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Australian/New Zealand Standard<sup>®</sup>

**Data elements and interchange  
formats—Information interchange—  
Representation of dates and times**



**AS/NZS 3802:1997**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT/11, Electronic Commerce. It was approved on behalf of the Council of Standards Australia on 5 November 1996 and on behalf of the Council of Standards New Zealand on 9 November 1996. It was published on 5 January 1997.

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT/11, Electronic Commerce, to supersede AS 3802—1989.

It is identical with and has been reproduced from ISO 8601:1988, *Data elements and interchange formats—Information interchange—Representation of dates and times*, including Technical Corrigendum 1:1991.

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| ISO                                 |                                                                                  | AS                  |                                                                              |
| 31-0                                | General principles concerning quantities, units and symbols                      | 2900                | Quantities, units and symbols                                                |
|                                     |                                                                                  | 2900.0              | General principles concerning quantities, units and symbols                  |
| 31-1                                | Quantities and units of space and time                                           | 2900.1              | Quantities and units of space and time                                       |
| 646                                 | Information processing—ISO 7-bit coded character set for information interchange | 1776                | Information processing—7-bit coded character set for information interchange |

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Originated in Australia as AS 3802—1989.  
Jointly revised and designated AS/NZS 3802:1997.

## AUSTRALIAN/NEW ZEALAND STANDARD

# Data elements and interchange formats — Information interchange — Representation of dates and times

## 0 Introduction

**0.1** Although ISO Recommendations and Standards in this field have been available since 1971, different forms of numeric representation of dates and times have been in common use in different countries. Where such representations are interchanged across national boundaries misinterpretation of the significance of the numerals can occur, resulting in confusion and other consequential errors or losses. The purpose of this International Standard is to eliminate the risk of misinterpretation and to avoid the confusion and its consequences.

**0.2** This International Standard includes specifications for the numeric representation of information regarding date and time of the day.

**0.3** In order to achieve similar formats for the representations of calendar dates, ordinal dates, dates identified by week number, periods of time, combined date and time of the day, and differences between local time and Coordinated Universal Time, and to avoid ambiguities between these representations, it has been necessary to use, apart from numeric characters, either single alphabetic characters or one or more other graphic characters or a combination of alphabetic and other characters in some of the representations.

**0.4** The above action has had the benefit of enhancing the versatility and general applicability of previous International Standards in this field, and provides for the unique representation of any date or time expression or combination of these. Each representation can be easily recognized, which is beneficial when human interpretation is required.

**0.5** This International Standard retains the most commonly used expressions for date and time of the day and their representations from the earlier International Standards and provides unique representations for some new expressions used in practice. Its application in information interchange, especially between data processing systems and associated equipment will eliminate errors arising from misinterpretation and the costs these generate. The promotion of this Inter-

national Standard will not only facilitate interchange across international boundaries, but will also improve the portability of software, and will ease problems of communication within an organization, as well as between organizations.

**0.6** Several of the alphabetic and graphic characters used in the text of this International Standard are common both to the representations specified and to normal typographical presentation.

**0.7** To avoid confusion between the representations and the actual text, its punctuation marks and associated graphic characters, all the representations are contained in brackets [ ]. The brackets are not part of the representation, and should be omitted when implementing the representations. All matter outside the brackets is normal text, and not part of the representation. In the associated examples, the brackets and typographical markings are omitted.

## 1 Scope and field of application

This International Standard specifies the representation of dates in the Gregorian calendar and times and representations of periods of time. It includes

- a) calendar dates expressed in terms of year, month and day of month;
- b) ordinal dates expressed in terms of year and day of year;
- c) dates identified by means of year, week numbers and day numbers;
- d) time of the day based upon the 24-hour timekeeping system;
- e) differences between local time and Coordinated Universal Time (UTC);
- f) combination of date and time;
- g) periods of time, with or without either a start or end date or both.

This International Standard is applicable whenever dates and times are included in information interchange.

This International Standard does not cover dates and times where words are used in the representation.

This International Standard does not assign any particular meaning or interpretation to any data element that uses representations in accordance with this International Standard. Such meaning will be determined by the context of the application.

## 2 References

ISO 31-0 : 1981, *General principles concerning quantities, units and symbols*.

ISO 31-1 : 1978, *Quantities and units of space and time*.

ISO 646 : 1983, *Information processing — ISO 7-bit coded character set for information interchange*.

## 3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

**3.1 complete representation:** The representation that includes all the date and time elements associated with the expression.

**3.2 Coordinated Universal Time (UTC):** The time scale maintained by the Bureau International de l'Heure (International Time Bureau) that forms the basis of a coordinated dissemination of standard frequencies and time signals.

### NOTES

1 The source of this definition is Recommendation 460-2 of the Consultative Committee on International Radio (CCIR). CCIR has also defined the acronym for Coordinated Universal Time as UTC (see also 5.3.3).

2 UTC is often (incorrectly) referred to as Greenwich Mean Time and appropriate time signals are regularly broadcast.

**3.3 date, calendar:** A particular day of a calendar year, identified by its ordinal number within a calendar month within that year.

**3.4 date, ordinal:** A particular day of a calendar year identified by its ordinal number within the year.

**3.5 day:** A period of time of 24 hours starting at 0000 and ending at 2400 (which is equal to the beginning of 0000 the next day).

**3.6 format, basic:** The format of a representation comprising the minimum number of components necessary for the precision required.

**3.7 format, extended:** An extension of the basic format that includes additional separators.

**3.8 Gregorian calendar:** A calendar in general use introduced in 1582 to correct an error in the Julian calendar. In the Gregorian calendar common years have 365 days and leap years 366 days divided into 12 sequential months.

**3.9 hour:** A period of time of 60 minutes.

**3.10 local time:** The clock time in public use locally.

**3.11 minute:** A period of time of 60 seconds.

**3.12 month, calendar:** A period of time resulting from the division of a calendar year in twelve sequential periods of time, each with a specific name and containing a specified number of days. In the Gregorian calendar, the months of the calendar year, listed in their order of occurrence, are named and contain the number of days as follows: January (31), February (28 in common years; 29 in leap years), March (31), April (30), May (31), June (30), July (31), August (31), September (30), October (31), November (30), December (31).

NOTE — In certain applications a month is regarded as a period of 30 days.

**3.13 period:** A duration of time, specified

a) as a defined length of time (e.g. hours, days, months, years);

b) by its beginning and end points.

**3.14 second:** A basic unit of measurement of time in the International System of Units (SI) as defined in ISO 31-1.

**3.15 truncated representation:** The abbreviation of a complete representation by omission of higher order components starting from the extreme left-hand side of the expression.

**3.16 week:** A period of time of seven days.

**3.17 week, calendar:** A seven day period within a calendar year, starting on a Monday and identified by its ordinal number within the year; the first calendar week of the year is the one that includes the first Thursday of that year. In the Gregorian calendar, this is equivalent to the week which includes 4 January.

**3.18 year:** A period of time of twelve consecutive months, considered to equal a calendar year.

**3.19 year, calendar:** A cyclic period of time in a calendar which is required for one revolution of the earth around the sun. In the Gregorian calendar, a calendar year is either a common year or a leap year.

**3.20 year, common:** In the Gregorian calendar, a year which has 365 days.

**3.21 year, leap:** In the Gregorian calendar, a year which has 366 days. A leap year is a year whose number is divisible by four an integral number of times, except that if it is a centennial year it shall be divisible by four hundred an integral number of times.