

---

---

**Space data and information transfer  
systems — Orbit data messages**

*Systèmes de transfert des informations et données spatiales —  
Messages pour données d'orbites*



This document is a preview generated by EVS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 26900 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 502.0-B-2, November 2009) and was adopted (without modifications except those stated in Clause 2 of this International Standard) by Technical Committee ISO/TC 20, Aircraft and space vehicles, Subcommittee SC 14, Space systems and operations, in collaboration with SC 13, Space data and information transfer systems.

ISO 26900 cancels and replaces ISO 22644:2006, which has been technically revised.



# Space data and information transfer systems — Orbit data messages

## 1 Scope

This International Standard specifies three standard message formats for use in transferring spacecraft orbit information between space agencies and commercial or governmental spacecraft operators: the Orbit Parameter Message (OPM), the Orbit Mean-Elements Message (OMM), and the Orbit Ephemeris Message (OEM). Such exchanges are used for

- a) pre-flight planning for tracking or navigation support,
- b) scheduling tracking support,
- c) carrying out tracking operations (sometimes called metric predicts),
- d) performing orbit comparisons,
- e) carrying out navigation operations such as orbit propagation and orbit reconstruction,
- f) assessing mutual physical and electromagnetic interference among satellites orbiting the same celestial body (currently primarily Earth, Moon, and Mars),
- g) performing orbit conjunction (collision avoidance) studies, and
- h) developing and executing collaborative manoeuvres to mitigate interference or enhance mutual operations.

This International Standard includes sets of requirements and criteria that the message formats have been designed to meet.

**NOTE** For exchanges where these requirements do not capture the needs of the participating agencies and satellite operators, another mechanism can be selected.

The scope and field of application are furthermore detailed in subclauses 1.1 and 1.2 of the enclosed CCSDS publication.

## 2 Requirements

Requirements are the technical recommendations made in the following publication (reproduced on the following pages), which is adopted as an International Standard:

CCSDS 502.0-B-2, November 2009, *Orbit data messages*.

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 502.0-B-2.

*Pages i to v*

This part is information which is relevant to the CCSDS publication only.

*Page 1-3*

Add the following information to the reference indicated:

[1] Document CCSDS 301.0-B-3, January 2002, is equivalent to ISO 11104:2003.

*Page G-1*

Add the following information to the reference indicated:

[G5] Document CCSDS 504.0-B-1, May 2008, is equivalent to ISO 13541:2010.

### **3 Revision of publication CCSDS 502.0-B-2**

It has been agreed with the Consultative Committee for Space Data Systems that Subcommittee ISO/TC 20/SC 13 will be consulted in the event of any revision or amendment of publication CCSDS 502.0-B-2. To this end, NASA will act as a liaison body between CCSDS and ISO.