SLOVENSKI STANDARD
SIST EN 9200:2005

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Aeronavtika - Vodenje programov - Smernice za specifikacijo vodenja projekta

Aerospace series - Programme management - Guidelines for project management specification

Luft- und Raumfahrt - Programm-Management - Richtlinie für eine Projektmanagement-Spezifikation

Série aérospatiale - Management de programme - Recommandation pour une spécification de management de projet

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Aerospace series - Programme management - Guidelines for project management specification

Série aérospatiale - Management de programme - Recommandation pour une spécification de management de projet

Luft- und Raumfahrt - Programm-Management - Richtlinie für eine Projektmanagement-Spezifikation

This European Standard was approved by CEN on 4 June 2004.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 9200:2004) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Annex A is informative.

Introduction

Project management aims at planning, monitoring and control of all aspects of a project, and the motivation of all those involved in it, to achieve the project objectives, on time and to the specified cost, quality and performance.

It requires:

- the definition of the activities,
- the roles and the responsibilities for the various actors,
- consistency between their activities,
- capacity for communication between them,
- a stable and rigorous project organisation.

To achieve these objectives, the present document describes the key best practices for the management of an aerospace project, to be adapted specifically for each particular project to be managed.

In this standard, the customer is either an external identified customer, or an internal entity within the organisation, in charge of receiving or accepting the product. Additionally, this standard may also be used as a basis for the relationship between customers and suppliers at any level of the supply chain.

Prior to contract negotiations, the customer will issue a management specification, against which a supplier will submit a management plan. This document will assist in that process by indicating the major issues presented in both documents.

The customers in charge of the establishment of the project management specification should be aware that any management requirement has an impact on the costs and that, as in the case of the requirements for a product, the minimum acceptable requirements should be an objective.

The project management specification is to be established with the objective of achieving the highest effectiveness in this discipline. In particular, attention is drawn to the possibility for suppliers to use, to the maximum extent, their own internal methods and procedures, in order to obtain quality, reliability and limitation of costs, provided internal procedures meet this recommendation.

1 Scope

For a given aerospace project, the present document is intended to be used as a reference to current best practices. These can be used as a guideline for the creation and negotiation of the project management specification between a customer and a supplier, and hence lead to the creation of the project management plan.

It may be used for any project utilising several actors at different levels. In particular in the case of large projects it presents provisions recommended for the management of a project according to (see Figure 1):

- project organisation,
- work breakdown structure,
- phasing and scheduling,
- risk management,
- configuration management,
- documentation management,
- interfaces with other disciplines,
- project monitoring and control,
  - technical performance control,
  - cost control,
  - schedule control,
- resource management,
- quality assurance,
- project closure.

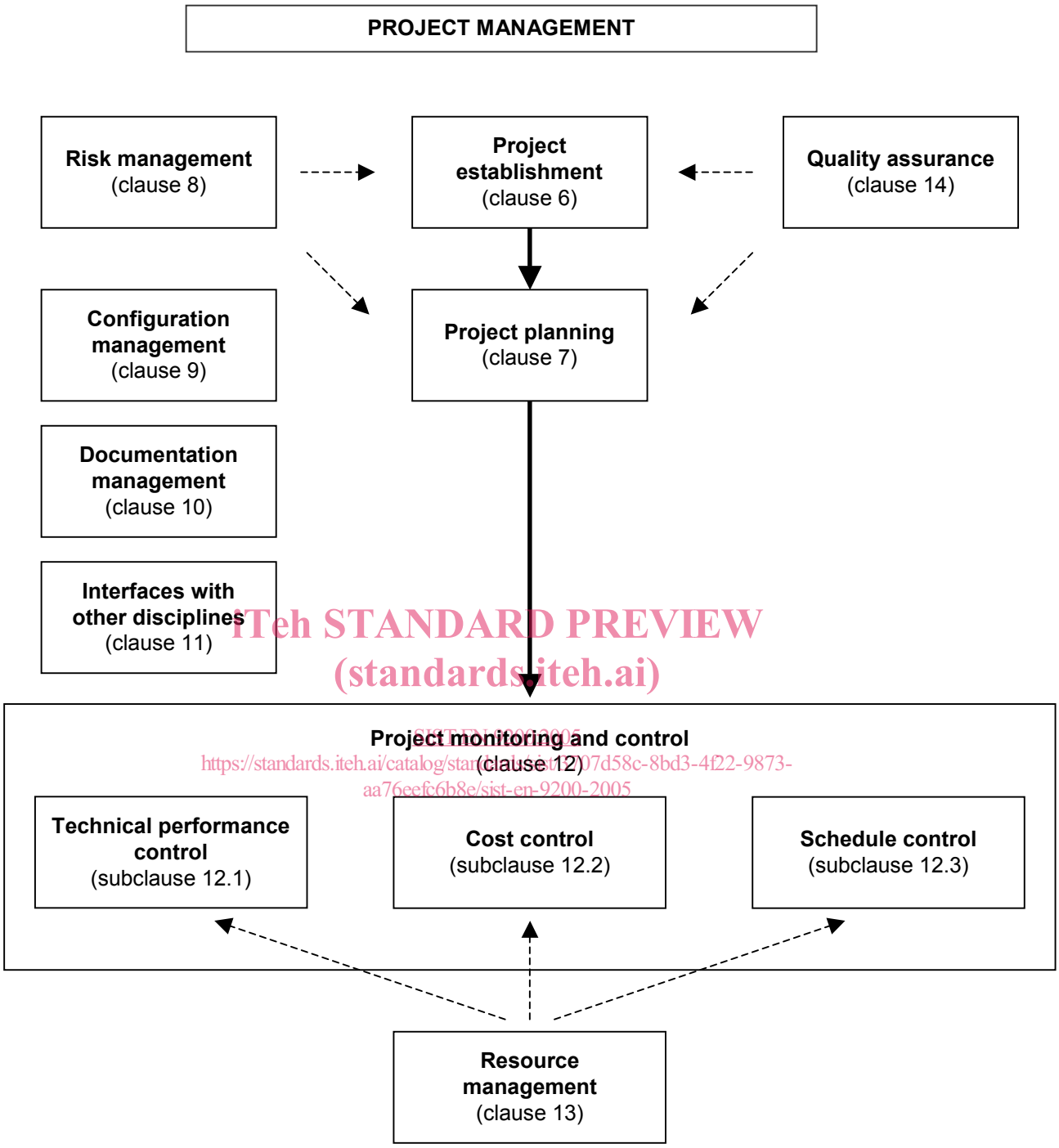

Figure 1 – Document organisation

The terminology employed is explained in clause 4. It is limited to specifying the context in which potentially ambiguous terms are employed. As far as possible, this terminology includes definitions already appearing in various normative documents, preferably international standards.

2 Programme Management

Referring to the definitions of project and project management as given in clause "0 Foreword", programme management may be considered as the directing of a portfolio of projects which benefit from a consolidated approach or towards one specific objective.

The common element of the projects in a portfolio is that they run simultaneously, or at least overlap with one another, they share a number of common resources and are supposed to generate some income.

Under this definition, Programme Management is typically concerned with activities at a much higher level within the organisation.

This standard will only focus on project management.

3 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.

This document is consistent with the quality management requirements as considered in normative references:

EN ISO 9000:2000, *Quality management systems – Fundamentals and vocabulary (ISO 9000:2000)*

EN ISO 9001:2000, *Quality management systems – Requirements (ISO 9001:2000)*

ISO 10006:2003, *Quality management systems – Guidelines for quality management in project*

ISO 10007:2003, *Quality management systems – Guidelines for configuration management*

EN 9100:2003, *Aerospace series – Quality management systems – Requirements (based on ISO 9001:2000) and Quality systems – Model for quality assurance in design, development, production, installation and servicing (based on ISO 9001:1994)*

EN 9130: 2001, *Aerospace series – Quality management systems – Record retention*

IEEE 1220:1998, *Standard for Application and Management of the Systems Engineering Process IEEE Computer Society Document* [1)]

4 Terms and Definitions

For the purposes of this European Standard, the terms and definitions given in EN ISO 9000:2000 and the following apply.

4.1
acceptance (of a product or a document)
decision pronounced by the customer, acknowledging that the product or the document is in conformity with the contractual commitments

NOTE The acceptance of a document does not involve the responsibility from the authority which accepts it, on the use of the document.

4.2
acquisition strategy
set of principles defined by a customer as regards technologies, performances, costs, schedules, co-operations to lead the project, …

1) Published by Institute of Electrical and Electronics Engineers Inc – 445 Hoes Lane – P.O.Box 1331 – Piscataway, NJ 08855-1331 - USA

4.3
anomaly
gap between a current situation and an expected one

NOTE An anomaly justifies an investigation which might lead to the discovery of a nonconformity or a defect.

4.4
applicable configuration
configuration of a product identified by its changes from the configuration baseline

At a given moment, a product may have several applicable configurations.

4.5
approval
formal agreement allowing the use or the application of a document

NOTE The approving authority commits its own responsibility on the use of the document contents.

4.6
as built configuration
configuration of one product item identified by its gaps of conformity with respect to its applicable configuration

4.7
audit
systematic and objective activity undertaken to determine to what extent the requirements related to the agreed topic are satisfied

This audit is carried out by one or more persons independent from what is being audited.

4.8
change
changes to document content submitted to configuration control (Technical specification, Design data file, …) and characterised by their impact on their use

4.9
configuration
functional and physical characteristics of a product as defined in technical documents and achieved in the product

[ISO 10007:2003]

4.10
configuration baseline
configuration of a product formally established at a specific point in time, which serves as reference for further activities

[ISO 10007:2003]

4.11
configuration item
aggregation of hardware, software, processed materials, services, or any of its discrete portions, that is designated for configuration management and treated as a single entity in the configuration management process

[ISO 10007:2003]

4.12
contractual hierarchy
stacking customer/supplier such as the supplier of level N becomes customer of the level N+1

4.13
corrective action
action to eliminate the cause of a detected **nonconformity**, or other undesirable situation

[EN ISO 9000:2000]

4.14
critical path
sequence of tasks where any delay affects the final date

4.15
design (of a product or a system)
set of technical output data of the design process describing the functional and physical characteristics of a product or a system

NOTE The data is structured in the design data file.

4.16
design data file
a structured set of documents constituting the response of the product designer to the technical requirements of the applicant

All the verifiable product characteristics (including the acceptance criteria) could be expressed in this document, and the prescribed processes to produce it are indicated. This file allows identification of the product, in order to prepare its manufacturing and inspection file and its operating documentation.

4.17
design justification data file
document gathering the whole set of information on studies and tests showing that a product is compliant with its design data file and meets the specification expressing the need which this product shall satisfy

4.18
design justification plan
document established by the supplier describing the set of needed works in order to demonstrate that a product compliant with its Design data file, meets the specification expressing the need which this product shall satisfy

4.19
deviation permit
permission to depart from the originally specified requirements of a **product** prior to realisation

[EN ISO 9000:2000]

NOTE A deviation permit is generally given for a limited quantity of products or period of time, and for a specific use.

4.20
execution plan
document established by every supplier which:

- describes:
  - the main tasks and their logic (it ensures the consistency and integrates work of the different disciplines such as management, systems engineering, integrated logistics support and RAMS, ...),
  - the resources (hardware and software) needed for their realisation;
- presents the schedule of works and in particular the critical paths of the project and the particular actions to be carried out.

4.21
function
actions of a product or one of its components expressed exclusively in terms of finality

4.22
functional analysis
approach which consists in defining, ordering, characterising, prioritising and/or giving value to the functions

NOTE 1 The Functional analysis applies to creation or improvement of a product, it is in this case the fundamental base of value analysis. Applied to the need only, it is the base for the establishment of the functional performance specification.

NOTE 2 Ordering aims at classifying the operating functions (sometimes technical functions in the event of redesign) in a logical way and allowing the identification of their interrelationships.

The characterisation consists in defining the evaluation criteria, in specifying their levels and in indicating their flexibility.

Prioritising allows evaluation of the order of importance of the functions.

giving value to the functions prioritises their relative or absolute contributions, independently of the solutions

4.23
functional architecture
structured breakdown of the system in functions and sub-functions (internal and external interfaces and data flow) which complies with a need

4.24
functional performance specification
document by which the applicant expresses his need (or the one which he is in charge to express) in terms of operating and constraints functions

For each of them, evaluation criteria and corresponding levels are defined. To each of these levels, flexibility must be associated.

NOTE 1 The establishment of a functional performance specification implies that a study allowed the precise definition of the user's needs.

NOTE 2 As an answer, the objective is to obtain the product proposal able to meet the expected service, under the intended conditions, at minimum cost ; for this purpose a functional performance specification expresses only results requirements and, in principle, no resources requirements.

NOTE 3 An evaluation criterion (of a qualitative nature) is accompanied by a scale allowing the location of its level (of a quantitative nature).

NOTE 4 Obtaining the totality of the expected advantages of a functional performance specification implies use of flexibility.

4.25
function-tree
representation of the product or the system showing the breakdown in functions and sub-functions which must be fulfilled by successive products levels

4.26
integrated logistics support
co-ordinated and iterative set of technical and management tasks whose objectives are the following:

- to express the need in logistics support and the environmental constraints of use in the expression of operational need;
- to contribute to obtaining a system design including the support elements:
  - allowing to optimise and maintain its effectiveness for all its life time, in consistency with the user resources,
  - allowing total optimisation « performances/costs/schedules »;
- to realise, set up and to renew the support elements, according to the exploitation and the maintenance needs.

4.27
integrated logistics support plan
document established by the supplier describing the organisation, the resources, the methods and the key events set up to achieve the specified goals as regards logistics support

4.28
in use configuration
configuration of one product item identified by its as-built configuration and complemented by the consequences of any in-service event on its functional and physical characteristics

NOTE Technical events, consumption of life potential, repairs etc. are examples of in-service events.

4.29
key-events
events considered as representative of the project progress and selected because of:

- their character as an outstanding task start/end,
- their interface character,
- their criticality, (technical, economical, schedule risks, etc),
- their contractual aspect (payment milestone).

4.30
lessons learnt
collection and exploitation, by all the actors of information concerning the events which have occurred throughout the project

4.31
life cycle
this describes the whole series of developments of the product throughout its life starting from the expression of its need until the disposal, whatever the form is

4.32
life cycle cost
total expenses for the whole life of the product for a given use

For a user, the life cycle cost includes the acquisition cost, the in service cost, the maintenance cost (spares, etc.). Possibly the cost of modification, the cost of destruction, etc.

4.33
life profile
chronological description of the situations in which a product will be utilised from its delivery to its disposal

NOTE "situations" correspond to the different uses of the product and events in its life (e.g. transport, handling, storage, maintenance, different missions...) with the respective duration and occurrences.

4.34
life time
duration, under a given set of conditions, of an interval of time, starting at a given moment and finishing when the failure rate becomes unacceptable, or when the product is regarded as non repairable following a failure

4.35
logistics support
set of tasks carried out on a system and including:

- maintaining or recovery of the system availability,
- providing the user and the various repairers, the supply items, the documentation, the tools, logistic resources and the infrastructure needed to carry out the assigned tasks,
- users training,
- technical follow-up of the system in service.

4.36
logistics support analysis (LSA)
method contributing to the optimisation of the expected system design, starting from the expressed need and the considered operational concepts

Then to define and optimise the products and the services necessary to implement, use and maintain the availability of the system.

4.37
management plan
document established by the supplier to describe how he answers the set of requirements of the management specification, according to its quality system

4.38
manufacturing and inspection file
document or set of documents detailing in a structured way the data necessary, in a given industrial context, for the manufacturing and the inspection of a product compliant with its design described in the design data file

4.39
nonconformity
non-fulfilment of a requirement

[EN ISO 9000:2000]

4.40
operational need
need to be satisfied to fulfil a mission

4.41
phasing and scheduling
logical sequence of all the tasks of the project taking into account the requirements resulting from the acquisition strategies and the execution plans declined in the stacking of customer/supplier

4.42
physical architecture
arrangement of physical elements which define a solution (products and operating processes) designed to satisfy a need expressed by a functional architecture

[according to IEEE 1220]

4.43
preventive action
action to eliminate the cause of a potential **nonconformity**, or other undesirable potential situation

[EN ISO 9000:2000]

NOTE 1 There can be more than one cause for a potential nonconformity.

NOTE 2 Preventive action is taken to prevent occurrence whereas **corrective action** is taken to prevent recurrence.

4.44
procedure
specified way to carry out an activity or a **process**

[EN ISO 9000:2000]

NOTE 1 Procedures can be documented or not.

NOTE 2 When a procedure is documented, the term "written procedure" or "documented procedure" is frequently used. The document that contains a procedure can be called a "procedure document".

4.45
process
set of interrelated or interacting activities which transforms inputs into outputs

[according to EN ISO 9000:2000]

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

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

NOTE 3 A process where the conformity of the resulting **product** cannot be readily or economically verified is frequently referred to as a "special process".