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Oberoende Arkivinformationssystem (OAIS) – Referensmodell (ISO 14721:2012, IDT)

Space data and information transfer systems – Open archival information system – Reference model (ISO 14721:2012, IDT)

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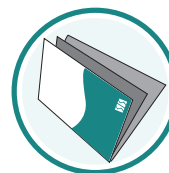
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Denna standard ersätter SS-ISO 14721, utgåva 1.

The International Standard ISO 14721:2012 has the status of a Swedish Standard. This document contains the official English version of ISO 14721:2012.

This standard supersedes the Swedish Standard SS-ISO 14721, edition 1.

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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 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 15889:2003¹⁾.

[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

CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

AUTHORITY

Issue:	Recommended Practice, Issue 2
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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.

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CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

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CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

FOREWORD

This document is a technical Recommended Practice 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 Recommended Practice establishes a common framework of terms and concepts which make up 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.

CCSDS has changed the classification of Reference Models from Blue (Recommended Standard) to Magenta (Recommended Practice).

Through the process of normal evolution, it is expected that expansion, deletion, or modification of this document may occur. This Recommended Practice is therefore subject to CCSDS document management and change control procedures, which are 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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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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- Space and Upper Atmosphere Research Commission (SUPARCO)/Pakistan.
- Swedish Space Corporation (SSC)/Sweden.
- United States Geological Survey (USGS)/USA.

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DOCUMENT CONTROL

Document	Title	Date	Status
CCSDS 650.0-B-1	Reference Model for an Open Archival Information System (OAIS)	January 2002	Original issue (superseded)
CCSDS 650.0-M-2	Reference Model for an Open Archival Information System (OAIS), Recommended Practice, Issue 2	June 2012	Current issue: – updates document based on input from user community (note).

NOTE – This issue includes: clarifications to many concepts, in particular Authenticity with the concept of Transformational Information Property introduced; corrections and improvements in diagrams; addition of Access Rights Information to PDI. Annex A from the previous issue, describing existing archives, has been removed. A security annex has been added as required by CCSDS. Substantive changes are indicated by change bars in the inside margin.

CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

CONTENTS

<u>Section</u>	<u>Page</u>
1 INTRODUCTION	1-1
1.1 PURPOSE AND SCOPE.....	1-1
1.2 APPLICABILITY.....	1-2
1.3 RATIONALE.....	1-3
1.4 CONFORMANCE.....	1-3
1.5 ROAD MAP FOR DEVELOPMENT OF RELATED STANDARDS.....	1-4
1.6 DOCUMENT STRUCTURE.....	1-5
1.7 DEFINITIONS.....	1-7
2 OAIS CONCEPTS	2-1
2.1 OAIS ENVIRONMENT.....	2-2
2.2 OAIS INFORMATION.....	2-3
2.3 OAIS HIGH-LEVEL EXTERNAL INTERACTIONS.....	2-8
3 OAIS RESPONSIBILITIES	3-1
3.1 MANDATORY RESPONSIBILITIES.....	3-1
3.2 EXAMPLE MECHANISMS FOR DISCHARGING RESPONSIBILITIES.....	3-1
4 DETAILED MODELS	4-1
4.1 FUNCTIONAL MODEL.....	4-1
4.2 INFORMATION MODEL.....	4-20
4.3 INFORMATION PACKAGE TRANSFORMATIONS.....	4-50
5 PRESERVATION PERSPECTIVES	5-1
5.1 DIGITAL MIGRATION.....	5-2
5.2 PRESERVATION OF ACCESS AND USE SERVICES.....	5-10
6 ARCHIVE INTEROPERABILITY	6-1
6.1 TECHNICAL LEVELS OF INTERACTION BETWEEN OAIS ARCHIVES.....	6-2
6.2 MANAGEMENT ISSUES WITH FEDERATED ARCHIVES.....	6-8
ANNEX A COMPOSITE FUNCTIONAL VIEW (NORMATIVE)	A-1
ANNEX B RELATIONSHIP WITH OTHER STANDARDS OR EFFORTS (INFORMATIVE)	B-1

CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

CONTENTS (continued)

<u>Section</u>	<u>Page</u>
ANNEX C BRIEF GUIDE TO THE UNIFIED MODELING LANGUAGE (UML) (INFORMATIVE)	C-1
ANNEX D INFORMATIVE REFERENCES (INFORMATIVE)	D-1
ANNEX E A MODEL FOR SOFTWARE USE IN REPRESENTATION INFORMATION (INFORMATIVE)	E-1
ANNEX F SECURITY CONSIDERATIONS (INFORMATIVE)	F-1

Figure

2-1 Environment Model of an OAIS.....	2-2
2-2 Obtaining Information from Data.....	2-4
2-3 Information Package Concepts and Relationships	2-6
2-4 OAIS Archive External Data	2-8
4-1 OAIS Functional Entities.....	4-1
4-2 Functions of the Ingest Functional Entity.....	4-5
4-3 Functions of the Archival Storage Functional Entity	4-8
4-4 Functions of the Data Management Functional Entity	4-10
4-5 Functions of the Administration Functional Entity	4-11
4-6 Functions of the Preservation Planning Functional Entity	4-14
4-7 Functions of the Access Functional Entity	4-16
4-8 OAIS Data Flow Diagram	4-18
4-9 Administration Context Diagram	4-19
4-10 Information Object.....	4-21
4-11 Representation Information Object.....	4-23
4-12 Information Object Taxonomy	4-26
4-13 Information Package Contents.....	4-34
4-14 Information Package Taxonomy.....	4-35
4-15 Archival Information Package (AIP).....	4-37
4-16 Preservation Description Information.....	4-38
4-17 Package Description	4-39
4-18 Archival Information Package (Detailed View)	4-40
4-19 Archival Specialization of the AIP	4-41
4-20 Archival Specialization of the Package	4-42
4-21 Archival Information Unit (AIU)	4-43
4-22 Unit Description.....	4-44
4-23 Archive Information Collections Logical View	4-46
4-24 Collection Description	4-47
4-25 Data Management Information.....	4-50
4-26 High-Level Data Flows in an OAIS	4-51
5-1 Conceptual View of Relationships among Names and AIP Components	5-3
6-1 Cooperating Archives with Mutual Exchange Agreement.....	6-3

CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

CONTENTS (continued)

<u>Figure</u>	<u>Page</u>
6-2 Cooperating Archives with Standard Ingest and Access Methods.....	6-4
6-3 An OAIS Federation Employing a Common Catalog	6-5
6-4 Archives with Shared Storage	6-8
A-1 Composite of Functional Entities	A-2
C-1 Key to UML Relationships.....	C-1
E-1 Layered Information Model.....	E-1

Table

4-1 Examples of PDI.....	4-31
--------------------------	------

CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

1 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this document is to define the CCSDS and International Organization for Standardization (ISO) 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 document, 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 Recommendation, as well as future related Recommendations and standards, are developed in open forums, and it does not imply that access to the Archive is unrestricted.

The information being maintained has been deemed to need **Long Term Preservation**, even if the OAIS itself is not permanent. **Long Term** is long enough to be concerned with the impacts of changing technologies, including support for new media and data formats, or with a changing user community. Long Term may extend indefinitely. In this reference model there is a particular focus on digital information, both as the primary forms of information held and as supporting information for both digitally and physically archived materials. Therefore, the model accommodates information that is inherently non-digital (e.g., a physical sample), but the modeling and preservation of such information is not addressed in detail. This reference model:

- 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;
- guides the identification and production of OAIS-related standards.

CCSDS RECOMMENDED PRACTICE FOR AN OAIS REFERENCE MODEL

The reference model addresses a full range of archival information preservation functions including ingest, archival storage, data management, access, and dissemination. It also addresses the migration of digital information to new media and forms, the data models used to represent the information, the role of software in information preservation, and the exchange of digital information among Archives. It identifies both internal and external interfaces to the Archive functions, and it identifies a number of high-level services at these interfaces. It provides various illustrative examples and some 'best practice' recommendations. It defines a minimal set of responsibilities for an Archive to be called an OAIS, and it also defines a maximal Archive to provide a broad set of useful terms and concepts.

1.2 APPLICABILITY

The OAIS model in this document may be applicable to any Archive. It is specifically applicable to organizations with the responsibility of making information available for the Long Term. This includes organizations with other responsibilities, such as processing and distribution in response to programmatic needs.

This model is also of interest to those organizations and individuals who create information that may need Long Term Preservation and those that may need to acquire information from such Archives.

The model, including the functional and information modeling concepts, is relevant to the comparison and design of facilities which hold information, on a temporary basis, for two reasons:

- When taking into consideration the rapid pace of technology changes or possible changes in a Designated Community, there is the likelihood that facilities, thought to be holding information on a temporary basis, will in fact find that some or much of their information holdings will need Long Term Preservation attention.
- Although some facilities holding information may themselves be temporary, some or all of their information may need to be preserved indefinitely. Such facilities need to be active participants in the Long Term Preservation effort.

Standards developers are expected to use this model as a basis for further standardization in this area. A large number of related standards are possible. A road map for such development is briefly addressed in 1.5.

This reference model does not specify a design or an implementation. Actual implementations may group or break out functionality differently.