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Part 61: Information & data quality management process reference model

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Introduction

This draft standard is based on international discussions in which the UK has taken an active part. Your comments on this draft are invited and will assist in the preparation of the consequent standard. Comments submitted will be reviewed by the relevant BSI committee before sending the consensus UK vote and comments to the international secretariat, which will then decide appropriate action on the draft and the comments received.

If the international standard is approved, it is possible the text will be published as an identical British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with reasons) or positive vote on this draft.

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Whether or not the standard is published in its original (international) form, or as a formal British Standard Implementation the BSI committee's responsibilities are to:

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- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related International and European developments and promulgate them in the UK.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	(7)
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/ Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

DRAFT INTERNATIONAL STANDARD

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ISO/TC 184/SC 4

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Data quality —

Part 61:

Information & data quality management process reference model

Qualité des données

ICS: 25.040.40

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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 electro-technical 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.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50% of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed every three years with a view to deciding whether it can be transformed into an International Standard.

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.

This part of ISO 8000 was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 4, *Industrial data*.

ISO 8000 is organized as a series of parts, each published separately. The structure of ISO 8000 is described in ISO 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 part of ISO 8000 is a member of the general data quality series but also applicable to the other series.

A complete list of parts of ISO 8000 is available from the Internet:

<http://www.iso.org/iso/home/store.htm>

Introduction

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

ISO 8000 defines characteristics of information and data that determine its quality, and provides methods to manage, measure and improve the quality of information and data.

When assessing the quality of information and data, it is useful to perform the assessment in accordance with documented methods. It is also important to document the tailoring of standardized methods with respect to the expectation and requirements pertinent to the business case at hand.

ISO 8000 includes parts applicable to all types of data and parts applicable to specific types of data. ISO 8000 can be used independently or in conjunction with quality management systems.

There is a limit to data quality improvement when only the nonconformity in data is corrected, since the nonconformity can recur. However, when the root causes of the data nonconformity and their related data are traced and corrected through data quality processes, recurrence of the same type of data nonconformity can be prevented. Therefore, a framework for process-centric data quality management is required to improve data quality more effectively and efficiently. Furthermore, data quality can be improved through assessing processes and improving under-performing processes identified by the assessment.

This part of ISO 8000 specifies the processes required for data quality management. This specification is used as a reference for assessing and improving the capability of the processes or increasing organizational maturity with respect to data quality management.

This part of ISO 8000 can be used on its own or in conjunction with other parts of ISO 8000.

This part of ISO 8000 is intended for use by those actors that have a vested interest in information or data quality, with a focus on one or more information systems both inter- and intra-organisation views, throughout all phases of the data life cycle.

Annex A contains an identifier that unambiguously identifies this part of ISO 8000 in an open information system.

Data quality — Part 61: Data quality management: Process reference model

1 Scope

This part of ISO 8000 specifies the processes required for data quality management. Each process is defined by a purpose, outcomes and activities that are to be applied for the assurance of data quality.

The following are within the scope of this part of ISO 8000:

- fundamental principles of data quality management;
- the structure of the data quality management process;
- definitions of the lower level processes for data quality management;
- the relationship between data quality management and data governance;
- implementation requirements.

The following is outside the scope of this part of ISO 8000:

- detailed methods or procedures by which to achieve the outcomes of the defined processes.

This part of ISO 8000 is applicable to managing the quality of digital data sets that include not only structured data stored in databases but also less structured data such as images, audio, video and electronic documents. This part of ISO 8000 can be used by an organization managing data quality at the organization level because, for instance, multiple application systems are sharing and exchanging data.

This part of ISO 8000 is used as a process reference model by internal and external parties, including certification bodies, to assess process capability or organizational maturity for data quality management, and enhance data quality through process improvement.

This part of ISO 8000 can be used in conjunction with or independently of quality management systems standards, including, for example, ISO 9001.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8000-2, *Data quality — Part 2: Vocabulary*

ISO 8000-60, *Data quality — Part 60: Data quality management: Process assessment: Overview*

ISO 8000-150, *Data quality — Part 150: Master data: Quality management framework*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8000-2 apply.

3.2 Abbreviations

For the purposes of this document, the following abbreviated terms apply.

DBMS database management system

4 Fundamental principles of data quality management

The following fundamental principles apply to managing the quality of data.

- Process approach: the processes that create and update data are defined and operated. By doing the same for the processes that manage data quality, data creation and update are repeatable and reliable.
- Continuous improvement: data quality is achieved through effective data processing, measurement and correction of data nonconformities. However, with only these processes, the same nonconformities can occur repeatedly and are not prevented. Sustained improvement arises through activities to analyse, trace and remove the root causes of poor data quality, usually requiring the improvement of processes.
- Involvement of people: specific responsibilities for data quality management exist at different levels of the organization. End users have the greatest direct effect on data quality through data processing activities. However, data administrators perform the necessary intervention and control to implement and embed processes for improvement of data quality across the organization. Furthermore, oversight by senior management is necessary to ensure the necessary resources are made available and to achieve the organizational vision, goals, or objectives for data quality.

5 The data quality management process

5.1 The basic structure of the data quality management process

The basic structure of the data quality management process is as follows.

- The data quality management process consists of Implementation, Data-Related Support, and Resource Provision. This is depicted in Figure 1.
- To achieve continuous improvement of data quality, the Implementation process is performed following the Plan-Do-Check-Act pattern.
- For successful performance of the Implementation process, the Data-Related Support process provides the Implementation process with information and technology related to data management.
- For effective and efficient improvement of data quality, the Resource Provision process provides both the Implementation process and the Data-Related Support process with resources and training services at the organizational level.