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INFORMATION PROCESSING SYSTEMS— DATA COMMUNICATIONS— USE OF X.25 TO PROVIDE THE OSI CONNECTION-MODE NETWORK SERVICE

This Australian Standard was prepared by Committee IS/1, Information Processing Systems. It was approved on behalf of the Council of the Standards Association of Australia on 14 September 1988 and published on 12 December 1988.

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Australian Association of Permanent Building Societies
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INFORMATION PROCESSING SYSTEMS— DATA COMMUNICATIONS— USE OF X.25 TO PROVIDE THE OSI CONNECTION-MODE NETWORK SERVICE

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PREFACE

This Standard was prepared by the Association's Committee on Information Processing Systems. It is identical with and has been reproduced from International Standard ISO 8878:1987, drawn up by ISO TC 97, Information Processing Systems.

This Standard defines two methods for providing the OSI Connection-Mode Network Service (CONS) through the use of the X.25 Packet Level Protocol (X.25/PLP). The first method, which is presented in the main body of the Standard, specifies a mapping between elements of the 1984 version of the X.25/PLP (X.25/PLP—1984) and elements of the OSI CONS. The second method, which is presented in Annex A, defines a Subnetwork Dependent Convergence Protocol (SNDCP) that shall be used to provide the OSI CONS over subnetworks or with equipment using the 1980 version of the X.25/PLP.

This Standard also specifies the conformance requirements for three classes of implementation. These requirements are applicable both to end system operation and to half the operation of a network layer relay. Where relay operation is concerned, the two halves of the relay may be the same or different classes of implementation.

The Standard is one of a series of Open Systems Interconnection (OSI) Standards which are currently under development. Since OSI Standards are developmental, there may be some minor difficulties encountered in their implementation. For this reason, SAA will be providing a limited interpretation service to coordinate and disseminate information concerning difficulties which are identified in using this Standard.

For the purpose of this Australian Standard, the text of the ISO Standard given herein should be modified as follows:

(a) *Terminology.* The words 'Australian Standard' should replace the words 'International Standard' wherever they appear.

(b) *Cross-references.* The references to International Standards should be replaced by references to Australian Standards as follows:

Reference to International Standard		*Australian Standard*	
ISO 7498	Information processing systems—Open Systems Interconnection—Basic reference model	AS 2777	Information processing systems—Open Systems Interconnection—Basic reference model
ISO 8208	Information processing systems—Data communications—X.25/Packet level protocol for data terminal equipment		—
ISO 8348	Information processing systems—Data communications—Network service definition	AS 2994	Information processing systems—Data communications—Network service definition (ISO 8348 and ISO 8348/Add.1)
ISO 8348/Add. 2,	Information processing systems—Data communications—Network service definition—Addendum 2: Network layer addressing		—
ISO/TR 8509	Information processing systems—Open Systems Interconnection—Service conventions		—

CCITT	Recommendation 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, 1984 (Red Book)	—
CCITT	Recommendation X.96, Call progress signals in public data networks, 1984 (Red Book)	—

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Information processing systems—Data communications—Use of X.25 to provide the OSI connection-mode network service

0 Introduction

This International Standard defines two methods for providing the OSI Connection-Mode Network Service (CONS) through the use of the X.25 Packet Level Protocol (X.25/PLP). The first method, which is presented in the main body of this International Standard, specifies a mapping between elements of the 1984 version of the X.25/PLP (X.25/PLP-1984) and elements of the OSI CONS. The second method, which is presented in Annex A of this International Standard, defines a Subnetwork Dependent Convergence Protocol (SNDCP) that shall be used to provide the OSI CONS over subnetworks or with equipment using the 1980 version of the X.25/PLP. This SNDCP should only be used if the elements of the X.25/PLP-1984, as defined in 5.1 of this International Standard, are not available to support the OSI CONS.

Annex B gives the conformance requirements for equipment providing the OSI CONS by one or more of the methods in this International Standard and defines the possibilities and rules for interworking between such equipment.

Annexes A and B are integral parts of this International Standard. They are intended to provide a migration strategy towards the use of the 1984 version of X.25 in both subnetworks and DTEs. Their status will be reviewed periodically.

Annex C provides additional considerations on the relationship between the X.25 protocol procedures and the CONS primitives.

Annex D illustrates the use of X.25 Network Protocol Address Information (NPAI), i.e., the Address Field and the Address Extension Facilities.

Annex E illustrates the use of X.25 transit delay facilities.

The above three annexes are not integral parts of this International Standard.

The relationship between the X.25/PLP-1984 and the OSI CONS is shown in Figure 1. This relationship is described only in terms of the Network Layer entities that provide the CONS. No discussion is given here to describe the actions of a Network Layer entity that only provides a relay function for a given network connection.

The OSI Network Service is defined in terms of:

a. the primitive actions and events of the Service;

b. the parameters associated with each primitive action and event, and the form which they take; and

c. the interrelationship between, and the valid sequences of, these actions and events.

The OSI Network Service does not specify individual implementations or products nor does it constrain the implementation of entities and interfaces within a computer system.

The X.25/PLP-1984 is defined in terms of:

a. procedures for Virtual Calls and Permanent Virtual Circuits;

b. formats of packets associated with these procedures; and

c. procedures and formats for optional user facilities and CCITT-Specified DTE facilities.