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Space product assurance - Hazard analysis

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

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English version

Space product assurance - Hazard analysis

Assurance produit des projets spatiaux - Analyse de risques

Raumfahrtproduktsicherung - Gefahrenanalyse

This European Standard was approved by CEN on 13 March 2014.

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Foreword

This document (EN 16602-40-02:2014) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16602-40-02:2014) originates from ECSS-Q-ST-40-02C.

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of an identical text or by endorsement, at the latest by March 2015, and conflicting national standards shall be withdrawn at the latest by March 2015.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 14738:2004.

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

Safety analysis comprises hazard analysis, safety risk assessment and supporting analyses as defined in ECSS-Q-ST-40. The objective of safety analysis is to identify, assess, reduce, accept, and control safety hazards and the associated safety risks in a systematic, proactive, complete and cost effective manner, taking into account the project's technical and programmatic constraints. Safety analysis can be implemented through an iterative process, with iterations being determined by the project progress through the different project phases, and by changes to a given project baseline.

Hazard analysis comprises the identification classification and reduction of hazards. Hazard analysis can be implemented at each level of the customer-supplier network. Hazard analysis activities at lower level can contribute to system level safety analysis. System level safety analysis can determine lower level hazard analysis activities.

Hazard analysis interfaces with dependability analysis, in particular FMECA. Safety risk assessment interfaces with quantitative dependability analysis, in particular reliability analysis. Safety risk assessment contributes to project risk management. Ranking of safety risks according to their criticality for project success, allowing management to direct its attention to the essential safety issues, is part of the major objectives of risk management.

Safety risk assessment is further addressed in ECSS-Q-ST-40.

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Scope

This Standard details the hazard analysis requirements of ECSS-Q-ST-40; it defines the principles, process, implementation, and requirements of hazard analysis.

It is applicable to all European space projects where during any project phase there exists the potential for hazards to personnel or the general public, space flight systems, ground support equipment, facilities, public or private property or the environment.

This standard may be tailored for the specific characteristics and constrains 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 16001-00-01	ECSS-S-ST-00-01	ECSS system — Glossary of terms
EN 16601-80	ECSS-M-ST-80	Space project management — Risk management
EN 16602-40	ECSS-Q-ST-40	Space product assurance — Safety