AS 2482—1981
UDC 681.32

Australian Standard 2482—1981

INTERCHANGE OF FEATURE CODED DIGITAL MAPPING DATA

STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Army Survey Regiment

Australian Banks Payment Systems Committee

Australian Bureau of Statistics

Australian Computer Users Association

Australian Public Service Board

Central Mapping Authority, N.S.W.

CSIRO, Division of Computing Research

Department of Defence

Department of Transport

Life Insurance Federation of Australia

Manufacturers of Data Processing Equipment

National Library of Australia

National Mapping Council

Office Equipment Industry Association of Australia

Public Service Board, N.S.W.

Qantas Airways Limited

State Electricity Commission of Victoria

Surveyor General's Department, S.A.

Telecom Australia

Universities and Colleges

This standard, prepared by Committee MS/20, Computers and Information Processing, was approved on behalf of the Council of the Standards Association of Australia on 9 June 1981, and was published on 17 August 1981.

This standard was issued in draft form for public review as DR 79178.

AUSTRALIAN STANDARD

INTERCHANGE OF FEATURE CODED DIGITAL MAPPING DATA

AS 2482—1981

First published 1981

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.

ISBN 0 7262 2307 7

PREFACE

This standard was prepared by the Association's Committee on Computers and Information Processing at the request of the National Mapping Council.

The purpose of this standard is to specify a file structure and formats for the interchange of digital mapping and charting data and information. This includes a code structure to be used for identifying individual types of cultural, hydrographic, relief and vegetation features associated with the mapped entities.

The need for such a standard arises for the following reasons:

(a) Different organizations are responsible for the generation or initial acquisition of the various types of mapping data. This information is then generally used by other organizations for specific purposes.

(b) The nature of the data at its initial acquisition and the form in which it is stored within the different organizations varies significantly depending on its intended use by those organizations. More frequently now, this information exists in a digitized form.

(c) It would be of significant economic benefit if a simple common structure were defined for the interchange of the basic digitized information thus avoiding costly duplication of effort in its reacquisition.

In the application of this standard, reference may be necessary to the following Australian standards:

AS 1009	9-Track 32 RPmm (800 RPI) Magnetic Tape for Information Interchange
AS 1068	Magnetic Tape Labelling and File Structure for Information Interchange
AS 1776	7-Bit Coded Character Set for Information Interchange
AS 2241	9-Track, 12.7 mm (0.5 in) Wide Magnetic Tape for Information Interchange Recorded at 63 rpmm (1600 rpi), Phase Encoded
AS 2356	Implementation of the 7-Bit Coded Character Set and its Extensions
AS 2412	Information Interchange on 3.81 mm (0.150 in) Magnetic Tape Cassette at 4 CPmm (100 CPI), Phase Encoded at 63 ftpmm (1600 ftpi)
AS 2414	Magnetic Tape Cassette and Cartridge Labelling and File Structure for Information Interchange

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
INTERCHANGE OF FEATURE CODED DIGITAL MAPPING DATA

FOREWORD

This standard is primarily intended for use by organizations that wish to interchange digital mapping or charting data and information. The exchange is based on individual records for each feature involved without any attempt to define structures or relationships within the data.

The features are identified by an 8-digit feature header code and are generally specified by a string of coordinate values defining their boundary or location and other optional attribute data. The feature header is composed of a feature code, being one of those codes listed in Appendix C of this standard and a feature modifier.

This standard does not specify values for the feature modifier other than zeroes. Other values may be used at the supplier's discretion to permit a further breakdown of the feature code. If other values are used, a list of them and their meanings is to be supplied with the data.

This standard describes a preferred exchange medium with a simple format designed for ease of conversion and to minimize loss in the event of a record being corrupted. With agreement between participants, other media as defined in alternative national standards may be used.

SPECIFICATION

1 SCOPE. This standard specifies the format and coding for digital mapping and charting data to be used when the information is being prepared for exchange purposes. The standard is not intended to apply to data representing maps of area mosaics.

2 APPLICATION. The purpose of this standard is to provide a means whereby digital mapping and charting data, gathered at various scales by different methods and equipments in different organizations, may be conveniently exchanged between themselves and other interested parties.

3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

3.1 Australian geodetic datum (AGD)—the basis of the geographical latitude and longitude coordinate system as defined in Appendix B.

3.2 Australian height datum (AHD)—the datum for heights above mean sea level.

NOTE: AHD is more comprehensively defined in National Mapping Council of Australia Special Publication 8.

3.3 Australian map grid (AMG)—the metric cartesian coordinate system based on the AGD and the Universal Transverse Mercator map projection, whose coordinates are termed eastings and northings.

NOTE: AMG is more comprehensively defined in National Mapping Council of Australia Special Publication 7.

3.4 Feature—a characteristic or physical entity illustrated on any graphic map or chart.

4 PREFERRED EXCHANGE METHOD.

4.1 Medium. The preferred exchange medium shall be 9-track 12.7 mm (0 5 in) wide magnetic tape at 63 rpmm (1600 rpi) phase encoded as specified in AS 2241.

4.2 Coding. All characters used for the information exchange shall be selected from the graphic set defined in AS 1776 and implemented on the 9-track magnetic tape as defined in Part 1 of AS 2356. Records shall be recorded in variable length, type D, format with a maximum block length of not more than 2048 characters as defined in Part 1 of AS 2356.

4.3 Labels and File Structure. The magnetic tape shall be internally labelled and structured in accordance with AS 1068. File sets shall contain applicable labels written at Level 3 as specified in AS 1068.

5 OPTIONAL EXCHANGE METHODS. Subject to agreement between the exchange parties, data may also be exchanged using other sequential media for which national standards exist as set out in Table 1.

6 INTERCHANGE FILE DESCRIPTION.

6.1 External Label. Each exchange volume shall bear an external label for visual identification purposes. This label shall carry the following information:

(a) Volume identifier—same as that recorded on the internal VOL 1 label.

(b) Recording density.

(c) Number of files recorded on the volume.

(d) Maximum block length and maximum record length—same as that recorded in the HDR2 header label.

NOTE: Additional information may be carried on the external label, as appropriate.

6.2 Internal Labels. On the preferred exchange medium, system tape labels VOL 1, HDR1, HDR2, EOV1, EOV2, EOF1 and EOF2 shall appear on the volume as defined for Level 3 in AS 1068.

6.3 File Information. The information indicated in Clauses 6.4 and 6.5 may be given, as appropriate, in an accompanying document referenced to the volume identifier and file number given on the external label. Alternatively, it may be included in the definition records within the file as defined in Clause 7.2(b).

6.4 Essential Information. The following essential information shall be supplied:

(a) *Task identifier.* A map or chart name and/or number (or equivalent) recorded in HDR1 label as the file identifier (with a maximum of 17 characters) shall be given.

(b) *Horizontal coordinate system.* One of the following systems shall be used:

(i) Longitude and latitude on the AGD—units in degrees of arc with West longitude and South latitude as negative.

(ii) Eastings and northings on the AMG—units in metres and the zone number shall be stated.

(iii) X and Y as defined by the orginator.

A field length and offset for the coordinate-field values, for each horizontal axis, shall be defined together with a scale factor and factor operator to be applied to both horizontal axes (see Clause 6.6 and Table 8).

TABLE 1

APPLICABLE AUSTRALIAN STANDARDS

1	2	3	4	5
Media description	Media standard	Coded character standard	Implementation standard	Label and file structure standard
1. 9-track 12.7 mm mag. tape 800 RPI NRZI encoded	AS 1009	AS 1776	AS 2356.1	AS 1068
2. 9-track 12.7 mm mag. tape 6250 cpi GCR encoded	See Note	AS 1776	AS 2356.1	AS 1068
3. 3.81 mm mag. tape cassette 100 cpi phase encoded	AS 2412	AS 1776	AS 2356.1	AS 2414

NOTE: AS ...., Information Processing—9-track, 12.7 mm (0.5 in) Wide Magnetic Tape for Information Interchange: Format and Recording, Using Group Coding at 246 cpm (6250 cpi). This standard, which is in the course of preparation, will be based on ISO 5652 (to be published).