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DATA COMMUNICATION—HIGH LEVEL DATA LINK CONTROL PROCEDURES—ELEMENTS OF PROCEDURES

STANDARDS ASSOCIATION OF AUSTRALIA
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Australian Bureau of Statistics

Australian Computer Equipment Suppliers Association

Australian Computer Services Association

Australian Computer Users Association

Australian Electrical and Electronic Manufacturers Association

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PREFACE

This standard was prepared under the authority of the Association's Committee on Information Processing Systems. It is identical with and has been reproduced from International Standard ISO 4335, including Addenda Nos 1 and 2, drawn up by ISO/TC 97, Information Processing Systems. Acknowledgement to ISO is accordingly made.

The purpose of this standard is to describe elements of data link control procedures for synchronous bit sequence independent data transmission using the HDLC frame structure and independent frame numbering in both directions.

For the purpose of this Australian standard, the text of ISO 4335 given herein should be modified as follows:

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

(b) *Decimal comma:* The decimal point should replace the decimal comma wherever it appears.

(c) *Cross-references:* The references to International standards should be replaced by references to Australian standards as follows:

Reference to International standard	*Appropriate Australian standard*
ISO 3309, Data communication—High level data control procedures—Frame structure	AS 2572, Data communication—High level data link control procedures—Frame structure

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

Data communication — High level data link control procedures — Elements of procedures

0 INTRODUCTION

High level data link control (HDLC) procedures are designed to permit synchronous bit sequence independent data transmission.

This International Standard describes HDLC elements of procedures as outlined in clause 1. The reader should note that further study is in progress to define additional elements which enhance this document. This further study may result in a need for minor changes to the text of this International Standard.

In HDLC procedures, the normal cycle of the code transparent data communication between two data stations consists of the transfer of frames containing information from the data source to the data sink, acknowledged by a frame in the opposite direction. Until the data terminal equipment (DTE) comprising the data source receives the reply, it must hold the original information in memory in case the need should arise for retransmissions.

A data link involves two or more participating stations. For control purposes, one station on the link must assume responsibility for the organization of data flow and for link level error recovery operations. The station assuming these responsibilities is known as the primary and the frames it transmits are referred to as command frames. The other stations on the link are known as secondaries and frames they transmit are referred to as response frames.

For the transfer of data, the following two cases of data link control are considered : In the first case, the DTE comprising the data source performs a primary data link control function and controls the DTE comprising the data sink that is associated with a secondary data link control function, by select type commands.

In the second case, the DTE comprising the data sink performs a primary data link control function and controls the DTE comprising the data source that is associated with a secondary data link control function, by poll-type commands.

The information flows from the data source to the data sink and the acknowledgements will always be transmitted in the opposite direction.

These two cases of control may be combined differently so that the data link becomes capable of two-way alternate communication, or two-way simultaneous communication.

The control of traffic between the data source and the data sink is effected by means of a numbering scheme, which is cyclic within a modulus specified in the standard and measured in terms of frames. An independent numbering scheme is used for each data source/data sink combination on the link.

The acknowledgement function is accomplished by the data sink informing the data source of the next expected sequence number. This can be done in a separate frame, not containing information, or within the control field of a frame containing information.