

This is a preview of "ISO 20893:2021". [Click here to purchase the full version from the ANSI store.](#)

First edition
2021-02

Space systems — Detailed space debris mitigation requirements for launch vehicle orbital stages

Systèmes spatiaux — Exigences détaillées pour la limitation des débris spatiaux relatifs aux étages orbitaux des lanceurs



Reference number
ISO 20893:2021(E)

© ISO 2021

This is a preview of "ISO 20893:2021". [Click here to purchase the full version from the ANSI store.](#)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

This is a preview of "ISO 20893:2021". [Click here to purchase the full version from the ANSI store.](#)

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Avoiding the intentional release of space debris into Earth orbit during normal operations	1
5 Avoiding break-ups in Earth orbit	2
5.1 Accidental break-up caused by an on-board source of energy.....	2
5.1.1 General.....	2
5.1.2 Residual propellants in propulsion systems.....	2
5.1.3 Pressurized gasses in pressure vessels.....	2
5.1.4 Batteries.....	3
5.1.5 Range safety systems.....	3
5.1.6 Probability of accidental break-up due to internal causes.....	3
5.2 Accidental break-up caused by a collision.....	3
6 Disposal of a launch vehicle orbital stage after the end of mission so as to minimize interference with the protected regions	3
6.1 Launch service provider — spacecraft mission designer coordination.....	3
6.2 Selection of disposal option.....	4
6.2.1 Disposal to minimize interference with the geostationary Earth orbit (GEO) protected region.....	4
6.2.2 Disposal to minimize interference with the low Earth orbit (LEO) protected region.....	4
6.3 Probability of successful disposal.....	5
6.4 Contingency planning.....	5
7 Re-entry	5
8 Planning and documentation	6
8.1 General.....	6
8.2 Break-up prevention plan.....	6
8.3 End of mission disposal plan.....	6
8.4 Re-entry plan.....	7
8.5 Documentation.....	7
Bibliography	8

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This is a preview of "ISO 20893:2021". [Click here to purchase the full version from the ANSI store.](#)

Introduction

This document was developed to support the implementation of the high-level space debris mitigation requirements in ISO 24113.

This document contains a detailed and practical set of requirements and recommendations to assist the space industry in conforming to the requirements in ISO 24113 which relate to launch vehicle orbital stages.