Western Cape Government

Cultural Affairs and Sport

Western Cape Archives and Records Service

DIGITISATION POLICY

OF

WESTERN CAPE GOVERNMENTAL BODIES

2017

Title	Specification
Document Owner	DCAS
Created By	Head: Archives Management
Date Created	11 March 2016
Electronic file name	WCA12/2/4/P
Document location	WCARS Registry

Approvals

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FOREWORD

The rapid pace of technological innovation in information handling, such as digital technology, has created new opportunities to improve the accuracy and availability of information. Digital technology provides distinctive advantages, namely, improved and more efficient processing of business transactions through application of optical character recognition (OCR) and workflow technologies, improved access to records to a wider audience, and electronic preservation of original records that would otherwise be at risk of damage through frequent handling.

On the other hand, digital technology has brought about new challenges that the Western Cape Archives and Records Service (WCARS) needs to deal with, such as management of digitally born records, transformation of the largely paper-based current, semi-current and historical records to digital formats, digital preservation and short life cycle of technology.

The evident and increasing need for governmental bodies to embark on digitization projects has necessitated the compilation of a policy document to guide the processes and storage of the resulting digital images and accompanying data. The WCARS is mandated with the task of ensuring that reliable records are maintained over time as evidence of official business for the purposes of accountability, operational continuity, disaster recovery, institutional and social memory. It is in this light that the WCARS developed a policy to best manage the rapidly evolving digital landscape that governmental bodies find themselves operating within.

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Anroux Marais

Minister: Cultural Affairs and Sport

Date: 31·03·17

1. PURPOSE OF THE POLICY

1.1 provide guidance regarding digitisation of records as an integral part of the strategic management of records;

1.2 provide a guiding framework to compile digitisation strategy documents that are aligned with international standards;

1.3 give consideration to the role of digital technology in the management of records, with regard to the digitisation of original records, and storage of digital records;

1.4 promote a preservation-appropriate approach to the digitisation of paper-based collections;

1.5 provide guidance on digital rights management issues that must be addressed in digitisation strategies compiled by governmental bodies; and

1.6 provide guidance on the compilation of accurate and comprehensive metadata records, as a vital means for managing and locating digital surrogates.

2. SCOPE OF POLICY

2.1 The principles and requirements herein are applicable to all records held by governmental bodies within the Western Cape Province that have been identified for preservation and/or digitisation.

2.2 Digitally born records are excluded from this policy.[1]

3. LEGISLATIVE FRAMEWORK

Copyright Act, 1978 (Act No. 78 of 1978)

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[1] Information content which is produced in digital form and which in many cases is never converted into physical form such as paper. Examples include digitisation of the intangible heritage and most modern electronic records management systems.

Legal Deposit Act, 1997 (Act No.54 of 1997)
National Archives and Records Service Act, 1996 (Act 43 of 1996)
National Heritage Resources Act, 1999 (Act No.25 of 1999)
Promotion of Access to Information Act, 2000 (Act No.2 of 2000)
Promotion of Administrative Justice Act, 2000 (Act No.3 of 2000)
Protection of Personal Information Act, 2013 (Act No.4 of 2013)
Provincial Archives and Records Service of the Western Cape Act, 2005 (Act No.3 of 2005)
South African Constitution,1996 (Act No.108 of 1996)

4. POLICY PRINCIPLES

4.1 DIGITISING OBJECTIVES

Digitisation is an expensive exercise, governmental bodies therefore must justify embarking on a digitization drive. Converting every record to digital form would be wrong-headed and wasteful. Value alone is not a sufficient reason for digitisation. Below are reasons to justify such a drive:

4.1.1 To provide faster and easier access to records since digitised materials are much more accessible to researchers than non-digitised documents. Digitised documents can be accessed from any computer with an internet connection, which can reduce or eliminate user's travel time and expenses.

4.1.2 To prevent further damage to frequently used fragile records of historical value. Often, the fragile condition of collections prevents their use, in such cases therefore, digital surrogates will be used to protect the handling and damage of valuable records.

4.1.3 To make analogue materials more accessible using the powerful tool of digital technology, not only through conversion, but also through digital finding aids and linked databases of search tools. Digital records shall not and cannot replace analogue ones.

4.1.4 To raise the profile of an institution such as an archive, library or museum. Projects to digitize priceless national treasures or valuable scholarly or archival materials can bring prestige to the whole institution. Raising the profile of an organization by showcasing digital collections can be a useful public relations exercise.

4.1.5 For educational purposes. Digitisation of cultural heritage materials can have tremendous benefits for education. Museums have been particularly successful in this respect, as most organizations have in-house educational departments, which have been charged with developing materials that will exploit the potential of technology for delivering educational resources to all levels of learners

4.1.6 Digitisation should not be considered as way of minimizing storage costs, hence a physical copy of the original object is retained. Digital copies therefore, are not replacements of original heritage resources.

4.2 SELECTION

Digitisation opens exciting opportunities for preservation and access, but this wonderful capacity for delivery of audio and visual content across the Internet is not cheap or easy to achieve. Careful selection maximises the strengths of both traditional preservation and digital technology.

4.2.1 When selecting material for digitising, governmental bodies must concentrate on the parts of their collections that are best suited to digitisation, make the most effective use of the technology, and meet their clients' needs. The following selection criteria must be applied:

i. historical and cultural significance of material;
ii. high level of demand for the material ;

iii. restricted access to material due to its condition, value, vulnerability or location;

iv. preserved collections or items identified at risk because of obsolete technologies (i.e glass plate negatives, microfilms, audio cassettes) or iconic records by providing alternative access to them;

v. collections such as books and maps that are available in digital format elsewhere should not be digitised; and

vi. documents that are not used regularly, or have little value or interest to clients, or are still highly sensitive and restricted to certain users should not be considered for digitisation.

4.2.2 An archival group or collection, once identified for digitisation, shall be digitised in its entirety.

4.2.3 Intellectual property rights should be addressed early in the selection process because the institution may not be able legally to reformat the materials (i.e. copies of material from other institutions stored on microfilm).

4.2.4 Governmental bodies embarking on digitisation projects must state what the use of the images will be, who will be consulting them and for what since this information has an influence on the selection of technology to capture and display images.

4.3 PREPARATION AND HANDLING

Governmental bodies should recognise that the digitization process places a considerable amount of stress on already fragile and damaged records. The protection of archival records from further damage must be the central principle from which all operational planning for any given digitization project will be based upon. The safety and protection of the records must at all times be paramount when planning a digitization program and the practicalities around the scanning process. A number of mitigating measures should therefore be implemented during the

digitization process to ensure that it places minimum stress upon the record. These include:

4.3.1 integrating the principle of "scan right, scan once" into the scanning process, as well as the subsequent post-production process

4.3.2 ensuring that archival records are properly handled by both the institution's staff, as well as by the employees of any service provider and or any service provider employed to undertake all or some aspects of the scanning process

4.3.3 Careful consideration must be given before digitizing records marked as "Strictly Confidential, "Top Secret," or those containing sensitive personal information. An information security plan that identifies records series and their corresponding information sensitivity levels must be developed. To ensure protection and confidentiality of the material, records must be scanned in-house for less risk of unauthorized access to sensitive information. Less risk of damage to records as they remain on-site. High quality checking of digitised images required.

4.3.4 utilizing adequate and appropriate furniture and equipment which will be able to provide for out-size or unusual formats

4.3.5 adequate number of persons to ensure that staff are not overloaded with work and begin to take short-cuts in how items are handled, or that extra persons are available should large format items such as maps require extra hands to move

4.3.6 sound handling practices that include not eating or drinking while working with records, handling volumes with both hands, careful paging of pages, not placing records on the floor, not pressing or placing weights on records, especially open volumes; and using appropriate supports for bound volumes

4.3.7 governmental bodies shall recognise that some records may need some level of preparation or conservation repair before they can be scanned. The level of preparation will depend on the condition of the archival records.

4.4 DIGITAL PRESERVATION

Digital Preservation deals with the planning, resource allocation and application of preservation methods and technologies to ensure that digital information with ongoing value is available for use at any undetermined point in the future. The WCARS defines its primary objective of digital preservation activities as maintaining the ability to effectively access digital content over time. Preserving the Electronic Master File is the primary concern. With a safely preserved Electronic Master File, derivatives are able to be reproduced *ad infinitum* as technology allows, whilst also ensuring original physical content is optimally preserved and limited handling required. With this in mind, preservation of digital content includes, preservation of digital objects at Bit-level(Unaltered Electronic Master File); ensuring authenticity and provenance; and maintaining preservation information which can be retrievable with current technology.

4.4.1 Digital Preservation System and Technical Standards

Due to the rapid evolution of technology and a variety of industry standards, the WCARS does not prescribe to a specific technical digitising standard but any standard used should be in line with the relevant international accepted standards, guidelines and protocols included in Appendix 1.

Any digital preservation system and technical standards used by a particular institution must however be approved by the WCARS.

4.4.2 File Type

The process of digitization produces an electronic master file which is a true reflection of the physical object as closely as possible, and derivatives which are then scaled for user consumption and institution parameters.

4.4.2.1 Electronic Master file

i. The Electronic Master File, must be created at the highest possible parameters in a high quality Tagged Image File format (TIFF) to ensure all possible graphical data is available for long term preservation. For this purpose, WCARS recommends Metamorfoze Preservation Imaging Guidelines[2] as a guideline.

ii. The Electronic Master File must be stored as an uncompressed "read only" file and may not be modified post archiving.

iii. All metadata relating to the Electronic master file shall be retained in the electronic master file , which includes:

- Descriptive metadata that outlines the content, and which is used to categorize and contextualize the digital object.

- Provenance metadata, identifying the source and identifying this as the authentic version of the content.

- Version metadata, including history of any changes and preparations that have been performed on the digital record.

- Creation metadata, including basic parameters associated with the content such as the equipment and settings used for

[2] Available at: https://www.metamorfoze.nl/sites/metamorfoze.nl/files/publicatie_documenten/Metamorfoze_Preservation_Imaging_Guidelines_1.0.pdf

digitisation, as well as identification of the original creator.

- Preservation metadata, designed to identify the nature of the content and the threats to the sustainability of the content.

- Rights metadata, including copyright and moral rights information concerning who is allowed access, in what form, and under which conditions of license, and which specific types of digital content is included, and what are they allowed to do with this content, such as modification of the content.

4.4.2.2 Derivative

i. Derivatives are any identical or modified copies of the Electronic Master File The derivative may be resized and compressed to suit the institution's requirements.

ii. Consultation with WCG's IT and WCARS departments is required for derivatives which will be stored on the infrastructure directly under WCG's control. Such consultation will include necessary information to establish the infrastructure requirements to support the requirement with a focus on the storage, computing and network requirements.

4.4.3 Partnership with the Information Technology Department

It is imperative that strong relationships exist between the governmental body and the IT Department. Extensive discussions around storage, processing, network bandwidth, backups, archiving, metadata, support and solution policies and strategies must precede digitisation activities.

4.4.4 Digitisation Equipment

Digitisation equipment, including "scanning equipment", must be evaluated on its ability to perform to required standards on the widest possible range of original formats (for example, books, maps, photographs and 3-dimensional objects). Equipment must be able to digitise against the generally internationally accepted Metamorfoze Preservation Imaging Guidelines (Metamorfoze). This will ensure that equipment meets minimum requirements to provide best quality digital content.

4.4.5 Interoperability

4.4.5.1 All information and communication systems, including digital repositories, must comply with the Minimum Information Interoperability Standards (MIOS) issued by the Minister of Public Service and Administration in terms of the Public Service Regulations.

4.4.5.2 The WCARS recommended TIFF is currently considered universal. Electronic Master Files shall always be stored as TIFFs.

4.4.6 Processing Software

All processing software used shall be approved for use in Western Cape Governmental Bodies by the State Information Technology Agency and the Western Cape Government Centre for e-Innovation.

4.4.6.1 Image and Indexing Software

Imaging and editing software must allow for adding detailed metadata to the Electronic Master File or derivative files without affecting the intended quality of the processed image.

4.4.6.2 Quality Assurance Software

Quality assurance software must comply with Metamorfoze requirements to ensure that the digitisation equipment and processes are correctly set up.

4.5 MIGRATION STRATEGY

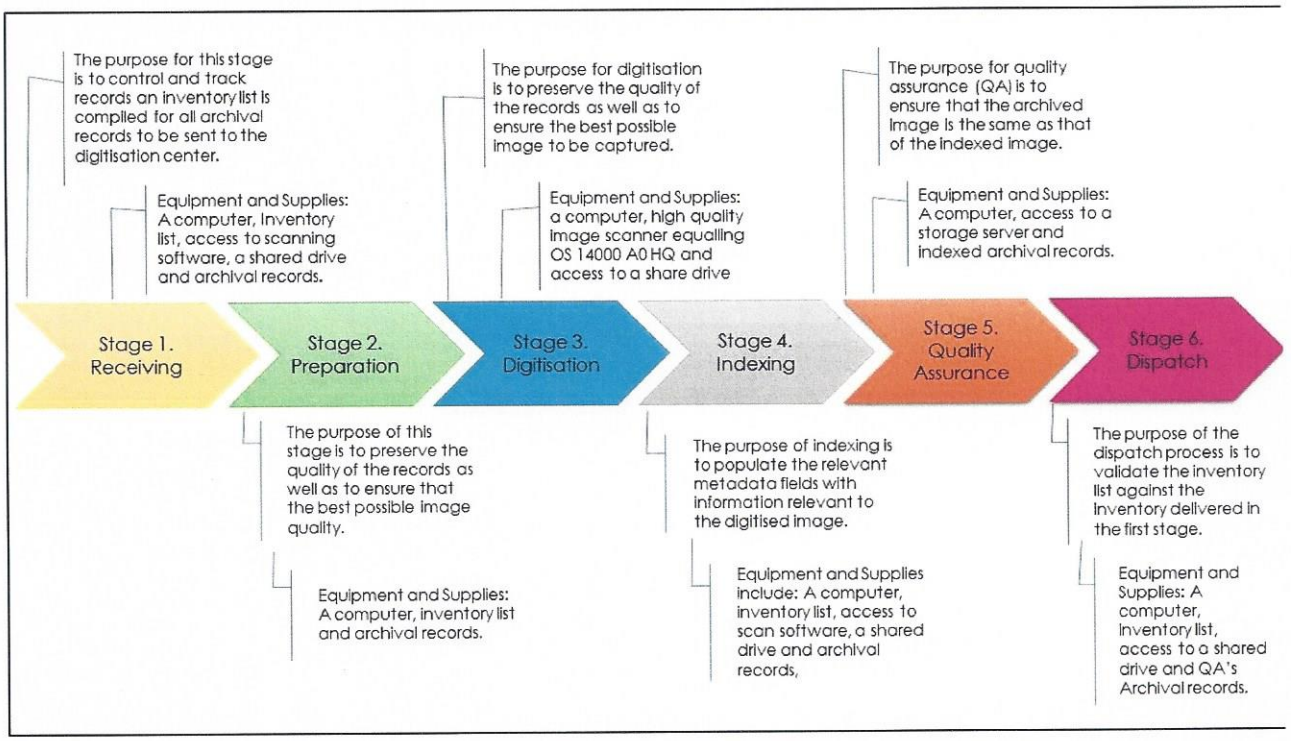
5.5.1 As the technologies for storage and access are evolving, many users can potentially be left behind if they only have access to outdated technologies. Governmental bodies must therefore establish a migration strategy to provide for future technologies.

5.5.2 Institutions are encouraged to collaborate to manage digitized material and make use of open source software to share information and develop technical standards for preservation for future technological changes.

4.6 OPERATIONS

The diagram below shows the various stages that must be undertaken during the digitisation process with a brief explanation of what each stage entails.

Figure 1: Stages in the Digitisation Process



4.7 ACCESS

4.7.1 Digitised records must be made available via a web browser to ensure that the digital surrogates are securely protected.

4.7.2 Retrievability and access of digital images must be tested after been captured into a database, server or any electronic storage system.

4.7.3 Optical Character Recognition (OCR) software must be used to enhance a searchable version of the digitised record.

4.8 CONTROL

4.8.1 Copyright

Information shall be made available in accordance with the Copyright Act No 98 of 1978. 4.9 Penalties should apply to non-compliance to the Copyright Act. An individual who is found guilty of a summary offence shall face the consequences according to the Copyright Act.

4.8.2 Security, authenticity and integrity

Information must be stored in accordance with the prescribed information security standards for the public service.

Digital records must adhere to generally acceptable standards of security, authenticity and integrity. Guidance can be found in the International Organization for Standardization: ISO/TR 13028:2010 *Information and documentation – Implementation guidelines for digitization of records.*

4.8.3 Permissions

A permission structure must be put in place to control what users are allowed to do and what they are allowed to view. Access controls must be in place for the metadata so that only authorised persons are able to change the metadata information.

4.8.3.1 Access to Electronic Master Images

There shall be no access to electronic master images. A derivative must be made available of the master image for public use and for system capabilities.

4.8.4 Watermarks

No additional watermarks, stamps or "branding" will be added to the Electronic Master File. Watermarks, stamps or branding reflected in the physical medium will be digitally captured as prescribed during the digitisation process and remain unaltered. Modified images are no longer a true and accurate copy of the original paper records. This is especially relevant where added information, such as a large watermark through the text, makes the content of a record difficult to read.

4.8.5 Provision for Commercial Exploitation

Governmental bodies shall ensure that there are controls in place to protect their information, including: acknowledgement of the institution, use of the correct reference coding; payment for access and use of image(s) for commercial broadcast or publication purposes; depending on the institution's access and usage policy.

4.8.6 Digital rights management

i. Every electronic master shall include rights metadata. This metadata shall include information on the owner of the original object as well as the rights owner of the digital record. This must include the moral rights of the original creator.

ii. Rights metadata shall include a description of the rights for each of the possible types of use including licensing for commercial purposes.

iii. Rights metadata shall indicate who is authorised to give permission for access and reproduction.

4.9 PARTNERSHIPS

i. Governmental bodies may work with external parties who wish to fund digitization of selected materials from their holdings. Organizations or individuals are welcome to discuss funding or partnership proposals for digitization projects with WCARS.

ii. All proposals are considered on the basis of the digitisation selection criteria. The basis for partnerships must be to support the goals of increased access to and enhanced preservation of public records.

iii. Partners may participate in digitization projects in a variety of ways including through full or partial funding, grants, donations, sponsorship and in-kind contribution in-line with relevant prescripts.

4.9.1 Types of partnerships

The types of partnerships which governmental bodies may enter into include the following:

Other collecting and research organisations, government, community based and not-for-profit organizations, institutions and individuals undertaking digitization projects.

4.9.1.1 Commercial partnerships

Capacity to undertake large-scale digitization projects is sometimes limited by budget constraints and other priorities. Governmental bodies may therefore enter into partnerships with commercial organizations. The terms of any such partnership are carefully considered and must include the retention of a number of rights by governmental bodies, such as:

i. the ability to provide free access to the resulting digitized content to its registered users on-site and off-site;
ii. permanent ownership of the digitized content, together with any associated metadata in formats; and
iii. agreement on how the materials are to be used by the partner.

It is possible to support digitization activities with non-financial contributions such as provision of human resources and expertise to digitize selected material. The following must be taken into account:

i. the nature of the partner and their relationship with the governmental body;

ii. the nature of the proposed in-kind contributions and how they may impact on the costs, benefits and risks for the project, an example being when a partner offers images they scan themselves; and

iii. any potential impact on other planned digitization programmes.

4.9.2 Agreements for foreign-funded digitisation projects

i. All governmental bodies which make use of international funding for digitization projects must develop agreements governing terms and ownership of the digital copies concerning the records in their care.

ii. Any request for the digitization of South Africa's heritage of any form, from a foreign agency or funder, must be treated as an international arrangement and must be conducted in terms of bilateral agreements or other government-to-government structures in cases when such bilateral agreements exist.

iii. When no bilateral agreement exists between South Africa and another country these requests must be treated as a government-to-government initiative when this is appropriate in terms of the significance of the collection and other parameters. A set of guidelines on such appropriateness should be produced and made accessible and which are linked to existing declaration of significance of objects and collections as are identified within the National Heritage Resources Act No. 25 of 1999 and its regulations.

iv. All contracts involving foreign funding must include a set of minimum elements applicable to such agreements and will guide the process for the acceptance of agreements of this nature.

v. Digitization agreements and contracts with foreign funding agencies must include the following:

a) the custodial organization or institution's details;

b) list of collections to be digitized, details of the selection criteria identifying why these are selected and why others are excluded. An indication as to how this complies with the institution's digitization strategy must also be included;

c) total number of items in the collections, and the nature of the originals;

d) procedures for handling of originals, and the mitigations in place against loss or damage during digitization;

e) the media and format of the completed digital products;

f) the metadata to be used for description and the extent to which this complies with this digitization policy (with specific reference to provenance and rights metadata);

g) nature of preparations to be performed on the originals prior to digitization, for example, cutting of paper originals to support scanning;

h) authorizations obtained to allow digitization;

i) the manner in which the electronic master files will be created and maintained;

j) the location where the electronic master file will be stored, and in particular the high-resolution photographs and scans;

k) the intended beneficiaries and the kinds of access that they are to be provided with;

l) the access available by the general public for fair and private use;

m) the charges that will be levied for access to the digital resources;

n) the restrictions that will be placed on access to the digital resources;

o) the digital preservation strategy for these collections;

p) the backup strategy for these digital collections;

q) the repository that will hold the digital masters;

r) the specific rights that the funding organization and its associate organizations will acquire and or retain concerning the digitized materials. The rights of any funding agency to access digital records must be limited to non-commercial "fair dealing" usage. Any additional rights can only be conferred under special license; and

s) digital rights ownership must be clearly stated within contracts pertaining to foreign funded digitization projects. In each instance the governmental bodies must retain the ownership of the digital rights. Requests for exporting digital rights must be treated in the same way as the export of the tangible or analogue objects and be administered by the appropriate

bodies[3]. The necessary changes to legislation must be introduced to enable this level of control.

4.10 DIGITISATION STRATEGY

i. Governmental bodies shall develop a digitisation strategy in terms of this policy.

ii. The digitisation strategy shall include the following minimum information:

a) A description of the collections within the institution, their significance and digitisation status.

b) The nature of the threats to the collections.

c) The frequency of usage and handling of the collections.

d) The guiding principles for selection of collections for digitisation and the principles for selection of items within collections.

e) The rights associated with each collection.

f) The metadata to be used and applied for describing the digital resources.

g) The management of the digital resources in terms of location and backup and the disaster management plans.

h) Access methods to the digital resources.

i) The digital preservation strategy including the preferred media and formats, and how migration is used to ensure long-term preservation.

[3] Treasury approval is required for the export of any intellectual property right to or in favour of a person who is not resident in South Africa. See Regulation 10 of the Exchange Control Regulations, 1961 made in terms of the Currency and Exchanges Act, 1933.

j) The digitisation approach concerning usage of external agencies or internal expertise.

k) The skills needed to digitise and maintain the digital resources, and how these are developed through capacity development programmes.

l) The equipment used and whether this is purchased, rented, or outsourced to other specialists.

m) The specific digitization programmes underway including the stakeholders and beneficiaries, and the specific projects that have been structured under these programmes.

n) The specific policies on collection management that impact on digitisation.

o) Institutional policies relating specifically to digitisation including local and foreign funding, rights identification and management, handling during digitisation, storage after digitisation, access to the digital resources, digital preservation and prioritization rules for digitization.

5. REVIEW OF POLICY DOCUMENT

i. This policy shall be reviewed annually.

ii. Proposals for the review of the policy document must be directed to the Deputy Director: Archives Management, WCARS who will amend the policy with the assistance of section heads. The amended policy will then be submitted to the Head of Service for consideration and approval.

APPENDIX 1: SOURCES FOR MORE INFORMATION

- ISO 19115-1:2014 *Geographic information - Metadata* http://www.iso.org/iso/catalogue_detail?csnumber=26020
- ISO 23950:1998[4] *Information and documentation - Information retrieval (Z39.50) - Application service definition and protocol specification*
- ISO 21127:2014 *Information and documentation – A reference ontology for the interchange of cultural heritage information. http://www.iso.org/iso/catalogue_detail?csnumber=34424*
- ISO /TR 13028:2010 *Information and documentation: implementation guidelines for digitization of records*
  - SANS 15081: 2013/ISO/TR *Document management - Information stored electronically - Recommendations for trustworthiness and reliability. https://www.sabs.co.za/Business_Units/Standards_SA/Controls/Published_Standards/PS046.PDF*
  - SANS 23081-1:2006/ISO 23081-1:2006. *Information and documentation - Records management processes, - Metadata for records. Part 1: Principles*
  - SANS 23081-2:2010/ISO 23081-2:2009. *Information and documentation – Managing metadata for records. Part 2: Conceptual and implementation issues*
  - SATR 23081-3:2015/ISO/TR 23081-3:2011 *Information and documentation – Managing metadata for records – Part 3: Self-assessment method https://www.sabs.co.za/Business_Units/Standards_SA/Controls/Published_Standards/PS171.PDF*
  - SANS 17799. *Information technology: security techniques, code of practice for information security management.*

Books

Berger, M. 1999. Digitization for preservation and access: a case study. Library HiTech 17(2): 146-151.

[4] Reviewed in 2014.

Berne Convention - international agreement governing copyright, 1886.

Federal Agencies Digitisation Initiative (FADGI). 2009. Technical guidelines for digitizing cultural heritage materials: creation of raster image master files.

Lazinger, S.S. 2001. Digital preservation and metadata: history, theory and practice. Englewood: Libraries Unlimited.

Moss, M. and Currall, J. 2004. Digitisation: taking stock. Journal of the Society of Archivists 26(2): 123-136.

Minimum Information Security Standards, 1996.

National Department of Arts and Culture. 2010. National policy on the digitisation of heritage resources final draft for public review, v8.

Penn, I.A.; Pennix, G.B. and Coulson, J. 1994. Records Management handbook. Aldershot: Ashgate.

Van Dormolen, H. 2012. Metamorfoze preservation imaging guidelines. The Hague: National Archives of the Netherlands.

National Archives and Records Service of South Africa documents

- National policy on the digitisation of heritage resources: final draft policy (for public review) August 2010.
- Records Management Policy Manual, 2007.
- Managing Electronic Records in Governmental Bodies: Metadata requirements, 2006.
- Managing Electronic Records in Governmental Bodies: Policy, principles and requirements, 2006.
- Electronic records and the law: What governmental bodies need to know. Advisory pamphlet No. 2, April 2012.

APPENDIX 2: LIST OF TERMS AND DEFINITIONS

For the purpose of this policy, the following definitions apply:

Access	Access is primarily used to indicate access through electronic means to digital heritage resources. The UNESCO Charter[5] states that the purpose of preserving the digital heritage is to ensure that it remains accessible to the public and thus access should be free of unreasonable restrictions.
Analogue	Analogue refers to archival records, heritage objects and resources, *not in digital form*, e.g. paper, stone sculpture, tape recordings (non-digital), video recordings (non-digital), microfiche and models.
Copying	All methods of manufacturing a reproduction of a record in order to create a second record in the same, or new, medium/media. The subsequent copy will have its own attributes, including history of creation, metadata and requirements for control, preservation and access.
Copyright	A legal term describing rights given to creators for their literary and artistic works. It confers protection to a tangible creation, that is, to music composition, plays, screen writings, books, paintings, sculpture, ceramics, etc. Copyright protection is also awarded on an individual basis, to individual creators or heirs. Government texts are considered to be

[5] UNESCO (2003). UNESCO Charter on the Preservation of the Digital Heritage. Adopted at the 32nd session of the General Conference of UNESCO, 17 October 2003

automatically in the public domain and are excluded from copyright.

The provisions for awarding copyright to tangible objects and on an individual basis, makes it difficult to extend copyright to indigenous knowledge, which is often in oral form and is considered to be collectively owned by a particular community.

Database

A structured collection of data.

Digital obsolescence

The increasing speed at which newer versions of electronic hard- and software are replaced with successive generations of programs and equipment. Resulting in earlier versions of electronic files, their supporting software and hardware quickly becomes obsolete. This poses a considerable challenge to cultural institutions, which need to preserve electronic records for the future.

Digital preservation

A set of specialised technical processes to ensure that digital records and documents remain accessible over the long term. Digital preservation consists of the activities that guard against loss of the digital heritage4. UNESCO (2003). UNESCO Charter on the Preservation of the Digital Heritage. Adopted at the 32nd session of the General Conference of UNESCO, 17 October 2003.

Digital resources

For the purpose of this policy digital resources are specifically digital content representing heritage resources, including all types of digital content on any form of media and in any format.

Digital rights management	The formal management of the bundle of rights associated with digital records. All items in historical and/or cultural collections have legal rights, these legal rights affect how these items can be used. These rights are separate from the rights of ownership. Rights management is, currently, seen as forming part of the considerations for the management of historical collections (i.e. collections management). It is imperative for institutions to recognise the necessity for managing the digital rights to their collection. See associated entries on: **intellectual property**, **copyright**.
Digitally born	Information content which is produced in digital form and which in many cases is never converted into physical form such as paper. Examples include digitisation of the intangible heritage and most modern electronic records management systems.
Digitization	The conversion of information in analogue form into electronic form.
Document	Any recorded information or object which can be treated as a unit.
Electronic Master File	A Digital Master is a combination of digital files, metadata and index/manifest files which are structured as a unit which provides the basis for authenticity of digital records, and the means of reliable transfer between the creator and the Provincial Digital Repository.

File format

Information and data is stored in binary digits, or bits. The manner in which these bits are combined into larger structures is called a file format.

Governmental body

Any legislative, executive, judicial or administrative organ of the state, including a statutory body, commission, board or council, in the provincial or local sphere of government in the province of the Western Cape. See also entry for **public record.**

Head of the Service

Official appointed in terms of the Public Service Act, 1994 read with the Provincial Archives and Records Service of the Western Cape Act, 2005 to head the Western Cape and Archives Service.

Heritage

The term "heritage" is defined in the White Paper on Arts and Culture (1996) as "the sum total of wildlife and scenic parks, sites of scientific and historical importance, national monuments, historic buildings, works of art, literature and music, oral traditions and museum collections and their documentation which provides the basis for a shared culture and creativity in the arts." (Section 12).

Intellectual property (IP)

The concept of intellectual property (IP) is intended to give recognition to- and protection for the creative output of human mind. IP confers a form of ownership interest in human intellectual output, and allows owners of IP to exercise control over the future use of a work. IP grants owners the opportunity to exploit their creation by passing IP rights onto others. Categories recognized under intellectual property include: inventions, literary

and artistic works, symbols, names, images and designs used in commerce. Government texts are considered to be automatically in the public domain and are excluded.

IP makes use of more recent development in law and policy associated with **copyright** issues, such as trademarks and the management of electronic records. IP has the potential to provide considerable protection to cultural heritage, as it protects the rights of the producer. IP can be used in the developing world to develop cultural heritage through the protections it affords.

Intellectual property rights

Rights associated with **intellectual property** include the rights to reproduce (e.g. photography and scanning), adapt or create derivatives (e.g. translations), perform in public, distribute (e.g. lend, rent or loan copies to the public), display in public.

Metadata

Information about other information. For example, information contained in a library catalogue is considered to be metadata (about the books in the library). Metadata, as a term, is most commonly used to describe electronic data that describes electronic records, e.g. date of creation, program on which the record was created, and such like. Data describing context, content and structure of records, and their management through time. Metadata is used for records management, retrieval and use.

Migration

The process of transforming an **electronic record** from one encoding format to another, most usually by transferring it to a newer version of software and/or hardware. The most usual reason for migration is to transfer records to newer generations of computers, so that the **records** they contain can continue to be accessed by later generations of digital technology.

The fast development and marketing of newer versions of electronic soft- and hardware, means that the older versions of programs quickly become obsolete. Migration techniques are active preservation method which constitute a change to the nature of the record, and entail a risk of information loss that must be clearly identified and managed.

Obsolescence

The increasing rate of technological advancement in the computing field results in hard- and software increasingly becoming out of date (or "obsolete") within an increasingly shorter time span. It means that certain file types and images cannot be opened or accessed by later generations of hard- and software. This is a concern, as it means that much information in digital or electronic form may be rendered useless as it cannot be read by later technology. This issue had been a concern for cultural institutions since the start of digital record keeping. Cultural institutions have to plan for obsolescence by ensuring that electronic records are migratable across successive generations of software.

See associated entries: digital obsolescence, migration.

Optical character recognition (OCR)

Software programs that enable the searching of a scanned image of a printed or typewritten document. The software has the ability to recognise certain keywords appearing in the text. Scanned images of printed or typewritten documents are then able to be searched, greatly enhancing the value of the information and the scanned image. Currently, no commercially successful program exists to read manuscript or handwritten records, in the same way as printed or typewritten text.

Original record

A record, which may be in a physical or electronic format, from which a copy or surrogate can be made.

Preservation

Measures aim to prevent, retard or halt deterioration of archival records and other cultural property. Preservation is considered to be integral to the functioning of any given archives or heritage institution. Preservation measures touch on a variety of actions and functions within any given archives or heritage institution. Preservation measures include: maintaining clean and safe storage conditions for records; ensuring that pests and other threats to the collections are mitigated for; that correct handling of records is adhered to

by staff and clients; that the building fabric is kept in a sound state of repair; that the use of appropriate protective enclosures for fragile records occurs, etc.

Provincial Digital Repository (PDR) The division in the Western Cape Archives and Records Service who is responsible for the safe and secure preservation of the electronic master files created or received by a governmental body in pursuance of its activities. All electronic master files that are appraised as having archival value must be transferred to this repository. These digital masters must be managed in accordance with strict standards and practices to ensure authenticity and integrity of the digital content.

Public record Recorded information, regardless of the form or medium thereof, created or received by a governmental body in pursuance of its activities.

Record Recorded information, regardless of the form or medium thereof or evidence of a transaction preserved for the evidential information it contains.

Recording Anything on which sounds or images (or both) are fixed; or, from which sound or images (or both) are capable of being reproduced, regardless of form. See entry on technology-dependent record.

Repository A repository is typically used in the context of archives repositories. Within the context of this policy this term is primarily concerned with digital repositories.

Rights management

The management of rights within any given institution should include a rights management policy that will specify how the institution is to go about managing these rights. For example with regard to copyright, intellectual property (IP), rights pertinent to digitised and digitally-born records. A survey to determine the nature of these rights will need to be conducted within the institution to determine the rights applicable. Metadata accompanying the digital record will also have to include information on rights (e.g. ownership and licensing information).

Scan right

A preservation-orientated approach for the scanning of paper-based records. Paper records are to be scanned at the highest possible quality image. This will ensure that fragile paper-based records do not have to be repeatedly scanned in order to ensure high quality images. The once-off scanning process minimises the damage that would otherwise occur to documents repeatedly subjected to the scanning process.

Scanning

The process of converting analogue artifacts into digital form using optical scanning equipment or similar equipment. This can be done in two-dimensional (2D) or three-dimensional (3D) format. For the purposes of intellectual property rights, the scanning process is not considered a skilled enough process, to warrant a scanned image to be considered as being a new or unique creation. Thus, scanned images are considered to be derivative.

Surrogate

A duplicate of an original record in, either, whole or in part. Copies are used as surrogates to preserve original records, while providing access to the information contained in the record. Use of copies as surrogates removes the stress associated with handling of fragile original records, and has been a recognised preservation strategy for libraries, museums and archives worldwide for over a century.