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Quality management — Guidelines for quality management in projects

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.

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 on 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 the following URL: www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 10006:2003), which has been technically revised to align it with ISO 9000:2015, ISO 9001:2015 and ISO 21500:2012.

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Introduction

This document provides guidelines for 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 is aligned with ISO 9000:2015 and ISO 9001:2015, and supplements the guidance given in ISO 21500:2012.

The guidelines given in this document 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 people who have experience in managing projects and need to ensure that their organization is applying the practices contained in the quality management and quality management system standards from ISO/TC 176, 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 users will find that material presented in the guidelines is unnecessarily detailed for them; however, other users require the detail.

This document employs the process approach, which incorporates the Plan-Do-Check-Act (PDCA) cycle and "risk based thinking". The two concepts of "quality management in projects" and "quality management systems in projects" are distinguished as follows:

— quality management in projects includes: quality management systems in projects, management responsibility in projects, resource management in projects, product/service realization in projects, and measurement, analysis and improvement in projects;

— quality management systems in projects includes: project characteristics, quality management principles in projects, project quality management processes and a quality plan for the project.

It is recognized that there are two aspects to the application of quality management in projects: the project processes that are managed within the project management system, and the quality of the project's outputs in the form of products and services. Failure to meet either of these dual aspects can have significant effects on the project's products and services, the project's customer and other interested parties, and the project organization.

NOTE The expression "products/services" is used as an abbreviation for "products and services" throughout the remainder of this document.

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 needs to retain responsibility for its respective processes and products/services.

The creation and maintenance of process and product/service quality in a project requires a systematic approach. This approach needs to 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.

This document is designed to be used in the context of the requirements for quality management systems specified in ISO 9001:2015 and the guidance on project management processes provided in ISO 21500. Project management processes are described in ISO 21500.

The structure of this document reflects its design as a supporting standard providing guidance rather than a management system standard. A matrix is presented in Annex B to provide a cross reference between this document, ISO 9001:2015 and ISO 21500:2012.

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Quality management — Guidelines for quality management in projects

1 Scope

This document gives guidelines for the application of quality management in projects.

It is applicable to organizations working on projects of varying complexity, small or large, of short or long duration, being an individual project to being part of a programme or portfolio of projects, in different environments, and irrespective of the kind of product/service or process involved, with the intention of satisfying project interested parties by introducing quality management in projects. This can necessitate some tailoring of the guidance to suit a particular project.

This document is not a guide to project management itself. Guidance on quality in project management processes is presented in this document. Guidance on project management and related processes is covered in ISO 21500.

This document addresses the concepts of both "quality management in projects" and "quality management systems in projects". These are distinguished by being addressed separately by the following topics and clauses:

— quality management in projects includes: quality management systems in projects (Clause 4); management responsibility in projects (Clause 5); resource management in projects (Clause 6); product/service realization in projects (Clause 7); and measurement, analysis and improvement in projects (Clause 8);

— quality management systems in projects includes: project characteristics (4.1); quality management principles in projects (4.2); project quality management processes (4.3); and a quality plan for the project (4.4).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 9000:2015, *Quality management systems — Fundamentals and vocabulary*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

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

3.1
activity
identified piece of work that is required to be undertaken to complete a *project* (3.3)

Note 1 to entry: The activity in a project can generally be recognized as the smallest identified entity.

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3.2
progress evaluation
assessment of progress made on achievement of the *project* (3.3) objectives

Note 1 to entry: This assessment should be carried out at appropriate phases/steps in the *project life cycle* (3.8) across project processes, based on criteria for project processes and product or service.

Note 2 to entry: The results of progress evaluations can lead to revision of the *project management plan* (3.5).

3.3
project
unique process undertaken to achieve an objective

Note 1 to entry: A project generally consists of a set of coordinated and controlled *activities* (3.1) with start and finish dates, conforming to specific requirements, including the constraints of time, cost and resources

Note 2 to entry: An individual project can form part of a larger project structure and generally has a defined start and finish date.

Note 3 to entry: In some projects the objectives and scope are updated and the product or service characteristics defined progressively as the project proceeds.

Note 4 to entry: The output of a project can be one or several units of product or service.

Note 5 to entry: The project's organization is normally temporary and established for the lifetime of the project.

Note 6 to entry: The complexity of the interactions among project activities is not necessarily related to the project size.

3.4
project management
planning, organizing, monitoring, controlling and reporting of all aspects of a *project* (3.3) and the motivation of all those involved in it to achieve the project objectives

3.5
project management plan
document specifying what is necessary to meet the objective(s) of the *project* (3.3)

Note 1 to entry: A project management plan should include or refer to the project's *quality plan* (3.9).

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

3.6
project organization
temporary structure that includes project roles, responsibilities and levels of authority and boundaries that need to be defined and communicated to all interested parties of the *project* (3.3)

3.7
project phase
division of the *project life cycle* (3.8) into manageable sets of activities, such as conception, development, realization and termination

3.8
project life cycle
defined set of phases from the start to the end of the *project* (3.3)

[SOURCE: ISO 21500:2012, 2.12]

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3.9
quality plan
specification of the actions, responsibilities and associated resources to be applied to a specific object

[SOURCE: ISO 10005:—[1)], 3.2]

3.10
provider
supplier
organization that provides a product or a service

EXAMPLE Producer, distributor, retailer or vendor of a product or a service.

Note 1 to entry: A provider can be internal or external to the organization.

Note 2 to entry: In a contractual situation a provider is sometimes called a "contractor".

Note 3 to entry: In the context of *projects* (3.3), "contractor" or "subcontractor" is often used in place of "provider".

[SOURCE: ISO 9000:2015, 3.2.5, modified — Note 3 to entry has been added.]

4 Quality management systems in projects

4.1 Context and characteristics of the project

4.1.1 General

Both the project organization and the originating organization (see 4.1.2) should consider the context in which their project quality management systems operate. Some internal and external issues can affect the project's ability to achieve the intended project results. Other issues can offer opportunities to work more effectively with internal and external parties (see ISO 9001:2015, 4.1).

Consideration of internal and external issues that can influence the project quality management system enables both the project and originating organizations to:

a) understand the needs and expectations of interested parties;

b) establish or adopt project quality management processes necessary to achieve intended project results;

c) determine risks and opportunities related to project processes and planned outputs.

The main 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 quantified results within predetermined parameters, for example, quality-related parameters;

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

— they have outputs that can be one or several units of a product or service;

— 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 can be subject to change as the project progresses];

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

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