:

1. IUT receives an ABRT APDU, and issues a TP-P-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI.

11.1.6.5.6 BV/SE/SA/S4/TP-BEGIN-TRANSACTION req (BTRQ)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BEGIN-TRANSACTION req" in State 4.

Test purpose:

1. When the minor-synchronize-token is owned, the IUT receives a TP-BEGIN-TRANSACTION req, and sends a C-BEGIN-RI.
2. When the minor-synchronize-token is not owned, the IUT receives a TP-BEGIN-TRANSACTION req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind on the association, and sends a C-BEGIN-RI.

11.1.6.5.7 BV/SE/SA/S4/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 4.

Test purpose:

1. Root node IUT receives a C-ROLLBACK-RI, and issues a TP-ROLLBACK ind. After that the IUT receives a TP-DONE req, and sends a C-ROLLBACK-RC.

11.1.6.5.8 BV/SE/SA/S4/C-ROLLBACK-RC (CRBRC)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RC" in State 4.

Test purpose:

1. When the Chained transactions fu is selected, root node IUT receives a C-ROLLBACK-RC, issues a TP-ROLLBACK-COMPLETE ind, and sends a C-BEGIN-RI.

11.1.6.5.9 BV/SE/SA/S4/P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind (PTGINr)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 4.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind" in State 4.

Test purpose:

1. When dialogue establishment confirmation has been requested and no queue exists, the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] ind, and ignores this PDU. After that the IUT receives a TP-BEGIN-DIALOGUE-RC, issues a TP-BEGIN-DIALOGUE cnf, receives a TP-DATA req, and sends a U-ASE APDU.

11.1.6.6 BV/SE/SA/State 6(S6)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 6.

Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-BUSY" state (State 6).

Subgroups:

1. TP-U-ABORT req (UARQ)
2. P-DATA[TP-ABORT(user)-RI] ind (ABRI)
3. Service Primitives (SERV)

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11.1.6.6.1 BV/SE/SA/S6/TP-U-ABORT req (UARQ)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-U-ABORT req" in State 6.

Test purpose:

1. When the Unchained transactions fu is selected, the coordination level is "none" and the minor-synchronize-token is owned, subordinate IUT receives a TP-U-ABORT req, sends a TP-ABORT-RI, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.1.6.6.2 BV/SE/SA/S6/P-DATA[TP-ABORT(user)-RI] ind (ABRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a "P-DATA[TP-ABORT(user)-RI] ind" in State 6.

Test purpose:

1. When the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and a queue exists, superior IUT receives a P-DATA[TP-ABORT(user)-RI] ind, and issues a TP-U-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI or a TP-BID-RI to the association.
2. When the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC and no queue exists, superior IUT receives a P-DATA[TP-ABORT(user)-RI] ind, and issues a TP-U-ABORT ind. After that the IUT receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.
3. When the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC, a C-ROLLBACK-RI has been sent and a queue exists, superior IUT receives a P-DATA[TP-ABORT(user)-RI] ind on an association where it is the contention-winner, issues a TP-U-ABORT ind. After that the IUT receives a TP-BEGIN-DIALOGUE req, and sends a TP-BEGIN-DIALOGUE-RI.
4. When the Unchained transactions fu is selected, the IUT has sent a C-BEGIN-RI but not received a C-BEGIN-RC, a C-ROLLBACK-RI has been sent and a queue exists, superior IUT receives a P-DATA[TP-ABORT(user)-RI] ind on an association where it is the contention-loser, issues a TP-U-ABORT ind, accepts a new dialogue established over the association.

11.1.6.6.3 BV/SE/SA/S6/Service Primitives(SERV)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 6.

Test group objective: Test valid protocol behaviour when the IUT receives a following service primitives in State 6.

TP-U-ERROR req
TP-U-ABORT req
TP-GRANT-CONTROL req
TP-HANDSHAKE req
TP-HANDSHAKE-AND-GRANT-CONTROL req
TP-DEFERRED-END-DIALOGUE req
TP-DEFERRED-GRANT-CONTROL req
TP-COMMIT req TP-PREPARE req
TP-DATA req TP-ROLLBACK req

Test purpose:

1. When a queue exists, the IUT receives a TP-DATA req, a TP-U-ERROR req, a TP-HANDSHAKE req and a TP-U-ABORT req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs, a U-ASE APDU, a TP-U-ERROR-RI, a TP-HANDSHAKE-RI and a C-ROLLBACK-RI[TP-ABORT-RI].
2. When a queue exists, the IUT receives a TP-GRANT-CONTROL req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs and a TP-GRANT-CONTROL-RI.

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3. When a queue exists, the IUT receives a TP-HANDSHAKE-AND-GRANT-CONTROL req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs and a TP-HANDSHAKE-AND-GRANT-CONTROL-RI.
4. When a queue exists, the IUT receives a TP-DEFERRED-END-DIALOGUE req and a TP-COMMIT req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs, a TP-DEFER(end-dialogue)-RI and a C-PREPARE-RI[TP-PREPARE-RI].
5. When a queue exists, the IUT receives a TP-DEFERRED-GRANT-CONTROL req and a TP-PREPARE req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs, a TP-DEFER(grant-control)-RI and a C-PREPARE-RI[TP-PREPARE-RI].
6. When a queue exists, the IUT receives a TP-ROLLBACK req. After that the IUT receives a P-TOKEN-GIVE[TP-TOKEN-GIVE(keep)-RI] ind on the association, and sends a C-BEGIN-RI, some PDUs and a C-ROLLBACK-RI.

11.1.6.7 BV/SE/SA/State 7(S7)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 7.

Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-CLEANUP ROLLBACK INDICATION EXPECTED" state (State 7).

Subgroups:

1. TP-BID-RI (BIRI)
2. Ignored PDUs (PDU)

11.1.6.7.1 BV/SE/SA/S7/TP-BID-RI (BIRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a "TP-BID-RI" in State 7.

Test purpose:

1. IUT receives a TP-BID-RI on an association where it is the contention-winner, ignores this PDU. After that the IUT receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.6.7.2 BV/SE/SA/S7/Ignored PDUs(PDU)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 7.

Test group objective: Test valid protocol behaviour when the IUT receives a following PDUs in State 7. TP-U-ERROR-RI P-DATA[TP-ABORT-RI] ind

Test purpose:

1. IUT receives a TP-U-ERROR-RI and a P-DATA[TP-ABORT-RI] ind, ignores these PDUs. After that the IUT receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC.

11.1.6.8 BV/SE/SA/State 9(S9)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 9.

Test group objective: Test valid protocol behaviour when the IUT is in the "SACF-CLEANUP ROLLBACK CONFIRM EXPECTED" state (State 9).

Subgroups:

1. C-ROLLBACK-RI (CRBRI)
1. C-ROLLBACK-RI[TP-ABORT-RI] (ABRI-CRBRI)

11.1.6.8.1 BV/SE/SA/S9/C-ROLLBACK-RI (CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI" in State 9.

Test purpose:

1. IUT that has sent a C-ROLLBACK-RI[TP-ABORT(rejected, diagnostic=begin-transaction-reject)-RI] on an association where it is the contention-winner, receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC[TP-ABORT(rejected, diagnostic=begin-transaction-reject)-RI].

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2. When IUT is contention-winner or does not own the minor-synchronize-token, the IUT that has sent a C-ROLLBACK-RI[TP-BEGIN-DIALOGUE(rejected(user))-RC], receives a C-ROLLBACK-RI, and sends a C-ROLLBACK-RC[TP-BEGIN-DIALOGUE(rejected(user))-RC].

11.1.6.8.2 BV/SE/SA/S9/C-ROLLBACK-RI[TP-ABORT-RI] (ABRI--CRBRI)

Reference: ISO/IEC 10026-3, Annex A, Table 18, State 9.

Test group objective: Test valid protocol behaviour when the IUT receives a "C-ROLLBACK-RI[TP-ABORT-RI]" in State 9.

Test purpose:

1. When IUT is contention-winner or does not own the minor-synchronize-token, the IUT receives a C-ROLLBACK-RI[TP-ABORT-RI], and sends a C-ROLLBACK-RC.
2. When IUT contention-loser and owns the minor-synchronize-token, the IUT receives a C-ROLLBACK-RI[TP-ABORT-RI], and sends a C-ROLLBACK-RC, and sends a P-TOKEN-GIVE[TP-TOKEN-GIVE(regular)-RI] req.

11.2 BV/Field Variations (FV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test valid protocol behaviour for each field of each PDU. Check that the IUT performs the correct action as stated in the Standard.

Subgroups:

1. TP-INITIALIZE-RI (INRI)
2. TP-INITIALIZE-RC (INRC)
3. TP-BEGIN-DIALOGUE-RI dialogue (BDRID)
4. TP-BEGIN-DIALOGUE-RI channel (BDRIC)
5. TP-BEGIN-DIALOGUE-RC dialogue (BDRCD)
6. TP-BEGIN-DIALOGUE-RC channel (BDRCC)
7. TP-BID-RI (BIRI)
8. TP-BID-RC (BIRC)
9. TP-END-DIALOGUE-RI (EDRI)
10. TP-END-DIALOGUE-RC (EDRC)
11. TP-U-ERROR-RI (UERI)
12. TP-U-ERROR-RC (UERC)
13. TP-ABORT(user)-RI (ABRIU)
14. TP-ABORT(provider)-RI (ABRIP)
15. TP-GRANT-CONTROL-RI (GCRI)
16. TP-REQUEST-CONTROL-RI (RCRI)
17. TP-HANDSHAKE-RI (HSRI)
18. TP-HANDSHAKE-RC (HSRC)
19. TP-HANDSHAKE-AND-GRANT-CONTROL-RI (HGRI)
20. TP-HANDSHAKE-AND-GRANT-CONTROL-RC (HGRC)
21. TP-DEFER-RI (DFRI)
22. TP-PREPARE-RI (PRRI)
23. TP-HEURISTIC-REPORT-RI (HRRI)
24. TP-TOKEN-GIVE-RI (TGRI)
25. TP-TOKEN-PLEASE-RI (TPRI)
26. TP-RECOVER-RI (RERI)

11.2.1 BV/FV/TP-INITIALIZE-RI (INRI)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the fields of the TP-INITIALIZE-RI APDU.

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Subgroups:

1. protocol-version (PV)
2. contention-winner-assignment (CWA)
3. bid-mandatory (BM)
4. recovery-context-handle (RCH)

11.2.1.1 BV/FV/INRI/Protocol-version(PV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Protocol-version" field of the TP-INITIALIZE-RI APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.1.1.1 BV/FV/INRI/PV/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Protocol-version" field of the TP-INITIALIZE-RI APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "version1".

11.2.1.1.2 BV/FV/INRI/PV/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Protocol-version" field of the TP-INITIALIZE-RI APDU, when the IUT sends the APDU.

Test purpose:

1. Set "version1".

11.2.1.2 BV/FV/INRI/Contention-winner-assignment(CWA)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Contention-winner-assignment" field of the TP-INITIALIZE-RI APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.1.2.1 BV/FV/INRI/CWA/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Contention-winner-assignment" field of the TP-INITIALIZE-RI APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "TRUE".
2. Set "FALSE".

11.2.1.2.2 BV/FV/INRI/CWA/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Contention-winner-assignment" field of the TP-INITIALIZE-RI APDU, when the IUT sends the APDU.

Test purpose:

1. Set "TRUE" or omit this field.
2. Set "FALSE".

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11.2.1.3 BV/FV/INRI/Bid-mandatory(BM)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Bid-mandatory" field of the TP-INITIALIZE-RI APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.1.3.1 BV/FV/INRI/BM/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Bid-mandatory" field of the TP-INITIALIZE-RI APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "TRUE".
2. Set "FALSE".

11.2.1.3.2 BV/FV/INRI/BM/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Bid-mandatory" field of the TP-INITIALIZE-RI APDU, when the IUT sends the APDU.

Test purpose:

1. Set "TRUE" or omit this field.
2. Set "FALSE".

11.2.1.4 BV/FV/INRI/Recovery-context-handle (RCH)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recovery-context-handle" field of the TP-INITIALIZE-RI APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.1.4.1 BV/FV/INRI/RCH/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recovery-context-handle" field of the TP-INITIALIZE-RI APDU, when the IUT receives a the APDU.

Test purpose:

No tests have been identified, this subclause is included for completeness only.

11.2.1.4.2 BV/FV/INRI/RCH/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recovery-context-handle" field of the TP-INITIALIZE-RI APDU, when the IUT sends the APDU.

Test purpose:

No tests have been identified. This subclause is included for completeness only.

11.2.2 BV/FV/TP-INITIALIZE-RC (INRC)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the fields of the TP-INITIALIZE-RC APDU.

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Subgroups:

1. protocol-version (PV)
2. recovery-context-handle (RCH)
3. diagnostic (DIAG)

11.2.2.1 BV/FV/INRC/Protocol-version(PV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Protocol-version" field of the TP-INITIALIZE-RC APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.2.1.1 BV/FV/INRC/PV/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Protocol-version" field of the TP-INITIALIZE-RC APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "version1".

11.2.2.1.2 BV/FV/INRC/PV/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Protocol-version" field of the TP-INITIALIZE-RC APDU, when the IUT sends the APDU.

Test purpose:

1. Set "version1".

11.2.2.2 BV/FV/INRC/Recovery-context-handle (RCH)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recovery-context-handle" field of the TP-INITIALIZE-RC APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.2.2.1 BV/FV/INRC/RCH/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recovery-context-handle" field of the TP-INITIALIZE-RC APDU, when the IUT receives a the APDU.

Test purpose:

No tests have been identified. This subclause is included for completeness only.

11.2.2.2.2 BV/FV/INRC/RCH/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recovery-context-handle" field of the TP-INITIALIZE-RC APDU, when the IUT sends the APDU.

Test purpose:

No tests have been identified. This clause is included for completeness only.

11.2.2.3 BV/FV/INRC/Diagnostic(DIAG)

Reference: ISO/IEC 10026-3, 12.1.

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Test group objective: Test variations of the "Diagnostic" field of the TP-INITIALIZE-RC APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.2.3.1 BV/FV/INRC/DIAG/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Diagnostic" field of the TP-INITIALIZE-RC APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "ccr-version-2-not-available".
2. Set "tp-protocol-version-incompatibility".
3. Set "contention-winner-assignment-rejected".
4. Set "bid-mandatory-value-rejected".

11.2.2.3.2 BV/FV/INRC/DIAG/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Diagnostic" field of the TP-INITIALIZE-RC APDU, when the IUT sends the APDU.

Test purpose:

1. Set "ccr-version-2-not-available".
2. Set "tp-protocol-version-incompatibility".
3. Set "contention-winner-assignment-rejected".
4. Set "bid-mandatory-value-rejected".

11.2.3 BV/FV/TP-BEGIN-DIALOGUE-RI dialogue(BDRID)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the fields of the TP-BEGIN-DIALOGUE-RI dialogue APDU.

Subgroups:

1. initiating-tpsu-title (ITT)
2. recipient-tpsu-title (RTT)
3. functional-units (FU)
4. begin-transaction (BT)
5. confirmation (CNF)
6. correlator (CORR)
7. last-partner-identifier (LPI)
8. user-data (UD)

11.2.3.1 BV/FV/BDRID/Initiating-tpsu-title(ITT)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Initiating-tpsu-title" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.3.1.1 BV/FV/BDRID/ITT/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

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Test group objective: Test variations of the "Initiating-tpsu-title" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "T61String" type value.
2. Set "PrintableString" type value.
3. Set "INTEGER" type value.

11.2.3.1.2 BV/FV/BDRID/ITT/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Initiating-tpsu-title" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Set "T61String" type value.
2. Set "PrintableString" type value.
3. Set "INTEGER" type value.

11.2.3.2 BV/FV/BDRID/Recipient-tpsu-title(RTT)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recipient-tpsu-title" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.3.2.1 BV/FV/BDRID/RTT/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recipient-tpsu-title" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "T61String" type value.
2. Set "PrintableString" type value.
3. Set "INTEGER" type value.

11.2.3.2.2 BV/FV/BDRID/RTT/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Recipient-tpsu-title" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Set "T61String" type value.
2. Set "PrintableString" type value.
3. Set "INTEGER" type value.

11.2.3.3 BV/FV/BDRID/Functional-units(FU)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Functional-units" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

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11.2.3.3.1 BV/FV/BDRID/FU/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Functional-units" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "polarized-control".
2. Set "polarized-control, handshake".
3. Set "polarized-control, commit-and-chained-transactions".
4. Set "polarized-control, handshake, commit-and-chained-transactions".
5. Set “polarized-control, commit-and-unchained-transactions”.
6. Set “polarized-control, handshake, commit-and-unchained-transactions”.
7. Set “shared-control”.
8. Set "shared-control, handshake".
9. Set "shared-control, commit-and-chained-transactions".
10. Set "shared-control, handshake, commit-and-chained-transactions".
11. Set "shared-control, commit-and-unchained-transactions".
12. Set "shared-control, handshake, commit-and-unchained-transactions".

11.2.3.3.2 BV/FV/BDRID/FU/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Functional-units" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

No tests have been identified. This subclause is included for completeness only.

11.2.3.4 BV/FV/BDRID/Begin-transaction(BT)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Begin-transaction" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.3.4.1 BV/FV/BDRID/BT/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Begin-transaction" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "TRUE".
2. Set "FALSE".

11.2.3.4.2 BV/FV/BDRID/BT/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Begin-transaction" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Set "TRUE".
2. Set "FALSE".

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11.2.3.5 BV/FV/BDRID/Confirmation(CNF)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Confirmation" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.3.5.1 BV/FV/BDRID/CNF/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Confirmation" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "always".
2. Set "negative".

11.2.3.5.2 BV/FV/BDRID/CNF/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Confirmation" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Set "always".
2. Set "negative".

11.2.3.6 BV/FV/BDRID/Correlator(CORR)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.3.6.1 BV/FV/BDRID/CORR/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Present this field.

11.2.3.6.2 BV/FV/BDRID/CORR/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

No tests have been identified. This subclause is included for completeness only.

11.2.3.7 BV/FV/BDRID/Last-partner-identifier(LPI)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Last-partner-identifier" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

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Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.3.7.1 BV/FV/BDRID/LPI/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Last-partner-identifier" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Present this field.

11.2.3.7.2 BV/FV/BDRID/LPI/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Last-partner-identifier" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Present this field.

11.2.3.8 BV/FV/BDRID/User-data(UD)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "User-data" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.3.8.1 BV/FV/BDRID/UD/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "User-data" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set the minimal length data of the range defined by PICS.
2. Set the maximal length data of the range defined by PICS.

11.2.3.8.2 BV/FV/BDRID/UD/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "User-data" field of the TP-BEGIN-DIALOGUE-RI dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Set the minimal length data of the range defined by PICS.
2. Set the maximal length data of the range defined by PICS.

11.2.4 BV/FV/TP-BEGIN-DIALOGUE-RI channel(BDRIC)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the fields of the TP-BEGIN-DIALOGUE-RI channel APDU.

Subgroups:

1. functional-units (FU)
2. correlator (CORR)
3. channel-utilization (CU)

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11.2.4.1 BV/FV/BDRIC/Selected-FUs(SF)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Selected-FUs" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.4.1.1 BV/FV/BDRIC/SF/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Selected-FUs" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "recovery".

11.2.4.1.2 BV/FV/BDRIC/SF/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Selected-FUs" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends the APDU.

Test purpose:

1. Set "recovery".

11.2.4.2 BV/FV/BDRIC/Correlator(CORR)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.4.2.1 BV/FV/BDRIC/CORR/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT receives a the APDU.

Test purpose:

1. Present this field.

11.2.4.2.2 BV/FV/BDRIC/CORR/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends the APDU.

Test purpose:

1. Present this field.

11.2.4.3 BV/FV/BDRIC/Channel-utilization(CU)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Channel-utilization" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

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11.2.4.3.1 BV/FV/BDRIC/CU/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Channel-utilization" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "one-way-recovery".
2. Set "two-way-recovery".

11.2.4.3.2 BV/FV/BDRIC/CU/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Channel-utilization" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends the APDU.

Test purpose:

1. Set "one-way-recovery".
2. Set "two-way-recovery".

11.2.4.4 BV/FV/BDRIC/Last-partner-identifier(LPI)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Last-partner-identifier" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.4.4.1 BV/FV/BDRIC/LPI/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Last-partner-identifier" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT receives a the APDU.

Test purpose:

1. Present this field.

11.2.4.4.2 BV/FV/BDRIC/LPI/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Last-partner-identifier" field of the TP-BEGIN-DIALOGUE-RI channel APDU, when the IUT sends the APDU.

Test purpose:

1. Present this field.

11.2.5 BV/FV/TP-BEGIN-DIALOGUE-RC dialogue(BDRCD)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the fields of the TP-BEGIN-DIALOGUE-RC dialogue APDU.

Subgroups:

1. fus-supported (FS)
2. result (R)
3. diagnostic (PD)
4. correlator (CORR)
5. user-data (UD)

11.2.5.1 BV/FV/BDRCD/FUs-supported (FS)

Reference: ISO/IEC 10026-3, 12.1.

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Test group objective: Test variations of the "FUs-supported" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.5.1.1 BV/FV/BDRCD/FS/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "FUs-supported" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set "polarized-control".
2. Set "polarized-control, handshake".
3. Set "polarized-control, commit-and-chained-transactions".
4. Set "polarized-control, handshake, commit-and-chained-transactions".
5. Set "polarized-control, commit-and-unchained-transactions".
6. Set "polarized-control, handshake, commit-and-unchained-transactions".
7. Set "shared-control".
8. Set "shared-control, handshake".
9. Set "shared-control, commit-and-chained-transactions".
10. Set "shared-control, handshake, commit-and-chained-transactions".
11. Set "shared-control, commit-and-unchained-transactions".
12. Set "shared-control, handshake, commit-and-unchained-transactions".

11.2.5.1.2 BV/FV/BDRCD/FS/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "FUs-supported" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends the APDU.

Test purpose:

No tests have been identified. This subclause is included for completeness only.

11.2.5.2 BV/FV/BDRCD/Result(R)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Result" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends or receives the

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.5.2.1 BV/FV/BDRCD/R/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Result" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set “accepted”.
2. Set “rejected-provider”.
3. Set “rejected-user”.

11.2.5.2.2 BV/FV/BDRCD/R/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

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Test group objective: Test variations of the "Result" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Set "accepted".
2. Set “rejected-user”.

11.2.5.3 BV/FV/BDRCD/diagnostic (PD)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "diagnostic" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.5.3.1 BV/FV/BDRCD/PD/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "diagnostic" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT receives a the APDU.

Test purpose:

No tests have been identified. This subclause is included for completeness only.

11.2.5.3.2 BV/FV/BDRCD/PD/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "diagnostic" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends the APDU.

Test purpose:

No tests have been identified. This subclause is included for completeness only.

11.2.5.4 BV/FV/BDRCD/Correlator(CORR)

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.5.4.1 BV/FV/BDRCD/CORR/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Present this field.

11.2.5.4.2 BV/FV/BDRCD/CORR/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Correlator" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Present this field.

11.2.5.5 BV/FV/BDRCD/User-data(UD)

Reference: ISO/IEC 10026-3, 12.1.

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Test group objective: Test variations of the "User-data" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.5.5.1 BV/FV/BDRCD/UD/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "User-data" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT receives a the APDU.

Test purpose:

1. Set the minimal length data of the range defined by PICS.
2. Set the maximal length data of the range defined by PICS.

11.2.5.5.2 BV/FV/BDRCD/UD/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "User-data" field of the TP-BEGIN-DIALOGUE-RC dialogue APDU, when the IUT sends the APDU.

Test purpose:

1. Set the minimal length data of the range defined by PICS.
2. Set the maximal length data of the range defined by PICS.

11.2.6 BV/FV/TP-BEGIN-DIALOGUE-RC channel(BDRCC)

Test group objective: Test variations of the fields of the TP-BEGIN-DIALOGUE-RC channel APDU.

Subgroups:

1. result (R)
2. diagnostic (PD)
3. correlator (CORR)

11.2.6.1 BV/FV/BDRCC/Result(R)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Result" field of the TP-BEGIN-DIALOGUE-RC channel APDU, when the IUT sends or receives the APDU.

Subgroups:

1. Receiver (RECV)
2. Sender (SEND)

11.2.6.1.1 BV/FV/BDRCC/R/Receiver(RECV)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Result" field of the TP-BEGIN-DIALOGUE-RC channel APDU, when the IUT receives a the APDU.

Test purpose:

1. Set “accepted”.
2. Set “rejected-provider”.

11.2.6.1.2 BV/FV/BDRCC/R/Sender(SEND)

Reference: ISO/IEC 10026-3, 12.1.

Test group objective: Test variations of the "Result" field of the TP-BEGIN-DIALOGUE-RC channel APDU, when the IUT sends the APDU.

Test purpose:

1. Set "accepted".

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