



Library and Archives Canada

Operational Standard for Digital Archival Records' Metadata



Operational Standard for Digital Archival Records' Metadata

1. Effective Date

This standard has been approved by the Director General, Government Record Branch, and takes effect on November 16, 2023.

2. Application

This standard applies to all government records in digital format under the control of Government of Canada (GC) institutions (hereinafter referred to as "government institutions") that are considered to have historical or archival value (hereinafter referred to as "digital archival records"). Archival value is determined through a Disposition Authorization, as per sections 12 and 13 of the [Library and Archives of Canada Act](#) (LAC Act).

This standard forms part of the policy suite governed by LAC's [Evaluation and Acquisition Policy Framework](#) and associated [Policy on Making Holdings Discoverable](#). This standard also supports the Treasury Board Secretariat (TBS) [Policy on Service and Digital](#), [Directive on Service and Digital](#), [Directive on Open Government](#), and [Standard for Managing Metadata](#). It aligns with relevant legislation, regulations, and established standards for metadata, recordkeeping, and archival description (outlined in [Appendix B](#)).

This standard outlines the baseline of metadata (specified in [Appendix C](#)) that is mandatory to create and maintain with digital archival records under the control of government institutions.

Technical requirements concerning metadata format and structure at the time of transfer are out of scope of this standard.

3. Definitions

See [Appendix A](#).

4. Context

Metadata supports the creation, management, use, and preservation of records by detailing information on the structure and meaning of records, and the context and systems within which they exist.

Metadata is necessary to establish the authoritativeness, authenticity, integrity, and reliability of records, as well as to enable the usability of those records over time.

As metadata offers essential descriptive, technical, and administrative information necessary to appropriately acquire, preserve, and provide access to digital archival

records over the long term, this standard supports LAC in meeting its legislated mandate.

The *LAC Act* requires that government records identified as having historical or archival value are transferred to LAC under the terms set by the Librarian and Archivist of Canada, contained in instruments known as disposition authorizations. Within LAC's [government records disposition program](#), government institutions are required 1) to protect archival records until their transfer to LAC, and 2) transfer archival records to LAC at the expiry of their retention periods, in accordance with all applicable LAC policy instruments. The obligation to protect digital archival records to ensure their integrity and compatibility with transfer specifications is further expressed in the *LAC Operational Standard for the Protection of Digital Archival Records*.

This operational standard is complementary to, and should be applied in conjunction with, existing guidance for transfer: [Procedures for the Transfer of Unpublished Information Resources of Enduring Value from Government of Canada Institutions to Library and Archives Canada](#) and [Guidelines on File Formats for Transferring Information Resources of Enduring Value](#).

5. Purpose

This operational standard specifies the mandatory metadata that all digital archival records must have for their protection throughout their lifecycle including when they are transferred to LAC. Maintaining this mandatory metadata throughout the digital archival records' lifecycle is one mechanism that helps protect the records. It also aligns with general information management best practices, which dictate that metadata accumulated throughout the records' lifecycle should be maintained with the records to support their authenticity, reliability, and usability. Mandatory metadata must accompany digital archival records when they are transferred to LAC. This metadata is essential for LAC to fulfill its legislated responsibilities to preserve and provide access to the digital archival records it acquires for its collections.

6. Requirements

The mandatory metadata concepts required for digital archival records throughout their lifecycle including at transfer are:

- classification code
- creator
- date/time
- disposition authorization
- extent
- format
- integrity
- language
- record identifier
- rights management information
- technical environment information

- title

Details for these requirements are provided in [Appendix C](#). [Appendix D](#) offers an illustration of the different levels at which the mandatory metadata may apply to digital archival records. [Appendix E](#) summarizes metadata concept obligations.

7.0 Roles and Responsibilities

7.1 LAC's Activities

The Director General, Government Record Branch ensures that LAC:

7.1.1 Establishes and maintains this standard.

7.1.2 Provides advice and services, as required, on the interpretation, application, and use of this standard.

7.1.3 Develops guidelines and tools, as needed, to support the application of this standard.

7.1.4 Monitors the presence of minimum metadata corresponding to each of the concepts outlined in [Appendix C](#) for all transfers of digital archival records to LAC.

7.2 Government Institutions' Activities

The government institution's Chief Information Officer or equivalent:

7.2.1 Ensures that, at minimum, metadata that correspond to each of the concepts outlined in [Appendix C](#) are present for digital archival records throughout their lifecycle including when transferring them to LAC.

7.2.2 Ensures that metadata values are accurate and are drawn from authoritative sources such as metadata stored as part of the computer file itself (i.e., embedded metadata), metadata stored externally from the computer file(s) with which they are associated (i.e., associated metadata), or a combination of the two.

7.2.3 Provides, when requested, information about how each metadata element supplied at transfer corresponds to metadata concepts in [Appendix C](#).

7.2.4 Notifies and/or consults with LAC on any matters that may impede their ability to adhere to this standard.

8. Monitoring, Evaluation and Review

LAC will monitor compliance with this standard on a regular basis and will evaluate and review this standard every five years.

9. Consequences

Consequences of non-compliance with this instrument may range from informal follow-ups by LAC, to formal direction on corrective measures to be put in place, to review, suspension or revocation of Disposition Authorizations as allowed by the *LAC Act* and determined appropriate by the Librarian and Archivist of Canada or their delegate.

10. Information

Please address any questions about this standard to:

Liaison Centre
Library and Archives Canada
550 de la Cité Boulevard
Gatineau, Quebec
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centre.liaison.centre@bac-lac.gc.ca

Appendix A: Definitions

Administrative metadata [*métadonnées administratives*]

Information that facilitates both short-term and long-term management and processing of records, and includes the following:

- technical data on creation and quality control;
- rights management, access control and use requirements; and
- preservation action information, such as information on copying or treatment.¹

Aggregation [*regroupement*]

A grouping of records (i.e., files, series) accumulated and organized to reflect the creator's activities.² In the context of this standard, aggregation may also refer to the grouping of records transferred together at one time (i.e., a transfer).

Authenticity [*authenticité*]

The quality of being genuine, not a counterfeit, and free from tampering over the continuum of records creation, maintenance and preservation. It refers to a record's reliability over time and is typically inferred from internal and external evidence.³

Compound record [*document composite*]

A digital record comprising more than one component; components are constituent parts comprising a digital record (e.g., multimedia components of a web page; a digital document; a data element, such as an entry in a database).⁴

Checksum [*somme de contrôle*]

A checksum on a computer file is a "digital fingerprint;" any change to the computer file will change the checksum. Checksums are typically created by tools using cryptographic techniques. A checksum can be used to detect if a computer

¹ Adapted from: Library and Archives Canada, *Policy on Holdings Management*, date modified August 10, 2022, <https://library-archives.canada.ca/eng/corporate/about-us/policies/Pages/policy-holdings-management.aspx>.

² Society of American Archivists, s.v. "aggregated record," in *Dictionary of Archives Terminology*, retrieved September 9, 2021, <https://dictionary.archivists.org/entry/aggregated-record.html>. See also: s.7.5.3, "Aggregations of digital records" in *ISO 16175-1:2020 Information and documentation – Processes and functional requirements for software for managing records – Part 1: Functional requirements and associated guidance for any applications that manage digital records*.

³ Library and Archives Canada, *Preservation Policy Framework*, accessed September 7, 2022, <https://library-archives.canada.ca/eng/corporate/about-us/policies/Pages/preservation-policy-framework.aspx>.

⁴ Adapted from: *ISO 16175-1:2020 Information and documentation – Processes and functional requirements for software for managing records – Part 1: Functional requirements and associated guidance for any applications that manage digital records*.

file's contents have changed but cannot identify where in the computer file a change occurred.⁵

Cryptographic hash function [fonction de hachage cryptographique]

An equation used to verify the validity of data, translating data of different lengths (the message) into a fixed size numerical string (hash).⁶

Descriptive metadata [métadonnées descriptives]

Information that establishes the conceptual content, access rights and physical attributes of records to support their discovery.⁷

File

(1) An organized unit of records (i.e., an aggregation) brought together because they relate to the same subject, activity or transaction.⁸ **[dossier]**

(2) A conceptual level of arrangement of records that refers to a particular classification within a file plan.⁹ **[dossier]**

(3) [in computing, also **computer file**] A collection of information for use on a computer that is treated as a unit for storage.¹⁰ **[fichier informatique]**

File name [nom de fichier]

[in computing] A series of characters used to identify a computer file in a system.¹¹

⁵ Adapted from: Digital Preservation Coalition, "Fixity and Checksums," in *Digital Preservation Handbook*, 2nd rev. ed., 2015, <https://www.dpconline.org/handbook/technical-solutions-and-tools/fixity-and-checksums>.

⁶ Adapted from "Cryptographic Hash Function (CHF)," in Security Encyclopedia, 2023, [https://www.hypr.com/security-encyclopedia/cryptographic-hash-function#:~:text=A%20cryptographic%20hash%20function%20\(CHF\)%20is%20an%20equation%20used%20to,size%20numerical%20string%20%E2%80%94%20the%20hash](https://www.hypr.com/security-encyclopedia/cryptographic-hash-function#:~:text=A%20cryptographic%20hash%20function%20(CHF)%20is%20an%20equation%20used%20to,size%20numerical%20string%20%E2%80%94%20the%20hash).

⁷ Adapted from: Library and Archives Canada, *Policy on Making Holdings Discoverable*, date modified August 9, 2022, <https://library-archives.canada.ca/eng/corporate/about-us/policies/policy-making-holdings-discoverable/pages/policy-making-holdings-discoverable.aspx>.

⁸ Library and Archives Canada, *Procedures for the Transfer of Unpublished Information Resources of Enduring Value from Government of Canada Institutions to Library and Archives Canada*, last modified May 31, 2023, <https://library-archives.canada.ca/eng/services/government-canada/information-disposition/managing-government-records/guidelines-information-management/Pages/procedures-transfer-unpublished.aspx>.

⁹ Oliver W. Holmes, "Archives and Records Management Resources," last reviewed August 15, 2016, <https://www.archives.gov/research/alic/reference/archives-resources/archival-arrangement.html>.

¹⁰ Adapted from: Society of American Archivists, s.v. "data file," in *Dictionary of Archives Terminology*, retrieved September 9, 2021, <https://dictionary.archivists.org/entry/data-file.html>.

¹¹ Society of American Archivists, s.v. "file name," in *Dictionary of Archives Terminology*, retrieved September 9, 2021, <https://dictionary.archivists.org/entry/file-name.html>.

Filepath [*chemin d'accès au fichier*]

[in computing] A list of one or more directory names and an object name (such as the name of a computer file) that are separated by an operating system-specific character, such as the backslash (\) in Windows operating systems. The directory names detail the path to follow, in left-to-right order, to locate the object within the file system.¹²

File plan [*plan de classement*]

A classification scheme describing different types of files (i.e., groupings of records), how they are identified, where they should be stored, and how they should be indexed for retrieval.¹³

Fixity [*fixité*]

Property of a computer file that indicates it has remained unaltered at the bit level between two points in time.¹⁴

Item [*pièce*]

Smallest conceptually indivisible archival unit that is complete in itself and can be distinguished from a group.¹⁵

Message digest algorithm [*algorithme d'empreinte numérique*]

The specific algorithm (i.e., procedure that maps input data of arbitrary length to an output of fixed length) used to construct the results of a cryptographic hash function for a computer file.¹⁶

Metadata [*métadonnées*]

Information used to contextualize, manage, preserve and provide access to records.¹⁷

¹² Adapted from: IBM Archives, s.v. "path," in *Dictionary of IBM & Computing Terminology*, accessed September 9, 2021, <https://web.archive.org/web/20231109002610/https://www.ibm.com/ibm/history/documents/pdf/glossary.pdf>.

¹³ Society of American Archivists, s.v. "file plan," in *Dictionary of Archives Terminology*, retrieved September 9, 2021, <https://dictionary.archivists.org/entry/file-plan.html>.

¹⁴ Adapted from: PREMIS Editorial Committee, *PREMIS Data Dictionary for Preservation Metadata, v.3.0*, November 2015, <https://www.loc.gov/standards/premis/v3/premis-3-0-final.pdf>.

¹⁵ Adapted from: Society of American Archivists, s.v. "item," in *Dictionary of Archives Terminology*, retrieved September 9, 2021, <https://dictionary.archivists.org/entry/item.html>.

¹⁶ Adapted from: *PREMIS Data Dictionary for Preservation Metadata, v3.0* (June 2015). <https://www.loc.gov/standards/premis/v3/premis-3-0-final.pdf>, and Mansi Sheth, "Message Digests, aka Hashing functions," *Veracode*, 13 June 2017, <https://www.veracode.com/blog/research/message-digests-aka-hashing-functions>.

¹⁷ Adapted from: Library and Archives Canada, *Procedures for the Transfer of Unpublished Information Resources of Enduring Value from Government of Canada Institutions to Library and Archives Canada*, last modified August 27, 2022, <https://library->

Metadata element [élément de métadonnées]

Formally defined terms that are used to describe properties of a record or grouping of records.¹⁸

Metadata schema [schéma de métadonnées]

Logical plan showing the relationships between metadata elements, normally through establishing rules for the use and management of metadata specifically as regards the semantics, the syntax and the optionality (obligation level) of values.¹⁹

Protection [protection]

(1) taking actions to prevent serious damage or loss.²⁰

(2) in the context of digital records, protection can be interpreted as undertaking digital preservation, which comprises a combination of policies, strategies and actions ensuring the ongoing accessibility of authenticatable digital content over time regardless of technological changes.²¹

Record [document]

Any documentary material other than a publication, regardless of medium or form.²²

Series [série]

A grouping (i.e., an aggregation) of similar records that are arranged according to a filing system and that are related as the result of being created, received, or used in the same activity.²³

archives.canada.ca/eng/services/government-canada/information-disposition/managing-government-records/guidelines-information-management/Pages/procedures-transfer-unpublished.aspx.

¹⁸ Adapted from: Mary S. Woodley, s.v. "element," in *DCMI Glossary*, date modified April 23, 2004, <https://www.dublincore.org/specifications/dublin-core/usageguide/glossary/>.

¹⁹ *ISO 23081-1:2017 Information and Documentation -- Records Management Processes -- Metadata for Records -- Part 1: Principles*.

²⁰ Adapted from: Library and Archives Canada, *Operational Standard for the Use of Disposition Authorizations*, last modified September 16, 2022, <https://library-archives.canada.ca/eng/services/government-canada/information-disposition/disposition-government-records/pages/operational-standard-disposition.aspx>.

²¹ ALCTS Preservation and Reformatting Section, Working Group on Defining Digital Preservation, "Definitions of Digital Preservation", June 24, 2007, <https://www.ala.org/alcts/resources/preserv/defdigpres0408>.

²² *Library and Archives of Canada Act, Statutes of Canada 2004*, c.11, <https://laws-lois.justice.gc.ca/eng/acts/l-7.7/page-1.html>.

²³ Adapted from: Society of American Archivists, s.v. "series," in *Dictionary of Archives Terminology*, retrieved January 11, 2022, <https://dictionary.archivists.org/entry/series.html>.

Transfer [transfert]

(1) A grouping (i.e., an aggregation) of records moved as part of their scheduled disposition in a single transaction from a government institution to LAC or another repository.²⁴

(2) The change in custody and ownership of government records from a government institution to LAC. Transfer occurs via the application of a valid disposition authority or transfer agreement by the transferring institution.²⁵

²⁴ Adapted from: Society of American Archivists, s.v. "transfer," in *Dictionary of Archives Terminology*, retrieved January 12, 2022, <https://dictionary.archivists.org/entry/transfer.html>.

²⁵ Library and Archives Canada, *Procedures for the Transfer of Unpublished Information Resources of Enduring Value from Government of Canada Institutions to Library and Archives Canada*, last modified August 27, 2022, <https://library-archives.canada.ca/eng/services/government-canada/information-disposition/managing-government-records/guidelines-information-management/Pages/procedures-transfer-unpublished.aspx>.

Appendix B: Sources and Related Documents

Legislation

- [Access to Information Act](#)
- [Library and Archives of Canada Act](#)
- [Privacy Act](#)

LAC Policy Instruments

- [Access Policy Framework](#)
- [Evaluation and Acquisition Policy Framework](#)
- [Government Records Disposition Program](#)
- [Guidelines on File Formats for Transferring Information Resources of Enduring Value](#)
- *Operational Standard for the Protection of Digital Archival Records*
- [Policy on Making Holdings Available](#)
- [Policy on Making Holdings Discoverable](#)
- [Preservation Policy Framework](#)
- [Procedures for the Transfer of Unpublished Information Resources of Enduring Value from Government of Canada Institutions to Library and Archives Canada](#)

TBS Policy Instruments

- [Government of Canada Digital Standards](#)
- [Policy on Service and Digital](#)
- [2023-2026 Data Strategy for the Federal Public Service](#)
- [Directive on Service and Digital](#)
- [Directive on Service and Digital, Appendix J: Standard on Systems that Manage Information and Data \(SStMID\)](#)
- [Directive on Service and Digital, Appendix L: Standard for Managing Metadata](#)
- [Directive on Open Government](#)

TBS Tools/Initiatives

- [Information Management Common Core \(IMCC\)](#)²⁶
- [Open Government Portal](#)

National Standards

- [Rules for Archival Description \(RAD\)](#) (Canadian Council of Archives)
- [CAN/CGSB-72.34-2017 Electronic records as documentary evidence](#) (Canadian General Standards Board)

International Standards

- ISO 15489-1:2016 *Information and documentation – Records management – Part 1: Concepts and principles*
- [ISO 16175-1:2020 Information and documentation – Processes and functional requirements for software for managing records – Part 1:](#)

²⁶ A user account is required.

[Functional requirements and associated guidance for any applications that manage digital records](#)²⁷

- ISO 23081-1:2017 *Information and documentation – Records management processes – Metadata for records – Part 1: Principles*
- ISO 23081-2:2021 *Information and documentation – Managing metadata for records – Part 2: Conceptual and implementation issues*
- ISO 15836-1:2017 *Information and documentation – The Dublin Core metadata element set – Part 1: Core elements*
- ISO 15836-2:2019 *Information and documentation – The Dublin Core metadata element set – Part 2: DCMI Properties and classes*

²⁷ Access to the GC network is required.

Appendix C: Mandatory Metadata Concepts

The following tables define the required metadata as concepts, in a system-agnostic manner, that accommodates a range of interpretations by government institutions to support their adherence to this standard.

Corresponding elements from established metadata schemas and sources are included *as examples only and are not exhaustive or prescriptive*.

Configuring metadata upstream for digital archival records ensures that the data endures throughout the lifecycle and is present at the point of transfer. Obligation statements provided for each metadata concept clarify in what way they are mandatory. To accommodate legacy metadata which may not fully meet the requirements of the standard, some metadata concepts are only mandatory for transfer if they are present (i.e., they had optionally been configured within the recordkeeping system and are available at the time of transfer).

If not identified as mandatory, then concepts are optional. For example, Extent is only mandatory for transfers (i.e., a specific kind of records aggregation); it is optional for items and aggregations. Unless identified as a transfer, “aggregation” refers to a series or file of records.

Metadata Concept	Classification Code
Definition	A unique code derived from a file plan that is applied to the record.
Purpose	To provide an understanding of the business context within which the record was created, captured, managed; the hierarchical structure according to which it was organized by the creator for use and retrieval; and its relationship to other records.
Obligation	Mandatory where present for items. Mandatory for aggregations.
Authoritative Source	Associated metadata.
Comments	When provided for compound records or aggregations, all components or subordinates inherit the same value.
Examples of Corresponding Elements	Value Example
IMCC: <i>Classification Code</i>	<i>9540-R5747-1-2007</i>

Metadata Concept	Creator
Definition	An agent, i.e., the individual and/or group (organizational unit or corporate body), primarily responsible for making (i.e., creating, authoring, accumulating and/or maintaining) the record.

Purpose	To document the origin of the record described as a means of establishing its custodial history and the grounds for presuming its authenticity.
Obligation	Mandatory where present for items. Mandatory where present for aggregations. Mandatory for transfers.
Authoritative Source	Depending on the agent role, embedded or associated metadata.
Comments	Content approver and trustee are additional agent roles of potential interest. Creator may either be implemented distinctly from author or considered conceptually equivalent. An author may either be responsible for the conceptual content of the record, or for administrative actions such as typing or filing the record.
Examples of Corresponding Elements	Value Examples
IMCC: <i>Agent Role</i> [+] IMCC: <i>Agent Identifier</i> IMCC: <i>Agent Name</i> IMCC: <i>Agent Corporate Name</i> IMCC: <i>Agent Section Name</i> IMCC: <i>Agent Position Title</i>	<i>Author</i> [+] <i>jdoe75</i> <i>Doe, Jane</i> <i>Library and Archives Canada</i> <i>Archives Branch</i> <i>Deputy Minister</i>
DCMI Metadata Term: <i>creator</i>	<i>Doe, Jane</i> [or] <i>Library and Archives Canada</i>
DCMI Metadata Term: <i>creator</i>	<i>Claims Sector</i>
DCMI Metadata Term: <i>creator</i>	<i>Yukon Regional Office</i>
MS Word: <i>Author</i>	<i>Doe, Jane</i>

Metadata Concept	Date/Time
Definition	A point in time or a period of time associated with an event in the life cycle of the record(s) (for example, an action, such as creation, modification, or view).
Purpose	To capture the date or dates that best reflect the record(s), including date of creation. This information aids in discovery of records by supporting timeframe-based searches. Furthermore, "Date/Time" information for other key events in the lifecycle management of the record, such as chain of custody and authorized change history, help to establish the record's or records' authenticity, reliability and provenance.
Obligation	Mandatory for items. Mandatory where present for aggregations.
Authoritative Source	Embedded or associated metadata, depending on the corresponding event.

Comments	<p>At a minimum, this requirement aims to capture "Date/Time" information for the record's or records' creation and last modification.</p> <p>Depending on the context, other required values may include the date/time on which the record(s) was approved, marked "final" or "official," locked, and/or closed (for example, for a project case file).</p> <p>For an aggregation, a named period or predominant date range (for example, the earliest and the most recent dates of the records comprising the aggregation) may be required to appropriately describe and represent the aggregation.</p> <p>Where copyright metadata is contributed as part of the "Rights Management Information" provided for the transfer, protection terms may correlate to record publication dates that must also be provided to LAC as part of this requirement.</p>	
Examples of Corresponding Elements	Value Examples	
IMCC: <i>Event Date/Time</i>	1979-06-13T21:09:30+1:00	
IMCC: <i>Resource Date</i>	1996-01-16	
DCMI Metadata Term: <i>date</i>	1997-07-16T19:20+01:00	
DCMI Metadata Term: <i>created</i>	1977-12-05 10:45 AM	
DCMI Metadata Term: <i>date Copyrighted</i>	2001-01-20	

Metadata Concept	Disposition Authorization
Definition	In accordance with the provisions of the <i>LAC Act</i> , the instrument that the Librarian and Archivist of Canada issues to enable government institutions to dispose of records at the expiry of their retention periods, either by permitting their destruction, by requiring their transfer to LAC, or by agreeing to their alienation from the control of the GC.
Purpose	To provide confirmation that LAC is to acquire the archival content in question, while offering a cross-reference to critical details about the archival records' context of creation and provenance.
Obligation	Mandatory where present for aggregations. Mandatory for transfers.
Authoritative Source	Associated metadata.
Comments	Unless otherwise specified by the responsible LAC archivist, the minimum required metadata value is the applicable Disposition Authorization number. Additional metadata, particularly the clause in the Disposition Authorization used to enact the transfer, may be requested.

Examples of Corresponding Elements	Value Examples
IMCC: <i>Disposition Authority</i>	<i>Disposition Authorization # 2015/007 issued to Library and Archives Canada</i>

Metadata Concept	Extent
Definition	The size and/or duration of the record(s).
Purpose	To provide measurable information about the volume of archival content acquired by LAC and the amount of storage space needed to manage it. Further facilitates resource discovery by providing measurements critical to rendering records.
Obligation	Mandatory for transfers.
Authoritative Source	Embedded metadata (generally; depends on file format).
Comments	The value provided must include the following information: <ul style="list-style-type: none"> • A numeric component that quantifies the size or duration of the record(s) described according to a standardized unit of measurement; • A component that qualifies the unit of measurement used.
Examples of Corresponding Elements	Value Examples
DCMI Metadata Term: <i>extent</i>	<i>241 MB</i>
MS Word: <i>Size</i>	<i>75.5 MB</i>
IMCC: <i>Extent</i>	<i>241 KB</i>
ISO 8601 Date and Time Format [Duration]	<i>PT12H30M5S</i>

Metadata Concept	Format
Definition	A standard way in which information is encoded for storage in a computer file. It dictates how a computer displays, prints, processes and saves the information.
Purpose	To determine preservation, migration, or other actions required to ensure the preservation and capability to render the record for access over the long term.
Obligation	Mandatory for items.
Authoritative Source	Embedded metadata (generally; depends on file format).
Comments	Software is available that extracts metadata embedded within file formats. Items may comprise more than one format or computer file, such as with a compound record.
Examples of Corresponding Elements	Value Examples
DCMI Metadata Term: <i>format</i>	<i>application/mp4</i>

MIME Type	<i>application/msword</i>
File Format Name	<i>Microsoft Word for Windows</i>
File Format Version	<i>Microsoft Word 4.0 for the Macintosh</i>
IMCC: <i>Format</i>	<i>application/msword</i>

Metadata Concept	Integrity
Definition	The quality of being whole and unaltered through loss, tampering, or corruption.
Purpose	To enable LAC to check and confirm the fixity of transferred records' content and formats over time as a means of ensuring they remain complete and unaltered, including at the bit level.
Obligation	Mandatory for items at transfer.
Authoritative Source	Associated metadata.
Comments	<p>The corresponding value should be a checksum or cryptographic hash, ideally supplemented by metadata detailing the message digest algorithm or hash function name, and indicating by whom the checksum was performed.</p> <p>Ideally integrity metadata is generated and maintained with each item throughout its lifecycle, including upon transfer to LAC. If this is not done, integrity metadata must be generated for each item and provided at transfer to LAC.</p>
Examples of Corresponding Elements	Value Examples
<i>Message Digest</i> [+] <i>Message Digest Algorithm</i> [or] <i>Hash Function Name</i> <i>Checksum Performed By</i>	<i>79054025255fb1a26e4bc422aef54eb4</i> [+] <i>md5</i> <i>MD5</i> <i>Smith, John</i>
IMCC: <i>Integrity</i>	<i>79054025255fb1a26e4bc422aef54eb4</i> [item-level md5 checksum value]

Metadata Concept	Language
Definition	A language of the conceptual content of the record.
Purpose	To enable discovery, access and use.
Obligation	Mandatory where present for items.
Authoritative Source	Associated metadata (generally).
Comments	May be repeated to accommodate more than one value where item-level content is bilingual or multilingual.
Examples of Corresponding Elements	Value Examples
IMCC: <i>Language</i>	<i>fra</i> <i>eng</i>

DCMI Metadata Term: <i>language</i>	<i>cre</i>
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Metadata Concept	Record Identifier
Definition	A unique value or code that is applied to a record or aggregation of records in a given system or context.
Purpose	To provide an unambiguous reference to the record(s) described.
Obligation	Mandatory for items. Mandatory where present for aggregations.
Authoritative Source	Associated metadata (generally; may be embedded).
Comments	<p>Corresponding values are often system-generated from a software solution for managing records and consist of numeric or alpha-numeric strings conforming to a formal identification system. Depending on the context, a file path may be targeted as an identifier.</p> <p>An aggregation of records may be assigned its own identifier that is distinct from identifiers assigned to the individual items comprising it. Information regarding the identifier scheme or the type of system or context within which the identifier is unique (i.e., the identifier type) may also be required for it to be usable as a distinguishing value. This additional metadata should be provided where necessary and not otherwise captured among other technical environment information.</p>
Examples of Corresponding Elements	Value Examples
IMCC: <i>Resource Identifier</i>	<i>TBSSCT #1068509:GC RKMIG</i>
DCMI Metadata Term: <i>identifier</i>	<i>TBS GCDOCS #3114357</i>
MS SharePoint: <i>Document ID</i>	<i>7J2ZS4E245AH-1849552607-19565</i>
MS SharePoint: <i>Project ID</i>	<i>9928</i>
GCdocs: <i>Nickname</i>	<i>100338</i>
[Shared drive filepath]	<i>C:\home\files\committee\agendas</i>
Statistics Canada Dissemination Geography Unique Identifier	<i>2011A00033520</i>
Statistics Canada Boundary Files, Naming Convention	<i>lcd_000a16a_e</i>
Public Services and Procurement Canada National Computer Aided Design and Drafting Standard	<i>A-WL-EXT-E</i>

Metadata Concept	Rights Management Information
Definition	Permissions, limitations or restrictions to accessing or using the record, including if and when a record may be partially

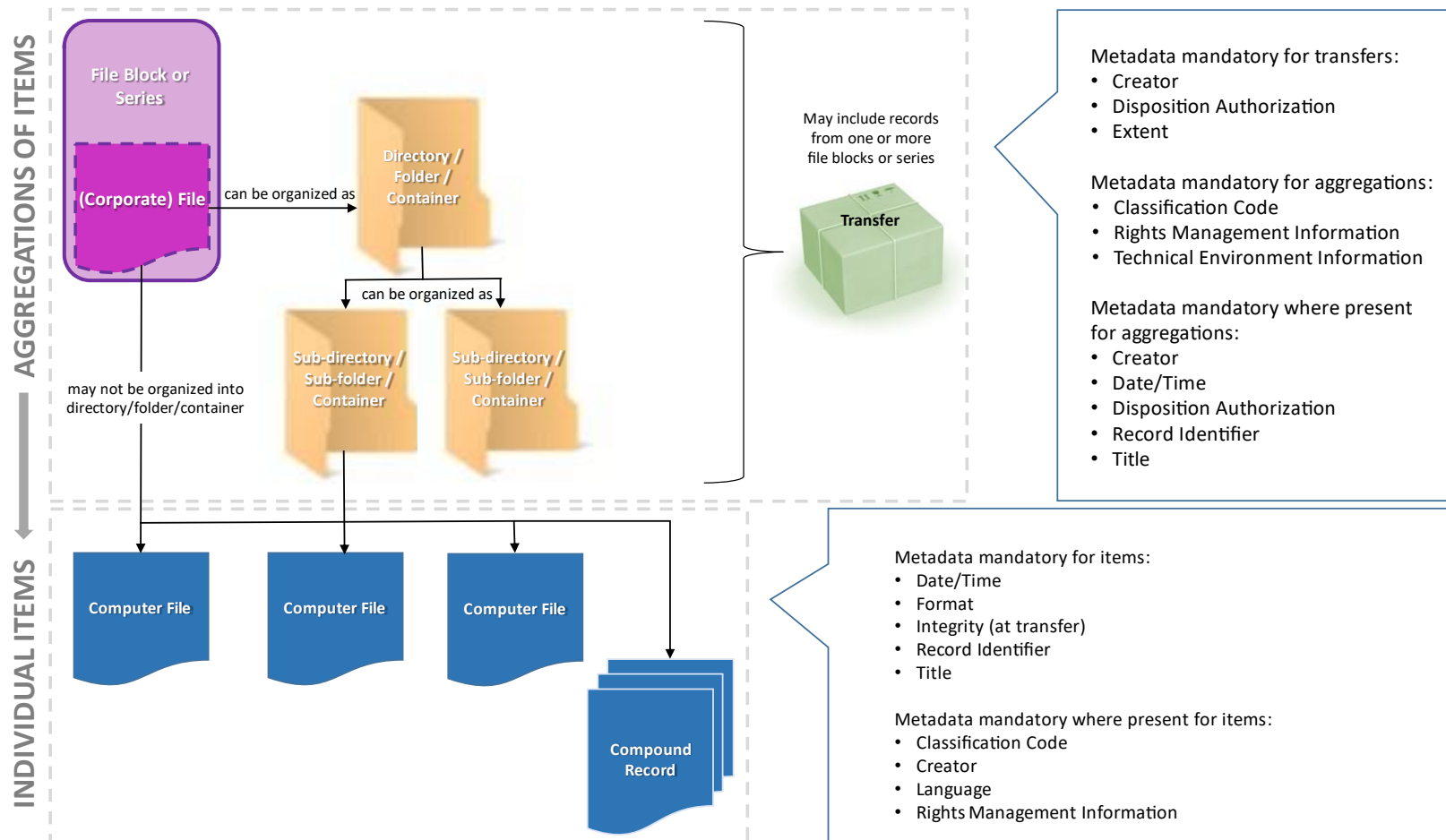
	or fully released (for example, declassified or opened) for public access or use, or formally published.
Purpose	To indicate if, where and which restrictions on access, use or reproduction of a record continue to apply to at the time of its transfer to LAC.
Obligation	Mandatory where present for items. Mandatory for aggregations.
Authoritative Source	Associated metadata (generally).
Comments	More than one value may apply to the record described, including, but not limited to the following metadata: <ul style="list-style-type: none"> • Restrictions resulting from the <i>Access to Information Act</i> or the <i>Privacy Act</i>; • Security classification or designation; • Special handling requirements for sensitivities that do not necessarily pertain to national security or privacy (for example, Cabinet Confidences; solicitor-client privilege); • Copyright and/or license agreements or other legal documents that grant rights; • Other usage conditions; • Prior release on the Open Government Portal.
Examples of Corresponding Elements	Value Examples
IMCC: <i>Releasable To</i>	<i>CA/US Eyes Only</i>
IMCC: <i>Sensitivity</i>	<i>Protected B Unclassified Secret Top Secret</i>
IMCC: <i>Supplemental Markings</i>	<i>Solicitor-Client privilege Cabinet Confidence</i>
IMCC: <i>Usage Conditions</i>	<i>Copyright held by Acme Consulting Inc. Access restricted because of licensing fees</i>
DCMI Metadata Term: <i>license</i>	<i>Attribution 4.0 International (CC BY 4.0)</i>
DCMI Metadata Term: <i>rights [+] Rights Holder</i>	<i>©Her Majesty The Queen in Right of Canada as represented by the Minister of Agriculture and Agri-Food, 2020</i>

Metadata Concept	Technical Environment Information
Definition	Details about hardware, media, or system components that are pertinent to rendering the record accurately.
Purpose	To provide information about hardware or software dependencies (for example, minimum system requirements to run software), originating devices, or other technical characteristics that can enable LAC to render and provide access to the record(s) described.
Obligation	Mandatory for aggregations.

Authoritative Source	Associated metadata (generally).
Comments	This metadata should complement, but not repeat, file format information.
Examples of Corresponding Elements	Value Example
Operating System Developer Name	<i>Developer Name: Microsoft</i>
Operating System Name	<i>Name: Windows OS</i>
Operating System Version	<i>Version: Windows 10 Enterprise</i>
IMCC: <i>Medium</i> [if applicable]	<i>CD-ROM</i> <i>DVD</i> <i>USB key</i>

Metadata Concept	Title
Definition	A name given to the record or aggregation of records.
Purpose	To indicate the name by which the record or aggregation of records is formally known or an account of the content of the record(s) where no formal name is supplied. This metadata also provides searchable text and offers additional context.
Obligation	Mandatory for items. Mandatory where present for aggregations.
Authoritative Source	Associated metadata (generally), in the form of a title proper, which may be embedded at the item level depending on the file format, if the computer file name reflects the proper title. Titles of file-level aggregations of records may be derived from the file plan, in cases where classification codes have corresponding titles.
Comments	At the item level, the assigned computer file name may reflect the proper title formally assigned to the record, but this is not always the case.
Examples of Corresponding Elements	Value Examples
IMCC: <i>Title</i> [item-level]	<i>Operational Standard for Digital Archival Government Records' Metadata</i>
IMCC: <i>Title</i> [file-level]	<i>Financial Management – Budgets – 2002/03</i>
DCMI Metadata Term: <i>title</i>	<i>Government of Canada Recordkeeping Document Type Scheme (GCRKTYPE), 1st Edition</i>

Appendix D: Levels at which Mandatory Metadata May Apply to Transfers of Digital Archival Records



Appendix E: Summary of Metadata Concept Obligations

	1	2	3	4	5	6
	Metadata Concept	Mandatory for items	Mandatory where present for items	Mandatory for aggregations	Mandatory where present for aggregations	Mandatory for transfers
1	Classification Code	--	✓	✓	--	--
2	Creator	--	✓	--	✓	✓
3	Date/Time	✓	--	--	✓	--
4	Disposition Authorization	--	--	--	✓	✓
5	Extent	--	--	--	--	✓
6	Format	✓	--	--	--	--
7	Integrity	✓*	--	--	--	--
8	Language	--	✓	--	--	--
9	Record Identifier	✓	--	--	✓	--
10	Rights Management	--	✓	✓	--	--
11	Technical Environment Information	--	--	✓	--	--
12	Title	✓	--	--	✓	--

*at transfer.