INTERNATIONAL STANDARD

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Second edition
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Information and documentation — Processes and functional requirements for software for managing records —

Part 1: Functional requirements and associated guidance for any applications that manage digital records

Information et documentation — Processus et exigences fonctionnelles applicables aux logiciels de gestion des documents d'activité —

Partie 1: Exigences fonctionnelles et recommandations associées pour toute application de gestion de documents d'activité numériques

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 16175-1:2010), which has been technically revised. The main changes compared to the previous edition are as follows.

— The distinction between dedicated records management applications and business applications has been dispensed with. As a result, a single set of functional requirements and associated guidance is provided in a single document that addresses both kinds of software applications.

— The number of functional requirements has been greatly reduced and simplified in order to help users focus on the most important areas of software functionality.

— Text has been updated, clarified and simplified, with the use of records jargon eliminated where possible and explained when necessary in acknowledgement of the primary audience for the standard being IT professionals. More diagrams have been added.

A list of all parts in the ISO 16175 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

0.1 Case for management of records

Good management of records and information is fundamental to a well-functioning organization. It supports business functions and processes and provides a basis for efficient service delivery. It also provides the mechanism for organizations to retain evidence of their decisions and actions for future reference and to support business continuity. Good records practice is simply good business practice.

Managing records facilitates:

a) efficiency, by making information readily available when needed for decision-making and operational purposes and to support information reuse and innovation;

b) sound use of financial resources, by allowing timely disposition of non-current records;

c) accountability, by enabling the creation of complete and authoritative records of business functions and processes;

d) compliance, by demonstrating that legal requirements have been met; and

e) risk mitigation, by managing the risks associated with unlawful loss or destruction of records and with over-retention of records, and risks resulting from inappropriate or unauthorized access to records.

In most organizations today, business is transacted and enabled by a variety of software applications. If organizations are to capture and manage reliable records of their business functions and processes, it is vital that their line-of-business applications incorporate good records functionality as part of their design. Making, keeping and disposing of records should be an organic and natural part of business processes.

0.2 Purpose of this document

This document provides model, high-level functional requirements, with associated explanatory information and usage guidance, for any software applications that are intended to manage digital records. ISO/TS 16175-2:—[1)] provides guidance on how to select/design, implement and maintain software for managing records within organizations.

For the purpose of presenting model functional requirements, this document makes no distinction between software applications that are used for any business purpose and those applications specifically intended and designed to manage records. Examples of the former include Enterprise Content Management Systems and applications which create records as one part of their functionality such as Contracts Management Systems, Case Management Systems or transactional systems. The term used throughout is therefore "Business application", which is intended to encapsulate the totality of applications that manage records as part of their usual functioning. It is assumed that almost all business applications will generate data that is needed to serve as evidence of business functions and processes for future reference and as such will, among other things, need to create, store and manage records. The purpose of this document is to assist the developers and implementers of those applications to identify and deploy functional requirements that helps ensure that the data generated and held in such applications can serve as adequate records of business functions and processes.

In addition to providing model high-level functional records requirements in business applications, this document provides guidance on identifying and addressing the needs for records. It aims to:

a) help organizations understand requirements for managing digital records as they relate to software applications used by organizations;

b) assist IT and business specialists to include records considerations in applications design and/or procurement; and

1) Under development. Stage at the time of publication: ISO/DTS 16175-2:2020.

c) assess the capabilities of existing business applications to manage records, including helping to identify gaps or areas of risk in the current functionality of those applications.

This document is part of a suite of records system implementation guidance that supports the core international records management standard, ISO 15489-1, where utility and characteristics of records systems are explained.

0.3 Audience

The primary audience for this document are professionals responsible for designing, developing, procuring, reviewing and/or implementing software applications, such as business analysts, applications developers, solution architects and IT procurement decision-makers. The audience also includes records professionals who are involved in advising or assisting in such processes.

Role	Purpose
Solution architects/ designers	Ensure IT applications infrastructure supports the records requirements.
Records professionals	Advising and assisting the business in defining records requirements.
IT procurement decision-makers	Ensure procurement processes meet these requirements.
Applications developers	Build applications and support information systems testers during functional specification development and test phase. Includes software vendors and developers who wish to incorporate records functionality within their products, both commercial or open source.
Business analysts	Develop technical specifications; initiate/collate feedback and walkthrough. Submit specification for sign-off and pass over to developer. Update any changes to specification after sign-off (e.g. changes that are agreed during test phase), if required.
Applications testers	Develop test plans, test conditions/cases and execute tests. Analyse test results, log any failures and retest once immutability has been applied and built to test environment.
Business owners	For solution-specific requirements. Review and confirm application requirements that meet business objectives. Provide the business rules/processes/requirements to the business analyst during the software specification development and test phases.

Given the target audience for this document, the use of terminology that is specific to records professionals has been minimised as far as possible. Where the use of such terminology is unavoidable, it is explained and/or defined (in Clause 3).

Information and documentation — Processes and functional requirements for software for managing records —

Part 1: Functional requirements and associated guidance for any applications that manage digital records

1 Scope

This document provides model, high-level functional requirements and associated guidance for software applications that are intended to manage digital records (including digital copies of analogue source records), either as the main purpose of the application or as a part of an application that is primarily intended to enable other business functions and processes.

It does not include:

— functional requirements for applications that manage analogue records;

— generic design requirements such as reporting, application administration and performance;

— requirements for the long-term preservation of digital records in a dedicated preservation environment;

NOTE The model requirements are intended to encourage the deployment of applications that do not hinder long-term preservation of records. As such, some of the requirements support long-term digital preservation outcomes.

— implementation guidance for applications that manages analogue and/or digital records. Such guidance can be found in ISO/TS 16175-2:—[2)].

2 Normative references

The following document is referred to in the text in such a way that some or all of its content constitutes requirements of this document. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 30300, *Information and documentation — Records management — Core concepts and vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 30300 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org

2) Under development. Stage at the time of publication: ISO/DTS 16175-2:2020.

4 Key outcome areas and configuration options

4.1 Key outcome areas

The functional requirements in this document focus on the outcomes required to ensure records are managed appropriately. How to achieve the outcomes will depend on the type of application being used. See Figure 1.

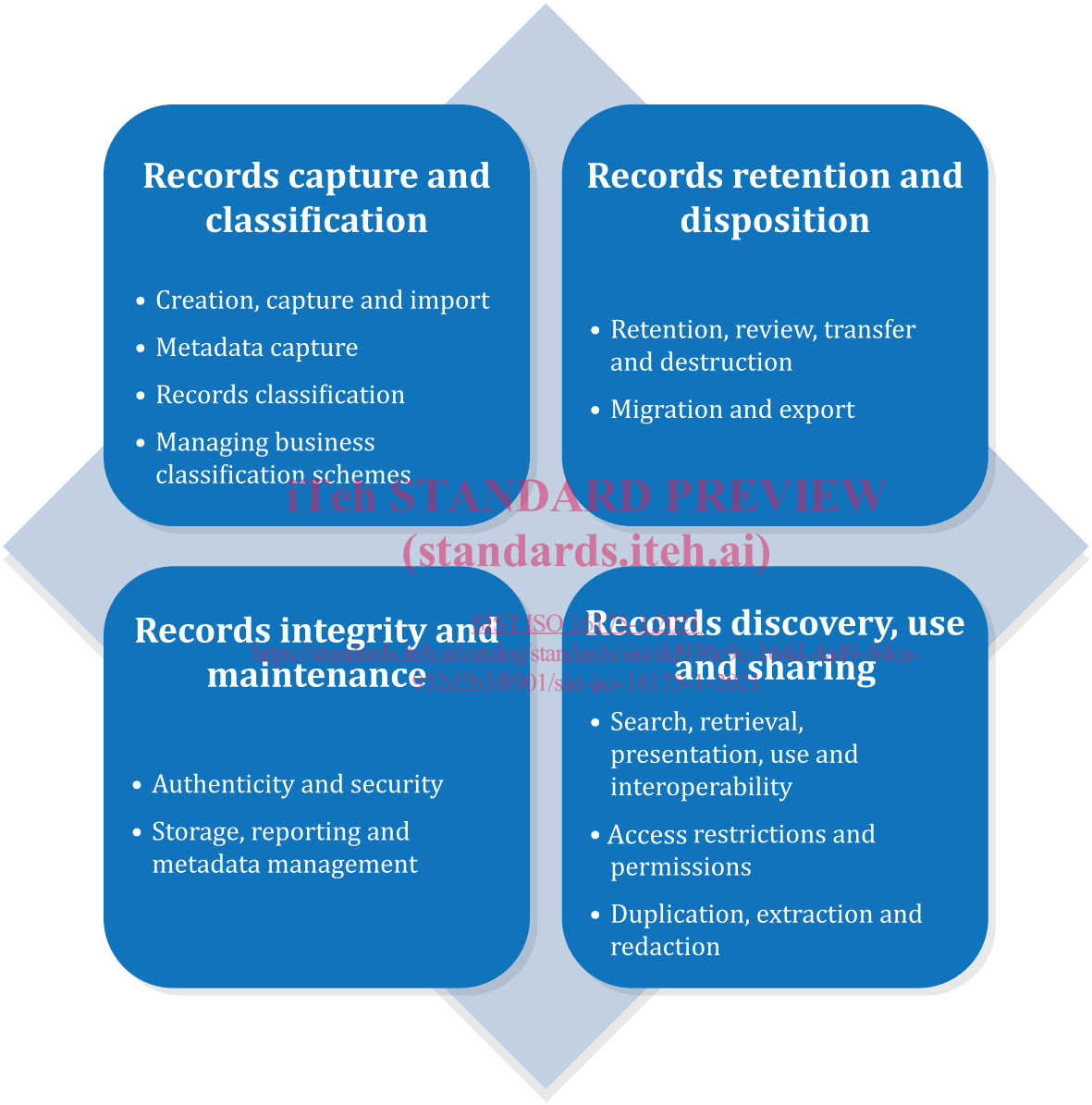


Figure 1 — Key outcome areas

4.2 Key outcome areas in detail

4.2.1 Records capture and classification

Software applications that enable business activities or transactions should be able to capture and/or import/ingest evidence of those activities. This involves identifying sets of digital information to serve as records. Records shall be linked to their business context using metadata.

4.2.2 Records retention and disposition

Records shall be kept and remain accessible to authorized agents for as long as required for legislative, community and business needs. In conformance with authorized disposition authorities, records should be retained and disposed of in a managed, systematic and auditable way.

4.2.3 Records integrity and maintenance

Business applications should be able to register any interactions with or changes to the records. Metadata recording these interactions and changes should include the name of the responsible agent, a timestamp and details of any changes. The metadata should be persistently linked to the records for as long as they exist.

4.2.4 Records discovery, use and sharing

Business applications should enable searching, retrieval, rendering, use, sharing and redaction of records for authorized agents. They should also support interoperability across platforms and domains and over time.

NOTE See 7.5.5 for a discussion on redaction of records.

4.3 Possible configuration options for managing records created in business applications

It is not necessary for all the functional requirements presented in this document to be met by a single software application. It may be more cost effective for the requirements to be satisfied by multiple software applications that collectively work together within an organization, or across multiple organizations, to enable the conduct of business. Guidance on these issues can be found in Figure 2 and in 7.5. In addition, some requirements could be satisfied outside applications through processes and procedures.

Before using the functional requirements, organizations should consider how to meet these requirements: through internal mechanisms within a business application itself, or by interacting with external software applications that are capable of providing the necessary records management functionality.

The mandatory functional requirements in this document outline the core records processes that shall be addressed. Options to implement these requirements may include:

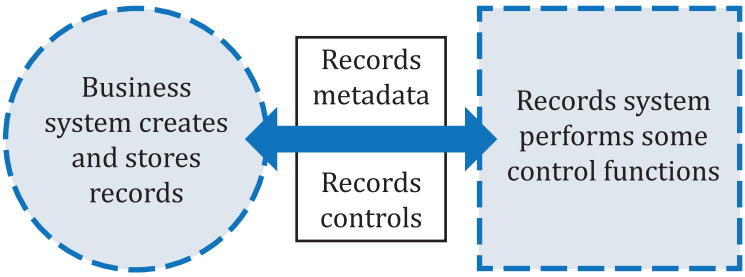
a) designing the business application to internally perform the records processes, or to do so in combination with associated work processes;

b) integrating with a dedicated records management application, such as an electronic records management system (ERMS); or

c) designing export functionality into the business application to directly export records and their associated metadata to an identified records management application.

1. Records managed **WITHIN** the business system

2. **INTEGRATION** with a records system



3. **EXPORT** of records to a records system

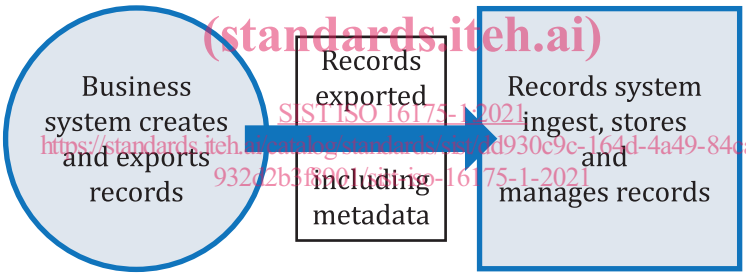


Figure 2 — Possible configuration options for managing records created in business applications

For more detail, see 8.6.

5 High-level requirements for software managing digital records

5.1 General

Organizations make decisions on what type of software for managing records should support particular business processes, business units or the organization as a whole and consider the risks that are linked to business processes when making such decisions. The scope of software for managing records will be affected by the social and regulatory framework within which an organization operates, by the organizational readiness or maturity around records reflected in its policies and allocation of responsibilities, and by the technologies that are appropriate for organizational use.

Organizations that already rely on digital records to conduct and document business, or that are interested in eliminating paper records from their operations, are seeking solutions to the issues arising from management of digital records. The decisions that organizations make today about the capability of the software, and the arrangement and structure of information within the software will have a significant impact on the long-term sustainability of digital records. The capacity to sustain digital records beyond the lifespan of a single instance of software is closely linked to the design, selection and

configuration of software, and should be considered carefully within an organization-wide information governance context.

Organizations deploy software applications to automate business activities and transactions. The digital information generated by an application may serve as the only evidence or record of the activity or transaction, despite the application not being designed specifically for the purpose of managing records. Without evidence of these activities, organizations are exposed to risk and may be unable to meet legislative, accountability, business and community expectations. Because of the dynamic and manipulable nature of business applications, the capture of records and the ongoing management of their fixity, authenticity, reliability, usability and integrity can be challenging.

Many business applications generate and store data that can be subject to constant updating (dynamic), able to be transformed (manipulable) and only contain current data (non-redundant). While business requirements for dynamic, manipulable and non-redundant data can be entirely legitimate, if records are to serve as reliable evidence of business functions and processes, they need to be fixed and inviolable. That is, systems and processes need to be able to guarantee the reliability, integrity and authenticity of the records as evidence of past business activities and as business assets.

For the purposes of this document, the characteristics of authoritative records (as defined in ISO 15489-1:2016, 5.2.2) may be applied to any and all data, documents or information. A records approach enables the traceability of actions documenting business to be maintained for as long as needed to support assertions of authenticity, reliability and integrity.

5.2 Assumptions

This document assumes

— that records controls (particularly those identified in Clause 8) are already developed within the organization;

— that projects to implement records requirements in software will be continuous; and

— that all new software implementation projects require implementation of defined records requirements.

Designing, implementing and maintaining software for managing records is an ongoing and continual part of managing records within organizations, to reflect constantly changing technological environments, new business software, and changes to business processes.

5.3 General overview of requirements

Selecting software that creates or manages digital records should be done in line with defined functional requirements. The high-level requirements included here are consistent with the principles for managing records outlined in ISO 15489-1:2016, Clause 4. Clause 6 provides more detailed functional requirements for software that creates or manages digital records.

a) Software should support the management of digital records as a core component of the business process.

   When automating a business process, records requirements should be met by software.

b) Software managing digital records should maintain persistent links to the business context.

   An understanding of the business context of records is required to enable accurate interpretation of their content. Software should persistently link to the specific business context in which records are created and maintain that linkage over time.