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Quality management systems -- Guidelines for quality management in projects

Systèmes de management de la qualité -- Lignes directrices pour le management de la qualité dans les projets

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Quality management systems — Guidelines for quality management in projects

Systèmes de management de la qualité — Lignes directrices pour le management de la qualité dans les projets

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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 10006 was prepared by Technical Committee ISO/TC 176, *Quality management and quality assurance*, Subcommittee SC 2, *Quality systems*.

This second edition cancels and replaces the first edition (ISO 10006:1997), which has been technically revised.

This edition has sought to improve the alignment of ISO 10006 with the ISO 9000 family of International Standards, and includes new text concerning their quality management principles. Also, the title of ISO 10006 has been revised to reflect the changes to the ISO 9000 family of International Standards and to give an improved expression of the aim of this International Standard.

Introduction

This International Standard provides guidance on quality management in projects. It outlines quality management principles and practices, the implementation of which are important to, and have an impact on, the achievement of quality objectives in projects. It supplements the guidance given in ISO 9004.

These guidelines are intended for a wide audience. They are applicable to projects which can take many forms from the small to very large, from simple to complex, from being an individual project to being part of a programme or portfolio of projects. They are intended to be used by personnel who have experience in managing projects and need to ensure that their organization is applying the practices contained in the ISO 9000 family of standards, as well as those who have experience in quality management and are required to interact with project organizations in applying their knowledge and experience to the project. Inevitably, some groups will find that material presented in the guidelines is unnecessarily detailed for them, however other readers may be dependent on the detail.

It is recognized that there are two aspects to the application of quality management in projects; that of the project processes and that of the project's product. A failure to meet either of these dual aspects may have significant effects on the project's product, the project's customer and other interested parties, and the project organization.

These aspects also emphasize that the achievement of quality objectives is a top management responsibility, requiring a commitment to the achievement of quality objectives to be instilled at all levels within the organizations involved in the project. However, each level should retain responsibility for their respective processes and products.

The creation and maintenance of process and product quality in a project requires a systematic approach. This approach should be aimed at ensuring that the stated and implied needs of the customer are understood and met, that other interested parties' needs are understood and evaluated, and that the originating organization's quality policy is taken into account for implementation in the management of the project.

It should be noted that a summary of processes in projects is given in Annex A.

Quality management systems — Guidelines for quality management in projects

1 Scope

This International Standard gives guidance on the application of quality management in projects.

It is applicable to projects of varying complexity, small or large, of short or long duration, in different environments, and irrespective of the kind of product or process involved. This can necessitate some tailoring of the guidance to suit a particular project.

This International Standard is not a guide to “project management” itself. Guidance on quality in project management processes is discussed in this International Standard. Guidance on quality in a project’s product-related processes, and on the "process approach", is covered in ISO 9004.

Since this International Standard is a guidance document, it is not intended to be used for certification/registration purposes.

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*

ISO 9004: 2000, *Quality management systems — Guidelines for performance improvements*

NOTE The Bibliography contains additional references applicable to quality management in projects.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 and the following apply. Some of the definitions below are quoted directly from ISO 9000:2000, but are also supplemented with notes specific to projects.

3.1
activity
⟨project⟩ smallest identified item of work in a **project** (3.5) **process** (3.3)

3.2
interested party
person or group having an interest in the performance or success of an organization

EXAMPLE Customers, owners, people in an organization, suppliers, bankers, unions, partners or society.

NOTE 1 A group can comprise an organization, a part thereof, or more than one organization.

[ISO 9000:2000, definition 3.3.7]

NOTE 2 Interested parties may include

— customers (of the project's products),

— consumers (such as a user of the project's product),

— owners of the project (such as the organization originating the project),

— partners (as in joint-venture projects),

— funders (such as a financial institution),

— suppliers or subcontractors (e.g. organizations supplying products to the project organization),

— society (such as jurisdictional or regulatory bodies and the public at large), and

— internal personnel (such as members of the project organization).

NOTE 3 There can be conflicting interests among interested parties. These may need to be resolved for the project to be successful.

3.3
process
set of interrelated or interacting activities which transforms inputs into outputs

NOTE 1 Inputs to a process are generally outputs of other processes.

NOTE 2 Processes in an organization are generally planned and carried out under controlled conditions to add value.

[ISO 9000:2000, definition 3.4.1 (excluding Note 3)]

3.4
progress evaluation
assessment of progress made on achievement of the **project** (3.5) objectives

NOTE 1 This assessment should be carried out at appropriate points in the project life cycle across project processes, based on criteria for project processes and product.

NOTE 2 The results of progress evaluations may lead to revision of the **project management plan** (3.7).

3.5
project
unique process, consisting of a set of coordinated and controlled **activities** (3.1) with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including the constraints of time, cost and resources

[ISO 9000:2000, definition 3.4.3 (excluding Notes)]

NOTE 1 An individual project may form part of a larger project structure.

NOTE 2 In some projects the objectives and scope are updated and the product characteristics defined progressively as the project proceeds.

NOTE 3 The project's product (see ISO 9000:2000, 3.4.2) is generally defined in the project scope (see 7.3.1). It may be one or several units of product and may be tangible or intangible.

NOTE 4 The project's organization is normally temporary and established for the lifetime of the project.

NOTE 5 The complexity of the interactions among project activities is not necessarily related to the project size.

3.6
project management
planning, organizing, monitoring, controlling and reporting of all aspects of a **project** (3.5) and the motivation of all those involved in it to achieve the project objectives

3.7
project management plan
document specifying what is necessary to meet the objective(s) of the **project** (3.5)

NOTE 1 A project management plan should include or refer to the project's **quality plan** (3.8).

NOTE 2 The project management plan also includes or references such other plans as those relating to organizational structures, resources, schedule, budget, risk management, environmental management, health and safety management and security management, as appropriate.

3.8
quality plan
document specifying which procedures and associated resources shall be applied by whom and when to a specific **project** (3.5), product, **process** (3.3) or contract

NOTE 1 These procedures generally include those referring to quality management processes and to product realization processes.

NOTE 2 A quality plan often makes reference to parts of the quality manual or to procedure documents.

NOTE 3 A quality plan is generally one of the results of quality planning.

[ISO 9000:2000, definition 3.7.5]

3.9
supplier
organization or person that provides a product

EXAMPLE A producer, distributor, retailer or vendor of a product, or a provider of a service or information.

NOTE 1 A supplier can be internal or external to the organization.

NOTE 2 In a contractual situation a supplier is sometimes called a "contractor".

[ISO 9000:2000, definition 3.3.6]

NOTE 3 In the context of projects, "contractor" or "subcontractor" is often used in place of "supplier".

4 Quality management systems in projects

4.1 Project characteristics

4.1.1 General

Some of the characteristics of projects are as follows:

— they are unique, non-repetitive phases consisting of processes and activities;

— they have some degree of risk and uncertainty;

— they are expected to deliver specified (minimum) quantified results within predetermined parameters, for example, quality-related parameters;

— they have planned start and finishing dates, within clearly specified cost and resource constraints;

— personnel may be temporarily assigned to a project organization for the duration of the project [the project organization may be assigned by an originating organization (see 4.1.2) and may be subject to change as the project progresses];

— they may be of a long duration, and subject to changing internal and external influences over time.

4.1.2 Organizations

This International Standard makes separate reference to an “originating organization” and to a “project organization”.

The “originating organization” is the organization that decides to undertake the project. It may be constituted as a single organization, joint-venture, consortium, etc. The originating organization assigns the project to a project organization. The originating organization may be undertaking multiple projects, each of which may be assigned to a different project organization.

The “project organization” carries out the project. The project organization may be a part of the originating organization.

4.1.3 Processes and phases in projects

Processes and phases are two different aspects of a project. A project may be divided into interdependent processes and into phases as a means of planning and monitoring the realization of objectives and assessing the related risks.

Project phases divide the project life cycle into manageable sections, such as conception, development, realization and termination.

Project processes are those processes that are necessary for managing the project as well as those that are necessary to realize the project’s product.

Not all the processes discussed in this International Standard will necessarily exist in a particular project, whereas in others, additional processes may be necessary. In some projects, a distinction may need to be made between core and supporting processes. Annex A lists and summarizes the processes that are considered to be applicable for the majority of projects.

NOTE To facilitate the discussion of the guidance to quality management in projects, the “process approach” is adopted in this International Standard. Additionally, the processes of a project have been grouped into two categories: the project management processes and the processes related to the project’s product (those primarily concerned with the project’s product such as design, production, etc.).

The processes are grouped according to their affinity to one another, for example all time-related processes are included in one group. Eleven groups of processes are presented.

The strategic process covered in Clause 5 sets the direction for the project. Clause 6 addresses resource-related processes and personnel-related processes. Clause 7 covers processes related to interdependency, scope, time, cost, communication, risk and purchasing. Processes related to measurement and analysis, and continual improvement, are covered in Clause 8. These clauses include a description of each process and provide guidance to quality management in the process.

4.1.4 Project management processes

Project management includes the planning, organizing, monitoring, controlling, reporting and taking necessary corrective actions on all processes of the project that are needed to achieve the project objectives, on a continual basis. The quality management principles (see 4.2.1 and 5.2, and ISO 9000:2000, 0.2) should be applied to all the project management processes.

4.2 Quality management systems

4.2.1 Quality management principles

The guidance for quality management of projects in this International Standard is based on eight quality management principles (see ISO 9000:2000, 0.2):

a) customer focus;

b) leadership;

c) involvement of people;

d) process approach;

e) system approach to management;

f) continual improvement;

g) factual approach to decision making;

h) mutually beneficial supplier relationships.

These generic principles should form the basis for quality management systems for the originating and project organizations.

NOTE Guidance on the application of the quality management principles to the planning carried out in the strategic process is given in 5.2.2 to 5.2.9.

4.2.2 Project quality management system

It is necessary to manage project processes within a quality management system in order to achieve project objectives. The project quality management system should be aligned, as far as is possible, with the quality management system of the originating organization.

NOTE ISO 9004 provides guidelines for considering both effectiveness and efficiency of quality management systems.

Documents needed and produced by the project organization to ensure the effective planning, implementation and control of the project should be defined and controlled (see ISO 9004:2000, 4.2).

4.2.3 Quality plan for the project

The project quality management system should be documented and included or referenced in a quality plan for the project.

The quality plan should identify activities and resources necessary for achieving the quality objectives of the project. The quality plan should be incorporated into, or referenced in, the project management plan.

In contractual situations, a customer may specify requirements for the quality plan. These requirements should not limit the scope of the quality plan used by the project organization.

NOTE ISO 10005 gives guidance on quality plans.