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**Quality management systems—
Guidelines for quality management
in projects**

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

Consequently **JIS Q10006:1998** is replaced with this Standard.

This revision has been made based on **ISO 10006:2003** *Quality management systems—Guidelines for quality management in projects* for the purpose of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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Quality management systems— Guidelines for quality management in projects

Introduction This Japanese Industrial Standard has been prepared based on the second edition of **ISO 10006** *Quality management systems—Guidelines for quality management in projects* published in 2003 without modifying the technical contents.

This 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 **JIS Q 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 **JIS Q 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.

1 Scope This 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 in-

volved. This can necessitate some tailoring of the guidance to suit a particular project.

This Standard is not a guide to "project management" itself. Guidance on quality in project management processes is discussed in this Standard. Guidance on quality in a project's product-related processes, and on the "process approach", is covered in **JIS Q 9004**.

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

Remarks : The International Standard corresponding to this Standard is as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21**.

ISO 10006:2003 *Quality management systems—Guidelines for quality management in projects* (IDT)

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.

JIS Q 9000 : 2000 *Quality management systems—Fundamentals and vocabulary*

Remarks : **ISO 9000** *Quality management systems—Fundamentals and vocabulary* is identical with the said standard.

JIS Q 9004 : 2000 *Quality management systems—Guidelines for performance improvements*

Remarks : **ISO 9004** *Quality management systems—Guidelines for performance improvements* is identical with the said standard.

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 **JIS Q 9000 : 2000** and the following apply. Some of the definitions below are quoted directly from **JIS Q 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.

NOTES 1 A group can comprise an organization, a part thereof, or more than one organization. [**JIS Q 9000:2000**, definition 3.3.7]

- 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).
- 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

- NOTES 1 Inputs to a process are generally outputs of other processes.
- 2 Processes in an organization are generally planned and carried out under controlled conditions to add value.

[JIS Q 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

- NOTES 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.
- 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 [JIS Q 9000:2000, definition 3.4.3 (excluding Notes)]

- NOTES 1 An individual project may form part of a larger project structure.
- 2 In some projects the objectives and scope are updated and the product characteristics defined progressively as the project proceeds.
- 3 The project's product (see JIS Q 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.
- 4 The project's organization is normally temporary and established for the lifetime of the project.

- 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)

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

- 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

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

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

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

[JIS Q 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.

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

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

[JIS Q 9000:2000, definition 3.3.6]

- 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 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 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 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 JIS Q 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 Standard is based on eight quality management principles (see JIS Q 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 : JIS Q 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 JIS Q 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.

5 Management responsibility

5.1 Management commitment The commitment and active involvement of the top management of the originating and project organizations are essential for developing and maintaining an effective and efficient quality management system for the project.

Top management of both the originating and project organizations should provide input into the strategic process (see 5.2).

Since the project organization may be dispersed on completion of the project, the top management of the originating organization should ensure that continual improvement actions are implemented for current and future projects.

Top management of the originating and project organizations need to create a culture for quality, which is an important factor in ensuring the success of the project.

5.2 Strategic process

5.2.1 Application of quality management principles through the strategic process Planning for the establishment, implementation and maintenance of a quality management system based on the application of the quality management principles is a strategic, direction-setting process. This planning should be performed by the project organization.

In this planning, it is necessary to focus on the quality of both processes and products to meet the project objectives.

The general guidance given in 5.2.2 to 5.2.9 should also be applied to the processes described in 6.1, 6.2, 7.2 to 7.8, and in clause 8, in addition to the specific guidance given in those clauses.

5.2.2 Customer focus Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations [see JIS Q 9000:2000, 0.2 a)].

Satisfaction of the customers' and other interested parties' requirements is necessary for the success of the project. These requirements should be clearly understood to ensure that all processes focus on, and are capable of, meeting them.

The project objectives, which include the product objectives, should take into account the needs and expectations of the customer and other interested parties. The objectives may be refined during the course of the project. The project objectives should be documented in the project management plan (see 7.2.2) and should detail what is to be accomplished (expressed in terms of time, cost and product quality) and what is to be measured.

When determining the balance between time or cost and product quality, potential impacts on the project's product should be evaluated, taking into consideration customers' requirements.

Interfaces should be established with all the interested parties to facilitate the exchange of information, as appropriate, throughout the project. Any conflicts between interested party requirements should be resolved.

Normally, when conflicts arise between the requirements of the customer and other interested parties, customer requirements take precedence, except in the case of statutory or regulatory requirements.

Resolution of conflicts should be agreed to by the customer. Interested party agreements should be documented. Throughout the project, attention will need to be paid to changes in the requirements of the interested parties, including additional requirements from new interested parties that join the project after it has commenced.

5.2.3 Leadership Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives [see JIS Q 9000:2000, 0.2 b)].

A project manager should be appointed as early as possible. The project manager is the individual with the defined responsibility and authority for managing the project and ensuring that the project's quality management system is established, implemented and maintained. The authority delegated to the project manager should be commensurate with the assigned responsibility.

The top management of both the originating and the project organizations should assume leadership in creating a culture for quality

- by setting the quality policy and identifying the objectives (including the quality objectives) for the project,
- by providing the infrastructure and resources to ensure achievement of project objectives,
- by providing an organizational structure conducive to meeting project objectives,
- by making decisions based on data and factual information,
- by empowering and motivating all project personnel to improve the project processes and product, and
- by planning for future preventive actions.

NOTE : The title of the project manager can vary from project to project.

5.2.4 Involvement of people People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit [see JIS Q 9000:2000, 0.2 c)].

Personnel in the project organization should have well-defined responsibility and authority for their participation in the project. The authority delegated to the project participants should correspond to their assigned responsibility.

Competent personnel should be assigned to the project organization. In order to improve the performance of the project organization, appropriate tools, techniques and methods should be provided to the personnel to enable them to monitor and control the processes.

In the case of multi-national and multi-cultural projects, joint ventures, international projects, etc., the implications of cross-cultural management should be addressed.

5.2.5 Process approach A desired result is achieved more efficiently when activities and related resources are managed as a process [see JIS Q 9000:2000, 0.2 d)].

The project processes should be identified and documented. The originating organization should communicate the experience gained in developing and using its own processes, or those from its other projects, to the project organization. The project organization should take account of this experience when establishing the project's processes, but it may also need to establish processes that are unique to the project.

This may be accomplished

- by identifying the appropriate processes for the project,
- by identifying the inputs, outputs and the objectives for the project's processes,
- by identifying the process owners and establishing their authority and responsibility,
- by designing the project's processes to anticipate future processes in the life cycle of the project, and
- by defining the interrelations and interactions among the processes.

Process effectiveness and efficiency may be assessed through internal or external review. Assessments can also be made by benchmarking or evaluating the processes against a maturity scale. Maturity scales typically range in degrees of maturity from "no formal system" to "best-in-class". Numerous maturity models have been developed for different applications (see JIS Q 9004:2000, Annex A).

NOTE : The ISO 9000 family of standards provide guidance on a number of process-related and product-related quality management practices. These can assist an organization in meeting its project objectives.

5.2.6 System approach to management Identifying, understanding and managing