



GOVERNMENT ICT STANDARDS

Electronic Records Management System Standard

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REVISION OF ICT STANDARDS

In order to keep abreast of progress in industry, ICT Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Chief Executive Officer, ICT Authority, are welcome.

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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 Electronic Records Management 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 ICT 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.



Stanley Kamanguya, OGW
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1.0 INTRODUCTION

Electronic government (e-government) has been considered as the use of ICTs for improving the efficiency of government agencies and providing government services online. This has since broadened to include use of ICT by government for conducting a wide range of interactions with citizens and businesses. These online government transactions generate electronic records that are provided and managed by archivists and records management professionals. Therefore, there is need for strong collaboration between records management and ICT professionals.

This standard envisages sound management of electronic records by MCDAs to ensure they have the following inherent characteristics:

- Authenticity – the record can be proven to be what it purports to be, to have been created or sent by the person that created or sent it, and to have been created or sent at the time it is purported to have occurred.
- Reliability – the record can be trusted as a full and accurate representation of the transaction(s) to which they attest, and can be depended on in the course of subsequent transactions.
- Integrity – the record is complete and unaltered, and protected against un-authorized alteration. This characteristic is also referred to as 'inviolability'.
- Usability – the record can be located, retrieved, preserved and interpreted

Generally, records management; electronic or otherwise provides a basis for:

- Efficiency, effectiveness and continuity in service delivery
- Transparent, informed and quality planning and decision-making;
- Verifiable demonstrating and account for organizational activities;
- Enhancing access to public information; and
- Maintaining the confidentiality and privacy of non-public personal information

This Standard is therefore developed to provide guidance on management of electronic records such that they meet the same requirements as their regular paper record counterparts. Thus, digital objects created by email, word processing, spread sheet and imaging applications (such as text documents, and still and moving images), where they are identified to be of business value, should be managed within electronic records management systems that meet the functional requirements in this standard. Records managed by an electronic records management system may be stored on a variety of different media formats, and may be managed in hybrid record aggregations that include both electronic and non-electronic elements.

2.0 SCOPE

This standard sets out general aspects, capture and receipt, classification and indexing, access control and security, digital conversion and migration, and retention and disposal of public electronic records (e-records).

3.0 APPLICABILITY

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

4.0 NORMATIVE REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. All standards are subject to revision and, since any reference to a standard is deemed a reference to the latest edition of that standard, parties to agreements based on this standard are encouraged to take steps to ensure the use of the most recent editions of the standards indicated below. Information on currently valid national and international standards can be obtained from Kenya Bureau of Standards.

The normative references include:

- ISO 30300:2020. Information and documentation — Records management — Core concepts and vocabulary.
- KS ISO 30301:2019. Information and documentation - Management systems for records – Requirements
- ISO 30302:2022. Information and documentation — Management systems for records — Guidelines for implementation
- ISO 15489-1:2016. Information and documentation - Records management - Concepts and principles
- ISO/TR 15489-2:2001. Information and documentation — Records management —Guidelines.
- ISO 23081-1:2017. Information and Documentation - Records Management Processes - Metadata for Records – Principles
- ISO 23081-2:2021. Information and documentation. Metadata for managing records.
- KS ISO TR 18128:2014. Information and documentation — Risk assessment for records processes and systems
- KS ISO/TR 21946:2018. Information and documentation — Appraisal for managing records
- KS ISO 13008:2012. Information and documentation — Digital records conversion and migration process

5.0 TERMS AND DEFINITIONS

For the purpose of this Standard the following terms and definitions will apply:

5.1 Access

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

5.2 Aggregation

Aggregation of electronic records is an accumulation of related electronic record entities that when combined may exist at a level above that of a singular electronic record object, for example a file or series.

5.3 Archives

These are collections of records that have been chosen for permanent or long-term preservation due to their cultural, historical, or evidential importance.

5.4 Business Classification Scheme

Refer to a governance tool that organizes work of MDACs by function and by activity, and helps with the proper management of records created

5.5 Classification

This is systematic identification and arrangement of business activities and their records into categories according to logically structured conventions, methods and procedural rules.

5.6 Content

An element of record that provides basic data or information carried in a record; substance of the record that captures sufficient information to provide evidence of a business transaction

5.7 Context

An element of record that provides the relationship of the record to the business and technical environment in which it arises.

5.8 Conversion

The process of changing records from one format to another but ensures that the record retains the identical primary information

5.9 Destruction

Refers to a disposal process whereby digital records, record plan entities and their metadata are permanently removed, erased or obliterated but with authorization and approval of the KNADS.

5.10 Disposition

The range of processes associated with implementing records retention, destruction, transfer or long-term preservation which are documented in disposition authorities or other instruments

5.11 Document

Refer to documented information which can change from time to time but in a controlled manner.

5.12 Electronic Documents

Refer to collection of data, which may be produced through original output, combination of existing data or data received from outside the organization such as via e-mail, or scanning

5.13 Electronic Document Management System

This is an electronic system that can collect and organize documents for storage, retrieval, and tracking purpose. They have ability to preserve and provide access to the content, structure, and context of the records.

5.14 Electronic Records

Refer to records that are in machine-readable form. Electronic records may be any combination of text, data, graphics, images, video or audio information that is created, maintained, modified or transmitted in digital form by a computer or related system.

5.15 Electronic Records Management System

An automated system used to manage the creation, use, maintenance and disposal of electronic records. An E-records management system should be able to maintain a record along with its associated metadata.

5.16 Export

This is process of passing metadata of a digital record or a group of records from one system to another system; either within or beyond the organization.

5.17 Indexing

Refers to the process of describing and identifying documents or records in terms of their subject contents

5.18 Long Term Preservation

Refer to preservation period greater than ten (10) years

5.19 Metadata

It is data describing the content, context, and structure of records and their management through a continuum care.

5.22 Records Management

Records management is an integrated framework of governance arrangements, architectures, policies, processes, systems, tools and techniques that enables organizations to create and maintain trustworthy evidence of business activity in the form of records.

5.23 Rendering

Rendering is the production of a human-readable representation of a record, usually to a visual display screen or in hardcopy format

5.24 Retrieving

Retrieving is the process of preparing the located records for rendering and viewing.

5.25 Structure

An element of record that provides the physical and logical format of records, where logical format includes elements such as font type, font size, margin, headers, labels; and logical format include how information is arranged.

6.0 ABBREVIATIONS AND ACRONYMS

| | |
|--------------|---|
| BCP | Business Continuity Plan |
| EDMS | Electronic Document Management System |
| ERM | Electronic Records Management |
| ERMS | Electronic Records Management System |
| GEA | Government Enterprise Architecture |
| GoK | Government of Kenya |
| ICT | Information and Communication Technology |
| ISO | International Organization for Standardization |
| KEBS | Kenya Bureau of Standards |
| KS | Kenya Standard |
| KNADS | Kenya National Archives and Documentation Service |
| MCDAs | Ministries, Counties, State Departments, and Agencies |
| PDF | Portable Document Format |
| PDF/A | Portable Document Format Archive |
| PIN | Personal Identification Numbers |
| PKI | Public Key Infrastructure |
| SGML | Standard Generalized Markup Language |
| SSL | Secure Sockets Layer |
| TR | Technical Reports |

7.0 FUNCTIONAL REQUIREMENTS FOR AN ERM SYSTEM

7.1 Creation, Receipt and Capture of E-records

The Electronic Records Management system (ERMS):

7.1.1 Shall enable integration with business applications so that transactional records created by those applications can be captured within the electronic records management system

7.1.2 Shall indicate when an individual record is captured within the electronic records management system.

7.1.3 Shall prevent the alteration of the content of any record by any user or administrator during the process of records capture.

7.1.4 Shall prevent the destruction or deletion of any record by any user, including an administrator, with the exceptions of:

- (a) Destruction in accordance with disposal requirements
- (b) Authorized deletion by an administrator

7.1.5 Shall support manual naming of electronic records, and allow this name to be different from the existing file name (including email subject lines used to construct record titles). If the existing filename is taken by default, the electronic records management system must allow this name to be amended at the time of capture.

7.1.6 Shall allow an administrator to alter the metadata of a record within the system if required, to allow finalisation/correction of the record profile. Any such action must be captured in a records management metadata.

7.1.7 Shall capture any revision or alteration of metadata as additional records

7.1.8 Shall alert the user of unsuccessful capture a record.

7.1.9 Should provide a warning if an attempt is made to capture a record that is incomplete or inconsistent in a way which will compromise its future apparent authenticity.

7.2 Capture of metadata

The Electronic Records Management system (ERMS):

7.2.1 Shall support the use of persistent metadata for records

7.2.2 Shall acquire metadata elements for each record and persistently link them to the record over time

7.2.3 Shall ensure that the values for metadata elements conform to specified encoding schemes.

7.2.4 Shall allow the administrator to pre-define (and re-define) the metadata elements associated with each record, both mandatory and optional.

7.2.5 Shall allow all metadata for every record to be viewed by users, subject to access rights for individuals or groups of users.

7.2.6 Shall automatically capture the date and time of capture of each record as metadata elements linked to each record.

7.2.7 Shall support automatic extraction or migration of metadata from:

- (a) the software application that created the record;
- (b) an operating system or line of business system;
- (c) an electronic records management system; and
- (d) The file header, and file format metadata, of each record and its constituent components captured into the system.

7.2.8 Shall prohibit alteration of metadata captured, unless authorised by the system administrator.

7.2.9 Shall allow entry of additional metadata by users during record capture and or a later stage of processing

7.2.10 shall only allow change the content of records management metadata elements by authorised users and administrators

7.2.11 shall assign an identifier, unique within the system, to each record at point of capture automatically.

7.3 Aggregation of E-records

7.3.1 Shall ensure that all records captured within the electronic records management system are associated with at least one aggregation.

7.3. Should manage the integrity of all markers or other reference tags to records and ensure that:

- (a) following a marker, whichever aggregation that the marker record is located in, will always result in correct retrieval of the record; and
- (b) any change in location of a record also redirects any marker that references that record.

7.3.3 Shall NOT impose any practical limit on the number of records that can be captured in an aggregation, or on the number of records that can be stored in the electronic records management system.

7.3.4 May permit the administrator to set limitations on the quantity of items within an aggregation if required for business purposes.

7.3.5 Shall allow users to choose at least one of the following where an electronic object has more than one manifestation:

- (a) register all manifestations of the object as one record;
- (b) register one manifestation of the object as a record; or
- (c) Register each manifestation of the object as a discrete record.

7.3.6 Shall support the ability to assign records to multiple aggregations without their duplication

7.4 Bulk importing

7.4.1 ERM system shall be able to capture in bulk records exported from other systems, including capture of:

- (a) electronic records in their existing format, without degradation of content or structure, retaining any contextual relationships between the components of any individual record;
- (b) electronic records and all associated records management metadata, retaining the correct contextual relationships between individual records and their metadata attributes; and
- (c) The structure of aggregations to which the records are assigned, and all associated records management metadata, retaining the correct relationship between records and aggregations.

7.4.2 ERM systems shall be able to import any directly associated event history metadata with the record and/or aggregation, retaining this securely within the imported structure.

7.5 Electronic Document Formats

The Electronic Records Management system (ERMS):

7.5.1 Shall support the capture of records created in native file formats from commonly used software applications such as:

- (a) standard office applications;
- (b) email client applications;
- (c) imaging applications; and
- (d) Web authoring tools.

7.5.2 Shall be able to extend the range of file formats supported as new file formats are introduced for business purposes or for archival retention

7.6 Compound records

The Electronic Records Management system (ERMS):

7.6.1 Shall capture compound electronic records (records comprising more than one component) so that:

- (a) the relationship between the constituent components of each compound record is retained;
- (b) the structural integrity of each compound record is retained; and
- (c) Each compound record is retrieved, displayed and managed as a single unit.

7.6.2 Shall capture compound records easily, preferably with one action, for example, a single click.

7.7 Electronic Mails

The Electronic Records Management system (ERMS):

7.7.1 Shall capture emails including attachments as single records as well as individual records linked by metadata

7.7.2 Shall capture email messages and attachments from within their email application.

7.7.3 Should allow users to choose whether to capture emails with attachments as:

- (d) Email text only;
- (e) Email text with attachments; or
- (f) Attachments only.

7.7.4 Shall capture email transmission data as metadata persistently linked to the email record.

7.7.5 Shall deny amendment of the text of an email and its transmission details upon capture.

7.7.6 Should allow editing the title of the record for easier access through, for example, keywords or by file-naming conventions.

7.7.7 Shall allow capture of human-readable version of an email message address, where one exists.

7.8 Identification of E-Records

ERMS shall:

7.8.1 Associate each of the following with a unique identifier:

- (a) Record;
- (b) Record extract; and
- (c) Aggregation.

7.8.2 Use unique identifiers that will not be duplicated within the entire electronic records management system.

7.8.3 Keep the unique identifiers as metadata elements of the entities to which they refer to

- (a) Generate unique identifiers automatically, and prevent users from inputting the unique identifier manually and from subsequently modifying it, or
- (b) Allow users to input a unique identifier, but validate that it is unique before it is accepted

7.8.4 Allow the format of the unique identifier to be specified at configuration time.

7.8.5 Allow the administrator to specify at configuration time the starting number and increment to be used in all cases.

7.9 Classification Scheme

The Electronic Records Management system (ERMS):

7.9.1 Shall support and be compatible with the MCDA classification scheme.

7.9.2 Shall support a classification scheme that can represent aggregations as being organised in a hierarchy with a minimum of three levels.

7.9.3 Shall allow inheritance of values from a classification scheme.

7.9.4 Shall allow naming conventions or thesauri to be defined at configuration of the electronic records management system

7.9.5 Shall support the initial and ongoing construction of a classification scheme.

7.9.6 Shall allow administrators to create new aggregations at any level within any existing aggregation.

7.9.7 Should not limit the number of levels in the classification scheme hierarchy unless set by an administrator.

7.9.8 Shall support the definition of different record types that are associated with a specified set of metadata to be applied at capture.

7.9.9 Shall support the allocation of unique identifiers to records within the classification structure

7.9.10 Shall automatically generate the next sequential number within the classification scheme for each new electronic aggregation

7.9.11 Shall support a distributed classification scheme that can be maintained across a network of electronic record repositories.

7.9.12 Support browsing and graphical navigation of the aggregations and classification scheme structure, and the selection, retrieval and display of electronic aggregations and their contents through this mechanism.

7.9.13 should support the definition and simultaneous use of several classification schemes. This may be required following the merger of organisations or migration of legacy systems.

7.9.14 shall support metadata for levels within the classification scheme.

7.9.15 shall provide at least two naming mechanisms for records in the classification scheme:

- (a) A mechanism for allocating a structured alpha, numeric or alphanumeric reference code (that is, an identifier which is unique within the classification scheme) to each classification level; and
- (b) A mechanism to allocate a textual title for each electronic aggregation.

7.9.16 It must be possible to apply both identifiers separately or together.

7.9.17 shall allow only authorised users to create new classifications at the highest level in the classification scheme

7.9.18 shall record the date of opening of a new aggregation within its associated records management metadata.

7.9.19 shall automatically include in the records management metadata of each new aggregation those attributes that derive from its position in the classification scheme

7.9.20 shall allow the automatic creation and maintenance of a list of classification levels.

7.9.21 shall support a naming mechanism that is based on controlled vocabulary terms and relationships

7.9.22 should support an optional aggregation naming mechanism that includes names and/or dates as file names, including validation of the names against a list.

7.10 Classification, Aggregations, and Reclassification

ERM System:

7.10.1 Shall allow an electronic aggregation to be relocated to a different position in the classification scheme, and ensure that all electronic records already allocated remain allocated to the aggregations being relocated.

7.10.2 Shall allow an electronic record to be reclassified to a different volume of an electronic aggregation.

7.10.3 Shall restrict to authorised users the ability to move aggregations and individual records

7.10.4 Shall retain history of the location of reclassified aggregations prior to their reclassification

7.10.5 Prevent the deletion of an electronic aggregation or any part of its contents at all times, with the exceptions of:

- (a) Destruction in accordance with a disposal authority; and
- (b) Deletion by records administrator as part of an audited procedure.

7.10.6 Shall allow an electronic aggregation to be closed by a specific administrator procedure, and restrict this function to an administrator.

7.10.7 Shall record the date of closing of a volume in the volume's records management metadata.

7.10.8 Shall maintain internal integrity (relational integrity or otherwise) at all times, regardless of: maintenance activities; other user actions; and failure of system components.

7.10.9 Shall not allow any volume that has been temporarily re-opened to remain open after the administrator who opened it has logged off.

7.10.10 shall allow users to create cross-references between related aggregations or between aggregations and individual records.

7.10.11 shall provide reporting tools for the provision of statistics to the administrator on aspects of activity using the elements of the classification scheme

7.10.11 shall allow the authorised users to enter the reason for the reclassification of aggregations and individual records.

7.10.12 shall allow closure of a volume of an electronic aggregation automatically on fulfilment of specified criteria to be defined at configuration, including at least:

- (a) The number of electronic records within a volume;
- (b) Volumes delineated by an annual cut-off date (for example, end of the calendar year, financial year or other defined annual cycle); and
- (c) Duration since a specified event

7.10.13 shall enable opening a new volume of an electronic aggregation automatically on fulfilment of specified criteria to be defined at configuration.

7.10.14 should allow system administrator to lock or freeze aggregations to prevent relocation, deletion, closure or modification to fulfil some legal obligations.

7.11 Record volumes

ERM Systems shall:

7.11.1 Allow administrators to add (open) electronic volumes to any electronic aggregation that is not closed.

7.11.2 Record the date of opening of a new volume in the volume's records management metadata.

7.11.3 Automatically include in the metadata of new volumes those attributes of its parent aggregation's records management metadata that assign context

7.11.4 Support the concept of open and closed volumes for electronic aggregations, as follows:

- (a) Only the most recently created volume within an aggregation can be open; and
- (b) All other volumes within that aggregation must be closed

7.11.5 Prevent the user from adding electronic records to a closed volume

7.11.6 Allow an authorised user to add records to a closed file.

7.12 Access rights and Control

ERM System shall:

- 7.12.1 Ensure that records are maintained complete and unaltered, except in circumstances such as court orders for amendments to record content and metadata, in which cases only system administrators may undertake such changes with appropriate authorisation.
- 7.12.2 Maintain the technical, structural and relational integrity of records and metadata in the system.
- 7.12.2 Restrict access to system functions according to a user's role and strict system administration controls

7.13 Security levels and control

ERM System shall:

- 7.13.1 Allow only administrators to set up user profiles and allocate users to groups.
- 7.13.2 Allow the administrator to limit access to records, aggregations and records management metadata to specified users or user groups.
- 7.13.3 Allow the administrator to alter the security category of individual records.
- 7.13.4 Allow changes to security attributes for groups or users such as access rights, security level, and initial password allocation to be made only by the administrator.
- 7.13.5 Allow only the administrator to attach to the user profile attributes that determine the features, records management metadata fields, records or aggregations to which the user has access. The attributes of the profile will:
 - (a) Prohibit access to the electronic records management system without an accepted authentication mechanism attributed to the user profile;
 - (b) Restrict user access to specific records or aggregations;
 - (c) Restrict user access according to the user's security clearance;
 - (d) Restrict user access to particular features (for example, read, update and/or delete specific records management metadata fields);
 - (e) Deny access after a specified date; and
 - (f) Allocate the user to a group or groups.
- 7.13.6 is able to provide the same control functions for roles, as for users
- 7.13.7 is able to set up groups of users that are associated with an aggregation
- 7.13.8 Allow a user to be a member of more than one group
- 7.13.9 is able to limit user access to parts of the list of aggregation
- 7.13.10 Allow a user to stipulate which other users or groups can access records that the user is responsible for.
- 7.13.11 Allow the administrator, subject to Security categories, to alter the security category of all records within an aggregation in one operation.
- 7.13.12 provide a warning if the security classifications of any records are lowered, and await confirmation before completing the operation
- 7.13.13 Allow the administrator to change the security category of aggregations

7.13.14 Record details of any change to security category in the records management metadata of the record, volume or aggregation affected.

7.13.15 Provide one of the following responses whenever a user requests access to, or searches for, a record, volume or aggregation that they do not have the right to access:

- (a) Display title and records management metadata;
- (b) Indicate existence of a record or aggregation without showing title or metadata
- (c) Not display any record information or indicate its existence in any way.

7.13.16 Log all unauthorised attempts to access aggregations (and their volumes) or records in their respective unique metadata

7.13.17 Allow security classifications to be assigned to records as defined in the electronic records management processes standard

7.13.18 Allow security classifications to be selected and assigned at system level for:

- (a) All levels of records aggregations (including volumes); and
- (b) Individual records or record objects.

7.13.19 Allow access-permission security categorisation to be assigned:

- (c) At group level (be able to set up group access to specific aggregations, record classes security or clearance levels);
- (d) By organisational role;
- (e) At user level; and
- (f) In combination(s) of the above

7.13.20 Allow the assignment of a security category:

- (a) At any level of records aggregation;
- (b) After a specified time or event; and
- (c) To a record type.

7.13.21 Support the automated application of a default value of 'Unclassified' to an aggregation or record not allocated any other security category.

7.13.22 Enable its security subsystem to work effectively together with general security products.

7.13.23 is able to determine the highest security category of any record in any aggregation by means of one simple enquiry.

7.13.24 Support routine, scheduled reviews of security classifications

7.13.25 Restrict access to electronic aggregations or records that have a security classification higher than a user's security clearance

7.13.26 is capable of preventing an electronic aggregation from having a lower security classification than any electronic record within that aggregation.

7.14 Records Management process Metadata

ERM System shall

7.14.1 is capable of creating unalterable metadata of records management actions that are taken on records, aggregations or the classification scheme. The metadata should include the following records management metadata elements:

- (a) Type of records management action;
- (b) User initiating and/or carrying out the action; and
- (c) Date and time of the action.

7.14.2 Track events, once the metadata functionality have been activated, without manual intervention, and store in the metadata information.

7.14.3 Maintain the metadata for as long as required and provide metadata of all changes made to:

- (a) Electronic aggregations (including volumes);
- (b) Individual electronic records; and
- (c) Records management metadata associated with (a) or (b).

7.14.4 Document all changes made to administrative parameters such as changes on user access rights by administrator

7.14.5 is capable of capturing and storing in the metadata information about the following actions:

- (a) Date and time of capture of all electronic records;
- (b) Reclassification of an electronic record in another electronic volume;
- (c) Reclassification of an electronic aggregation in the classification scheme;
- (d) Any change to the disposal authority of an electronic aggregation;
- (e) Any change made to any records management metadata associated with aggregations or electronic records;
- (f) date and time of creation, amendment and deletion of records management metadata;
- (g) Changes made to the access privileges affecting an electronic aggregation, electronic record or user;
- (h) Export or transfer actions carried out on an electronic aggregation;
- (i) Date and time at which a record is rendered; and
- (j) Disposal actions on an electronic aggregation or record.

7.14.6 Ensure that metadata is available for inspection on request, so that a specific event can be identified and all related data made accessible, and that this can be achieved by authorised external personnel who have little or no familiarity with the system.

7.14.7 is able to export metadata for specified records and selected groups of records without affecting the metadata stored by the electronic records management system.

7.14.8 be able to capture and store violations (that is, a user's attempts to access a record or aggregation, including volumes, to which they are denied access), and (where violations can validly be attempted) attempted violations of access control mechanisms.

7.14.9 is able, at a minimum, to provide reports for actions on records and aggregations organised:

- (a) By record or aggregation;
- (b) By user; and
- (c) In chronological sequence

7.14.10 Allow the metadata facility to be configurable by the administrator so that the functions for which information is automatically stored can be selected. The electronic records management system must ensure that this selection and all changes to it are stored in the metadata.

7.14.11 is able to provide reports for actions on aggregations and records organised by workstation and (where technically appropriate) by network address.

7.14.12 Allow the administrator to change any user-entered records management metadata element. Information about any such change must be stored in the metadata

7.15 Tracking record movement

ERM System shall:

7.15.1 Provide a tracking feature to monitor and record information about the location and movement of both electronic and non-electronic aggregations. This will include:

- (a) Unique identifier of the aggregation or record;
- (b) Current location as well as a user-defined number of previous locations
- (c) Date item sent/moved from location;
- (d) Date item received at location (for transfers); and
- (e) User responsible for the move (where appropriate).

7.15.2 Maintain access to the electronic record content, including the ability to render it, and maintenance of its structure and formatting over time.

7.16 Management of Electronic and Non-electronic records

ERM System shall:

7.16.1 Be able to define in the classification scheme, non-electronic aggregations and volumes

7.16.2 Allow the presence of non-electronic records in these volumes to be reflected and managed in the same way as electronic records.

7.16.3 Allow a non-electronic aggregation that is associated as a hybrid with an electronic aggregation to use the same title and numerical reference code, but with an added indication that it is a hybrid non-electronic aggregation.

7.16.4 Allow a different records management metadata element set to be configured for non-electronic and electronic aggregations; non-electronic aggregation records management metadata must include information on the physical location of the non- electronic aggregation.

7.16.5 Ensure that retrieval of non-electronic aggregations displays the records management metadata for both electronic and non-electronic records associated with it.

7.16.6 Support tracking of non-electronic aggregations by the provision of request, check-out and check-in facilities that reflect the current location of the item concerned.
electronic records.

7.16.7 Support the printing and recognition of bar codes for non-electronic objects such as documents and files, or other tracking systems to automate the data entry for tracking the movement of such non-electronic records.

7.16.8 Support the retention and disposal protocols and routinely apply to both electronic and non-electronic elements within hybrid aggregations.

7.16.9 Ensure that a non-electronic record is allocated the same security category as an associated electronic record within a hybrid records aggregation.

7.17 Disposal

7.17.1 Provide a function that:

- (a) Specifies disposal authorities;
- (b) Automates reporting and destruction actions;
- (c) Disposes of compound records as a single action; and
- (d) Provides integrated facilities for exporting records and records management metadata.

7.17.2 is able to restrict the setting up and changing of disposal authorities to the administrator only.

7.17.3 Allow the administrator to define and store a set of customised standard disposal authorities.

7.17.4 Support retention periods from a minimum of one month to an indefinite period.

7.17.5 be capable of assigning a disposal authority to any aggregation or record type

7.17.6 Ensure that every record in an aggregation is governed by the disposal authority(ies) associated with that aggregation.

7.17.7 Allow for defining of disposal action, agency retention period and trigger in the (metadata) record for the decision for each disposal authority.

7.17.8 for each aggregation:

- (a) automatically track retention periods that have been allocated to the aggregation; and
- (b) Initiate the disposal process by prompting the administrator to consider and, where appropriate approve and execute disposal action when disposal is due.

7.17.9 Allow at least the following decisions for each disposal authority:

- (a) Retain indefinitely;
- (b) Present for review at a future date;
- (c) Destroy at a future date; and
- (d) Transfer at a future date.

7.17.10 Allow retention periods for each disposal authority to be specified at a future date, with the date able to be set in at least the following ways:

- (a) Passage of a given period of time after the aggregation is opened;
- (b) Passage of a given period of time after the aggregation is closed;
- (c) Passage of a given period of time since the most recent record has been assigned to the aggregation;
- (e) Specified as 'indefinite' to indicate long-term preservation of the records.

- 7.17.11 Enable a disposal authority to be assigned to an aggregation that over-rides the disposal authority assigned to its 'parent' aggregation
- 7.17.12 Allow the administrator to amend any disposal authority allocated to any aggregation at any point in the life of that aggregation.
- 7.17.13 Allow the administrator to change the authority(s) associated with an aggregation at any time.
- 7.17.14 Allow the definition of sets of processing rules that can be applied as an alerting facility to specified aggregations prior to initiation of a disposal process.
- 7.17.15 Provide the option of allowing electronic records or aggregations that are being moved between aggregations by the administrator to have the disposal authority of the new aggregation, replacing the existing disposal authority(s) applying to these records.
- 7.17.16 Allow the administrator to delete aggregations, volumes and records
- 7.17.17 when executing disposal authorities, the electronic records management system must be able to:
- (a) Produce an exception report for the administrator;
 - (b) Delete the entire contents of an aggregation or volume when it is deleted;
 - (c) Prompt the administrator to enter a reason for the action;
 - (d) Ensure that no items are deleted if their deletion would result in a change to another record;
 - (e) Inform the administrator of any links from another aggregation or record to an aggregation or volume, that is about to be deleted, and request confirmation before completing the deletion;
 - (f) Alert the administrators to any conflicts, for example, items that are linked to more than one disposal action involving pointers; and
 - (g) Maintain complete integrity of the records management metadata at all times.
- 7.17.18 automatically track all retention periods specified in these disposal authorities, and initiate the disposal process once the last of all these retention dates is reached.
- 7.17.19 Allow the administrator to manually or automatically lock or freeze records disposition processes to fulfil a legal obligation
- 7.17.20 Record any deletion or disposal action comprehensively in the process metadata.
- 7.17.21 automatically record and report all disposal actions to the administrator.
- 7.17.22 Support the review process by presenting electronic aggregations to be reviewed, with their records management metadata and disposal authority information, in a manner that allows the reviewer to browse the contents of the aggregation and/or records management metadata efficiently.
- 7.17.23 Allow the reviewer to take at least any one of the following actions for each aggregation during review:
- (a) Mark the aggregation for destruction;
 - (b) Mark the aggregation for transfer to KNADS;
 - (c) Mark the aggregation for indefinite hold, for example, pending litigation; and
 - (d) Change the disposal authority (or assign a different schedule) so that the aggregation is retained and re-reviewed at a later date, as defined in this section.
- 7.17.24 Allow the reviewer to enter comments into the aggregation's records management metadata to record the reasons for the review decisions.

7.17.25 Alert the administrator to aggregations due for disposal before implementing disposal actions, and on confirmation from the administrator must be capable of initiating the disposal actions specified in this section.

7.17.26 Store in the metadata all decisions taken by the reviewer during reviews.

7.17.27 Produce a disposal authority report for the administrator that identifies all disposal authorities that are due to be applied in a specified time period, and provide quantitative reports on the quantity and types of records covered.

7.17.28 Be able to specify the frequency of a disposal authority report, the information reported and highlight exceptions such as overdue disposal.

7.17.29 Alert the administrator if an electronic aggregation that is due for destruction is referred to in a link from another aggregation and pause the destruction process to allow the following remedial action to be taken:

- (a) Confirmation by the administrator to proceed with or cancel the process; and
- (b) Generation of a report detailing the aggregation or record(s) concerned and all references or links for which it is a destination.

7.17.30 support reporting and analysis tools for the management of retention and disposal authorities by the administrator, including the ability to:

- (a) List all disposal authorities;
- (b) List all electronic aggregations to which a specified disposal authority is
- (c) assigned;
- (d) List the disposal authority(s) applied to all aggregations below a specified point in the hierarchy of the classification scheme;
- (e) Identify, compare and review disposal authorities (including their contents) across the classification scheme; and
- (f) Identify formal contradictions in disposal authorities across the classification scheme.

7.17.31 Provide, or support the ability to interface with, a workflow facility to support the scheduling, review and export/transfer process by tracking:

- (a) Progress/status of the review, such as awaiting or in-progress, details of reviewer and date;
- (b) Records awaiting disposal as a result of a review decision; and
- (c) Progress of the transfer process.

7.17.32 is able to accumulate statistics of review decisions in a given period and provide tabular and graphic reports on the activity.

7.18 Migration, Export and Destruction

ERM System shall:

7.18.1 Provide a well-managed process to transfer records to another system or to a third-party organisation and support migration processes.

7.18.2 Include all aggregations, volumes, records and associated metadata within aggregations whenever an electronic records management system transfers any aggregation or volume.

7.18.3 is able to transfer or export an aggregation (at any level) in one sequence of operations so that:

- (a) The content and structure of its electronic records are not degraded;
- (b) All components of an electronic record are exported as an integral unit including any technical protection measures;
- (c) All links between the record and its records management metadata are retained; and
- (d) All links between electronic records, volumes and aggregations are retained.

7.18.4 Be able to include a copy of the entire metadata set associated with the records and aggregations that are transferred or exported from an electronic records management system.

7.18. Produce a report detailing any failure during a transfer, export or destruction. The report must identify any records destined for transfer that have generated processing errors, and any aggregations or records that are not successfully transferred, exported or destroyed.

7.18.6 Retain copies of all electronic aggregations and their records that have been transferred, at least until such time as a successful transfer is confirmed.

7.18.7 Be able to continue to manage records and aggregations that have been exported from the electronic records management system to other forms of storage media.

7.18.8 Have the ability to retain records management metadata for records and aggregations that have been destroyed or transferred.

7.18.9 Allow the administrator to specify a subset of aggregation records management metadata that will be retained for aggregations which are destroyed, transferred out or moved offline.

7.18.10 Enable the total destruction of records (whether identified by class or individually) stored on re-writable media by completely obliterating them so that they cannot be restored through specialist data recovery facilities.

7.18.11 Provide a utility or conversion tool to support the conversion of records marked for transfer or export into a specified file transfer or export format.

7.18.12 Provide the ability to add user-defined records management metadata elements required for archival management purposes to electronic aggregations selected for transfer.

7.18.13 Provide the ability to sort electronic aggregations selected for transfer into ordered lists according to user-selected records management metadata elements.

7.18.14 Require the administrator to confirm that the non-electronic part of the same aggregations has been transferred, exported or destroyed before transferring, exporting or destroying the electronic part.

7.19 Retention and disposal of electronic and non-electronic records

ERM System shall:

7.19.1 Support the allocation of disposal authorities to every non-electronic aggregation in the classification scheme. The authorities must function consistently for electronic and non- electronic aggregations, notifying the administrator when the disposal date is reached, but taking account of the different processes for disposing of electronic and non- electronic records.

- 7.19.2 Support the application of the same disposal authority to both the electronic and non-electronic aggregations that make up a hybrid aggregation.
- 7.19.3 Be able to apply any review decision made on a hybrid electronic aggregation to a non-electronic aggregation with which it is associated.
- 7.19.4 Alert the administrator to the existence and location of any hybrid non-electronic aggregation associated with a hybrid electronic aggregation that is to be exported or transferred.
- 7.19.5 Be able to record in the metadata all changes made to records management metadata references to non-electronic or hybrid aggregations and records.
- 7.19.6 Be capable of offering check-out and check-in facilities for non-electronic aggregations profiled in the system, in particular enabling the ability to record a specific user or location to which a non-electronic aggregation is checked out, and to display this information if the non-electronic aggregation is requested by another user.
- 7.19.7 Be capable of offering a request facility for non-electronic records profiled in the hybrid aggregation system, enabling a user to enter a date that the non-electronic element is required and generating a consequent message for transmission to the current holder of that non-electronic aggregation or the administrator, according to configuration.
- 7.19.8 Be able to export and transfer records management metadata of non-electronic records and aggregations.
- 7.19.9 Support the application of a review decision taken on a group of aggregations to any non-electronic aggregations within that group, by notifying the administrator of necessary actions to be taken on the non-electronic aggregations.

7.20 Search and retrieval

ERM System shall:

- 7.20.1 Provide a flexible range of functions that operate on the metadata related to every level of aggregation and on the contents of the records through user-defined parameters for the purpose of locating, accessing and retrieving individual records or groups of records and/or metadata.
- 7.20.2 Allow all record, volume and aggregation records management metadata to be searchable.
- 7.20.3 Allow the text contents of records (where they exist) to be searchable
- 7.20.4 Allow the user to set up a single search request with combinations of records management metadata and/or record content.
- 7.20.5 Allow administrators to configure and change the search fields to:
- Specify any element of record, volume and aggregation records management metadata, and optionally full record content, as search fields; and
 - Change the search field configuration.
 - Provide searching tools for:
 - Free-text searching of combinations of record and aggregation records management metadata elements and record content; and
 - Boolean searching of records management metadata elements.

7.20.6 Provide for 'wild card' searching of records management metadata that allows for forward, backward and embedded expansion.

7.20.7 Allow searching within a single aggregation or across more than one aggregation.

7.20.8 Be able to search for, retrieve and display all the records and records management metadata relating to an electronic aggregation, or volume, as a single unit.

7.20.9 Be able to search for, retrieve and render an electronic aggregation by all implemented naming principles, including:

- (a) Name; and
- (b) Identifier (classification code).

7.20.10 Display the total number of search results on a user's screen and must allow the user to then display the results list, or refine the search criteria and issue another request.

7.20.11 Allow records and aggregations featured in the search results list to be selected, then opened (subject to access controls) by a single click or keystroke.

7.20.12 Allow users to retrieve aggregations and records directly through the use of a unique identifier

7.20.13 Never allow a search or retrieval function to reveal to a user any information (records management metadata or record content) that the access and security settings are intended to hide from that user.

7.20.14 have integrated search facilities for all levels of the classification scheme

7.20.15 Provide free-text and records management metadata searches in an integrated and consistent manner;

7.20.16 Present seamless functionality when searching across electronic, non-electronic and hybrid aggregations;

7.20.17 Allow users to save and re-use queries;

7.20.18 Allow users who are viewing or working with a record or aggregation, whether as the result of a search or otherwise, to see the record within the classification or aggregation hierarchy easily and without leaving or closing the record;

7.20.19 Allow users to refine (that is, narrow) searches

7.20.20 Provide a browsing mechanism that enables graphical or other display browsing techniques at any level of aggregation (this applies to where a graphical user interface is employed)

7.21 Rendering: displaying records

ERM System shall:

7.21.1 Render or download records that the search request has retrieved

7.21.2 Render records that the search request has retrieved without loading the associated application software

7.21.3 Be able to render all the types of electronic records specified by the organisation in a manner that preserves the information in the records, and which renders all components of an electronic record in their original relationship

7.22 Rendering: printing

ERM System shall:

7.22.1 Provide the user with flexible options for printing records and their relevant records management metadata, including the ability to print a record(s) with records management metadata specified by the user.

7.22.2 Allow the printing of records management metadata for an aggregation.

7.22.3 Allow the user to be able to print out a summary list of selected records, consisting of a user-specified subset of records management metadata elements (for each record).

7.22.4 Allow the user to print the results list from all searches.

7.22.5 Be able to print all the types of electronic records specified by the organisation while preserving the layout produced by the generating application package(s)

7.22.6 Allow the administrator to specify that all printouts of records have selected records management metadata elements appended to them, for example, title, registration number, and date and security category.

7.22.7 Allow the administrator to print:

- (a) The thesaurus, where a thesaurus exists within the system.
- (b) Any and all administrative parameters
- (c) Disposition authorities
- (d) The classification schemes
- (e) Metadata schema or element sets
- (f) The file lists (If classification schemes and thesauri is in use)

7.22.8 Allow all records in an aggregation to be printed, in the sequence specified by the user, in one operation.

7.23 Rendering: redacting records

ERM System shall:

7.23.1 Allow the administrator to take a copy of a record for the purposes of redaction.

7.23.2 Record the creation of extracts in the records management metadata, including at least date, time, reason for creation and creator.

7.23.3 Store in the metadata any change made in response to the requirements in this section.

7.23.4 Provide functionality for redacting sensitive information from the extract or allow other software packages to do so.

7.23.5 Prompt the creator of an extract to assign it to an aggregation.

7.23.6 Store a cross-reference to an extract in the same aggregation and volume as the original record, even if that volume is closed.

7.26 Administrator Functions

ERM System shall:

7.26.1 Allow the system administrator to retrieve, display and re-configure system parameters and to re-allocate users and functions between user roles.

7.26.2 Provide back-up facilities so that records and their records management metadata can be recreated using a combination of restored back-ups and metadata.

7.26.3 Provide recovery and rollback facilities in the case of system failure or update error, and must notify the administrator of the results

7.26.4 Monitor available storage space and notify the administrator when action is needed because available space is at a low level or because it needs other administrative attention.

7.26.5 Allow the records administrator to make bulk changes to the classification scheme, ensuring all records management metadata and metadata data are handled correctly and completely at all times, in order to make the following kinds of organisational change:

- (a) Division of an organisational unit into two;
- (b) Combination of two organisational units into one;
- (c) Movement or re-naming of an organisational unit; and
- (d) Division of a whole organisation into two organisations

7.26.6 Support the movement of users between organisational units.

7.26.7 Allow the definition of user roles, and must allow several users to be associated with each role.

7.26.8 Communicate any errors encountered in saving data to storage media.

7.27 Metadata administration

ERM System shall:

7.27.1 Allow the records administrator to;

- (a) Create, define and delete metadata elements, including custom fields.
- (b) Apply and modify metadata schema rules, including semantic and syntactical rules, encoding schemes and obligation status.

7.27.2 Allow the system administrator to configure the system to restrict the viewing or modifying of metadata elements by group, functional role or user.

7.27.3 Document all metadata administration activities

7.28 Reporting

ERM System shall:

7.28.1 Provide flexible reporting facilities for the records administrator. They must include, at a minimum, the ability to report the following:

- (a) Numbers of aggregations, volumes and records;
- (b) Transaction statistics for aggregations, volumes and records; and
- (c) Activity reports for individual users.

7.28.2 Allow the records administrator to report on metadata based on selected:

- (a) Aggregations;
- (b) Volumes;
- (c) Record objects;
- (d) Users;
- (e) Time periods; and
- (f) File formats and instances of each format.

7.28.3 Be able to produce a report listing aggregations, structured to reflect the classification scheme, for all or part of the classification scheme.

7.28.4 Allow the records administrator to request regular periodic reports and one-off reports.

7.28.5 Allow the records administrator to report on metadata based on selected:

- (a) Security categories;
- (b) User groups; and
- (c) Other records management metadata.

7.28.6 Include features for sorting and selecting report information

7.28.7 Include features for totalling and summarising report information.

7.28.8 Allow the system administrator to restrict users' access to selected reports.

7.29 Back-up and recovery

ERM System shall:

7.29.1 provide automated back-up and recovery procedures.

7.29.2 Allow the system administrator to schedule back-up routines by:

- (a) Specifying the frequency of back-up; and
- (b) Allocating storage media, system or location for the back-up

7.29.3 Allow only the administrator to restore from electronic records management system back-ups. Full integrity of the data must be maintained after restoration.

7.29.4 Allow only the administrator to roll-forward the electronic records management system from a back-up to a more recent state, maintaining full integrity of the data.

7.29.5 Allow users to indicate that selected records are considered to be 'vital records'

7.29.6 Be able to notify users whose updates may have been incompletely recovered, when they next use the system, that a potentially incomplete recovery has been executed.

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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