



**SLOVENSKI STANDARD**  
**SIST ISO 13008:2013**

**01-julij-2013**

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**Informatika in dokumentacija - Proces konverzije in migracije digitalnih zapisov**

Information and documentation -- Digital records conversion and migration process

Information et documentation -- Processus de conversion et migration des documents  
d'activité numériques

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# INTERNATIONAL STANDARD

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13008**

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## Information and documentation — Digital records conversion and migration process

*Information et documentation — Processus de conversion et migration  
des documents d'activité numériques*

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## ISO 13008:2012(E)

**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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13008 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 11, *Archives/records management*.

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## Introduction

This International Standard provides guidance for the conversion of records from one format to another and the migration of records from one hardware or software configuration to another. It contains applicable records management requirements, the organizational and business framework for conducting the conversion and migration process, technology planning issues, and monitoring/controls for the process. It also identifies the steps, components and particular methodologies for each of these processes, covering such topics as workflow, testing, version control and validation.

The development of this International Standard was derived from Reference [13].

With the rapid pace of technological change, many records in digital form will, at some point, need to be converted from one format to another, or migrated from one system to another to ensure their continued accessibility and processability.

This is not to suggest that conversion and migration are the only approaches to preserving digital records. Other methods, such as emulation, do exist or are under development. Conversion and migration are, however, two of the more prevalent methods of digital preservation at this time. While this International Standard does not address digital preservation per se, the conversion and migration processes can have an impact on a digital preservation strategy. How an organization chooses to set up the conversion and migration processes (which format to employ, the level of control needed, and so on) largely influences its view of the record. At the time of the development of this International Standard, no single preferred preservation method had been identified. However, institutions recognize the benefit of standardized procedures; many test beds and task forces have been established to explore and research conversion, migration, emulation and refreshment, among other preservation procedures, to determine what should work best.

Conversion and migration represent separate approaches to preserving digital records. It is important to implement them in a managed way to prevent any degradation or loss in the authenticity, reliability, integrity and usability of the records, thus ensuring an “authoritative record” as described in ISO 15489-1:2001, 7.2.2 to 7.2.5. This International Standard outlines the program components, planning issues, recordkeeping requirements and procedures for performing the conversion and migration of digital records so as to preserve their authenticity, reliability, integrity and usability so that they continue to act as evidence of business transactions.

From the outset, note that it is not necessary to adopt all of the procedures recommended in this International Standard to ensure that records management requirements are met. The decision regarding which procedures to adopt depends on such factors as the type of conversion or migration to be performed and the level of risk the organization is willing to accept. In addition, organizations would be well advised to incorporate future planning for further conversion and/or migration of records among requirements for managing enterprise electronic recordkeeping systems.

Before starting a conversion or migration project, individuals designated as “key” to the process need to be aware of records management requirements. The term “recordkeeping criteria/requirements” in records and information management means an adherence to a set of principles that relate to record integrity, authenticity, reliability and usability. Adherence to these principles ensures that record content, context and structure are maintained and that a given record’s standing as evidence of business activity is not compromised. The principles apply regardless of how long the record is retained.

This International Standard does not specifically address conversions and migrations as a routine, ongoing business-as-usual work.

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# Information and documentation — Digital records conversion and migration process

## 1 Scope

This International Standard specifies the planning issues, requirements and procedures for the conversion and/or migration of digital records (which includes digital objects plus metadata) in order to preserve the authenticity, reliability, integrity and usability of such records as evidence of business transactions. These digital records can be active or residing in a repository.

These procedures do not comprehensively cover:

- backup systems;
- preservation of digital records;
- functionality of trusted digital repositories;
- the process of converting analogue formats to digital formats and vice versa.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15489-1, *Information and documentation — Records management — Part 1: General*

ISO 23081-2, *Information and documentation — Managing metadata for records — Part 2: Conceptual and implementation issues*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15489-1 and the following apply.

### 3.1

#### access

right, opportunity, means of finding, using, or retrieving information

[ISO 15489-1:2001, definition 3.1]

### 3.2

#### attribute

characteristic of an object or entity

NOTE Adapted from ISO/IEC 11179-3:2003.

### 3.3

#### authenticity

record that can be proven to be what it purports to be, to have been created or sent by the person purported to have created or sent it, and to have been created or sent at the time purported

NOTE This term is further described in ISO 15489-1:2001, 7.2.2.

**ISO 13008:2012(E)****3.4****content**

subject information of a document

[IEC 82045-1:2001, definition 3.2.2]

**3.5****conversion**

(record) process of changing records from one format to another while maintaining the characteristics of the records

**3.6****data cleansing**

process of reviewing and correcting data to ensure data are in a standardized format

NOTE Correction may be carried out for incompleteness, incorrect formatting, obsolescence, duplication, etc. It is often done prior to merging data sets or converting data from one system/database to another.

**3.7****data object**

discrete data, considered as a unit, representing an instance of a data structure that is known or assumed to be known

[ISO/IEC 2382-17:1999, definition 17.01.11]

**3.8****emulation**

use of a data processing system to imitate another data processing system, so that the imitating system accepts the same data, executes the same programs, and achieves the same results as the imitated system

NOTE Adapted from ISO/IEC 2382-1:1993.

**3.9****encryption**

(reversible) transformation of data by a cryptographic algorithm to produce ciphertext, i.e. to hide the information content of the data

NOTE Adapted from ISO/IEC 18033-1:2005.

**3.10****file format**

encoding of a file type that can be rendered or interpreted in a consistent, expected and meaningful way through the intervention of a particular piece of software or hardware which has been designed to handle that format

NOTE A file may (or may not) be a container containing zero or more files of various formats. File formats may be defined by a specification, or by a reference software system. Many file formats exist in forms with minor variations and many also in more than one version. Typing of file formats should be interpreted generously rather than strictly, but sufficiently precisely to distinguish versions where such distinctions have significant interpretive consequences.

[PRONOM]

**3.11****integrity**

quality of being complete and unaltered

NOTE This term is further described in ISO 15489-1:2001, 7.2.4.

**3.12****metadata**

(records) data describing context, content, and structure of records and their management through time

[ISO 15489-1:2001, definition 3.12]

**3.13****migration**

⟨records⟩ process of moving records, including their existing characteristics, from one hardware or software configuration to another without changing the format

**3.14****originating**

initial manifestation of something

**3.15****preservation**

processes and operations involved in ensuring the technical and intellectual survival of authentic records through time

[ISO 15489-1:2001, definition 3.14]

**3.16****preservation metadata**

metadata that supports the viability, renderability, understandability, authenticity and identity of digital objects in a preservation context

[PREMIS Data Dictionary for Preservation Metadata, version 2.0, March 2008]

**3.17****record**

information created, received, and maintained as evidence and/or as an asset by an organization or person, in pursuance of legal obligations or in the transaction of business, regardless of medium, form or format

NOTE Adapted from ISO 15489-1:2001.

**3.18****refreshment**

data migration where the media is replaced with equivalent media such that all storage hardware and software functionality is unchanged

NOTE Adapted from ISO 14721:2003.

**3.19****reliability**

measure of the completeness and accuracy of the representation of transactions and activities, or of the facts to which they attest

NOTE This term is further described in ISO 15489-1:2001, 7.2.3.

**3.20****replication**

digital migration where there is no change to the packaging information, the content information, and the preservation description information

NOTE The bits used to represent these information objects are preserved in the transfer to the same or new media instance.

NOTE Adapted from ISO 14721:2003.

**3.21****usability**

⟨records⟩ property of being able to be located, retrieved, presented and interpreted

NOTE This term is further described in ISO 15489-1:2001, 7.2.5.

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## 3.22

**validation**

confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled

NOTE Adapted from ISO 9000:2005.

## 4 Organizational and business framework

### 4.1 General

This clause addresses the drivers that often prompt the need for the conversion or migration of digital records, the issues that organizations should consider when evaluating the need for conversion or migration of their records, and the steps taken in developing a conversion and migration program. It discusses the decision making and resource allocation associated with the conversion or migration within the organizational framework, as well as the technical infrastructure that supports the conversion and migration processes and which shall be used to ensure the records' authenticity and integrity for as long as they are needed.

### 4.2 Conversion and migration drivers

#### 4.2.1 General

A variety of drivers can compel an organization to convert or migrate its digital records. Some records have longer retention requirements than a software application or storage medium can sustain, prompting organizations to convert or migrate their records while supporting systems are still viable. Organizations might also choose to convert or migrate records proactively on the basis of operational factors relating to record volume, access, storage efficiency, business and technology cycles, or organizational change (such as mergers and acquisitions). In extreme circumstances, organizations might be compelled to convert or migrate records in response to regulatory or legal actions.

#### 4.2.2 Conversion drivers

Conversion is defined as the process of changing records from one format to another. Some examples of drivers that could require digital conversion include the following.

- a) Format change: for example, records stored in a closed format are converted to an open file format, such as a conversion of a Word file to PDF/A.
- b) Format obsolescence: for example, records stored in an obsolete but still readable word processing format are converted to a current word processing format.

#### 4.2.3 Migration drivers

Migration is defined as the process of moving records from one hardware or software configuration to another without changing the format. Some examples of drivers that could require digital migration include the following.

- a) There may be a need to migrate records from one structure to another. For example, records existing in several legacy databases might be restructured into a new consolidated database (e.g. from Oracle to SQL Server).
- b) The platform in which the records were created is changing and the records need to be migrated to the new platform. For example, records might need to be moved from a Microsoft Windows platform to a UNIX platform.
- c) A migration is prudent from a business perspective (e.g. to introduce a new system with improved functionality). For example, a migration of records might be needed to support a change from a physical business presence to a web-based storefront or to move records from a shared drive to an electronic document and records management system (EDRMS).