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2020-06

Data quality —

Part 2: Vocabulary

Qualité des données —

Partie 2: Vocabulaire

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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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This fourth edition cancels and replaces the third edition (ISO 8000-2:2018), which has been technically revised.

The main changes compared to the previous edition are as follows:

— addition and modifications of terms and definitions.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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.

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 https://www.iso.org/obp

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

3.1 Terms relating to quality

3.1.1
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.]

3.1.2
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.]

3.1.3
quality
degree to which a set of inherent characteristics of an object fulfils *requirements* (3.1.2)

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]

3.1.4
quality management system
part of a management system with regard to *quality* (3.1.3)

[SOURCE: ISO 9000:2015, 3.5.4]

3.1.5
nonconformity
non-fulfilment of a *requirement* (3.1.2)

[SOURCE: ISO 9000:2015, 3.6.9, modified — Note to entry has been removed.]

3.2 Terms relating to data and information

3.2.1
information
knowledge concerning objects, such as facts, events, things, *processes* (3.1.1), 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.]

3.2.2
data
reinterpretable representation of *information* (3.2.1) in a formalized manner suitable for communication, interpretation, or processing

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

3.2.3
data exchange
storing, accessing, transferring, and archiving of *data* (3.2.2)

[SOURCE: ISO 10303-1:—, 3.1.31]

3.2.4
data set
logically meaningful grouping of *data* (3.2.2)

EXAMPLE 1 Computer-aided design (CAD) files.

EXAMPLE 2 Electronic data interchange (EDI) transactions.

3.2.5
metadata
data (3.2.2) defining and describing other data

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

3.2.6
objective evidence
data (3.2.2) supporting the existence or verity of something

Note 1 to entry: Objective evidence can be obtained through observing, *measuring* (3.4.1), testing or other means.

[SOURCE: ISO 9000:2015, 3.8.3, modified — Note 1 to entry has been modified and Note 2 to entry has been removed.]

3.3 Terms relating to identifier

3.3.1
identifier
string of characters created by an organization to reference a *data set* (3.2.4)

3.3.2
identifier resolution
process (3.1.1) that, when applied to an *identifier* (3.3.1), returns an associated *data set* (3.2.4)

3.3.3
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.]

3.3.4
organization identifier
reference that can be resolved unambiguously to the legal name, the location and the administrator of the organization

3.3.5
legal entity
physical or juridical person granted legal status by the governing body of a nation, state or community

3.3.6
authoritative identifier
identifier (3.3.1) issued by an organization that is the originator of the object identified or that is a legal authority

EXAMPLE The original part manufacturer issues the authoritative identifier for that part. Distributors can also assign identifiers, which are *proxy identifiers* (3.3.8) (not authoritative identifiers).

Note 1 to entry: An *authoritative legal entity identifier* (3.3.7) is an authoritative identifier issued by an organization that is a legal authority.

3.3.7
authoritative legal entity identifier
ALEI
identifier (3.3.1) that identifies a *legal entity* (3.3.5) and is issued by the administrative agency for a governing body of the nation, state, or community with the authority to grant legal status

EXAMPLE For the State of Delaware (in the United States), the Division of Corporations is the administrative agency that issues identifiers for juridical persons represented on documents of formation. This agency issued the authoritative legal entity identifier "3031657" to identify the formation of the Code Management Association as a legal entity.

3.3.8
proxy identifier
identifier (3.3.1) issued by an organization that is not the originator of the object identified

3.3.9
proxy legal entity identifier
identifier (3.3.1) that identifies a *legal entity* (3.3.5) and is issued by an organization that is not the administrative agency for a government and, thus, has no authority to grant legal status

3.3.10
vital record
record of life events kept under governmental authority

EXAMPLE Birth certificates, marriage licenses and death certificates.

3.3.11
free decoding
identifier resolution (3.3.2) that, without the need to pay a fee, returns an associated *data set* (3.2.4)

3.3.12
fee-based decoding
identifier resolution (3.3.2) that, only after paying a fee, returns an associated *data set* (3.2.4)

3.3.13
free encoding
without the need to pay a fee, using terms and definitions to discover concept *identifiers* (3.3.1)

3.4 Terms relating to measurement

3.4.1
measure
ascertain or determine the magnitude or quantity of something

3.4.2
measurement
result of *measuring* (3.4.1) something

3.4.3
measurement data
data (3.2.2) representing a *measurement* (3.4.2)

3.4.4
measurement requirement
textual description of how a criterion is *measured* (3.4.1), including any necessary additional attributes and rules to control the test and the element or elements to be tested, and which plays the role of an external specification for a reliable measuring algorithm

Note 1 to entry: It is important to take care that the measurement requirement does not provide an algorithm for the measuring *process* (3.1.1), since it is understood that algorithm development is a competitive arena for engineering system vendors and where standardization is not possible.

3.5 Terms relating to industrial data

3.5.1
product
thing or substance produced by a natural or artificial *process* (3.1.1)

[SOURCE: ISO 10303-1:—, 3.1.49]

3.5.2
product data
representation of *information* (3.2.1) about a *product* (3.5.1) in a formal manner suitable for communication, interpretation, or processing by human beings or by computers

[SOURCE: ISO 10303-1:—, 3.1.50]

3.5.3
application
one or more *processes* (3.1.1) creating or using *product data* (3.5.2)

[SOURCE: ISO 10303-1:—, 3.1.5]

3.5.4
application protocol
AP
part of ISO 10303 that specifies an application interpreted model satisfying the scope and *information* (3.2.1) *requirements* (3.1.2) for a specific *application* (3.5.3)

Note 1 to entry: This definition differs from the definition used in open system interconnection (OSI) standards. No part of ISO 8000, however, contains content referring specifically to OSI communication, so this definition applies in all parts of ISO 8000.

[SOURCE: ISO 10303-1:—, 3.1.17, modified — Note 1 to entry has been modified.]

3.5.5
application reference model
ARM
information (3.2.1) model that describes the information *requirements* (3.1.2) and constraints of an *application* (3.5.3) within an *application protocol* (3.5.4) or module

[SOURCE: ISO 10303-1:—, 3.1.18]

3.6 Terms relating to data dictionary

3.6.1
data dictionary entry
description of an *entity* (3.3.3) type containing, at a minimum, an unambiguous *identifier* (3.3.1), a term and a definition

Note 1 to entry: In the ISO 8000 *data* (3.2.2) architecture, a property need not be associated with a specific data type in a *data dictionary* (3.6.2). The association between a property and a data type can be made in a *data specification* (3.6.3).

Note 2 to entry: In order to exchange a value corresponding to a data dictionary entry, more *information* (3.2.1) than an identifier, a name and a definition could be needed. For a property, a data type is needed. Depending on the kind of property, other data elements (e.g. unit of measure, language) could also be needed. These elements can be given in the data dictionary, in a data specification that references the data dictionary entry, or directly associated with the data.

Note 3 to entry: In the ISO 13584 data architecture, the dictionary entry for a property is required to reference a specific data type. Thus, an ISO 13584 dictionary entry is a special case of the more general concept, as it includes elements of a data specification.

[SOURCE: ISO 22745-2:2010, B.2.17, modified — The spelling of “datatype” has been changed to “data type” to be consistent with other terms in this document and Note 2 to entry has been modified.]

3.6.2
data dictionary
collection of *data dictionary entries* (3.6.1) that allows lookup by *entity* (3.3.3) *identifier* (3.3.1)

[SOURCE: ISO 22745-2:2010, B.2.16]

3.6.3
data specification
set of *requirements* (3.1.2) covering the characteristics of *data* (3.2.2) being fit for one or more particular purposes

Note 1 to entry: ISO 8000-110 requires a data specification to describe how items belong to a particular class by using entries from a *data dictionary* (3.6.2).

Note 2 to entry: In collaborative relationships, the supplier of data and the user of that data agree the content of the data specification in order to ensure the collaboration will be successful (i.e. the supplier can supply conforming data and the user is able to exploit the data for the intended purposes).

Note 3 to entry: An effective data specification is one where the creator of the specification intends for the requirements to be necessary and sufficient for the data to meet the particular purposes.

Note 4 to entry: All stakeholders will be able to understand the data specification more effectively if there is an explicit statement of the intended purposes for the data.

3.7 Terms relating to characteristic data

3.7.1
property value
instance of a specific value together with an *identifier* (3.3.1) for a *data dictionary entry* (3.6.1) that defines a property