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Information technology — Telecommunications and information exchange between systems — X.25 DTE conformance testing —

Part 2:
Data link layer conformance test suite

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Test de conformité X.25 DTE —

Partie 2: Suite d'essais de conformité pour la couche liaison de données

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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 8882-2 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 8882-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This third edition cancels and replaces the second edition (ISO/IEC 8882-2:1995), which has been technically revised.

ISO/IEC 8882 consists of the following parts, under the general title *Information technology — Telecommunications and information exchange between systems — X.25 DTE conformance testing*:

— *Part 1: General principles*

— *Part 2: Data link layer conformance test suite*

— *Part 3: Packet layer conformance test suite*

Annex A forms a normative part of this part of ISO/IEC 8882.

Introduction

This part of ISO/IEC 8882 presents the X.25-DTE Conformance Test Suite for Data Link Layer, described in Tree and Tabular Combined Notation (TTCN).

ISO/IEC 8882-1 explains the objectives and usage of this part of ISO/IEC 8882.

Clause 1 of this part of ISO/IEC 8882-2 is the scope which provides an objective basis for the applicability of the tests within this part of ISO/IEC 8882. Clauses 2 and 3 give the references, definitions and abbreviations used in this part of ISO/IEC 8882. Clause 4 contains information relating to procedures performed in conformance testing. The test suite structure is defined in terms of test groups and subgroups in Table 1. This clause also gives an overview of the test suite. Annex A provides information on the Abstract Test Suite for the X.25-DTE LAPB Data Link Layer protocol both in TTCN GR and TTCN MP format.

Information technology — Telecommunications and information exchange between systems — X.25 DTE conformance testing —

Part 2:
Data link layer conformance test suite

1 Scope

This part of ISO/IEC 8882 defines an abstract test suite for testing the conformance of the Data Link Layer of an IUT with respect to ISO/IEC 7776 (1986, 1995) or the ITU-T Recommendation X.25 (1980, 1984, 1988, 1993).

Conformance of a Data Terminal Equipment (DTE) to the above ISO International Standard or ITU-T Recommendations is tested using a dedicated circuit between the tester and the DTE. It is noted that ITU-T Recommendations X.25 (1980), X.25 (1984), X.25 (1988) and X.25 (1993) are written from the perspective of a DCE and therefore do not always explicitly specify the DTE's operation. In such cases it is assumed that recommended operation of a DTE is included by implication because of the need to communicate with X.25 DCE's. This part of ISO/IEC 8882 excludes the testing of the LAP procedures given in the ITU-T Recommendations.

NOTE   Test cases for extended mode operation (Modulo 128), multilink procedure and DTE-DTE operation as per ISO/IEC 7776 are for further study.

The tests in this part of ISO/IEC 8882 are designed for six possible interworking situations, shown in Figure 1. This part specifies tests for all six cases shown in Figure 1, but recognizes that not every test may apply to a particular DTE. A test selection procedure has to be performed to determine the applicability of a test to a particular DTE. Such selection will be based on the PICS and the PIXIT.
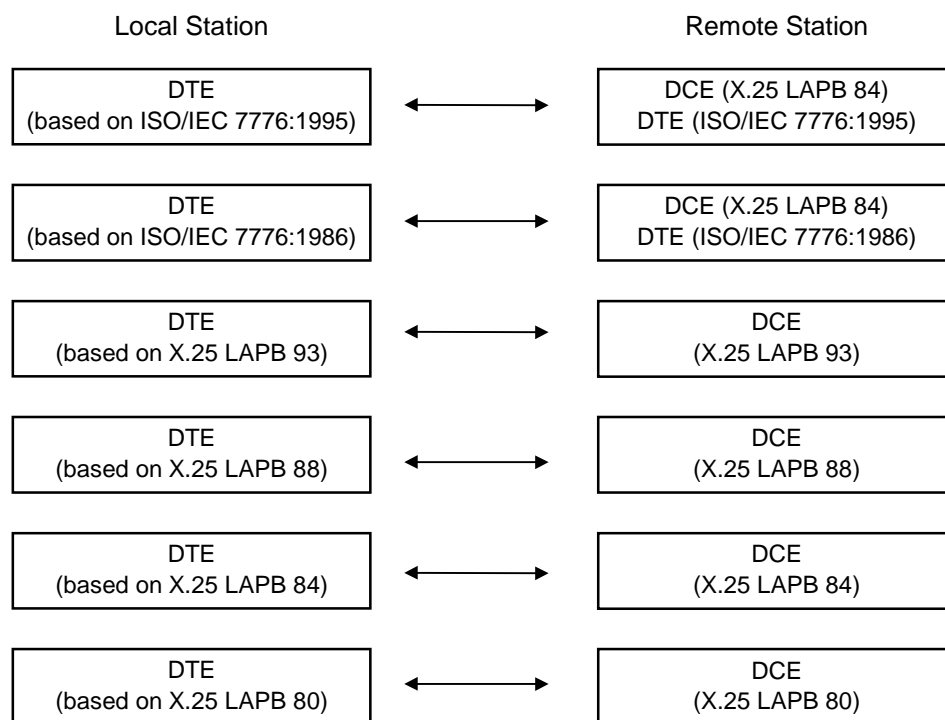
Local Station | Remote Station

| DTE (based on ISO/IEC 7776:1995) | ←→ | DCE (X.25 LAPB 84) DTE (ISO/IEC 7776:1995) |

| DTE (based on ISO/IEC 7776:1986) | ←→ | DCE (X.25 LAPB 84) DTE (ISO/IEC 7776:1986) |

| DTE (based on X.25 LAPB 93) | ←→ | DCE (X.25 LAPB 93) |

| DTE (based on X.25 LAPB 88) | ←→ | DCE (X.25 LAPB 88) |

| DTE (based on X.25 LAPB 84) | ←→ | DCE (X.25 LAPB 84) |

| DTE (based on X.25 LAPB 80) | ←→ | DCE (X.25 LAPB 80) |

Figure 1 — Testing X.25-DTE/DCE and X.25-DTE/DTE Interworking

In the rest of this part of ISO/IEC 8882, the term "X.25 standards" means all four of ITU-T Recommendations X.25 (1980), X.25 (1984), X.25 (1988), X.25 (1993), and International Standards ISO/IEC 7776 (1995) and ISO/IEC 7776 (1986), unless stated otherwise.

2   Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 8882. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 8882 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO/IEC 7776:1995, *Information technology — Telecommunications and information exchange between systems — High-level data link control procedures — Description of the X.25 LAPB-compatible DTE data link procedures.*

ISO/IEC 8824:1990, *Information technology — Open Systems Interconnection — Specification of Abstract Syntax Notation One (ASN.1).*

ISO/IEC 8882-1:1996, *Information technology — Telecommunications and information exchange between systems — X.25-DTE conformance testing — Part 1: General principles.*

ISO/IEC 9646-1:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts.* (See also ITU-T Recommendation X.290)

ISO/IEC 9646-2:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 2: Abstract Test Suite specification.* (See also ITU-T Recommendation X.291)

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

ISO/IEC 9646-4:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 4: Test realization.* (See also ITU-T Recommendation X.293)

ISO/IEC 9646-5:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 5: Requirements on test laboratories and clients for the conformance assessment process.* (See also ITU-T Recommendation X.294)

ITU-T Recommendations X.25 (1980), X.25 (1984), X.25 (1988), X.25 (1993), *Interface between Data Terminating Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to the public data networks by dedicated circuit.*