EESTI STANDARD

EVS-EN 16603-10-04:2015

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Space engineering - Space environment

EESTI STANDARDIKESKUS
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ICS 49.140

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16603-10-04

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Supersedes EN 14092:2002

English version

Space engineering - Space environment

Ing?ierie spatiale - Environnement spatial

Raumfahrttechnik - Raumfahrtumweltbedingungen

This European Standard was approved by CEN on 28 December 2013.

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Foreword

This document (EN 16603-10-04:2015) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16603-10-04:2015) originates from ECSS-E-ST-10-04C.

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of an identical text or by endorsement, at the latest by July 2015, and conflicting national standards shall be withdrawn at the latest by July 2015.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 supersedes EN 14092:2002.

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.

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Introduction

This standard forms part of the System Engineering branch (ECSS-E-10) of the Engineering area of the ECSS system. As such it is intended to assist in the consistent application of space environment engineering to space products through specification of required or recommended methods, data and models to the problem of ensuring best performance, problem avoidance or survivability of a product in the space environment.

The space environment can cause severe problems for space systems. Proper assessment of the potential effects is part of the system engineering process as defined in ECSS-E-ST-10. This is performed in the early phases of a mission when consideration is given to e.g. orbit selection, mass budget, thermal protection, and component selection policy. As the design of a space system is developed, further engineering iteration is normally necessary with more detailed analysis.

In this Standard, each component of the space environment is treated separately, although synergies and cross-linking of models are specified. Informative annexes are provided as explanatory background information associated with each clause.

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1 Scope

This standard applies to all product types which exist or operate in space and defines the natural environment for all space regimes. It also defines general models and rules for determining the local induced environment.

Project-specific or project-class-specific acceptance criteria, analysis methods or procedures are not defined.

The natural space environment of a given item is that set of environmental conditions defined by the external physical world for the given mission (e.g. atmosphere, meteoroids and energetic particle radiation). The induced space environment is that set of environmental conditions created or modified by the presence or operation of the item and its mission (e.g. contamination, secondary radiations and spacecraft charging). The space environment also contains elements which are induced by the execution of other space activities (e.g. debris and contamination).

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

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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

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