SLOVENSKI STANDARD
SIST EN 16601-10:2015

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Nadomešča:
SIST EN 13290-2:2002
SIST EN 13290-3:2002
SIST EN 13290-4:2002

Vodenje vesoljskih projektov - Načrtovanje projekta in izvedba

Space project management - Project planning and implementation

Raumfahrt-Projetmanagement - Projektplanung und Implementierung

Management des projets spatiaux - Planification et mise en œuvre du projet

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English version

Space project management - Project planning and implementation

Management des projets spatiaux - Planification et mise en œuvre du projet

Raumfahrt-Projetmanagement - Projektplanung und Implementierung

This European Standard was approved by CEN on 14 December 2013.

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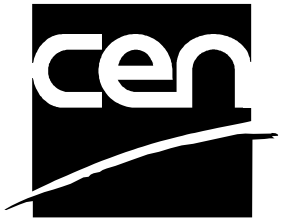

CEN-CENELEC Management Centre:
Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 16601-10:2015) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16601-10:2015) originates from ECSS-M-ST-10C Rev. 1.

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of an identical text or by endorsement, at the latest by July 2015, and conflicting national standards shall be withdrawn at the latest by July 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document supersedes EN 13290-2:2001, EN 13290-3:2001 and EN 13290-4:2001.

This document has been developed to cover specifically space systems and has therefore precedence over any EN covering the same scope but with a wider domain of applicability (e.g. : aerospace).

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

Introduction

Project planning and implementation is the project function, encompassing a coherent set of processes for all aspects of project management and control.

This is done by:

- establishing the project requirements and constraints derived from the mission statement.
- defining phases and formal milestones enabling the progress of the project to be controlled with respect to cost, schedule and technical objectives (i.e. project control function).
- defining project breakdown structures, which constitute the common and unique reference system for the project management to:
  - identify the tasks and responsibilities of each actor;
  - facilitate the coherence between all activities of the whole project;
  - perform scheduling and costing activities.
- setting up a project organization to perform all necessary activities on the project.

1
Scope

The scope of this ECSS Standard is limited to describing the key elements of project planning and implementation and identifying the top level requirements and products that together provide a coherent and integrated project planning across the 3 ECSS branches.

Where other ECSS management, engineering, or product assurance standards contain more specific and detailed requirements related to project planning, references are provided to identify where these can be found within the ECSS system.

This standard may be tailored for the specific characteristic and constrains of a space project in conformance with ECSS-S-ST-00.

2
Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this ECSS Standard. For dated references, subsequent amendments to, or revision of any of these publications do not apply, However, parties to agreements based on this ECSS Standard are encouraged to investigate the possibility of applying the more recent editions of the normative documents indicated below. For undated references, the latest edition of the publication referred to applies.

EN reference	Reference in text	Title
EN 16601-00	ECSS-S-ST-00-01	Space system – Glossary of terms
EN 16001-40	ECSS-M-ST-40	Space project management – Configuration and information management

3 Terms and definitions

3.1 Terms defined in other standards

For the purpose of this Standard, the terms and definitions from ECSS-S-ST-00-01 apply.

3.2 Terms specific to the present standard

3.2.1 discipline

specific area of expertise within a general subject

NOTE The name of the discipline normally indicates the type of expertise (e.g. in the ECSS System, system engineering, mechanical engineering, software and communications are disciplines within the Engineering domain)

3.2.2 domain

general area of interest or influence covering a number of inter-related topics or sub-areas

NOTE The name of a domain normally indicates the area of interest (e.g. in the ECSS System, the Management, Engineering, and Product Assurance branches represent three different domains).

3.2.3 function

combination and interaction of a number of operations or processes, which together achieve a defined objective

3.3 Abbreviated terms

For the purposes of this Standard, the abbreviated terms from ECSS-S-ST-00-01 and the following apply.

Abbreviation	Meaning
AR	acceptance review
B/L	baseline
CBCP	current baseline cost plan
CDR	critical design review
CRR	commissioning result review
DRL	document requirements list
EAC	estimate at completion
EGSE	electrical ground support equipment
ELR	end-of-life review
ETC	estimate to completion
FRR	flight readiness review
GSE	ground support equipment
ILS	integrated logistic support
ITT	invitation to tender
LRR	launch readiness review
MCR	mission close-out review
MDR	mission definition review
MGSE	mechanical ground support equipment
N/A	not applicable
OBCP	original baseline cost plan
OBS	organizational breakdown structure
ORR	operational readiness review
PDR	preliminary design review
PMP	project management plan
PRD	project requirements documents
PRR	preliminary requirements review
QR	qualification review
RFP	request for proposal
RFQ	request for quote
SRR	system requirements review
WBS	work breakdown structure
WP	work package

4
Principles

4.1 Project planning

4.1.1 Introduction

Project planning and implementation encompasses all of the processes carried out in order to plan and execute a space project from initiation to completion at all levels in the customer-supplier chain in a coordinated, efficient and structured manner. It is a project wide activity receiving inputs from all project disciplines and involving close co-operation across the project domains.

A space project typically comprises a space segment and a ground segment which are implemented in parallel (see ECSS-E-ST-70). They rely on, and have interfaces with the launch service segment. These three segments comprise a space system.

In principle, a proposal to initiate a space project can be raised by any party. However, the most common initiators are:

- individual governments, or co-operation between a number of governments;
- national, or international space agencies, either singly or collectively;
- national or international scientific communities;
- operators of commercial space systems.

In this ECSS standard, the top level customer is defined as the organization responsible for generating the top level space segment and ground segment business agreements and for interface arrangements with other external space system elements.

The following clauses 4.1.2 to 4.1.11 describe the key elements to be addressed, assessed, and balanced when planning a project.

4.1.2 Purpose and objectives of the project

The purpose and objectives of the project are defined by the project initiator in the mission statement which includes key performance parameters and technical and programmatic constraints to be applied to the project. They are normally coordinated with the top level customer, if one has been assigned.

4.1.3 Availability of and need to develop new technologies

This is an assessment carried out jointly by the customer and supplier to identify the availability of scientific and technological know-how and the technology needed to implement the project. The result of this assessment, which can be a significant cost and schedule driver, is a major input to the assessment of required resources and facilities and to the subsequent technical and programmatic risk assessment.

4.1.4 Availability of and need to reuse existing equipments/products

This is an assessment of the feasibility of reusing existing products and is typically carried out as a direct response to a customer requirement. The result of this assessment, which also can have a significant influence on cost and schedule is a major input to the assessment of required resources and facilities and to the subsequent technical and programmatic risk assessment.

4.1.5 Availability of and need for human resources, skills and technical facilities

This is an assessment carried out jointly by the customer and supplier of the resources, skills and facilities required to implement the project. The result of this assessment shows if required resources, skills and facilities are adequate, or if additional skills, resources, or facilities are needed to complete the project.

4.1.6 Risk assessment

The initial assessments of the technical and programmatic risks of a project are carried out by the customer, based on the project initiator's inputs with respect to the purpose and objectives of the project, together with the identified technical and programmatic constraints to be applied to the project. The initial assessment is subsequently regularly expanded to include other relevant parameters as they become available, and as the project matures. Comprehensive risk assessments are conducted at each major project review.

4.1.7 Development approach

The development approach for a project is jointly defined by the customer and supplier to comply with the project initiator's mission statement, requirements and constraints, and balancing these with the outcome of paragraphs 4.1.3 to 4.1.6 above.

4.1.8 Project deliverables

The customer has the responsibility for defining the deliverable products, needed to meet the project initiator's mission statement, taking into account the assessments noted in clauses 4.1.4 to 4.1.7 above.

4.1.9 Customer requirements and constraints

Customer requirements and constraints are prepared by the customer based on the outputs from 4.1.2 to 4.1.8 above and put into a format suitable for direct application in an invitation to tender (ITT). They address technical and programmatic requirements, as well as political, commercial, and industrial constraints to be applied to the project and collectively represent the project requirements documents (PRD).

4.1.10 Project requirements documents (PRD)

The project requirements documents are an integral part of an ITT, request for proposal (RFP), or request for quote (RFQ) prepared and released by a customer to potential suppliers.

The PRD typically comprise

- Statement of work
- Technical requirements documented in Technical Requirements Specification, as defined in ECSS-E-ST-10-06
- Management requirements
- Engineering requirements
- Product assurance requirements
- Programmatic requirements
- Other, project specific requirements (e.g. geographical distribution, model philosophy to be applied)
- Documents requirements list (DRL)
- Tender requirements

Under the ECSS system, management, engineering and product assurance requirements are contained in the M, E, and Q standards, progressively tailored by each customer in the customer-supplier chain to reflect the type and phase of the project covered by the business agreement, as well as the scope of the suppliers' tasks required by the PRD.

4.1.11 Project management plan

The top level project plan is the project management plan which defines the project management approach and methodology to be used throughout the life cycle of the project, together with an overview of all elements of project management disciplines. It includes the definition of the system engineering and product assurance management approach or provides references to separate system engineering and product assurance plans which together make up the total planning documentation used to implement a project.