



Space sustainability

Adoption Notice of ISO 24113: Space systems - Space debris mitigation requirements

**ECSS Secretariat
ESA-ESTEC
Requirements & Standards Division
Noordwijk, The Netherlands**

Foreword

This Adoption Notice is one document of the series of ECSS Standards intended to be applied together for the management, engineering and product assurance in space projects and applications. ECSS is a cooperative effort of the European Space Agency, national space agencies and European industry associations for the purpose of developing and maintaining common standards. Requirements in this Standard are defined in terms of what shall be accomplished, rather than in terms of how to organize and perform the necessary work. This allows existing organizational structures and methods to be applied where they are effective, and for the structures and methods to evolve as necessary without rewriting the standards.

This Adoption Notice has been prepared by the ECSS Space Debris Working Group, reviewed by the ECSS Executive Secretariat and approved by the ECSS Technical Authority.

Disclaimer

ECSS does not provide any warranty whatsoever, whether expressed, implied, or statutory, including, but not limited to, any warranty of merchantability or fitness for a particular purpose or any warranty that the contents of the item are error-free. In no respect shall ECSS incur any liability for any damages, including, but not limited to, direct, indirect, special, or consequential damages arising out of, resulting from, or in any way connected to the use of this document, whether or not based upon warranty, business agreement, tort, or otherwise; whether or not injury was sustained by persons or property or otherwise; and whether or not loss was sustained from, or arose out of, the results of, the item, or any services that may be provided by ECSS.

Published by: ESA Requirements and Standards Division
ESTEC, P.O. Box 299,
2200 AG Noordwijk
The Netherlands

Copyright: 2012© by the European Space Agency for the members of ECSS

Change log

ECSS-U-AS-10A	Never issued
ECSS-U-AS-11-00A	Never issued
ECSS-U-AS-10C 10 February 2012	First issue

Table of contents

Change log	3
1 Scope	5
2 Context information	6
3 Application requirements	7
 Tables	
Table 3-1: Applicability table for ISO 24113.....	7

1 Scope

This document identifies the clauses and requirements modified with respect to the standard ISO 24113, Space systems — Space debris mitigation requirements, Second edition 2011-05-15 for application in ECSS.

2 Context information

The standard ISO 24113, Space systems – Space debris mitigation requirements has been developed by ISO TC20/SC14. The key space debris mitigation requirements have been thoroughly discussed at international level, agreed by the ISO members and published as standard ISO 24113.

Aiming at the development of world wide implementation standards dealing with space debris mitigation, ECSS has proactively contributed to the preparation of ISO 24113.

ECSS decided to adopt and apply ISO 24133 with a minimum set of modifications, identified in the present document, to account for the reference and applicable space debris mitigation documents existing in Europe and of the needs of the ECSS members.

Application requirements

- a. ISO 24113, Space systems - Space debris mitigation requirements, Second edition 2011-05-15 shall apply with the modifications listed in Table 3-1.

Table 3-1: Applicability table for ISO 24113

Clause or requirement number	Applicability	Applicable text (the new/added text is underlined>	Comments	Text as in the original document (deleted text with strikethrough)
1 Scope (1 st paragraph)	Modified	This International Standard defines the primary space debris mitigation requirements applicable to all elements of systems launched into or passing through near-Earth space, including launch vehicle orbital stages, operating spacecraft, and any objects released as part of normal operations or disposal actions.	Word “unmanned” deleted from the Scope of the ISO standard.	<i>This International Standard defines the primary space debris mitigation requirements applicable to all elements of unmanned systems launched into...</i>
3.15 re-entry	Modified (NOTE deleted)	process in which atmospheric drag cascades deceleration of a spacecraft or launch vehicle orbital stage (or any part thereof), leading to its destruction or return to Earth	NOTE deleted	<i>process in which atmospheric drag cascades deceleration of a spacecraft or launch vehicle orbital stage (or any part thereof), leading to its destruction or return to Earth</i> <i>NOTE — For operational purposes, this is when the period of the mean orbit is 89 minutes or less.”</i>

Clause or requirement number	Applicability	Applicable text (the new/added text is underlined)	Comments	Text as in the original document (deleted text with strikethrough)
6.1.1.3	New requirement	<p><u>If space debris are released into Earth orbit during normal launch operations, then the number of space debris released, other than those covered by 6.1.2, shall not exceed:</u></p> <p><u>a. One, for the launch of a single spacecraft.</u></p> <p><u>b. Two, for the launch of multiple spacecraft.</u></p>	New requirement added	-
6.1.2.2	Modified (whole text of the requirement)	Solid rocket motors shall be designed and operated to avoid releasing solid combustion products <u>larger than 1 mm</u> into the GEO protected region.	ISO requirement modified to include the maximum size of solid combustion products.	<i>Solid rocket motors shall be designed and operated so as to avoid releasing solid combustion products into the GEO protected region.</i>