
Space systems — Interface control documents between ground systems, ground support equipment and launch vehicle with payload

Systèmes spatiaux — Documents de contrôle d'interface entre les systèmes au sol, l'équipement de soutien au sol et le véhicule de lancement de charge utile



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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

Introduction

This International Standard is intended for application at realization of interstate, intergovernmental or non-governmental space activity, between operators of some country and different organizations on the basis of their space activity contracts.

Interfaced (connected) devices development by two and more designers (commands, organizations, developers of other specializations, etc.) creates a need for coordination between them to prevent interfaces discrepancy for unlimited possibilities of design (construction) perfection during the creation of space technics.

This International Standard establishes basic requirements for interface control documents (ICD) writing and interface control procedures for the following items included in launch system: payload, launch vehicle, ground support equipment (according to ISO 14625:2007) and launch site (buildings with technical systems). Notably

- a) ICD between payload and launch vehicle (according to ISO 15863:2003),
- b) ICD between ground support equipment and payload (this International Standard),
- c) ICD between ground support equipment and launch vehicle (this International Standard),
- d) ICD between items of ground support equipment (this International Standard), and
- e) ICD between ground support equipment and launch site (this International Standard).

ICD enables systematic creation (development), operation and management of interfaces b) to e) at all stages of life cycle of launch system. It is necessary for the purpose of guarantee of launch system normal functioning, prevention of accident and reduces of acceptable risk at joint space projects and services of space vehicles insertion into space.

Application of this International Standard at design and development stages will improve control and compatibility of all interfaces [b) to e)].

Application of this International Standard at operation stage will improve launch system safety and facilitate control of interfaces.

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1 Scope

This International Standard is applied for organizations developing ground support equipment and also for operators performing space activity.

Interface control documents format defined here does not contain the descriptions regarding various properties of ground support equipment (i.e. performance, functions or endurance to launch mechanical environment or quality assurance provisions) which are defined in technical specifications.

Control of interfaces, independently of its frequency or depth, cannot replace stages of parameters definition of high-quality production and development of technical requirements of project, design and development. Interfaces control is used as a control process that can provide necessary verification of successful finishing of design at a stated in contract period.

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- e) ICD between ground support equipment and launch site (this International Standard).

2 Terms and definitions

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

2.1

interface control document for ground support equipment

document which describes mechanical, hydraulic, pneumatic, thermal, electric and other parameters of interfaces between ground support equipment and launch vehicle, items of ground support equipment, ground support equipment and launch site objects (building constructions with technical systems), and which is used to control these parameters

2.2

ground support equipment

units and systems necessary for the prelaunch operations and operations for launch of payload and launch vehicle (rocket fuelling systems, gas supply systems, thermostating systems, launch pad, units for LV installation on launch pad, ground support equipment control systems, etc.)