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**Document management — Long-term
preservation for electronic imaging
documents**

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Image and Information Management Association (JIIMA)/ Japanese Standards Association (JSA), with a draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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Document management—Long-term preservation for electronic imaging documents

1 Scope This Japanese Industrial Standard specifies the quality of image, file format, hardware and systems of recording media, specification of readability, media migration procedure, interpolation avoidance, security, disposal, etc., for digitizing paper documents or microfilmed documents and preserving the electronic imaging documents for a long term. The electronic imaging documents in this Standard shall be created conforming to JIS Z 6016.

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS Q 10006 *Quality management systems—Guidelines for quality management in projects*

JIS Q 14001 *Environmental management systems—Requirements with guidance for use*

JIS X 0009 *Glossary of terms used in information processing (Data communication)*

JIS X 6241 *120 mm DVD—Read-only disk*

JIS X 6281 *Data interchange on read-only 120 mm optical data disks (CD-ROM)*

JIS Z 6016 *Electronic imaging process of paper documents and microfilmed documents*

3 Terms and definitions For the purposes of this Standard, the following definitions apply.

- a) **long-term preservation** preserving electronic imaging documents in a condition that assures their authenticity and readability for the preservation term of 10 years to 30 years.

When preserving them for a period beyond the prescribed term, the preservation term may be extended by migration of recording media.

- b) **migration of recording media** transferring to other recording media without changing the file format while ensuring the originality of the electronic imaging documents
- c) **PDF/A** a type specified as PDF (Portable Document Format) suitable for long-term preservation of electronic imaging documents and electronic documents
- d) **Dublin Core Metadata** standard specifications of metadata (e.g. index, abstract, etc.) describing format for retrieving information resource established by the Dublin Core Metadata Initiative*

The document's retrieval performance can be improved by describing information including the title and the creator conforming to the Dublin Core Metadata in the management of electronic imaging documents.

Note* : Dublin Core Metadata Initiative is a world-wide open forum devoted to develop interoperability of metadata standard.

- e) **error rate** error rate during the readout operation from the optical recording media

The value indicates the criterion to determine if the combination of the recording media and drive equipment is in a good condition.

- f) **electronic storage system** place to store electronic imaging documents, its attribute information and management ledger

The electronic storage system consists of a server, a PC server and various recording media to be connected to them.

4 Regulation for long-term preservation documents and documentation of operating procedure

4.1 Regulation for generating and managing electronic imaging documents The management regulation of electronic imaging documents shall be incorporated into the document management regulation established by the organization along with documents of other formats, which shall be as follows. The document management regulation shall include the documentation procedure following the operating procedure.

- a) The document management regulation shall incorporate the creation process of electronic imaging documents for long-term preservation, and their management procedure.
- b) The business proprietor shall clearly write the documents subject to long-term preservation including the following.
 - 1) Documents holding social accountability for business shall be selected and preserved. The documents holding the social accountability are those related to intellectual property rights, product liability law, or important social infrastructures including traffic or electricity, etc.
 - 2) Documents that their preservation is mandated by related laws or regulations of the business. These documents include contracts of the loan, etc. in a banking business, minutes of an organization's board of directors meetings, settlement documents of a public administrative system.
- c) When **JIS Q 10006** and **JIS Q 14001** are enforced, the long-term preservation regulation of the electronic imaging document shall be, when necessary, incorporated into the business regulation conforming to **JIS Q 10006** and **JIS Q 14001**. In such a case, the following items shall be satisfied.
 - 1) The document management regulation specified in clause 4 (Quality management system in projects) of **JIS Q 10006**.
 - 2) **4.4.5 (Control of documents)** of **JIS Q 14001**
 - 3) Audit specifications specified in **JIS Q 10006** or **JIS Q 14001**

4.2 Business proprietor's responsibilities for document preservation

- a) To maintain admissibility of evidence, the business proprietor shall assign the document management department and its personnel in charge that are independent of document users in the organization.

- b) The business proprietor shall specify the electronic imaging documents regulation and preserve electronic imaging documents for a long term to assume the social and legal responsibilities.
- c) The business proprietor may outsource the document preservation work. However, it is only the work that is outsourced, and the responsibility remains in the proprietor.

4.3 Responsibilities of document management department

- a) The document management department shall oblige the users of electronic imaging documents to comply with the document management regulation.
- b) The document management department shall immediately register electronic imaging documents subject to long-term preservation to the electronic storage system, and prevent falsification and maintain admissibility of evidence by recording in the management ledger when and who registered the electronic imaging documents to the electronic storage system.
- c) The document management department shall preserve management ledger over a long term in a ready-to-refer state, and verify that its content is not falsified.
- d) The modification or deletion of electronic imaging documents in the electronic storage system shall not be permitted. When modifying a registered electronic imaging document, the original electronic imaging document shall be preserved unchanged as the old edition. The modified electronic imaging document shall be given a new edition number. When deleted, the deletion information shall be entered in the management ledger.

4.4 Creation and storage of the management ledger At the direction of the business proprietor, the document management department and its personnel in charge shall create the management ledger which specifies registered contents for each document according to each basic element of the Dublin Core Metadata, and preserve it over a long term in the electronic storage system. An example of a management ledger is shown in table 1. In this case, the file format should be a retrievable text format.

NOTE : See Annex 3 clause 2 (Management items of the management ledger).

Table 1 Example of a management ledger

No.	Name of electronic imaging documents	Creator, Department, Date	Registration date/time	Responsible contributor	No. of pages	Reg.media Mgt. no.	Media storage location
1	Xxx document						
2	Yyy document						
3	Zzz document						

a) Title

- 1) Document name

- 2) Version of the electronic imaging document
- b) **Creator of the original paper document**
 - 1) Creator's name
 - 2) Creator's department
 - 3) Date/time of creation
- c) **Description of the electronic imaging document**
 - 1) Number of pages
 - 2) Total bytes
- d) **Contributor of the electronic imaging document**
 - 1) Contributing department
 - 2) Responsible contributor
 - 3) Storage management department and its personnel in charge
 - 4) Migration personnel in charge
- e) **Date/time registered to the electronic storage system**
- f) **File format of the electronic imaging document [TIFF or PDF (PDF/A)]**
- g) **Related information on the electronic imaging document**
 - 1) Registration media of the electronic imaging document
 - 2) Management number and media storage location of the registration media
 - 3) Hash function record of the electronic signature (hash function of each periodical re-signature operation)
 - 4) Time-stamp record (record of periodical re-stamp operation) and the aid measure
 - 5) Error rate record

5 Formats and types of preserved files

5.1 General The formats and types of preserved files are specified in 2.2 of Annex 1.

5.2 Formats of preserved file The file format should be TIFF or PDF (including PDF/A) to maintain readability of long-term preserved file in accordance with JIS Z 6016.

5.3 Types of preserved files The types of preserved files shall be as follows.

The preserved file shall be stored for a long term with falsification prevented.

- a) **Body of electronic imaging document (original file)** This file is the main body of the electronic imaging document in itself.
- b) **Body of electronic imaging document (duplicate file)** This file is same as a), and mainly used to be preserved in a separate location as a disaster countermeasure.

c) **Management ledger (original file)**

- 1) **Management ledger** This ledger contains documents' management information, and items shown in table 1 shall be entered. A document becomes formal once registered in the management ledger.
- 2) **Reference record ledger** This ledger records the registration and reference history of the electronic imaging document.
- 3) **Media migration management ledger** This ledger records the contents upon media migration.

d) **Management ledger (duplicate file)** The same one as the management ledger of c) shall be preserved.

e) **Decryption* key for encrypted electronic imaging document**

Note* Decryption key is the code information to convert the encrypted document to the original.

5.4 Electronic signature and timestamp

- a) **Documents subject to assignment** Documents subject to the assignment of electronic signature and timestamp shall be specified by the document management regulation based on the legal system. When no legal restrictions exist, the document management regulation shall separately be specified considering necessities and business load.
- b) **Management method** In the case of separated electronic signature and timestamp assignment method, the linkage information to datum shall be managed by recording in the management ledger as an attribute of the document.
- c) **Expiration date handling** Expiration date is generally specified in an electronic signature and timestamp considering the aging of security strength. Therefore, to maintain the effect of the electronic signature and timestamp beyond the expiration date, re-signature method shall be used as a measure to extend the expiration date of electronic signature or timestamp. The personnel in charge of the re-signature shall be specified by the document management regulation.

The personnel in charge of the re-signature shall newly assign signature to the document after confirming the effectiveness of the current signature. The linkage between the new signature and the document subject to the assignment as well as information on the personnel in charge of the re-signature shall be managed in the management ledger. However, various methods have been proposed for extending expiration date of electronic signature and timestamp, and such kind of services are actually provided by some companies. There is no reason to hinder adoption of such methods as long as the consistency is maintained with the management method using the management ledger in this Standard. Also, when the method of electronic signature and the timestamp is specified by the laws or ministerial ordinances, it shall be utilized.