BS ISO 18676:2024

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# Space systems — Requirements and guidelines for the management of systems engineering

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# National foreword

This British Standard is the UK implementation of ISO 18676:2024. It supersedes BS ISO 18676:2017, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/68, Space systems and operations.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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# Space systems — Requirements and guidelines for the management of systems engineering

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# Contents

Page

**Foreword** ... **iv**
**Introduction** ... **v**
**1 Scope** ... **1**
**2 Normative references** ... **1**
**3 Terms and definitions** ... **1**
**4 Positioning of systems engineering management** ... **3**
4.1 General ... 3
4.2 Need for systems engineering management ... 3
4.3 Systems engineering ... 3
4.4 Systems engineering management ... 4
4.5 Systems engineering management relative to the mission/programme/project ... 4
**5 Management of the systems engineering activities** ... **5**
5.1 General ... 5
5.2 Planning ... 5
5.3 Assessment ... 6
5.4 Trade-offs and decision-making ... 6
5.5 Control ... 6
**6 Systems engineering management plan (SEMP)** ... **7**
**7 Systems engineering management activities** ... **7**
7.1 Management of stakeholder requirements analysis ... 7
7.2 Management of system requirements analysis ... 7
7.3 Management of architectural design ... 8
7.4 Management of detailed design ... 8
7.5 Management of assembly, integration and verification ... 8
7.6 Management of validation ... 8
**8 Work breakdown structures (WBS)** ... **9**
**9 Phasing, scheduling and recursivity** ... **10**
**10 Budgeting and resource planning** ... **10**
**11 Status reporting and assessment** ... **10**
11.1 General ... 10
11.2 Cost assessments ... 10
11.3 Scheduling assessments ... 11
11.4 Performance assessments ... 11
11.5 Risk assessments ... 11
**12 Reviews, audits and control gates** ... **12**
12.1 General ... 12
12.2 Review ... 12
12.3 Review list ... 13
12.4 Audits ... 14
12.5 Control gates ... 14
**13 Interfaces management with SE** ... **14**
13.1 General ... 14
13.2 Acquisition and supply interface management ... 15
13.3 Implementation interface management ... 15
**Bibliography** ... **16**

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# Foreword

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This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

This second edition cancels and replaces the first edition (ISO 18676:2017), which has been technically revised.

The main changes are as follows:

— updated the normative references in Clause 2;

— updated the terms and definitions references in Clause 3.

— changed some recommendations to requirements in Clauses 5 to 13.

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# Introduction

There is general consensus that to accomplish space programme/project requirements, it is mandatory to manage the systems engineering activities. The main role of systems engineering management is to ensure system performance conforms with expressed need and to control the technical risks involved in development. Also, cost and schedule parameters are taken into account in space systems engineering in the search of optimal performance.

Thus, this document provides requirements and recommendations for managing the systems engineering activities related to planning, assessment and control of space programmes/projects.

These requirements and recommendations are intended to help customers and space system organizations to establish management requirements for systems engineering activities and help the organization to construct the elements of the systems engineering management plan (SEMP).

Given the need for systems engineering management, the overall systems engineering activities can be divided into two types:

— systems engineering management activities related to programme management which comprise planning, assessing, controlling, trade-off studies and decision-making;

— technical activities linked to the technical processes (stakeholder requirements analysis, system requirements analysis, system architectural design, system detailed design and assembly, integration, and verification and validation) applied to the system.

Therefore, systems engineering management reinforces the technical viewpoint within programme management.

In this document, a set of leading indicators are suggested as measures for evaluating the effectiveness of each space systems engineering activity. Leading indicators are important tools for project management to make interventions and actions to avoid rework and wasted effort during the whole system engineering life cycle.

This document emphasizes the following aspects of managing space systems engineering:

— the positioning of space systems engineering activities related to the management of space activities;

— the framework for the management of systems engineering;

— the systems engineering management plan (SEMP);

— the system, product and work breakdown structures;

— the phasing, scheduling and recursivity of the systems engineering management;

— reviews, audits and control gates;

— the main activities of systems engineering and the respective management approach.

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