ICS 49.140 SLOVENSKÁ TECHNICKÁ NORMA December 2014

STN	**Kozmická technika. Metóda výpočtu dávok žiarenia, účinkov žiarenia a politika návrhových tolerancií.**	**STN EN 16603-10-12** 31 0543

Space engineering - Method for the calculation of radiation received and its effects, and a policy for design margins

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/14

Obsahuje: EN 16603-10-12:2014

119793

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16603-10-12

July 2014

ICS 49.140

English version

Space engineering - Method for the calculation of radiation received and its effects, and a policy for design margins

Ingéniérie spatiale - Procédé pour le calcul de rayonnement reçue et ses effets, et une politique de marges de conception

Raumfahrttechnik - Methoden zur Berechnung von Strahlungsdosis, -wirkung und Leitfaden für Toleranzen im Entwurf

This European Standard was approved by CEN on 9 February 2014.

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Foreword

This document (EN 16603-10-12:2014) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16603-10-12:2014) originates from ECSS-E-ST-10-12C.

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of an identical text or by endorsement, at the latest by January 2015, and conflicting national standards shall be withdrawn at the latest by January 2015.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

1
Scope

This standard is a part of the System Engineering branch of the ECSS engineering standards and covers the methods for the calculation of radiation received and its effects, and a policy for design margins. Both natural and man-made sources of radiation (*e.g.* radioisotope thermoelectric generators, or RTGs) are considered in the standard.

This standard applies to the evaluation of radiation effects on all space systems.

This standard applies to all product types which exist or operate in space, as well as to crews of manned space missions. The standard aims to implement a space system engineering process that ensures common understanding by participants in the development and operation process (including Agencies, customers, suppliers, and developers) and use of common methods in evaluation of radiation effects.

This standard is complemented by ECSS-E-HB-10-12 “Radiation received and its effects and margin policy handbook”.

This standard may be tailored for the specific characteristic and constrains of a space project in conformance with ECSS-S-ST-00.

2
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 16603-10-04	ECSS-E-ST-10-04	Space engineering – Space environment
EN 16603-10-09	ECSS-E-ST-10-09	Space engineering – Reference coordinate system
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