
**Space data and information transfer
systems — Open archival information
system — Reference model**

*Systèmes de transfert des informations et données spatiales —
Système ouvert d'archivage de l'information — Modèle de référence*

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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.

International Standard ISO 14721 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 650.0-B-1, January 2002) 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 — Open archival information system — Reference model

1 Scope

This International Standard specifies a reference model for an open archival information system (OAIS). The purpose of this International Standard is to establish a system for archiving information, both digitalized and physical, with an organizational scheme composed of people who accept the responsibility to preserve information and make it available to a designated community.

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 650.0-B-1, January 2002, *Reference Model for an Open Archival Information System (OAIS)*.

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 650.0-B-1.

Pages i to v

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

Page D-1

Add the following information to the references indicated:

- [5] Document IEEE 1003.0, February 1995, is equivalent to ISO/IEC/TR 14252:1996.
- [8] Document CCSDS 620.0-B-2, May 1992, is equivalent to ISO 12175:1994.
- [10] Document CCSDS 644.0-B-2, November 2000, is equivalent to ISO 15889:2003.
- [11] Document CCSDS 647.1-B-1, June 2001, is equivalent to ISO 21961:2003.
- [12] Document CCSDS 647.2-B-1, June 2001, is equivalent to ISO 21962:2003.

3 Revision of publication CCSDS 650.0-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 650.0-B-1. To this end, NASA will act as a liaison body between CCSDS and ISO.

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Consultative Committee for Space Data Systems

**RECOMMENDATION FOR SPACE
DATA SYSTEM STANDARDS**

Reference Model for an Open Archival Information System (OAIS)

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CCSDS 650.0-B-1

BLUE BOOK

January 2002



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CCSDS RECOMMENDATION FOR AN OAIS REFERENCE MODEL

AUTHORITY

Issue:	Blue Book, Issue 1
Date:	January 2002
Location:	Not Applicable

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 *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
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 Program Integration Division (Code M-3)
 National Aeronautics and Space Administration
 Washington, DC 20546, USA

CCSDS RECOMMENDATION FOR AN OAIS REFERENCE MODEL

STATEMENT OF INTENT

The Consultative Committee for Space Data Systems (CCSDS) is an organization officially established by the management of member space Agencies. 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 **Recommendations** and are not considered binding on any Agency.

This **Recommendation** is issued by, and represents the consensus of, the CCSDS Plenary body. Agency endorsement of this **Recommendation** is entirely voluntary. Endorsement, however, indicates the following understandings:

- o Whenever an Agency establishes a CCSDS-related **standard**, this **standard** will be in accord with the relevant **Recommendation**. Establishing such a **standard** does not preclude other provisions which an Agency may develop.
- o Whenever an Agency establishes a CCSDS-related **standard**, the Agency will provide other CCSDS member Agencies with the following information:
 - The **standard** itself. [ISO 14721:2003](https://standards.iteh.ai/catalog/standards/sist/2432d7c7-204b-4d96-2003)
 - The anticipated date of initial operational capability. <https://standards.iteh.ai/catalog/standards/sist/2432d7c7-204b-4d96-2003>
 - The anticipated duration of operational service.
- o Specific service arrangements shall be made via memoranda of agreement. Neither this **Recommendation** nor any ensuing **standard** is a substitute for a memorandum of agreement.

No later than five years from its date of issuance, this **Recommendation** 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 **Recommendation** is issued, existing CCSDS-related Agency standards and implementations are not negated or deemed to be non-CCSDS compatible. It is the responsibility of each Agency to determine when such standards or implementations are to be modified. Each Agency is, however, strongly encouraged to direct planning for its new standards and implementations towards the later version of the Recommendation.

CCSDS RECOMMENDATION FOR AN OAIS REFERENCE MODEL

FOREWORD

This document is a technical Recommendation for use in developing a broader consensus on what is required for an archive to provide permanent, or indefinite long-term, preservation of digital information.

This Recommendation establishes a common framework of terms and concepts which comprise an Open Archival Information System (OAIS). It allows existing and future archives to be more meaningfully compared and contrasted. It provides a basis for further standardization within an archival context and it should promote greater vendor awareness of, and support of, archival requirements.

Through the process of normal evolution, it is expected that expansion, deletion, or modification of this document may occur. This Recommendation is therefore subject to CCSDS document management and change control procedures which are defined in *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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Questions relating to the contents or status of this document should be addressed to the CCSDS Secretariat at the address indicated on page i.

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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.
- Instituto Nacional de Pesquisas Espaciais (INPE)/Brazil.
- National Aeronautics and Space Administration (NASA)/USA.
- National Space Development Agency of Japan (NASDA)/Japan.
- Russian Space Agency (RSA)/Russian Federation.

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- Austrian Space Agency (ASA)/Austria.
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- Indian Space Research Organization (ISRO)/India.
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- National Space Program Office (NSPO)/Taipei.
- Swedish Space Corporation (SSC)/Sweden.
- United States Geological Survey (USGS)/USA.

CCSDS RECOMMENDATION FOR AN OAIS REFERENCE MODEL

DOCUMENT CONTROL

Document	Title	Date	Status and Substantive Changes
CCSDS 650.0-B-1	Reference Model for an Open Archival Information System (OAIS)	January 2002	Original Issue

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