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Space engineering - Part 40: Software

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

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English version

Space engineering - Part 40: Software

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Raumfahrttechnik - Teil 40: Software

This European Standard was approved by CEN on 10 February 2014.

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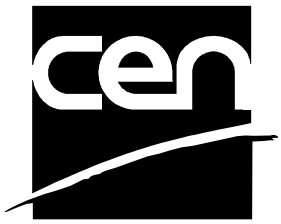

CEN-CENELEC Management Centre:
Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 16603-40:2014) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16603-40:2014) originates from ECSS-E-ST-40C.

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of an identical text or by endorsement, at the latest by February 2015, and conflicting national standards shall be withdrawn at the latest by February 2015.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 supersedes EN 14160:2001.

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

This Standard defines the principles and requirements applicable to space software engineering. ECSS-Q-ST-80 defines the principles and requirements applicable to space software product assurance.

The formulation of this Standard takes into account the existing ISO 9000 family of documents, and the ISO/IEC 12207 standard.

1
Scope

This software engineering Standard concerns the “product software”, i.e. software that is part of a space system product tree and developed as part of a space project.

This Standard is applicable, to the extent defined by the tailoring process, to all the elements of a space system, including the space segment, the launch service segment and the ground segment.

This Standard covers all aspects of space software engineering including requirements definition, design, production, verification and validation, transfer, operations and maintenance.

It defines the scope of the space software engineering processes and its interfaces with management and product assurance, which are addressed in the Management (–M) and Product assurance (–Q) branches of the ECSS System, and explains how they apply in the software engineering processes.

This Standard reflects the specific methods used in space system developments, and the requirements for the software engineering processes in this context. Together with the requirements found in the other branches of the ECSS Standards, this Standard provides a coherent and complete framework for software engineering in a space project.

This Standard is intended to help the customers to formulate their requirements and suppliers to prepare their responses and to implement the work.

This Standard is not intended to replace textbook material on computer science or technology, and such material is avoided in this Standard. The readers and users of this Standard are assumed to possess general knowledge of computer science.

The scope of this Standard is the software developed as part of a space project, i.e. “Space system product software”. This Standard also applies to the development of non–deliverable software that affects the quality of the deliverable product.

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 16603-10-11	ECSS-E-ST-10-11	Space product assurance – Human factors engineering
EN 16601-10	ECSS-M-ST-10	Space project management – Project planning and implementation
EN 16601-10-01	ECSS-M-ST-10-01	Space project management – Organization and conduct of reviews
EN 16601-40	ECSS-M-ST-40	Space project management – Configuration and information management
EN 16602-80	ECSS-Q-ST-80	Space product assurance – Software product assurance