
Data quality —

Part 66:

**Data quality management: Assessment
indicators for data processing in
manufacturing operations**

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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).

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

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

Digital data delivers value by enhancing all aspects of organizational performance, including:

- operational effectiveness and efficiency;
- safety;
- reputation with customers and the wider public;
- compliance with statutory regulations;
- consumer costs, revenues and stock prices.

The influence on performance originates from data being the formalized representation of information. This information enables organizations to make reliable decisions. This decision making can be performed by human beings directly and also by automated data processing including artificial intelligence systems.

Through widespread adoption of digital computing and associated communication technologies, organizations become dependent on digital data. This dependency amplifies the negative consequences of the lack of quality in this data. These consequences are the decrease of organizational performance.

The biggest impact of digital data comes from two key factors:

- the data having a structure that reflects the nature of the subject matter;
- the data also being computer processable (machine readable) rather than just being for a person to read and understand.

ISO 9000 explains that quality is not an abstract concept of absolute perfection. Quality is actually the conformance of characteristics to requirements and, thus, any item of data can be of high quality for one use but not for another use that has differing requirements.

EXAMPLE 1 When storing start times for meetings, a calendar application requires less precision than a control system would for storing the times at which to activate a propulsion unit during a spaceflight.

The nature of digital data is fundamental to establishing requirements that are relevant to the specific decisions that are made by each organization.

EXAMPLE 2 ISO/TS 8000-1 identifies that data has syntactic (format), semantic (meaning) and pragmatic (usefulness) characteristics.

To support the delivery of high-quality data, the ISO 8000 series addresses:

- data governance, data quality management and maturity assessment;

EXAMPLE 3 ISO 8000-61 specifies a process reference model for data quality management.

- creating and applying requirements for data and information;

EXAMPLE 4 ISO 8000-110 specifies how to exchange characteristic data that is master data.

- monitoring and measuring data and information quality;

EXAMPLE 5 ISO 8000-8 specifies approaches to measuring data and information quality.

- improving data and, consequently, information quality;

EXAMPLE 6 ISO/TS 8000-81 specifies an approach to data profiling, which identifies opportunities to improve data quality.

- issues that are specific to the type of content in a data set.