

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

The European Standard EN 28601:1992 has the status of a
British Standard

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This British Standard, having been prepared under the direction of the Information Systems Technology Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 30 June 1989

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National foreword

This British Standard has been prepared under the direction of the Information Systems Technology Standards Policy Committee. It is identical with ISO 8601:1988 “*Data elements and interchange formats — Information interchange — Representation of dates and times*”, including Technical Corrigendum 1. It supersedes BS 4760:1971 and BS 5249-1:1976, which are withdrawn.

In 1992 the European Committee for Standardization (CEN) accepted ISO 8601:1988 and technical corrigendum 1:1991 as European Standard EN 28601:1992. As a consequence of implementing the European Standard this British Standard is renumbered as BS EN 28601 and any reference to BS 7151 should be read as a reference to BS EN 28601.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

Cross-references

International Standard	Corresponding British Standard
	BS 5775 <i>Specification for quantities, units and symbols</i>
ISO 31-0:1981	Part 0:1982 <i>General principles</i> (Identical)
ISO 31-1:1978	Part 1:1979 <i>Space and time</i> (Identical)
ISO 646:1983	BS 4730:1985 <i>Specification for UK 7-bit coded character set</i> (Identical, exercising national options)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Information interchange, data representation, calendar dates, year, days of the month, hours: time

English version

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

(ISO 8601, 1st edition 1988 and technical corrigendum 1:1991)

Eléments de données et formats d'échange —
Echange d'information — Représentation de la
date et de l'heure
(ISO 8601, 1ère édition 1988 et corrigendum
technique 1:1991)

Datenelements und Austauschformate —
Informationsaustausch — Darstellung von
Datum und Uhrzeit
(ISO 8601, 1. Ausgabe 1988, und Technical
Corrigendum 1:1991)

This European Standard was approved by CEN on 1992-10-30. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

The Technical Board has decided to submit the International Standard ISO 8601:1988 “*Data elements and interchange formats — Information interchange — Representation of dates and times*” (ISO 8601, 1st edition, 1988, and its technical corrigendum 1:1991) for formal vote.

The result of the formal vote was positive.

This European standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 1993, and conflicting national standards shall be withdrawn at the latest by May 1993.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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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 International 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

NOTE 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).

NOTE 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