INTERNATIONAL STANDARD

ISO 8000-2

Second edition
2017-08

Data quality —

Part 2: Vocabulary

Qualité des données —

Partie 2: Vocabulaire

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 4, *Industrial data*.

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This second edition cancels and replaces the first edition (ISO 8000-2:2012), which has been technically revised, with the addition and modification of some terms and definitions.

ISO 8000 is organized as a series of parts, each published separately. The structure of ISO 8000 is described in ISO/TS 8000-1.

Each part of ISO 8000 is a member of one of the following series: general data quality, master data quality and product data quality. This document is a member of the general data quality series but applicable to all of the three data quality series.

A list of all parts in the ISO 8000 series can be found on the ISO website.

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Introduction

The ability to create, collect, store, maintain, transfer, process and present data to support business processes in a timely and cost effective manner requires both an understanding of the characteristics of the data that determine its quality, and an ability to measure, manage and report on data quality.

ISO 8000 defines characteristics that can be tested by any organization in the data supply chain to objectively determine conformance of the data to ISO 8000.

ISO 8000 provides frameworks for improving data quality for specific kinds of data. The frameworks can be used independently or in conjunction with quality management systems.

ISO 8000 covers industrial data quality characteristics throughout the product life cycle from conception to disposal. ISO 8000 addresses specific kinds of data including, but not limited to, master data, transaction data and product data.

This document establishes the vocabulary for the ISO 8000 series of parts.

Annex A contains an identifier that unambiguously identifies this document in an open information system.

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Data quality —

Part 2: Vocabulary

1 Scope

This document defines terms relating to data quality used in the ISO 8000 series of parts.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

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3.1 Terms relating to applications

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3.1.1
application
group of one or more *processes* (3.3.3) creating or using *product data* (3.11.5)

[SOURCE: ISO 10303-1:1994, 3.2.2]

3.1.2
application protocol
AP
part of ISO 10303 that specifies an application interpreted model satisfying the scope and *information* (3.2.7) *requirements* (3.3.4) for a specific *application* (3.1.1)

Note 1 to entry: This definition differs from the definition used in open system interconnection (OSI) standards. However, since this document is not intended to be used directly with OSI communications, no confusion should arise.

[SOURCE: ISO 10303-1:1994, 3.2.7, modified — The words “this International Standard” have been replaced by “this document” in the Note to entry.]

3.1.3
application reference model
ARM
information (3.2.7) model that describes the information *requirements* (3.3.4) and constraints of a specific *application* (3.1.1) context

[SOURCE: ISO 10303-1:1994, 3.2.8]

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3.2 Terms relating to data and information

3.2.1
data
reinterpretable representation of *information* (3.2.7) in a formalized manner suitable for communication, interpretation, or processing

[SOURCE: ISO/IEC 2382:2015, 2121272, modified — Notes to entry have been removed.]

3.2.2
data exchange
storing, accessing, transferring and archiving of *data* (3.2.1)

[SOURCE: ISO 10303-1:1994, 3.2.15]

3.2.3
data message
message used to exchange *data* (3.2.1) between organizations

EXAMPLE 1 Web Services call: data to be exchanged consisting of Extensible Markup Language (XML) elements in a Simple Object Access Protocol (SOAP) envelope.

EXAMPLE 2 E-mail message: data to be exchanged consisting of an XML file attached to the e-mail.

EXAMPLE 3 Java remote method invocation call: data to be exchanged consisting of Java objects serialized according to the Java Remote Method Invocation (RMI) specification.

EXAMPLE 4 Open Database Connectivity (ODBC) call: data to be exchanged consisting of an update statement encoded according to the ODBC specification.

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EXAMPLE 5 File or data to be exchanged contained on a compact diskette delivered to an organization by a person: data to be exchanged consisting of a spreadsheet.

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3.2.4
data set
logically meaningful grouping of *data* (3.2.1)

EXAMPLE 1 Computer-aided design (CAD) files.

EXAMPLE 2 Electronic data interchange (EDI) transactions.

3.2.5
data specification
rules for describing items belonging to a particular class using entries from a *data dictionary* (3.7.1)

[SOURCE: ISO 22745-2:2010, B.2.18, modified — Examples have been removed.]

3.2.6
entity
concrete or abstract thing in the domain under consideration

[SOURCE: ISO 19439:2006, 3.29, modified — The word “any” has been removed at the start of the definition.]

3.2.7
information
knowledge concerning objects, such as facts, events, things, *processes* (3.3.3), or ideas, including concepts, that within a certain context has a particular meaning

[SOURCE: ISO/IEC 2382:2015, 2121271, modified — Field of application and notes to entry have been removed.]

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3.2.8
metadata
data (3.2.1) defining and describing other data

[SOURCE: ISO/IEC 11179-1:2015, 3.2.16, modified — The words "that defines and describes" have been replaced by "defining and describing".]

3.2.9
organization identifier
reference that can be resolved unambiguously to the legal name, location and the administrator of the organization

3.3 Terms relating to quality

3.3.1
quality
degree to which a set of inherent characteristics of an object fulfils *requirements* (3.3.4)

Note 1 to entry: The term "quality" can be used with adjectives such as poor, good or excellent.

Note 2 to entry: "Inherent", as opposed to "assigned", means existing in the object.

[SOURCE: ISO 9000:2015, 3.6.2]

3.3.2
quality management system
part of a management system with regard to *quality* (3.3.1)

[SOURCE: ISO 9000:2015, 3.5.4]

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3.3.3
process
set of interrelated or interacting activities that use inputs to deliver an intended result

[SOURCE: ISO 9000:2015, 3.4.1, modified – Notes to entry have been removed.]

3.3.4
requirement
need or expectation that is stated, generally implied or obligatory

[SOURCE: ISO 9000:2015, 3.6.4, modified – Notes to entry have been removed.]

3.4 Terms relating to data quality

3.4.1
accepted reference value
value that serves as an agreed-upon reference for comparison

Note 1 to entry: The accepted reference value is derived as:

a) a theoretical or established value, based on scientific principles;

b) an assigned or certified value, based on experimental work of some national or international organization;

c) a consensus or certified value, based on collaborative experimental work under the auspices of a scientific or technical group;

d) the expectation, i.e. the mean of a specified set of *measurements* (3.9.2), when a), b) and c) are not available.

[SOURCE: ISO 3534-2:2006, 3.2.7]

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3.4.2
authoritative data source
owner of a *process* (3.3.3) that creates *data* (3.2.1)

EXAMPLE The Department of Transportation of the Commonwealth of Pennsylvania, USA, is the authoritative data source for Pennsylvania motor vehicle registration records.

3.4.3
data accuracy
closeness of agreement between a *property value* (3.6.2) and the *true value* (3.4.11)

Note 1 to entry: In practice, the *accepted reference value* (3.4.1) is substituted for the true value.

3.4.4
data accuracy record
record of the *information* (3.2.7) provided about the *accuracy* (3.11.1) of a piece of *data* (3.2.1)

Note 1 to entry: A data accuracy record can include representations and warranties of the data's accuracy.

3.4.5
data completeness
quality (3.3.1) of having all *data* (3.2.1) that existed in the possession of the sender at time the *data message* (3.2.3) was created

3.4.6
data completeness record
record of the *information* (3.2.7) provided about the completeness of a piece of *data* (3.2.1)

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Note 1 to entry: A data completeness record can include representations and warranties of the data's completeness.

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3.4.7
data error
non-fulfilment of a *data* (3.2.1) *requirement* (3.3.4)

Note 1 to entry: In this term, "error" is synonymous with *nonconformity* (3.14.8).

3.4.8
data quality
degree to which a set of inherent characteristics of *data* (3.2.1) fulfils *requirements* (3.3.4)

Note 1 to entry: See also *quality* (3.3.1).

3.4.9
data quality management
coordinated activities to direct and control an organization with regard to *data quality* (3.4.8)

3.4.10
data provenance record
record of the ultimate derivation and passage of a piece of *data* (3.2.1) through its various owners or custodians

Note 1 to entry: A data provenance record can include *information* (3.2.7) about creation, update, transcription, abstraction, *validation* (3.4.12), and transferring ownership of data.

3.4.11
true value
value that characterizes a characteristic perfectly defined in the conditions that exist when the characteristic is considered

Note 1 to entry: The true value is a theoretical concept and, in general, cannot be known exactly.

[SOURCE: ISO 3534-2:2006, 3.2.5, modified.]

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3.4.12
validation
confirmation, through the provision of *objective evidence* (3.14.9), that the *requirements* (3.3.4) for a specific intended use or *application* (3.1.1) have been fulfilled

[SOURCE: ISO 9000:2015, 3.8.13, modified – Notes to entry have been removed.]

3.4.13
verification
confirmation, through the provision of *objective evidence* (3.14.9), that specified *requirements* (3.3.4) have been fulfilled

[SOURCE: ISO 9000:2015, 3.8.12, modified – Notes to entry have been removed.]

3.5 Terms relating to syntax and semantics

3.5.1
formal syntax
specification of the valid sentences of a formal language using a formal grammar

EXAMPLE 1 An XML document type definition (DTD) is a formal syntax.

EXAMPLE 2 ISO 10303-21 contains a formal syntax in Wirth Syntax Notation (WSN) for ISO 10303 physical files.

Note 1 to entry: A formal language is computer-interpretable.

Note 2 to entry: Formal grammars are usually Chomsky context-free grammars.

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Note 3 to entry: Variants of Backus-Naur Form (BNF) such as Augmented Backus-Naur Form (ABNF) and Wirth Syntax Notation (WSN) are often used to specify the syntax of computer programming languages and *data* (3.2.1) languages.

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3.5.2
semantic encoding
technique of replacing natural language terms in a message with identifiers that reference *data dictionary entries* (3.7.2)

3.5.3
semantically coded data specification
data requirements statement
data specification (3.2.5) that uses entries from a *data dictionary* (3.7.1)

EXAMPLE 1 An ISO/TS 22745-30 compliant identification guide.

EXAMPLE 2 ISO 13584-501.

Note 1 to entry: A semantically coded data specification can be used to specify rules for describing items belonging to a particular class using *semantic encoding* (3.5.2).

3.6 Terms related to characteristic data

3.6.1
characteristic data
description of an *entity* (3.2.6) by the class to which it belongs and a set of *property values* (3.6.2)

EXAMPLE 1 ISO 13584, ISO 15926, ISO 22745, ISO 13399 and ISO/TS 29002 all include characteristic data in their *data* (3.2.1) models.

EXAMPLE 2 The item “Hex Cap Screw - A193 Grade B7,.250-20 X 1.250” appears in a manufacturer’s catalogue. It can be described as:

— class: hexagon cap screw;

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