BSI Standards Publication

Space systems — Spacecraft interface requirements document for launch vehicle services

National foreword

This British Standard is the UK implementation of ISO 17401:2023.

The UK participation in its preparation was entrusted to Technical Committee ACE/68, Space systems and operations.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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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*.

This second edition cancels and replaces the first edition (ISO 17401:2004), which has been technically revised.

The main changes are as follows:

— upgrade orbit definition parameters;

— upgrade SC environment description;

— upgrade SC description (interface, thermal aspects, EMC).

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.

Introduction

This document gives guidelines for writing an interface requirements document (IRD) for launch vehicle (LV) services. The application of this document is intended to facilitate the technical exchanges between spacecraft (SC) and launch vehicle agencies. By reducing the amount of work necessary for requesting launch services, this document will minimize spacecraft contractor's and spacecraft manufacturer's costs.

In some cases, drawings are explicitly requested in order to provide comprehensive information. Explicit international system units are specified for all items. The corresponding scale may be adjusted if not appropriate.

SC organizations may include additional topics if required. Some sections of the IRD may refer to specificities that are not applicable to the launch services of interest, in which case they should be ignored.

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1 Scope

This document provides spacecraft (SC) organizations with the general format for presenting the interface requirement document (IRD) for launch vehicle services. The IRD provides a list of the major technical requirements spacecraft agencies provide to launch vehicle (LV) agencies when submitting an application for launch services.

The IRD addresses the definition of the SC mission, the mechanical and electrical interfaces, the overall environment requirements (mechanical, thermal, cleanliness, radio-electrical), the SC development and test programme and, finally, launch range facilities and support requirements.

This document is applicable to all existing commercial LV and related launch facilities so as to permit SC contractors to prepare a single interface requirement document for a given SC mission, independently of the LV contractor to be selected.

The IRD, as defined in this document, includes the basic SC input data needed by LV agencies to prepare the interface control document defined in ISO 15863.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1.1
usable volume
volume available to the payload within the LV fairing or carrying structure that the static envelope of the SC may not exceed in order to ensure that there is no physical contact between the SC and the LV in a dynamic environment

3.1.2
spacecraft adapter
SC adapter
structure that mates the SC to the LV and includes the separation system for SC/LV separation

Note 1 to entry: The SC adapter is a part of the LV and does not separate with the SC.

3.2 Abbreviated terms

EIRP equivalent isotropic radiated power