

DIGITIZATION AND MIGRATION OF PUBLIC RECORDS

DRAFT

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FOREWORD

The ICT Authority has the mandate to set and enforce ICT standards and guidelines across all aspects of information and communication technology including Systems, Infrastructure, Processes, Human Resources and Technology for the public service. The overall purpose of this mandate is to ensure coherent and unified approach to acquisition, deployment, management and operation of ICTs across the public service in order to achieve secure, efficient, flexible, integrated and cost-effective deployment and use of ICTs.

To achieve this mandate, the Authority established a standards committee to identify the relevant standard domains and oversee the standards development process. The committee consulted and researched broadly among subject matter experts to ensure conformity to acceptable international and national industry best practices as well as relevance to the Kenyan public service. The committee eventually adopted the Kenya Bureau of Standards (KEBS) format and procedure for standards development. In an engagement founded on a memorandum of understanding KEBS, participated in the development of these Standards and gave invaluable advice and guidance.

The Digitization and Migration of Public Records standard, which falls under the overall Government Enterprise Architecture (GEA), has therefore been prepared in accordance with KEBS standards development guidelines based on the international best practices by standards development organizations including International Organization for standardization (ISO).

The Authority in consultation with Kenya National Archives and documentation Service has the oversight role and responsibility for management, enforcement and review of this standard. The Ministries, Departments, Agencies and Counties will be audited annually to determine compliance.

The Authority shall issue a certificate for compliance to agencies upon inspection and assessment of the level of compliance to the standard. For non-compliant agencies, a report detailing the extent of the deviation and the prevailing circumstances shall be tabled before the Standards Review Board who shall advise and make recommendations.

The ICT Authority management, conscious of the central and core role that standards play in public service integration, fostering shared services and increasing value in ICT investments, shall prioritize the adoption of this standard by all Government agencies. The Authority therefore encourages agencies to adhere to this standard in order to obtain value from their ICT investments.

Chief Executive Officer
ICT Authority

1.0 INTRODUCTION

The digital transformation agenda of Government was initiated in 2004, with some Ministries, Departments and Agencies making strides in digitization and automation of their processes to achieve a quick turnaround time in the delivery of public services. Notably, various MCDAs have undertaken digitization and automation initiatives amidst standardization and sustainability challenges.

The Access to Information Act (2016) obligated MCDAs to computerize or digitize public records by 2019. The Kenya Digital Masterplan (2022-2032) envisages a digital one-stopshop for all government common services through automation and digitization and The Kenya Digital Masterplan (2022-2032) that provides for a digital one-stop shop for all government common services through digitization and automation.

Apart from being misconstrued to be a cheaper option, digitization initiatives by Government entities, only few have succeeded. have not been successfully implemented are largely characterised by incoordination; lack of integration; lack of unified identifier. Therefore, there is need for guidance and control on digitization to ensure completeness of content; integrity; authenticity; completeness and accuracy of metadata; transparency of implementation; fulfilment of legal requirements; maximization of platform flexibility; business flexibility; and technical feasibility of the electronic records.

This standard shall guide conversion and the migration of public records at National and County governments to support automation of business processes. It specifically focuses on procedures, and methodologies for changing records from one format another as well as moving from one media to another.

This Standard establishes a framework for digitization of public records and takes into account need for: reliability and authenticity of digitized records for legal admissibility; accessibility of digitised records to support business operations; long-term preservation of digitised records; and management of original source records following digitisation.

2.0 SCOPE

These Standard covers conversion of non-digital original records (including audio, visual, image, text, or microform) into digital records, and management of the original and digitised records.

3.0 APPLICABILITY

This Standard applies to National Government, Constitutional Commissions and Independent Offices and County Governments.

In this Standard, obligation is indicated by the following terms, when they are capitalised within the text of the requirements:

- Shall
- Should
- May
- Can

4.0 NORMATIVE REFERENCES

- ISO/TR 13028:2010, Information and documentation - Implementation guidelines for digitization of records
- ISO 15489-1:2016, Information and documentation – Records management – Concepts and principles
- ISO/TR 18128:2014, Information and documentation – Risk assessment for records processes and systems
- ISO 23081-1:2017, Information and documentation – Records management processes – Metadata for records – Principles
- ISO 23081-2:2009, Information and documentation – Managing metadata for records – Conceptual and implementation issues
- ISO/TR 23081-3:2011, Information and documentation – Managing metadata for records – Self-assessment method
- ISO 30300:2020, Information and documentation – Records management – Core concepts and vocabulary

5.0 TERMS AND DEFINITIONS

For the purposes of this standard, the following terms and definitions apply:

Attribute

characteristic of an object or entity

Authenticity

quality of a record that can be proven to be what it purports to be, to have been created or sent by the agent purported to have created or sent it, and to have been created or sent when purported

Compression

Algorithms designed to reduce the size of the image for storage or transmission. Multiple options exist but decisions should be made on the characteristics of the document to be imaged

Conversion

changing records from one format to another

Data cleansing

the process of reviewing and correcting data to ensure data are in a standardized format. It is carried out prior to converting due to incompleteness, incorrect formatting, obsolescence, and duplication

Digitization

Encryption

this is transformation of data by a cryptographic algorithm to produce ciphertext, that is to hide the information content of the data.

Integrity

quality of being complete and unaltered

migration

moving records from one hardware or software configuration to another preservation measures taken to maintain the useability, authenticity, reliability and integrity of records over time

Public record

record

information created or received and maintained as evidence and as an asset by an organization, in pursuit of legal obligations or in the course of conducting business

Reliability

quality of a record that can be proven to be complete and accurate

Replication

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

Resolution

A measure of the ability to capture detail in the original work, often quantified in pixels per inch (ppi).

Source Record

document or record that has been copied, converted or migrated or will be the input for such a process

usability

property of being able to be located, retrieved, presented and understood

validation

the process of evaluating a system or component to ensure compliance with the functional, performance and interface requirements

6.0 ABBREVIATIONS AND ACRONYMS

| | |
|-------|---|
| ERMS | Electronic Records Management System |
| ICT | Information and Communication Technology |
| KNADS | Kenya National Archives and Documentation Service |
| MCDAs | Ministries, Counties, Departments, and Agencies |
| PPI | Pixel per inch |

7.0 DIGITIZATION PROCESS

The requirements cover planning for digitization, quality specifications, scanning environment and equipment,...

7.1 Planning for Digitization

7.1.1 Ministries, Counties, Departments, and Agencies (MCDAs) in consultation with KNADS with undertake records survey

7.1.2 Develop a digitisation programme that includes but limited to: scope, purpose, outcomes, technical standards, equipment and resources, budget, quality assurance, implementation approach, integration, management of digitized records

7.1.3 shall determine and implement appropriate digitisation approach such as

- Inhouse vs outsourced;
- ongoing or batch; and
- centralized or decentralized

7.1.4 Shall develop and implement a digitization quality control and assurance plan

7.1.5 SHOULD regularly review digitisation approach for continuing relevance and cost effectiveness

7.1.6 Electronic Records Management System (ERMS) and other systems that support digitization and management of electronic records shall be in place

7.1.7 All scanning operators should undergo training on document handling prior to handling records

7.1.8 The scanning operators should undertake refresher training over time

7.2 Quality Specifications

7.2.1 MDACs shall adopt open-source formats that are supported by various software, and operating systems,

7.2.2 The following technical specifications for digital records shall apply accordingly to ensure legibility;

- **Resolution:** 300 PPI for ordinary documents, photographs should be at 600 PPI, photographic transparencies should be at 4000 PPI, and microform the requirement should be for a resolution equivalent to 300 PPI at the size of the original document
- **Compression:** Use lossless compression for digitised records, though lossy compression is acceptable for digital surrogates

- **Physical dimensions:** all scans should be size-for-size with sufficient margin (this means the size of the original for microfilm) and if a single scan cannot entirely, there should be sufficient overlap

7.3 Scanning Environment and Equipment

7.3.1 The workstation of scanning operator should provide adequate surface area to ensure the full support of documents and allow for an organised workspace.

7.3.2 Shall not permit food or drinks (including chewing gum) in the scanning area.

7.3.3 May permit use pencils only - without erasers. No pens or correction fluid are permitted.

7.3.4 Scanning operator hands shall be clean and dry always, but hand and face moisturisers, moisturising wipes, lip balms or anything similar that is applied by hand shall not be permitted.

7.3.5 Scanning operators shall not wear cotton or powdered gloves

7.3.6 Shall use both hands when moving record files or boxes, and don't leave any at the scanner unattended

7.3.7 shall use overhead cameras and scanners with a flat scanning bed suitable for scanning (large enough to support whole document) except in exceptional cases.

7.3.8 Scanning of bound records shall be supported with a book cradle or wedges

7.3.9 Pages shall be turned from the right edge of the document not from the bottom edge

7.3.10 Do not use moisture for page turning or pinch document corners together to turn the page.

7.3.11 The scanning operator should unfold folded corners but should not then fold them back on themselves

7.4 Preparation and Handling of Source Records

7.4.1 Shall assess the condition of the records to checking for fragility or any damage

7.4.2 Shall remove staples, pins, or paperclips but removal should not be forceful to cause damage

7.4.3 Should ensure the documents are arranged in a reverse chronological order for scanning

7.4.4 Cut tags prior to scanning, and replace appropriate length (not less than 3 times the depth of the pile of papers) tags immediately after scanning

7.5 Conversion and Migration

7.5.1 Shall determine the conversion or migration methods

7.5.2 Shall test the chosen conversion or migration method to ensure that no data are lost, corrupted or unexpectedly altered during the process

7.5.3 Shall create a test file and execute it on digitization infrastructure, equipment and tools, and record any deviations.

7.5.4 Shall perform any “data cleansing” identified in the planning stage

7.5.5 Ensure the source records are duplicated prior to commencing the process

7.5.6 Shall track and document the entire process

7.5.7 May engage an external party to conduct an audit of a sample of converted data, representative of the entire scope

7.6 Metadata Capture

7.6.1 Metadata specific to the record and imaging process, and business being transacted shall be captured at scanning

7.6.2 High-level metadata shall include unique identifier, data and time of digitization, agent associated with bureau, capture hardware and software, calibration settings, and date of last calibration.

7.7 Quality Assurance

7.7.1 Shall establish the baseline for the test by recording the existing state of the records

7.7.2 Shall establish criteria for acceptable outcomes for the conversion or migration

7.7.3 Shall perform continuous check for any inadvertent errors that may have affected data integrity during the conversion or migration process

7.7.4 Quality checking shall be completed before

- the digitised images are accepted into a business process, or as a master copy in the case of digitisation projects

- the destruction of the source records is considered, but within the legislations

7.7.5 The results of quality assurance processes and quality checks shall be documented

7.7.6 Shall correct any errors that have been identified: reconciliation of data, manual corrections, or a complete rerun of the operation until the results match the planned targetstate.

7.8 Validation

7.8.1 Shall establish a validation team, though separate duties of conversion or migration from validation processes

7.8.2 Shall ensure that the operators are trained and the equipment and tools are prepared to conduct the validation.

7.8.3 Shall use an issue log to track any file transfer or media read or write errors. It will consist: issue number; description;probability (high-medium-low);impact (high-medium-low);containment action and owner;due date; and resolution date.

7.9 Storage and Disposition

7.9.1 MCDAs will be retention of psychical records after digitization until are disposition procedures are duly undertaken

7.9.2 Disposition activities shall be documented

TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

- State Department for Culture and Heritage
- Kenya National Archives and Documentation Service (KNADS)
- Information and Communication Technology (ICT) Authority

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