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Space engineering - Ground systems and operations

Táto norma obsahuje anglickú verziu európskej normy.
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Space engineering - Ground systems and operations

Ingénierie spatiale - Systèmes sol et opérations

Raumfahrtproduktsicherung - Bodensysteme und
Bodenbetrieb

This European Standard was approved by CEN on 23 November 2014.

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Foreword

This document (EN 16603-70:2015) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16603-70:2015) originates from ECSS-E-ST-70C.

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of an identical text or by endorsement, at the latest by July 2015, and conflicting national standards shall be withdrawn at the latest by July 2015.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 14737-1:2004 and EN 14337-2:2004.

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

Ground systems and operations are key elements of a space system and play an essential role in achieving mission success. Mission success is defined here as the achievement of the target mission objectives as expressed in terms of the quantity, quality and availability of delivered mission products and services within a given cost envelope.

Mission success requires successful completion of a long and complex process covering the definition, design, production, verification, validation, post-launch operations and post operational activities, involving both ground segment and space segment elements. It involves technical activities, as well as human and financial resources, and encompasses the full range of space engineering disciplines. Moreover it necessitates a close link with the design of the space segment in order to ensure proper compatibility between these elements of the complete space system.

1

Scope

Within the framework of the overall engineering standards for space missions, this Standard contains the basic rules, principles and requirements applied to the engineering of the ground segment and mission operations, which form an integral part of the overall system implementing a space project.

This Standard also addresses the relationships between a customer and the ground segment supplier (GSS) and a customer and the operations supplier (OS).

The following topics are not considered:

- Ground systems (e.g. EGSE) and operations to support space segment verification which are covered within ECSS-E-ST-10-02.
- The launch segment and its operations.

This Standard has the following structure:

- definition of the ground segment and operations domain;
- requirements on ground segment engineering, i.e. the tasks required to design, implement and maintain a ground segment;
- requirements on operations engineering, i.e. the tasks required to prepare and carry out operations of a space project;
- identification of the relationships between the ground segment engineering and operations engineering processes and the space project lifecycle as defined in ECSS-M-ST-10.

This Standard may be tailored for the specific characteristics and constraints of a space project in conformance with ECSS-S-ST-00.

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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 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 16601-00-01	ECSS-S-ST-00-01	ECSS system – Glossary of terms
EN 16603-10	ECSS-E-ST-10	Space engineering – System engineering general requirements
EN 16603-10-02	ECSS-E-ST-10-02	Space engineering – Verification
EN 16603-10-06	ECSS-E-ST-10-06	Space engineering - Technical specification
EN 16603-40	ECSS-E-ST-40	Space engineering – Software general requirements
EN 16601-40	ECSS-M-ST-40	Space project management – Configuration and information management
EN ISO 16091:2002	ECSS-M-ST-70	Space project management - Integrated logistic support
EN 16602-10-09	ECSS-Q-ST-10-09	Space product assurance - Nonconformance control system
EN 16602-80	ECSS-Q-ST-80	Space product assurance - Software product assurance

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