

**BS ISO 14721:2012**



**BSI Standards Publication**

# **Space data and information transfer systems — Open archival information system (OAIS) — Reference model**

**bsi.**

...making excellence a habit.™

This is a preview. [Click here to purchase the full publication.](#)

**National foreword**

This British Standard is the UK implementation of ISO 14721:2012. It supersedes BS ISO 14721:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/68/-/7, Space systems and operations - Space data and information transfer systems.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2012. Published by BSI Standards Limited 2012

ISBN 978 0 580 72788 7

ICS 49.140

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2012.

**Amendments issued since publication**

Date	Text affected
------	---------------

# INTERNATIONAL STANDARD

BS ISO 14721:2012

**ISO**  
**14721**

Second edition  
2012-09-01

---

---

## **Space data and information transfer systems — Open archival information system (OAIS) — Reference model**

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



Reference number  
ISO 14721:2012(E)



## **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 14721 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 650.0-M-2, June 2012) 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*.

This second edition cancels and replaces the first edition (ISO 14721:2003), which has been technically revised.



# Space data and information transfer systems — Open archival information system (OAIS) — Reference model

## 1 Scope

This International Standard defines the reference model for an open archival information system (OAIS). An OAIS is an archive, consisting of an organization, which may be part of a larger organization, of people and systems that has accepted the responsibility to preserve information and make it available for a designated community. It meets a set of such responsibilities as defined in this International Standard, and this allows an OAIS archive to be distinguished from other uses of the term "archive". The term "open" in OAIS is used to imply that this International Standard, as well as future related International Standards, are developed in open forums, and it does not imply that access to the archive is unrestricted.

This International Standard

- provides a framework for the understanding and increased awareness of archival concepts needed for long term digital information preservation and access,
- provides the concepts needed by non-archival organizations to be effective participants in the preservation process,
- provides a framework, including terminology and concepts, for describing and comparing architectures and operations of existing and future archives,
- provides a framework for describing and comparing different Long Term Preservation strategies and techniques,
- provides a basis for comparing the data models of digital information preserved by archives and for discussing how data models and the underlying information may change over time,
- provides a framework that may be expanded by other efforts to cover long term preservation of information that is not in digital form (e.g. physical media and physical samples),
- expands consensus on the elements and processes for long term digital information preservation and access, and promotes a larger market which vendors can support, and
- guides the identification and production of OAIS-related standards.

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-M-2, June 2012, *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-M-2.

*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 reference indicated:

[D6] Document CCSDS 620.0-B-2, May 1992, is equivalent to ISO 12175:1994.

[D7] Document CCSDS 644.0-B-2, November 2000, is equivalent to ISO 15889:2003<sup>1)</sup>.

[D8] Document CCSDS 647.1-B-1, June 2001, is equivalent to ISO 21961:2003.

[D9] Document CCSDS 647.2-B-1, June 2001, is equivalent to ISO 21962:2003.

[D11] Document CCSDS 661.0-B-1, September 2008, is equivalent to ISO 13527:2010.

### **3 Revision of publication CCSDS 650.0-M-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 650.0-M-2. To this end, NASA will act as a liaison body between CCSDS and ISO.

---

1) Cancelled and replaced by ISO 15889:2011.

## **Recommendation for Space Data System Practices**

# **REFERENCE MODEL FOR AN OPEN ARCHIVAL INFORMATION SYSTEM (OAIS)**

## **RECOMMENDED PRACTICE**

**CCSDS 650.0-M-2**

## **MAGENTA BOOK**

**June 2012**

## AUTHORITY

Issue:	Recommended Practice, Issue 2
Date:	June 2012
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 documents is detailed in *Organization and Processes for the Consultative Committee for Space Data Systems* (CCSDS A02.1-Y-3), and the record of Agency participation in the authorization of this document can be obtained from the CCSDS Secretariat at the address below.

This document is published and maintained by:

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

## 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 **Recommendations** and are not in themselves considered binding on any Agency.

CCSDS Recommendations take two forms: **Recommended Standards** that are prescriptive and are the formal vehicles by which CCSDS Agencies create the standards that specify how elements of their space mission support infrastructure shall operate and interoperate with others; and **Recommended Practices** that are more descriptive in nature and are intended to provide general guidance about how to approach a particular problem associated with space mission support. This **Recommended Practice** is issued by, and represents the consensus of, the CCSDS members. Endorsement of this **Recommended Practice** is entirely voluntary and does not imply a commitment by any Agency or organization to implement its recommendations in a prescriptive sense.

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