



**SLOVENSKI STANDARD**  
**SIST EN 14725:2004**

**01-maj-2004**

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**Space engineering - Verification**

Space engineering - Verification

Raumfahrttechnik - Verifikation

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## Space engineering - Verification

Raumfahrttechnik - Verifikation

This European Standard was approved by CEN on 1 October 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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## Foreword

This document (EN 14725:2003) has been prepared CMC.

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of an identical text or by endorsement, at the latest by June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

It is based on a previous version<sup>1)</sup> originally prepared by the ECSS Space Engineering Working Group, reviewed by the ECSS Technical Panel and approved by the ECSS Steering Board. The European Cooperation for Space Standardization (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.

This European Standard is one of the series of space standards intended to be applied together for the management, engineering and product assurance in space projects and applications.

Requirements in this European Standard are defined in terms of what should 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.

Annexes A,C,D,E,F,G,H,I,J,K and L are normative. Annex B is informative.

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

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

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1) ECSS-E-10-02A

**EN 14725:2003 (E)****1 Scope**

This European Standard establishes the requirements for the verification of a space system product.

It specifies the fundamental concepts of the verification process, the criteria for defining the verification strategy and the rules for the implementation of the verification programme.

It includes also in annexes A and B the description of the required documentation (i.e. DRDs) and some guidelines on specific aspects of the verification process such as the model philosophy definition.

This European Standard is intended to apply to different products at different levels (i.e. from a single equipment to the overall system). It is applicable to both the customer and the supplier of the product during all project phases.

The application of these requirements to a particular project is intended to result in an effective product verification and consequently to a high confidence in achieving successful product operations for the intended use.

In preparing this European Standard the following goals have been considered to facilitate its application, effective use and tailoring:

- definition of an envelope of the sets of minimum verification requirements applicable to the different products, so that tailoring is a selection (in reduction) process;
- clear identification of mandatory requirements, tailorable requirements and recommendations by means of the appropriate use of “shall”, “should” and “may” respectively;
- text defining requirements should be selfstanding to the greatest possible extent, to allow direct tailoring.

When viewed from the perspective of 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 and with reference to annex B.2.

**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.

**2 Normative references**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13701:2001, *Space systems — Glossary of terms*.

EN 13290-4, *Space project management — General requirements — Part 4: Project phasing and planning*.

prEN 13291-2, *Space product assurance — General requirements — Part 2: Quality assurance*.

EN 14097, *Space product assurance — Nonconformance control system*.

EN ISO 14620-1, *Space systems — Safety requirements — Part 1: System safety (ISO 14620-1:2002)*.

ECSS-Q-60, *Space product assurance — EEE components*.

prEN 13291-3, *Space product assurance — General requirements — Part 3: Materials, mechanical parts and processes*.

ECSS-E-10, *Space engineering — System engineering*.

prEN 14824, *Space engineering — Testing*.

### 3 Terms, definitions and abbreviated terms

#### 3.1 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13701:2001 and the following apply.

##### 3.1.1

##### **acceptance stage**

verification stage with the objective of demonstrating that the product is free of workmanship defects and integration errors and ready for its intended use

##### 3.1.2

##### **analysis**

verification method which entails performing a theoretical or empirical evaluation by accepted analytical techniques

NOTE 1 The selected techniques may typically include systematics, statistics, qualitative design analysis, modelling and computer simulation.

NOTE 2 See also EN 13701.

##### 3.1.3

##### **assembly**

process of mechanical mating hardware to obtain a low level configuration after the manufacturing process

NOTE See also EN 13701.

##### 3.1.4

##### **in-orbit stage**

verification stage valid for projects whose characteristics (e.g. mission, in-orbit operations) require in-orbit verification

##### 3.1.5

##### **inspection**

verification method that determines conformance to requirements for constructional features, document and drawing conformance, workmanship and physical conditions without the use of special laboratory equipment, procedures or services

NOTE See also EN 13701.

##### 3.1.6

##### **integration**

process of physically and functionally combining lower level products (hardware or software) to obtain a particular functional configuration