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

*Éléments de données et formats d'échange — Échange
d'information — Représentation de la date et de l'heure*



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS

© ISO 2004

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Terms and definitions	1
2.1 Basic concepts	1
2.2 Time units, nominal durations and time intervals	4
2.3 Representations and formats	7
3 Fundamental principles	7
3.1 Basic rules	7
3.2 Time scales	8
3.3 Representations and format representations	10
3.4 Characters used in the representations	10
3.5 Expansion	12
3.6 Leading zeros	12
3.7 Mutual agreement	12
4 Date and time representations	13
4.1 Date	13
4.2 Time of day	15
4.3 Date and time of day	18
4.4 Time interval	20
4.5 Recurring time interval	23
5 Date and time format representations	25
Annex A (informative) Relationship to ISO 2014, ISO 2015, ISO 2711, ISO 3307 and ISO 4031	26
Annex B (informative) Examples of representations	27
Bibliography	33

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8601 was prepared by Technical Committee ISO/TC 154, *Processes, data elements and documents in commerce, industry and administration*.

This third edition cancels and replaces the second edition (ISO 8601:2000), of which it constitutes a minor revision.

Introduction

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.

This International Standard includes specifications for a numeric representation of information regarding date and time of day. In addition this International Standard includes specifications for representation of the formats of these numeric representations.

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

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.

This International Standard retains the most commonly used expressions for date and time of 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.

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. Note that for units of time in plain text the symbols given in ISO 31-1 should be used.

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.

This document is a preview generated by EVS

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

1 Scope

This International Standard is applicable whenever representation of dates in the Gregorian calendar, times in the 24-hour timekeeping system, time intervals and recurring time intervals or of the formats of these representations are included in information interchange. It includes

- calendar dates expressed in terms of calendar year, calendar month and calendar day of the month;
- ordinal dates expressed in terms of calendar year and calendar day of the year;
- week dates expressed in terms of calendar year, calendar week number and calendar day of the week;
- local time based upon the 24-hour timekeeping system;
- Coordinated Universal Time of day;
- local time and the difference from Coordinated Universal Time;
- combination of date and time of day;
- time intervals;
- recurring time intervals.

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

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

2.1 Basic concepts

2.1.1

time axis

mathematical representation of the succession in time of instantaneous events along a unique axis

[IEC 60050-111]

2.1.2

instant

point on the time axis

[IEC 60050-111]

NOTE An instantaneous event occurs at a specific instant.