Sikring af rumfartsprodukter – Sikkerhed

Space product assurance – Safety

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IDT med: EN 16602-40:2018

DS-publikationen er på engelsk.

Denne publikation erstatter: DS/EN ISO 14620-1:2003

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EUROPEAN STANDARD **EN 16602-40**

EUROPÄISCHE NORM

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ICS 49.140

Supersedes EN ISO 14620-1:2002

English version

Space product assurance - Safety

Assurance produit des projets spatiaux - Sécurité

Raumfahrtsysteme - Sicherheit

This European Standard was approved by CEN on 18 September 2017.

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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 and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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European Foreword

This document (EN 16602-40:2018) has been prepared by Technical Committee CEN/CLC/JTC 5 “Space”, the secretariat of which is held by DIN (Germany).

This document (EN 16602-40:2018) originates from ECSS-Q-ST-40C Rev.1.

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of an identical text or by endorsement, at the latest by October 2018, and conflicting national standards shall be withdrawn at the latest by October 2018.

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 ISO 14620-1:2002.

The main changes with respect to EN ISO 14620-1:2002 are listed below:

- new EN number,
- Complete and thorough review with the focus on simplification and streamlining to improve clarity and consistency of requirements.
- Applicability guidelines to the different space systems has been defined (see applicability matrix provided in Annex E).
- System safety programme requirements reworked, i.e. the system safety programme supports the risk management process described in EN 16601-80 (based on ECSS-M-ST-80C).
- Space debris mitigation streamlined.
- Atmospheric re-entry addressed.
- Safety design principles reworked.
- Safety risk reduction and control updated.
- Safety analysis requirements and techniques updated.
- Common scheme for consequence severity classification used in EN 16602-30 and EN 16602-40 (based on ECSS-Q-ST-30C and ECSS-Q-ST-40C).
- Identification and control of safety-critical functions updated.
- Established link to EN 1602-10-04 “Critical-item control” (based on ECSS-Q-ST-10-04).
- Informative annex on European legislation and ‘CE’ marking added (Annex F).
- DRDs revisited and updated.
- Document reworked to be in compliance with ECSS standards drafting rules.

This document has been prepared under a standardization request 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 organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1
Scope

This Standard defines the safety programme and the safety technical requirements aiming to protect flight and ground personnel, the launch vehicle, associated payloads, ground support equipment, the general public, public and private property, the space system and associated segments and the environment from hazards associated with European space systems.

This Standard is applicable to all European space projects.

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 16603-10	ECSS-E-ST-10	Space engineering – System engineering general requirements
EN 16603-32-01	ECSS-E-ST-32-01	Space engineering – Fracture control
EN 16603-32-10	ECSS-E-ST-32-10	Space engineering – Structural factors of safety for spaceflight hardware
EN 16603-40	ECSS-E-ST-40	Space engineering – Software general requirements
EN 16601-10	ECSS-M-ST-10	Space project management – Project planning and implementation
EN 16601-40	ECSS-M-ST-40	Space project management – Configuration and information management
EN 16601-80	ECSS-M-ST-80	Space project management – Risk management
EN 16602-10	ECSS-Q-ST-10	Space product assurance – Product assurance management
EN 16602-10-04	ECSS-Q-ST-10-04	Space product assurance – Critical-item control
EN 16602-20	ECSS-Q-ST-20	Space product assurance – Quality assurance
EN 16602-30	ECSS-Q-ST-30	Space product assurance – Dependability
EN 16602-60	ECSS-Q-ST-60	Space product assurance – Electrical, electronic and electromechanical (EEE) components
EN 16602-70	ECSS-Q-ST-70	Space product assurance – Materials, mechanical parts and processes
EN 16602-80	ECSS-Q-ST-80	Space product assurance – Software product assurance