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Space engineering - On-board control procedures

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Space engineering - On-board control procedures

Ingénierie spatiale - Procédures automatiques de contrôle bord

Raumfahrtproduktsicherung - Bordseitige Kontrollprozeduren

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Foreword

This document (EN 16603-70-01:2015) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16603-70-01:2015) originates from ECSS-E-ST-70-01C.

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of an identical text or by endorsement, at the latest by July 2015, and conflicting national standards shall be withdrawn at the latest by July 2015.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 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

On-board control procedures (OBCPs) have been implemented on an ad-hoc basis on several European missions over the last 25 years, so the validity and utility of the concept has been amply demonstrated.

The purpose of the present Standard is to define an OBCP concept that can be applied for any mission and which:

- fulfils the needs of all categories of user (system engineers, on-board software engineers, AIT engineers, operations engineers);
- ensures that OBCPs have a development lifecycle that is independent of the remainder of the on-board software (OBSW);.
- conforms with, and extends, existing ECSS monitoring and control standards, namely ECSS-E-70-41 and ECSS-E-ST-70-31.

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Scope

This Standard defines the concept for an OBCP system, identifying the on-board functionality for OBCP execution and the ground functionality for OBCP preparation and subsequent control.

This Standard also defines the development lifecycle for OBCPs and identifies the relationships of this lifecycle with the overall space system, and in particular with the other elements of the on-board software.

This Standard assumes that missions implementing OBCPs are also compliant with ECSS-E-70-41, since a number of services contained therein are invoked in support of the operation of OBCPs and their interaction with the ground.

This Standard may be tailored for the specific characteristic 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 16603-40	ECSS-E-ST-40	Space engineering - Software
EN 16603-70	ECSS-E-ST-70	Space engineering - Ground systems and operations
EN 16603-70-31	ECSS-E-ST-70-31	Space engineering - Ground systems and operations - Monitoring and control data definition
EN 16603-70-41	ECSS-E-70-41	Space engineering - Ground systems and operations - Telemetry and telecommand packet utilization