



BSI Standards Publication

Managing records in cloud computing environments

Part 1: Issues and concerns

National foreword

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**Managing records in cloud computing
environments —**

**Part 1:
Issues and concerns**

*Gestion des documents d'activité dans les environnements
d'informatique en nuage —*

Partie 1: Enjeux et préoccupations



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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 by ISO technical committees. Each member body interested in a subject has the right to be represented on the relevant technical committee if such committee has been established. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electro-technical Commission (IEC) on all matters related to electrical and electronic technical standardization.

The procedures used to develop the present document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the various approval criteria needed for 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 listed 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 given for the purpose of information for users' convenience and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO-specific terms and expressions related to conformity assessment, as well as information on ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barrier to Trade (TBT), see 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*.

A list of all parts in the ISO 22428 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

A cloud service refers to capabilities offered via cloud computing where users can borrow, to use flexibly, physical or virtual resources which include software and platform, as well as computing infrastructure, such as data storage and computing servers. The cloud service offers benefits, such as dynamic scalability, enhanced organizational agility, resilience and cost reduction, enabling improved organizational competitiveness and efficiency. Cloud services are emerging as an essential aspect of information technology due to location-independent resource sharing, availability via the Internet and mobile devices, and the ability to deliver on-demand services and lower costs.

Currently, the explosive growth of digital content through mobile platforms and the Internet of things is driving organizations to move their computing systems and information assets to the cloud. As a result, a number of companies and government organizations have shifted their business systems to cloud services, and many other organizations are planning to adopt cloud services. In the near future, it is expected that most data will be processed and stored in cloud services.

Cloud services might prove to be an alternative for organizations that are reluctant to invest in establishing their own computer systems for digital records management. Cloud services can provide the software, hardware, and platform needed to implement a system for records at an affordable price. It is often not easy for an organization to implement a system for records that meets all the criteria set out in ISO 15489-1. If there is a cloud service that satisfies all the criteria set out in ISO 15489-1 and which is provided at a low price, organizations have good reasons to consider using the cloud service.

However, organizations can be reluctant to adopt cloud services for their records management due to unknown risks, safety and privacy concerns, and an absence of convincing use cases. While the advantages of cloud services are well-advertised, awareness of the risks and issues that should be taken into account in a records management context is often lacking.

Cloud services are based on the concept of borrowing computing resources provided by third parties. The functions, processes or architectures inside the cloud are not disclosed externally. Even if a customer agrees with a cloud service provider about their requirements, it is difficult to know in advance whether their requirements can be met. In particular, it can be very difficult for general-purpose cloud services to fully satisfy the requirements of the records management process. There are various types of cloud services according, each of which offers different capabilities. In order to apply a cloud service to the records management task, the customer could select a cloud service that is suitable for the characteristics of the records management. The customer also to understands the general characteristics of cloud services. Otherwise, there is a possibility that desired records management outcomes will not be able to be delivered after adopting a cloud service.

In addition, in the case of large cloud services, cloud systems can be distributed around the world transcending national borders. Users from various countries or regional communities can share a cloud service belonging to a particular country. These characteristics of the cloud can cause various conflicts and issues because the jurisdictional structure and social environment of the country where the cloud service provider belongs is different from those of the cloud users. As a result, cloud users can be faced with unexpected risks associated with immature legal and social agreements for cloud technology.

Therefore, when records managers introduce cloud services to records management, they should consider the legal and social aspects as well as the technical aspects in advance in order to prepare for potential risks. Records managers can provide cloud service providers with prerequisites for managing risks specified in contracts to reduce the probability of risks coming to fruition. This document aims to provide guidelines for persons and organizations who are intend to adopt cloud services for records management.

Managing records in cloud computing environments —

Part 1: Issues and concerns

1 Scope

This document presents a model for cloud records management and outlines the risks and issues that are considered by records managers before adopting cloud services for records management. The model for cloud records management includes a stakeholder model, processes, metadata, architecture, and use cases. Risks and issues are classified into those originating from cloud services internally and those originating from cloud services externally. Internal risks are associated with cloud services, systems and stakeholders. External risks and issues can occur in the social and legal context in which cloud services operate.

The target audience of this document includes:

- records, information, knowledge, and governance professionals;
- cloud service architects;
- archivists using cloud services for managing records;
- developers of cloud-deployed records management software;
- ICT staff; and
- providers of cloud-based records management services.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 30300, *Information and documentation — Management system for records — Core concepts and vocabulary*

ISO 13008, *Information and documentation — Digital records conversion and migration process*

ISO/IEC 17788, *Information technology — Cloud computing — Overview and vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 30300, ISO 13008, ISO/IEC 17788 and the following 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/>