



# Space project management

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## Project organization

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## Foreword

This Standard is one of the series of ECSS Standards intended to be applied together for the management, engineering and product assurance in space projects and applications. ECSS is a cooperative effort of the European Space Agency, national space agencies and European industry associations for the purpose of developing and maintaining common standards.

Requirements in this Standard are defined in terms of what shall be accomplished, rather than in terms of how to organize and perform the necessary work. This allows existing organizational structures and methods to be applied where they are effective, and for the structures and methods to evolve as necessary without rewriting the standards.

The formulation of this Standard takes into account the existing ISO 9000 family of documents.

Significant changes between this version and the previous version are:

- new clause “Organization principles”,
- restructuring of clause “Requirements”,
- unique identification of each requirement,
- consistency with ECSS-M-00B.

This Standard has been prepared by the ECSS Management Standards Working Group, reviewed by the ECSS Technical Panel and approved by the ECSS Steering Board.

This version B cancels and replaces ECSS-M-20A.

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## Introduction

As a part of the ECSS Management standards, this Standard defines specific requirements for the project organization for space projects.

The content of this ECSS Standard is coherent with the widely known and used processes for preparing and managing the different structures of projects in many fields of activity throughout the world.

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## Scope

This Standard, “Project organization”, is part of a collection of ECSS Standards belonging to the management branch.

This Standard defines the project organization principles and requirements needed to provide satisfactory and coherent management of space projects.

In particular it addresses the following:

- responsibility and authority of the actors (all actors, customer, supplier),
- interrelations between the actors (meetings, action monitoring, reporting, assessments and audits),
- information technologies, and
- project organization documentation.

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

When viewed in a specific project context, the requirements defined in this Standard should be tailored to match the genuine requirements of a particular profile and circumstances of a project.

NOTE Tailoring is a process by which individual requirements of specifications, standards and related documents are evaluated and made applicable to a specific project, by selection and in some exceptional cases, modification of existing or addition of new requirements.  
[ECSS-M-00-02A, clause 3]

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## 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 publication referred to applies.

ECSS-P-001            Glossary of terms

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## **Terms, definitions and abbreviated terms**

For the purpose of this Standard, the terms, definitions and abbreviated terms given in ECSS-P-001 apply.

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## Organization principles

### 4.1 Basic principles

A coherent organization is a prerequisite for the successful execution of a space project.

The activities of organizing a project consist of setting up the project internal organization and the external interfaces. This is done by defining the responsibilities and authority of the participants, and their interrelations, taking into account information technologies and subsequently documenting the project organization.

### 4.2 Responsibilities and authority of the actors

For the successful execution of a space project, the clear and unambiguous definition and allocation of individual roles, with their associated responsibilities and authority, is essential.

The project organization defines these roles with respect to the internal project set-up as well as to interfaces to the project external environment (both internal and external to the organization).

Certain roles are relevant to all actors, some to customers (at all levels) only and some to suppliers (at all levels) only.

### 4.3 Interrelations between actors

The complex nature of space projects leads to the vital need for effective communication between actors. This communication takes the form of direct contact (meetings) and other means. Communications have varying levels of formalism associated with them, ranging from informal information exchanges to contractually binding commitments.

Communication serves initially to provide clarity about the project's goals and objectives. Subsequently, communication supports the work towards achieving these objectives.

The use of formalized action monitoring systems has become established as good practice.

Regular reporting is a uniform means of exchanging information concerning the progress of the project.

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Monitoring and control activities give the customer the capability to verify the supplied information such as reports. This can be done by subsequent assessments and audits.

#### **4.4 Information technologies**

Information technology is the primary means for the exchange of information. It is thus important that data compatibility is ensured.

#### **4.5 Project organization documentation**

The organization is clearly defined in an implementation document to ensure that all project actors are aware of the project organization.

The documentation serves also to ensure that coherence is maintained throughout all disciplines and functions.



## Requirements

### 5.1 Introduction

In this ECSS Standard, in order to facilitate reading, tailoring and traceability, the requirements are listed according to numbered topics. Often an explanatory text, such as the aim of the requirement or the expected output (text in italics), is attached to the numbered requirement.

### 5.2 Responsibilities and authority of the actors

#### 5.2.1 All actors

- a. Each participant shall identify the individual responsible for the definition and set-up of the project organization.
- b. Each participant shall establish and maintain a project organization relative to its level.
- c. Each participant shall define the authority for project management and business agreement signing.
- d. If the project has links with other projects, each participant shall define the responsibilities relating to the definition and the management of interfaces.
- e. If a participant is responsible for more than one business agreement within a project, and the business agreements have different customers, then each business agreement shall be clearly identified and accomplished according to the appropriate relationships.
- f. Where a participant employs consultants or other specialists to assist him in performing his duties, then the roles, responsibilities and authority of these consultants and specialists shall be clearly defined.

#### 5.2.2 Customer

- a. The customer shall identify the project characteristics and define the projects requirements, the availability and the implementation requirements of the system including support elements.
- b. The customer shall maintain the definition of project performance requirements and constraints throughout the life of the project.
- c. The customer shall verify supplier compliance with requirements and constraints.
- d. When a customer supplies a product to lower tier actors he shall have the responsibility of a supplier in respect of that product.

### 5.2.3 Supplier

- a. The supplier shall set up the project management organization in such a way that adequate resources are allocated to the project to ensure timely completion of the contract
- b. The supplier's project management organization shall exercise an active monitoring and control over its own and lower tier supplier's activities and lead its lower tier supplier's in the execution of subcontracted activities to ensure that their services conform to the customer's requirements.
- c. The supplier's project management organization shall implement the approved management plan.
- d. The supplier shall identify the key personnel to be deployed on the work, and include them in the project organization. The following project functions shall be considered
  - project management,
  - contracts,
  - project control,
  - configuration management,
  - documentation management,
  - information systems,
  - procurement,
  - assembly, integration and verification,
  - product assurance and safety, and
  - engineering.
- e. The supplier shall nominate a project manager with a team assigned to the project. The members of the project team shall be under the authority and responsibility of the project manager and shall report to the project manager or his key personnel.
- f. The supplier's project manager shall have authority to ensure proper execution of all tasks needed under the contract. He shall have direct access to his company management hierarchy so that conflicts can be resolved at the appropriate level.
- g. Suppliers shall demonstrate that the key personnel have the necessary qualification, skills and experience to perform the task for which they are allocated.
- h. Where a supplier has lower level suppliers, he shall act as a customer.
- i. The first level supplier shall establish, maintain and distribute a project directory including key personnel, as a minimum.

AIM: A complete definition and implementation of a project organization with clear roles, responsibilities and authority for all actors.

## 5.3 Interrelations between the actors

### 5.3.1 Meetings

- a. Formal meetings between the supplier and customer shall be held to discuss major deviations from the plans defined in the implementation documents (e.g. management plan), or to discuss major changes proposed to the project requirements documents.
- b. Meetings may be scheduled on a periodic basis, but they shall only be held if there is a need.
- c. Any planned meeting shall be based on an agreed written agenda.

- d. The minutes should be taken during the meeting, and signed after the meeting by all parties involved.
- e. The results of the meeting shall be documented in the agreed minutes of the meeting.
- f. Action items shall be reviewed at each meeting.
- g. Agreed actions shall be documented in an action item list.
- h. A chairperson and secretary shall be designated at the beginning of the meeting.
- i. Any matters documented in the minutes of meeting having contractual impact shall be subject to the contract change procedure for implementation.

AIM: Ensure that understanding, consensus, agreement and approval are achieved concerning all the major project issues.

EXPECTED OUTPUT: — *Agreed agenda;*  
— *agreed minutes of meeting;*  
— *agreed action item list.*

### 5.3.2 Action monitoring

- a. Each participant shall define, implement and maintain an action-monitoring system.
- b. Each action shall be allocated
  - a unique identification,
  - the identification of the origin (e.g. meeting),
  - the initiator,
  - the description of the action (clear and concise),
  - the person responsible for the action,
  - the close-out date,
  - the current status, and
  - the close-out reference (e.g. document, letter).
- c. When reporting progress at the individual supplier level, the report shall contain an action status list.

AIM: Allow recording and follow-up of actions decided for the project (after meetings, assessments and reviews), up to the close-out.

EXPECTED OUTPUT: *Implemented action monitoring system.*

### 5.3.3 Reporting

- a. Each supplier's project manager shall regularly report on work progress to his customer. This shall include his assessment and analysis of the reports from his lower tier suppliers.
- b. The progress report shall contain as a minimum
  - the project manager's assessment of the current situation in relation to the forecasts and risks, at a level of detail agreed between the relevant actors,
  - the status of the progress of work being performed by the supplier,
  - identification of achievements measured against planned results,
  - status and trends of agreed key performance and engineering data parameters,

- adverse trends in technical and programmatic performance and proposals for remedial actions,
  - planning for implementation of remedial actions,
  - a consolidated report derived from the lower-level status reports, and
  - status report indicating progress on all actions since the previous report.
- c. A supplier's progress report shall be based on work packages and the corresponding schedules.
- d. The progress report periodicity shall be agreed between the actors.
- e. The supplier shall notify the customer within an agreed period of time of
- any event that could significantly affect the achievement of the contract objectives in terms of cost, technical performance and schedule, and
  - any situation resulting in a substantial schedule or planning change demanding immediate customer involvement.
- AIM: Provide visibility to the customer on the supplier's project activities. Ensure consistency between the technical status and the schedule report, and give an integrated view of the overall progress status and support decision making.

EXPECTED OUTPUT: *Regular progress reports from the supplier's project manager to his customer.*

#### **5.3.4 Assessments and audits**

- a. Every supplier shall accept to be assessed by the customer or by a third party agreed between the customer and the supplier in the framework of the business agreement.
- b. The supplier may demand that the assessment be performed by a third party, and that the third party obtain authorization each time the audit necessitates access to information concerning patent rights or confidentiality associated with defence secrecy.
- c. Each supplier shall provide his customer access to his facilities and data which are relevant in the frame of the business agreement.
- d. The customer shall notify the supplier in due time of
- his intention to perform (or to delegate performance of) the assessment or audit,
  - the objectives and the limits of the assessment or audit,
  - the designated assessor and his terms of reference, and
  - the assessment or audit schedule.
- e. Every assessment or audit performed shall be followed by a report prepared by the assessor and shall contain the views of both parties.
- f. The conclusions of the assessment or audit and the draft report shall be discussed with the supplier, before finalization and release.
- g. In the event of disagreement with any of the assessment or audit conclusions, the supplier may add his observations and comments.
- h. When finalized, the assessment or audit report shall not be divulged without the agreement of the assessed supplier.

AIM: Ensure the assessments or audits are performed in a planned, controlled and productive manner, and results are properly documented.

EXPECTED OUTPUT: — *Assessment or audit notification;*  
— *agreed assessment or audit report.*

## 5.4 Information technologies

The actors shall agree upon the standards to be used for information exchange. The agreement shall address the following as a minimum

- compatibility of data,
- flow of information,
- availability and accessibility of information,
- binding nature of information exchanged, and
- security of data (secrecy and protection against viruses).

AIM: To facilitate a compatible and efficient exchange of information

## 5.5 Project organization documentation

- a. The customer shall draw up as part of the project requirements documents the project organization requirements for the next level supplier.

AIM: Derive those requirements necessary for successful project organization.

EXPECTED OUTPUT: *Project requirements document for the supplier project organization.*

- b. Each supplier in the project shall produce an implementation document describing how he intends to respond to the project requirements document for project organization, in respect of his own organization (e.g. project organigramme).
- c. The supplier shall submit his implementation document for project organization to his customer for acceptance.

NOTE After acceptance, this document becomes an integral part of the business agreement.

- d. Implementation document for project organization shall cover
  - responsibility and authority of the actors,
  - resource requirements,
  - personnel qualification and training,
  - interrelation between the actors,
  - business agreement aspects between the actors,
  - the organizational structure of the supplier and a definition of the responsibility and authority of personnel who manage, perform and verify work affecting project performance,
  - facilities and logistics (offices, clean rooms), and
  - information technology (hardware and software).

EXPECTED OUTPUT: *Elements for project organization of the implementation documents.*

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## Bibliography

ECSS-M-00-02A    Space project management — Tailoring of space standards

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## ECSS Document Improvement Proposal

<b>1. Document I.D.</b> ECSS-M-20B	<b>2. Document date</b> 13 June 2003	<b>3. Document title</b> Project organization
<b>4. Recommended improvement</b> (identify clauses, subclauses and include modified text or graphic, attach pages as necessary)		
<b>5. Reason for recommendation</b>		
<b>6. Originator of recommendation</b>		
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