

Yukon Archives Metadata Standard

for Image Masters Created Through Digitization

Background

The Yukon Archives standards for digitizing photographs, maps, plans, posters and textual records define the formats, and technical and processing specifications that Yukon Archives adopts for digitizing records within its permanent collections for purposes of both access and preservation reformatting. Those standards provide basic information regarding metadata for the created image masters.

Metadata makes possible several key functions – the identification, management, access, use, and preservation of a digital object –and is therefore directly associated with most of the steps in the digitization workflow: file naming, capture, processing, quality control, production tracking, search and retrieval design, storage, and long-term management. Although it can be costly and time-consuming to produce, metadata adds value to image masters created through digitization. This standard identifies the metadata requirements for properly documenting Yukon Archives' image masters created through digitization.

Definitions

Metadata – Structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage digital objects (data about data or information about information). There are three main types of metadata: descriptive metadata, structural metadata and administrative metadata.

Descriptive Metadata – Metadata used in the discovery and identification of a specific digital object.

Structural Metadata – Metadata used to display and navigate a specific digital object for a user, including information on the internal organization of the object.

Administrative Metadata (includes rights management metadata and preservation metadata) – Represents the management information for the digital object (the date it was created, its file format, rights information, etc.).

Master File – Digital reproduction of a source record for preservation (preservation master file) or access (production master file).

*Derivative File*¹ – Digital file created by sampling a master file.

Source Record – Record selected by Yukon Archives as a source object for digitization.

The Yukon Archives Metadata Standard for Image Masters Created Through Digitization and Yukon Archives Image Masters

The *Yukon Archives Metadata Standard for Image Masters Created Through Digitization* applies from the time of its completion and approval by the Territorial Archivist to the time, at some future date, at which it is superseded by a revised, modified standard. It therefore charts Yukon Archives requirements for image masters created through

¹ This standard does not document metadata for derivative files. Metadata requirements for derivatives will reflect the purpose of the derivative file. See *Yukon Archives Digital Access File Standard* for details regarding metadata for access files, a specific type of derivative file.

digitization over a fixed period of time. At the time it is implemented, the standard will necessarily change and/or eliminate previously existing Yukon Archives standards and procedures for image masters created through digitization. When implemented, it is not a retroactive standard; it does not suggest that image masters documented according to previous standards should be redone or discarded. Digital files documented under previous versions of the standard are managed and utilized alongside those created under the current standard.

Metadata

The *Framework of Guidance for Building Good Digital Collections*² articulates six principles applying to good metadata:

1. Good metadata conforms to community standards in a way that is appropriate to the materials in the collection, users of the collection, and current and potential future uses of the collection.
2. Good metadata supports interoperability.
3. Good metadata uses authority control and content standards to describe objects and collocate related objects.
4. Good metadata includes a clear statement of the conditions and terms of use for the digital object.
5. Good metadata supports the long-term curation and preservation of objects in collections.
6. Good metadata records are objects themselves and therefore should have the qualities of good objects, including authority, authenticity, archivability, persistence, and unique identification.

Yukon Archives strives to adhere to these principles when creating and maintaining metadata for image masters created through digitization.

When digitizing photographs, maps, plans, posters and textual records, Yukon Archives maintains explicit, comprehensive, and discrete records of all descriptive, structural, and administrative metadata for the resulting image masters. This metadata documents the attributes of the image master – who created the image master, what source record was used, when the image master was created, etc. It does not document the source record itself.³ Metadata can be either embedded within files or stored separate from files.

Embedded Metadata

Metadata can be added directly to digital files, thus being carried along with the content it describes. Due to the long term preservation and/or access requirements of master files, Yukon Archives restricts embedded metadata to fields available in the master file format (Baseline TIFF 6.0). Table 1 defines the metadata which is embedded within image masters created through digitization. If multiple entries are required for a field, they are separated by a semicolon.

In addition to the metadata outlined here, many other metadata fields (particularly technical) will be automatically populated within the file by the creation software (TIFF writers and editors). This standard focuses on user generated metadata and does not document these automatically populated fields (ex. file format type, file size, camera capture settings). In some cases, these automatically populated fields are required metadata fields as per the master file format specification (ex. for TIFF 6.0 specification: colour, compression, rows and columns, physical dimensions, location of the data). In all cases these types of metadata are preserved as they provide important details about how an image master was created.

² NISO Framework Working Group. *A Framework of Guidance for Building Good Digital Collections*, 3rd ed. 2007.

³ The source record is documented through other Yukon Archives systems such as accession, description, and cataloguing records. This includes both descriptive intellectual and physical details such as title, dates, dimensions, base materials, etc.

Metadata Description	TIFF 6.0 Field Name (Tag ID)	Example Entry
Job title and organisation for who created the image master (name of person not entered).	Artist (315 13B.H)	<ul style="list-style-type: none"> • AV Digi Tech, Yukon Archives • Archives Conservator, Yukon Archives • Contractor, XYZ Digitization Company (for Yukon Archives)
Terms of use notice.	Copyright (33432 8298.H)	<ul style="list-style-type: none"> • Please credit: Yukon Archives
Date and time of image master creation. ⁴	DateTime (306 132.H)	<ul style="list-style-type: none"> • 2015:03:13 16:09:18
Format of the source record used to create the image master. ⁵ The use of special or out of the ordinary digitization techniques is also documented. For example, if a portion of the area that permits the transmission of light is not copied due to the use of a film holder, it will be noted.	ImageDescription (270 10E.H)	<ul style="list-style-type: none"> • print • neg. (film holder used) • see appendix for further format examples
The manufacturer of the scanner or other type of equipment used to generate the image master.	Make (271 10F.H)	<ul style="list-style-type: none"> • Epson • Contex • Betterlight
The model name or number of the scanner or other type of equipment used to generate the image master.	Model (272 110.H)	<ul style="list-style-type: none"> • Perfection V800 • Expression 10000XL • HD5450 • Super 8K-HS
Name and version number of the software package(s) used to create the image master.	Software (305 131.H)	<ul style="list-style-type: none"> • Adobe Photoshop CS5.1 Windows

Table 1. Metadata which is embedded within image masters created through digitization

Non-Embedded Metadata

Not all metadata need be added directly to digital files, but can be documented elsewhere. Due to the long term preservation and/or access requirements of master files, this information is not added directly to image masters by Yukon Archives as it has the potential to change or not remain accurate over time - for example, a name change to an archival collection or the creation of a derivative file from the image master. Additional reasons for not adding specific information directly to image master are to simplify metadata management and to facilitate search and retrieval. Table 2 defines metadata documented outside image masters created through digitization. As no single metadata element set or standard will be suitable for all image masters created through digitization, a general description of metadata elements is established here. These metadata types should be assessed, defined and properly documented for each digitization project. Those selected should balance the costs and benefits of being documented, taking into consideration the needs of current and future users

⁴ Ensure date and time settings of computer are correct.

⁵ This assists with identifying which source record format was digitized when materials may have more than one format (ex. a print and a negative may be available for a specific photograph) held by Yukon Archives.

Non-embedded metadata is stored outside the image master (ex. in database systems, XML, sidecar files, container files) and related to the image master through some form of connection or linkage. In all cases, measures are taken to ensure that metadata will not be lost, that problems with connecting image masters and metadata do not arise, and that image masters and metadata are updated together. The use of established open and accessible metadata schema(s) (ex. METS⁶, PREMIS⁷) and associated syntax to record non-embedded metadata is encouraged and should be documented with written guidelines / procedures. (Note: Embedded metadata may also be recorded in non-embedded metadata systems to facilitate use.)

Metadata Type	Metadata Description	Example Metadata Location	Example Metadata Field Name
Descriptive metadata	Records the Yukon Archives source record digitized (or part thereof) and allows for connection to its descriptive information	<ul style="list-style-type: none"> related to source record through filename 	<ul style="list-style-type: none"> Object Identifier
Structural metadata	Details regarding structure - how multiple image masters are put together, for example, number of image masters, how pages are ordered to form chapters (sequence), resource anomalies, etc. – to enable display and navigation	<ul style="list-style-type: none"> recorded in database system XML 	<ul style="list-style-type: none"> Group File Structure Map
Administrative metadata	Access permissions - information regarding who can access an image master	<ul style="list-style-type: none"> digital storage location permissions 	<ul style="list-style-type: none"> Access Category
	Master file type - Preservation Master, Production Master, Enhanced Preservation Master, or Enhanced Production Master.	<ul style="list-style-type: none"> digital storage location 	<ul style="list-style-type: none"> Group
	File fixity – information used to verify whether an image master has changed or been altered in an undocumented or unauthorized way	<ul style="list-style-type: none"> recorded in database system 	<ul style="list-style-type: none"> Message Digest Algorithm Message Digest
Rights management metadata	Intellectual property rights (ex. copyright, license information, reproductions)	<ul style="list-style-type: none"> source record information 	<ul style="list-style-type: none"> Rights Category
Preservation metadata	Details regarding archiving and preservation actions (migration/transformation information) over time	<ul style="list-style-type: none"> XML 	<ul style="list-style-type: none"> Preservation Level Significant Properties Event Type Agent Type

Table 1. Metadata documented outside image masters created through digitization

⁶ METS (Metadata Encoding & Transmission Standard) - Structure for encoding descriptive, administrative, and structural metadata.

⁷ PREMIS (Preservation Metadata: Implementation Strategies) - A data dictionary and supporting XML schemas for core preservation metadata needed to support the long-term preservation of digital materials.

Metadata for Modifications to Image Masters

If an image master is modified⁸, Yukon Archives maintains a discrete change history, including date/time modified, modifier, rationale, software, and actions. Changes are recorded as embedded metadata (ImageDescription) and/or outside the image master as appropriate.

Metadata Collection

Metadata capture will require both manual and automated entry, and should be recorded during the digitization workflow.

Quality Assurance and Quality Control

Yukon Archives conducts quality assurance and quality control relating to metadata. The specific technical and procedural areas in which quality assurance and quality control are applied are outlined in the *Yukon Archives Image Digitization Quality Assurance and Quality Control Procedures*. Where appropriate, these procedures identify accuracy requirements and acceptable error rates.

Related Documents

Yukon Archives Standard for Digitizing Photographs: Creation of Raster Image Masters
Yukon Archives Standard for Digitizing Maps, Plans and Posters: Creation of Raster Image Masters
Yukon Archives Standard for Digitizing Textual Records: Creation of Raster Image Masters
Yukon Archives Digital Access File Standard
Yukon Archives Image Digitization Quality Assurance and Quality Control Procedures

References

Adobe Systems Incorporated. TIFF Revision 6.0, Final. 1992.
Embedded Metadata Working Group – Smithsonian Institution. Basic Guidelines for Minimal Descriptive Embedded Metadata in Digital Images. 2010.
National Information Standards Organization. Understanding Metadata. 2004.
Still Image Working Group – FADGI. Guidelines for TIFF Metadata Recommended Elements and Format Version 1.0. 2009.

Original signed by Ian Burnett
Territorial Archivist

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Date

⁸ Modification is any change made to an image master after the image master has been saved in permanent storage.

Appendix - Source record formats established by Yukon Archives

Note: Entries are all lowercase. The lists below⁹ are not exhaustive as metadata entries for formats not commonly digitized at Yukon Archives are permissible. Consult established controlled vocabularies (ex. Library of Congress' Thesaurus for Graphic Materials) for selecting additional terms as required.

Common photograph formats include:

- print (*includes images developed on photographic paper for use as a postcard*)
- cyanotype
- neg. (*used for plastic film base negatives*)
- copy neg.
- glass plate neg.
- slide
- transparency
- glass slide
- stereocard
- postcard (*photomechanical process – otherwise use print*)
- tintype
- photocopy

Common map formats include:

- atlas
- diagram
- globe (*3D object*)
- map
- model
- profile
- remote-sensing image
- section
- view

Common plan formats include:

- architectural drawing
- diagram
- model
- presentation panel
- sketchbook
- technical drawing

Common poster formats include:

- poster

Common textual record formats include:

- page
- cover
- microfiche
- microfilm

⁹ The lists here derive from Yukon Archives description standards related to accepted specific material designations and formats.

Common object formats include:

- button
- medal
- pin
- calendar
- placemat

Common original art formats include:

- drawing
- painting