AS/NZS 3512:2000
ISO/IEC 7776:1995
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Australian/New Zealand Standard™

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

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT/1, Information Systems—Interconnection. It was approved on behalf of the Council of Standards Australia on 21 September 1999 and on behalf of the Council of Standards New Zealand on 20 September 1999. It was published on 10 January 2000.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT/1, Information Systems—Interconnection to supersede AS 3512—1987. This Standard is identical with and has been reproduced from ISO/IEC 7776:1995, *Information technology—Tele–communications and information exchange between systems—High-level data link control procedures—Description of the X.25 LAPB-compatible DTE data link procedures*, and Amendment 1: *Modulo 32 768 and multi-selective reject option*, which is bound at the back of this Standard.

The objective of this Standard is to give network designers a specification for the protocol between data terminal equipment and data circuit-terminating equipment at the data link layer level using the X.25 LAPB procedures.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this International Standard' should read 'this Australian/New Zealand Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to equivalent Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian or Australian/New Zealand Standard*	
ISO		AS	
7478	Information processing systems—Data communication—Multilink procedures	3511	Information processing systems—Data communication—Multilink procedures
ISO/IEC			
646	Information technology—ISO 7-bit coded character set for information interchange	1776	Information processing—7-bit coded character set for information interchange
		AS/NZS	
3309	Information technology—Telecommunications and information exchange between systems—High-level data link control (HDLC) procedures—Frame structure	2572	Information technology—Telecommunications and information exchange between systems—High-level data link control procedures—Frame structure
4335	Information technology—Telecommunications and information exchange between systems—High-level data link control (HLDC) procedures—Elements of procedures	2571	Information technology—Telecommunications and information exchange between systems—High-level data link control procedures—Elements of procedures
7809	Information technology—Telecommunications and information exchange between systems—High-level data link control procedures (HLDC) — Classes of procedures	2751	Information technology—Telecommunications and information exchange between systems—High-level data link control procedures—Classes of procedures

ISO/IEC		AS/NZS	
9646	Information technology—Open Systems Interconnection—Conformance testing methodology and framework	4103	Information technology—Open Systems Interconnection—Conformance testing methodology and framework
9646-1	Part 1: General concepts	4103.1	Part 1: General concepts
9646-2	Part 2: Abstract Test Suite specification	4103.2	Part 2: Abstract test suite specification
ITU-T		—	
Rec. X.25	Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit.		

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AUSTRALIAN/NEW ZEALAND STANDARD

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

1 Scope

This International Standard defines an application of the following HDLC standards: ISO/IEC 3309, ISO/IEC 4335, ISO 7478, and ISO/IEC 7809. When there is difficulty in the interpretation of a reworded requirement from one of the other International Standards, the original requirement of ISO/IEC 3309, ISO/IEC 4335, ISO 7478 or ISO/IEC 7809 is definitive. It also defines the structure, elements and procedures for the operation of a DTE using the X.25 LAPB protocol as specified in ITU-T Recommendation X.25.[1)] The procedures are applicable to data interchange between a DTE and a DCE, or between two DTEs. The procedures are defined for use on duplex links, using synchronous transmission or start/stop transmission.

Clause 3 describes two frame structures: one for basic (modulo 8) operation and one for extended (modulo 128) operation. Basic (modulo 8) operation is the ISO/IEC balanced asynchronous class of procedure with optional functions 2 and 8 (BAC, 2, 8). Extended (modulo 128) operation is the ISO/IEC balanced asynchronous class of procedure with optional functions 2, 8 and 10 (BAC, 2, 8, 10). For those DTE/DCE connections that support both basic (modulo 8) operation and extended (modulo 128) operation, the choice is made at subscription-time only. For those DTE/remote DTE connections that support both basic (modulo 8) operation and extended (modulo 128) operation, the choice is made by bilateral agreement.

NOTE — The procedure herein described as basic (modulo 8) operation is the only one available in all public data networks.

Clause 3 also describes two methods for encoding the frames, as sequences of bits when synchronous transmission is used, and as sequences of octets when start/stop transmission is used. The start/stop encoding specifies optional mechanisms, for use in environments that are sensitive to transmission of octets with values that could be interpreted as ISO/IEC 646 control characters, and/or in environments that support transfer of only seven data bits per start/stop character. The choice of encoding is made by bilateral agreement, or other suitable means, to suit the data transmission characteristics of the environment.

Clause 4 describes the elements of procedures. Some aspects are only operable for the basic (modulo 8) operation and some for the extended (modulo 128) operation.

Clauses 5 and 6 describe the single link procedure (SLP) which is derived from the frame structure and the elements of procedures, and an optional multilink procedure (MLP), respectively. The SLP is used for data interchange over a single data link and the MLP is used for data interchange over a multiple of parallel SLPs. An MLP is required if the effects of individual SLP failures are not to disrupt the higher layer operation. An MLP can also be used over a single SLP by prior bilateral agreement. For DTE/DCE connections the choice of an MLP operation or not is made at subscription-time only. For DTE/remote DTE connections, the choice is made by bilateral agreement.

Where choices among alternative actions are indicated in the procedures, a recommended choice is usually indicated. Unless specifically stated otherwise, the choice of action does not affect interoperability with other implementations of this International Standard although efficiency of operation may be affected. Where such choices do affect interoperability, the procedures explicitly state that prior bilateral

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1) Future revisions of this International Standard will be made in accordance with revisions of ITU-T Recommendation X.25. The present version is based on the 1993 ITU-T Recommendation X.25