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Raumfahrt-Projektmanagement - Teil 60: Kosten- und Zeitplanmanagement

Management des projets spatiaux - Partie 60: Maîtrise des coûts et des délais

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Raumfahrt-Projektmanagement - Teil 60: Kosten- und Zeitplanmanagement

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Foreword

This document (EN 16601-60:2014) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16601-60:2014) originates from ECSS-M-ST-60C.

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of an identical text or by endorsement, at the latest by February 2015, and conflicting national standards shall be withdrawn at the latest by February 2015.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 supersedes EN 13290-7:2001.

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

Cost and schedule management is defined as a collective system of organized processes and actions in support of project management. It allows optimal use to be made of human resources, facilities, materials and funds, thereby achieving a successful completion of the space project with respect to

- cost targets,
- timely completion, and
- technical performance.

To this end, costs and activities are planned and actively controlled, with special care being given to the identification of critical situations that can lead to an adverse impact on the project cost and schedule, so that the relevant recovery actions can be proposed.

1
Scope

The requirements specified herein apply to, and affect the customer and supplier at all levels.

This standard may be tailored for the specific characteristics and constraints 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 revisions 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 most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to apply.

EN reference	Reference in text	Title
EN 16601-00-01	ECSS-S-ST-00-01	ECSS system – Glossary of terms
EN 16601-10	ECSS-M-ST-10	Space project management – Project planning and implementation
EN 16601-80	ECSS-M-ST-80	Space project management – Risk management

3
Terms, definitions and abbreviated terms

3.1 Terms from other standards

For the purpose of this Standard, the terms and definitions from ECSS-S-ST-00-01 apply, in particular for the following terms:

cost breakdown structure

estimate (cost) at completion

estimate (cost) to completion

3.2 Terms specific to the present standard

3.2.1 cost reimbursement contract

generic type of business agreement in which payments are depending upon incurred costs

3.2.2 cost estimating

process helping in the determination of the expected costs of a project

3.2.3 critical path

chain of activities critical to the timely completion of the project

3.2.4 direct manpower cost

manpower cost charged to the project using the agreed rates

3.2.5 economic conditions

reference period of time during which a set of financial elements (e.g. hourly rates and overheads) are applicable

NOTE Reference economic conditions are those prevailing when the decision to commit to the project is taken. Current economic conditions are the conditions prevailing when the service is provided.

3.2.6 fixed price contract

generic type of business agreement in which payments are defined in the business agreement in the form of milestone payment plan(s), and depend upon the achievement of the relevant contractual milestones

3.3 Abbreviated terms

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

Abbreviation	Meaning
AIV	assembly, integration and verification
CBCP	current baseline cost plan
CBS	cost breakdown structure
CCN	contract change notice
CCS	country/company structure
CIL	critical items list
CPM	critical path method
CR	cost reimbursement
CWP	control work package
DCP	development cost plan
DIL	deliverable items list
EAC	estimate at completion
EC	economic conditions
ETC	estimate to completion
FP	fixed price
FFP	firm fixed price
G&A	general & administrative
MPP	milestone payment plan
MTA	milestone trend analysis
MTC	milestone trend chart
OBCP	original baseline cost plan
PDM	precedence diagram method
PMAC	payment milestone achievement certificate
PEF	price escalation formula
PSS	procedure standard specification
PT	product tree
WBS	work breakdown structure

4
Cost and schedule management common principles

4.1 Objectives and relationships

Cost and schedule management is a major factor in the effective, responsible and proactive controlling of projects. It provides a common working baseline for the planning and expenses and across the participants of the project. It ensures a uniform basis and common understanding of the project planning, cost and manpower targets for use by all participants.

The main objectives of Cost and Schedule management are to:

- plan accurately the phasing of procurements, expenses and resources for the project;
- highlight any deviations and hence propose remedial actions, with the aim of completing the project within the given time and financial constraints.

Schedule management includes the activities to accomplish timely completion of the project, i.e.:

- Schedule definition, including activity definition and sequencing, activity duration estimating and schedule baseline establishment;
- Schedule control, including the comparison between the current working schedule and the baseline schedule;
- Schedule reporting.

Cost management includes the activities to complete the project within the approved budget, i.e.

- Cost estimating and planning;
- Cost control;
- Cost reporting.

The main structures to perform these activities are the:

- Work breakdown structure;
- Cost breakdown structure;
- Business agreement structure;
- Country/company structure.

Figure 4-1 presents an overall functional analysis of cost and schedule management.

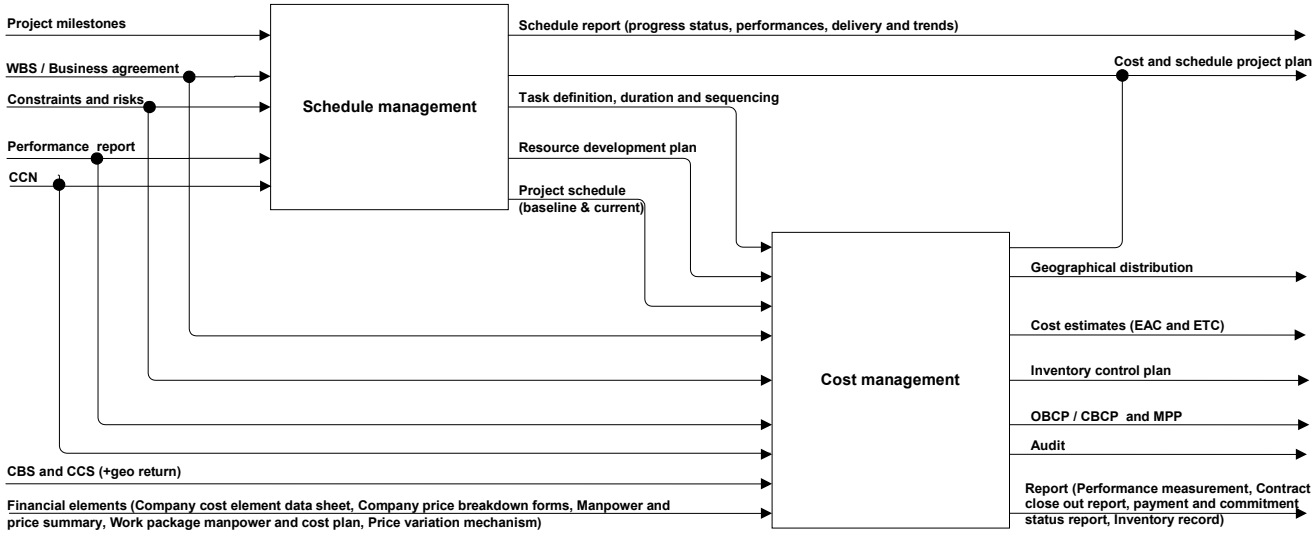

Figure 4-1: Overall functional analysis

4.2 Project structure

4.2.1 Work breakdown structure

A general introduction into the Work Breakdown Structure (WBS) is provided in ECSS-M-ST-10.

In the specific context of Cost and Schedule management, the WBS is used as a common tool in the project, assisting its participants in:

- Conducting tender comparisons and business agreement negotiations;
- Optimizing the distribution of work amongst the different suppliers;
- Monitoring the schedule of the project:

  A network of events (e.g. start, complete) and activities (e.g. design, develop and operate) takes place. The logical relationships between the activities allow the producing and completing of the WBS deliverables. Resources (e.g. labour skill, and materials) and responsible organizations (e.g. mechanical engineering department, fabrication department, supplier) can then be identified for each activity.

  The scope and complexity of the work and the management needs for schedule visibility influence the frequency of schedule reporting and their associated levels of detail.