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Australian Standard 2572—1982

DATA COMMUNICATION—HIGH LEVEL DATA LINK CONTROL PROCEDURES—FRAME STRUCTURE

STANDARDS ASSOCIATION OF AUSTRALIA
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Australian Banks Payment Systems Committee

Australian Bureau of Statistics

Australian Computer Equipment Suppliers Association

Australian Computer Services Association

Australian Computer Users Association

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AUSTRALIAN STANDARD

DATA COMMUNICATION—HIGH LEVEL DATA LINK CONTROL PROCEDURES—FRAME STRUCTURE

AS 2572—1982

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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 3309, drawn up by ISO TC/97, Information Processing Systems. Acknowledgement to ISO is accoroingly made.

The purpose of this standard is to define the frame structure for data communication systems using bit-orientated high-level data link contro! (HDLC) procedures.

For the purpose of this Australian standard, the text of ISO 3309 given herein should be modified as follows:

Terminology: The words 'Australian Standard' should replace the words 'International Standard' wherever they appear.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

Data communication — High-level data link control procedures — Frame structure

0 INTRODUCTION

This document is one of a series of International Standards, to be used for implementation of various applications with synchronous transmission facilities.

1 SCOPE AND FIELD OF APPLICATION

This International Standard defines in detail the frame structure for data communication systems using bit-oriented high-level data link control (HDLC) procedures. It defines the relative positions of the various components of the basic frame and the bit combination for the frame delimiting sequence (Flag). The bit escaping mechanism which is used to achieve bit pattern independence within the frame is also defined. The document also specifies the frame checking sequence (FCS). No details of the address or control field allocations are included, other than address extension outlined in clause 4.

2 FRAME STRUCTURE

In HDLC, all transmissions are in frames, and each frame conforms to the following format :

Flag	Address	Control	Information	FCS	Flag
01111110	8 bits	8 bits	*	16 bits	01111110

* An unspecified number of bits which in some cases may be a multiple of a particular character size, for example an octet.

where

Flag = flag sequence

Address = station address field

Control = control field

Information = information field

FCS = frame checking sequence

Frames containing only supervisory control sequences form a special case where there is no information field. The format for these frames shall be :

Flag	Address	Control	FCS	Flag
01111110	8 bits	8 bits	16 bits	01111110

3 ELEMENTS OF THE FRAME

3.1 Flag sequence

All frames shall start and end with the flag sequence. All stations which are attached to the data link shall continuously hunt for this sequence. Thus, the flag is used for frame synchronization. A single flag may be used as both the closing flag for one frame and the opening flag for the next frame.

3.2 Address field

In command frames, the address shall identify the station(s) for which the command is intended. In response frames, the address shall identify the station from which the response originated.

3.3 Control field

The control field contains commands or responses, and sequence numbers. The control field shall be used :

1) to convey a command to the addressed station to perform a particular operation or

2) to convey a response to such a command from the addressed station.

3.4 Information field

Information may be any sequence of bits. In most cases it will be linked to a convenient character structure, for example octets, but if required, it may be an unspecified number of bits and unrelated to a character structure.