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Measurement management systems — Requirements for measurement processes and measuring equipment

Systèmes de management de la mesure — Exigences pour les processus et les équipements de mesure

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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.

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 10012 was prepared by Technical Committee ISO/TC 176, *Quality management and quality assurance*, Subcommittee SC 3, *Supporting technologies*.

This first edition of ISO 10012 cancels and replaces ISO 10012-1:1992 and ISO 10012-2:1997, of which it constitutes a technical revision.

Introduction

An effective measurement management system ensures that measuring equipment and measurement processes are fit for their intended use and is important in achieving product quality objectives and managing the risk of incorrect measurement results. The objective of a measurement management system is to manage the risk that measuring equipment and measurement processes could produce incorrect results affecting the quality of an organization's product. The methods used for the measurement management system range from basic equipment verification to the application of statistical techniques in the measurement process control.

In this International Standard, the term "measurement process" applies to physical measurement activities (e.g. in design, test, production, inspection).

References to this International Standard can be made

— by a customer when specifying products required,

— by a supplier when specifying products offered,

— by legislative or regulatory bodies, and

— in assessment and audit of measurement management systems.

One of the stated management principles in ISO 9000 addresses the process-oriented approach. Measurement processes should be considered as specific processes aiming to support the quality of the products produced by the organization. Application of the measurement management system model applicable to this International Standard is shown in Figure 1.

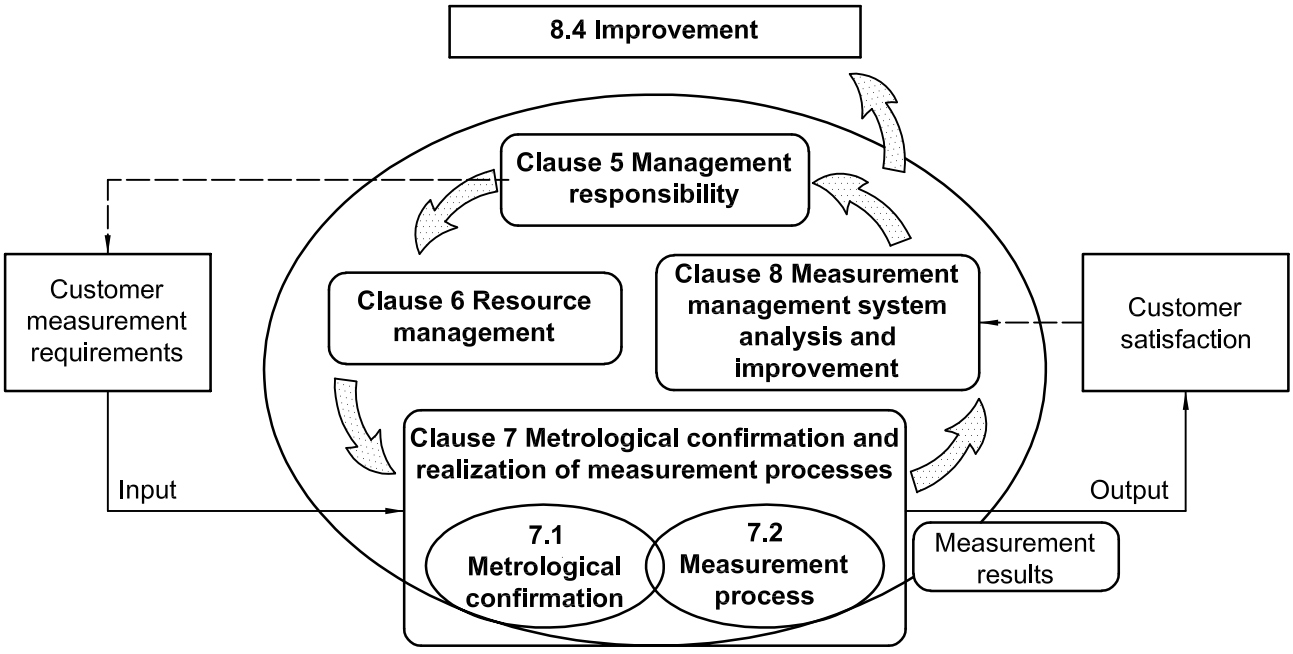

Figure 1 — Model of measurement management system

This International Standard includes both requirements and guidance for implementation of measurement management systems, and can be useful in improving measurement activities and the quality of products. The requirements appear in normal typeface. Guidance appears in italic typeface within a box after the appropriate requirement paragraph. Guidance is for information only and is not to be construed as adding to, limiting, or modifying any requirement.

Organizations have the responsibility to determine the level of controls needed and to specify the measurement management system requirements to be applied as part of their overall management system. Except by agreement, this International Standard is not intended to add to, subtract from, or replace any requirements of other standards.

Following the requirements laid down in this International Standard will facilitate compliance with requirements for measurements and measurement process control specified in other standards, for example, ISO 9001:2000, Subclause 7.6, and ISO 14001:1996, Subclause 4.5.1.

Measurement management systems — Requirements for measurement processes and measuring equipment

1 Scope

This International Standard specifies generic requirements and provides guidance for the management of measurement processes and metrological confirmation of measuring equipment used to support and demonstrate compliance with metrological requirements. It specifies the quality management requirements of a measurement management system that can be used by an organization performing measurements as part of the overall management system, and to ensure metrological requirements are met.

This International Standard is not intended to be used as a requisite for demonstrating conformance with ISO 9001, ISO 14001 or any other standard. Interested parties can agree to use this International Standard as an input for satisfying measurement management system requirements in certification activities.

This International Standard is not intended as a substitute for, or as an addition to, the requirements of ISO/IEC 17025.

NOTE Other standards and guides exist for particular elements affecting measurement results, for example, details of measurement methods, competence of personnel, and interlaboratory comparisons.

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 9000:2000, *Quality management systems — Fundamentals and vocabulary*

VIM:1993, *International vocabulary of basic and general terms used in metrology*. Published jointly by BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 and VIM and the following apply:

3.1
measurement management system
set of interrelated or interacting elements necessary to achieve metrological confirmation and continual control of measurement processes

3.2
measurement process
set of operations to determine the value of a quantity