INTERNATIONAL STANDARD

**ISO 13526**

First edition
2010-09-15

# Space data and information transfer systems — Tracking data message

*Systèmes de transfert des informations et données spatiales — Message de données de suivi*

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Reference number
ISO 13526:2010(E)

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## Foreword

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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 13526 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 503.0-B-1, November 2007) 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 13, *Space data and information transfer systems*.

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# Space data and information transfer systems — Tracking data message

## 1 Scope

This International Standard specifies a standard message format for use in exchanging spacecraft tracking data between space agencies. Such exchanges are used for distributing tracking data output from routine interagency cross-supports, in which spacecraft missions managed by one agency are tracked from a ground station managed by a second agency. The standardization of tracking data formats facilitates space agency allocation of tracking sessions to alternate tracking resources.

This International Standard includes requirements and criteria that the message format has been designed to meet. For exchanges where these requirements do not capture the needs of the participating agencies, another mechanism can be selected.

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

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## 2 Requirements

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

CCSDS 503.0-B-1, November 2007, *Tracking data message*

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 503.0-B-1.

*Pages i to v*

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

*Page 1-4*

Add the following information to the reference indicated:

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

[4] Document CCSDS 502.0-B-1, September 2004, is equivalent to ISO 22644:2006.

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Add the following information to the reference indicated:

[E2] Document CCSDS 501.0-B-1-S, January 1987, is equivalent to ISO 11103:1991[1)].

1) Withdrawn in 2007.

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## 3 Revision of publication CCSDS 503.0-B-1

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 503.0-B-1. To this end, NASA will act as a liaison body between CCSDS and ISO.

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The Consultative Committee for Space Data Systems

# Recommendation for Space Data System Standards

# TRACKING DATA MESSAGE

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## RECOMMENDED STANDARD

## CCSDS 503.0-B-1

## BLUE BOOK
November 2007

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# AUTHORITY

| | |
|---|---|
| Issue: | Recommended Standard, Issue 1 |
| Date: | November 2007 |
| Location: | Washington, DC, USA |

This document has been approved for publication by the Management Council of the Consultative Committee for Space Data Systems (CCSDS) and represents the consensus technical agreement of the participating CCSDS Member Agencies. The procedure for review and authorization of CCSDS Recommendations is detailed in the *Procedures Manual for the Consultative Committee for Space Data Systems*, and the record of Agency participation in the authorization of this document can be obtained from the CCSDS Secretariat at the address below.

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CCSDS Secretariat
Space Communications and Navigation Office, 7L70
Space Operations Mission Directorate
NASA Headquarters
Washington, DC 20546-0001, USA

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# STATEMENT OF INTENT

The Consultative Committee for Space Data Systems (CCSDS) is an organization officially established by the management of its members. The Committee meets periodically to address data systems problems that are common to all participants, and to formulate sound technical solutions to these problems. Inasmuch as participation in the CCSDS is completely voluntary, the results of Committee actions are termed **Recommended Standards** and are not considered binding on any Agency.

This **Recommended Standard** is issued by, and represents the consensus of, the CCSDS members. Endorsement of this **Recommendation** is entirely voluntary. Endorsement, however, indicates the following understandings:

- Whenever a member establishes a CCSDS-related **standard**, this **standard** will be in accord with the relevant **Recommended Standard**. Establishing such a **standard** does not preclude other provisions which a member may develop.
- Whenever a member establishes a CCSDS-related **standard**, that member will provide other CCSDS members with the following information:
  - The **standard** itself.
  - The anticipated date of initial operational capability.
  - The anticipated duration of operational service.
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No later than five years from its date of issuance, this **Recommended Standard** will be reviewed by the CCSDS to determine whether it should: (1) remain in effect without change; (2) be changed to reflect the impact of new technologies, new requirements, or new directions; or (3) be retired or canceled.

In those instances when a new version of a **Recommended Standard** is issued, existing CCSDS-related member standards and implementations are not negated or deemed to be non-CCSDS compatible. It is the responsibility of each member to determine when such standards or implementations are to be modified. Each member is, however, strongly encouraged to direct planning for its new standards and implementations towards the later version of the Recommended Standard.


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# FOREWORD

This document is a Recommended Standard for tracking data messages and has been prepared by the Consultative Committee for Space Data Systems (CCSDS). The tracking data message described in this Recommended Standard is the baseline concept for tracking data interchange applications that are cross-supported between Agencies of the CCSDS.

This Recommended Standard establishes a common framework and provides a common basis for the format of tracking data exchange between space agencies. It allows implementing organizations within each Agency to proceed coherently with the development of compatible derived standards for the flight and ground systems that are within their cognizance. Derived Agency standards may implement only a subset of the optional features allowed by the Recommended Standard and may incorporate features not addressed by this Recommended Standard.

Through the process of normal evolution, it is expected that expansion, deletion or modification to this document may occur. This Recommended Standard is therefore subject to CCSDS document management and change control procedures, as defined in the *Procedures Manual for the Consultative Committee for Space Data Systems*. Current versions of CCSDS documents are maintained at the CCSDS Web site:

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- Agenzia Spaziale Italiana (ASI)/Italy.
- British National Space Centre (BNSC)/United Kingdom.
- Canadian Space Agency (CSA)/Canada.
- Centre National d'Etudes Spatiales (CNES)/France.
- Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)/Germany.
- European Space Agency (ESA)/Europe.
- Federal Space Agency (FSA)/Russian Federation.
- Instituto Nacional de Pesquisas Espaciais (INPE)/Brazil.
- Japan Aerospace Exploration Agency (JAXA)/Japan.
- National Aeronautics and Space Administration (NASA)/USA.

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# DOCUMENT CONTROL

| Document | Title | Date | Status |
|---|---|---|---|
| CCSDS 503.0-B-1 | Tracking Data Message, Recommended Standard, Issue 1 | November 2007 | Original issue |

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