Digital Records Preservation

Procedure No.:	6701-PR2
Policy Reference:	6700 Records Management
Category:	Information Management
Department Responsible:	Records Management and Privacy
Current Approved Date:	2009 Nov.20

Overview

This procedure provides a framework for the preservation of digital records identified for long-term and permanent retention in BCIT's Directory of Records. It outlines the procedure on how these digital records are will be made available for current and future use through the implementation of preservation methods throughout their lifecycle that minimize the effects of information technology obsolescence. In this way it supports BCIT's Records Management Policy (6701) and Archives and Special Collections Policy (6702), both of which govern the creation, management, and appraisal of records in all media.

This procedure facilitates the effective management of digital resources so that dependable Institutional resources can be directed toward the institutional goals of teaching and service delivery. The effective management of digital information resources will assist BCIT in providing technical and professional education and training that supports our graduates as practitioners and as citizens, and advances the state of practice.

This procedure aims to enable BCIT to effectively carry out its educational and training, research, and administrative purposes, pursuant to the mandate of the Institute by keeping records usable and available to support institutional operations and decision-making.

Goals

The goals of this procedure are to act as an authoritative guide on the long-term preservation of digital records at BCIT, and to provide a comprehensive overview of the long-term digital preservation function.

Further goals are as follows:
- To support the identification of the significant characteristics of digital records that need to be protected to maintain their accuracy, reliability, and authenticity
- To inform BCIT digital records creators and custodians of their roles and responsibilities in the creation, maintenance, and disposition of digital records identified for long-term and permanent preservation
- To support the ongoing accessibility and continuing preservation of digital records that will be considered trustworthy for legal, administrative, and historical purposes over the long term

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Who Does This Procedure Apply To?

This procedure applies to all BCIT employees (including faculty, staff, and administrators) and all schools and departments that generate digital records.

Related Documents and Legislation

BCIT Policies:

- 6700, Freedom of Information and Protection of Privacy
- 6701, Records Management
- 6702, Archives and Special Collections

Legislation

- *BC Evidence Act*
- *BC Freedom of Information and Protection of Privacy Act*
- *Canada Copyright Act*
- *Canadian Patent Act*
- *Canadian Trade-Marks Act*

Guidelines and Standards:

- *Canadian Digital Information Strategy (October 2008)*
- *Electronic Records as Documentary Evidence (CAN/CGSB-72.34-2005)*
- *Canadian General Standards Board Microfilm Standard*

Definitions [i]

accessibility: the availability, intelligibility, and usability of information.

accuracy: the degree to which data, information, documents, or records are precise, correct, truthful, free of error or distortion, or pertinent to the matter.

active records: records that are in current use, meaning that they are referred to at least once a month per records series. They are stored in office areas and on information technology servers that are immediately accessible.

appraisal: the process of assessing the value of records to determine the length of time and conditions of their preservation.

appraise records for permanent preservation:
- to make decisions about the preservation of records for an indefinite length of time on the basis of all of the following:
    - Information about the records and their context
    - Their use, authenticity and value
    - The feasibility of their preservation
- and to monitor the records in relation to those decisions to identify any necessary changes to appraisal decisions over time.

authenticity: the trustworthiness of a record as a record; i.e., the quality of a record that is what it purports to be and that is free from tampering or corruption. A record is considered authentic when its identity and integrity can be ascertained.

authenticity requirement: a condition, the satisfaction of which allows for a presumption that it is trustworthy.

case file: in both electronic and paper-based records systems, the group of records that relate to a specific action, event, person, or project. Case files are created within the Directory of Records in order to record the development of a business matter or of a person's relationship with BCIT, and constitutes the basis of the records retention schedule.

case file management: a coherent set of objectives and procedures that enable an Institutional department to effectively manage its case files throughout their lifecycle (from creation to disposal).

[departmental] digital records custodian: the employee within a BCIT department who is responsible for managing the department's digital records.

Directory of Records: BCIT's records classification and retention schedule. It provides a filing structure for records that exist at the Institute, descriptive scope notes, classification numbers, and designation of the BCIT office accountable for maintaining each record. The Directory also shows the legislation and procedures that apply. Department managers and/or directors have approved the retention time schedules published in the Directory.

information life cycle management: a coherent set of objectives and procedures for the effective management of information during its entire lifecycle, from original receipt or creation to active and semi-active use, inactive maintenance and final disposition.

long-term digital records maintenance ["long-term maintenance"]: a coherent set of objectives and methods for managing, protecting, and maintaining accessibility of authentic copies of digital records throughout their life cycle, until such time when they are either transferred to the archives for permanent preservation or destroyed.

long-term value: for purposes of digital records preservation, long-term means a minimum retention time of eight years for business purposes with a final disposition of destruction. These records are not transferred to the Archives.

metadata: information that characterizes another information resource by listing its attributes, especially for purposes of identifying, retrieving, managing, and preserving that resource.

permanent value: the quality of records that have been identified for permanent preservation in the Archives. It pertains to records having legal or administrative usefulness for an indefinite

period of time and to records of enduring historical significance, made or received by the Institute and its employees in the course of their activities and functions. These records may include correspondence, reports, policy and procedure manuals, strategic planning statements, surveys, architectural drawings, minutes of Board of Governors meetings or of committees and departments, financial statements, and case files on any medium.

records: recorded information, or documents, produced in the conduct of business in any media format, analogue or digital, including audio-visual, graphic, and print, for the delivery of BCIT programs and services, to carry out operations, to make decisions, and to account for activities. Records are used for action or reference and may serve as evidence of those actions, transactions, operations, or events or simply as information. Any record made or received in the course of an employee's or contractor's duties at BCIT is the property of BCIT with the exception of teaching and research materials as covered in BCIT Policy 6700, Freedom of Information and Protection of Privacy.

records disposition: disposition is the determination of what will happen to records at the end of their life cycle, after active and semi-active uses have expired. As a consequence of such determination records are either destroyed or transferred to BCIT's historical Archives.

record's fife cycle: the entire period of a record's existence, from original receipt or creation to active and semi-active use, inactive maintenance and final disposition.

reliability: the trustworthiness of a record as a statement of fact. It exists when a record can stand for the fact it is about, and is established by examining the completeness of the record's form and the amount of control exercised on the process of its creation.

Scope of Digital Records Preservation Program

The BCIT procedure for digital records preservation provides the institutional framework necessary to carry out the process that will ensure such preservation. Based on the infrastructure outlined in the InterPARES 2 Policy Framework,[ii] policy and procedures together constitute a Digital Records Preservation Program that encompasses the disposition of all BCIT digital records appraised for long-term maintenance and of those appraised for permanent preservation in the Archives.

Digital Records Preservation Models

The goals and objectives of the BCIT digital records preservation procedure will be achieved by developing processes and guidelines that adhere to widely applicable models for the long-term maintenance and permanent preservation of accurate, reliable, and authentic records.

BCIT will utilize the concepts of the InterPARES 2 Chain of Preservation model,[iii] a system of controls that extends over the entire lifecycle of records to ensure their identity and integrity over time. The InterPARES 2 Creator and Preserver guidelines,[iv] as well as other InterPARES documents, such as "Selecting Digital File Formats for Long-Term Preservation" [v] will be used in the design of procedures for the long-term maintenance and permanent preservation of digital records, including the transfer and reproduction of digital records.

BCIT will also utilize any standard that will complement the InterPARES models and guidelines in supporting its records preservation program, such as the forthcoming ISO 13008, Digital Records Conversion and Migration Process.

Duties and responsibilities

Associate Director, Records Management and Privacy

The Associate Director, Records Management and Privacy, is responsible for management oversight and auditing of preservation of digital records. The Associate Director:

1. Raises awareness and advises the business units and ITS about departmental data system requirements and all relevant roles and standards required for creation, maintenance, and preservation of reliable, authentic digital records
2. Consults with the business unit and ITS on selecting hardware, software, and file formats that offer the best likelihood of interoperability and continuing accessibility over time
3. Identifies, with input from the BCIT Archivist, digital records for long-term and permanent value at the point of creation in accordance with BCIT retention schedules – Directory of Records, governed by BCIT's Records Management Policy (6701) appraisal guidelines[vi]

The implementation of this policy, based on the development and implementation of the procedures recommended in the InterPARES 2 Creator and Preserver Guidelines (see above), will be under the oversight of the Associate Director, Records Management and Privacy.

BCIT Archivist

The BCIT Archivist acts as an advisor to the Associate Director, Records Management and Privacy, Departmental Digital Records Custodians, and Information Technology Services (ITS) on issues surrounding digital preservation. In her/his role, the archivist also acts as the overall **BCIT digital records coordinator** and, in consultation with digital records creators and ITS, is responsible for the following activities:

1. Audits, trains, and advises on the preservation of long-term and permanent records
2. Advises the Associate Director, Records Management and Privacy, the business unit and ITS on selecting hardware, software, and file formats that offer the best likelihood of interoperability and continuing accessibility over time
3. Advises department digital records custodians to ensure existing digital records' accuracy and authenticity according to the InterPARES 1 Project's "Benchmark Requirements Supporting the Presumption of Authenticity of Electronic Records,"[vii] the legitimacy and transparency of their chain of custody, knowledge of BCIT's records creators' record making and recordkeeping practices, and, where necessary, conducts direct verification of the implementation of the authenticity requirements
4. Advises departmental digital records custodians to ensure that digital materials are maintained stable and fixed in both their content and form
5. Advises departmental digital records custodians on issues of long-term maintenance and issues affecting permanent preservation if multiple owners occur[viii]
6. Identifies the digital components of the records to be preserved and ensures that the records will remain linked to the metadata necessary to verify their identity and integrity over time
7. Establishes, advises on, and oversees the implementation of maintenance strategies (i.e., storage media, system security, etc.)[ix]
8. Advises on the documentation that needs to be produced on how the reproduction process control measures are established and implemented, how they are monitored, and the technical requirements for access

The BCIT Archivist is the designated custodian for all records identified by BCIT as destined to permanent preservation. The BCIT Archivist, in her/his role as designated digital record custodian for records identified for permanent preservation, is responsible for the following activities:

Duties and responsibilities

1. Takes responsibility for the permanent preservation of these records
2. Employs registration procedures for records transfer to the Archives when necessary[x]
3. Supervises transfer and acquisition procedures
4. Assesses the authenticity of digital records transferred to the Archives for permanent preservation[xi]
5. Generates archival descriptions for all digital records transferred to and acquired by the Archives
6. Establishes and implements strategies for permanent digital preservation (i.e., management of the information about the records, migration, emulation, technology preservation, etc.)[xii]
7. Makes the digital records accessible to researchers according to the procedure described in the InterPARES Chain of Preservation model

BCIT Departmental Digital Records Custodians
The BCIT departmental digital record custodians, in consultation with the Archivist and the Associate Director, Records Management and Privacy, digital records creators and Information Technology Services, are responsible for the following activities within their department:

1. Recognizes digital records destined to long-term maintenance early in their lifecycle, preferably at the time of creation
2. Ensures that digital materials are maintained stable and fixed in both their content and form
3. Identifies all owners of the records and addresses issues of long-term maintenance if multiple owners occur[xiii]
4. Selects hardware, software, and file formats, in consultation with the Archivist, the Associate Director, Records Management and Privacy, and ITS, that offer the best likelihood of interoperability and continuing accessibility over time
5. Recognizes the digital components of the records to be maintained and ensures that the records will remain linked to the metadata necessary to verify their identity and integrity over time
6. Implements maintenance strategies (i.e., storage media, system security, etc.)[xiv]
7. Documents how the reproduction process control measures are implemented, how they are monitored, and the technical requirements for access

BCIT Records Creators
BCIT records creators have a duty to create and maintain reliable, authentic electronic records according to the procedures related to this policy.

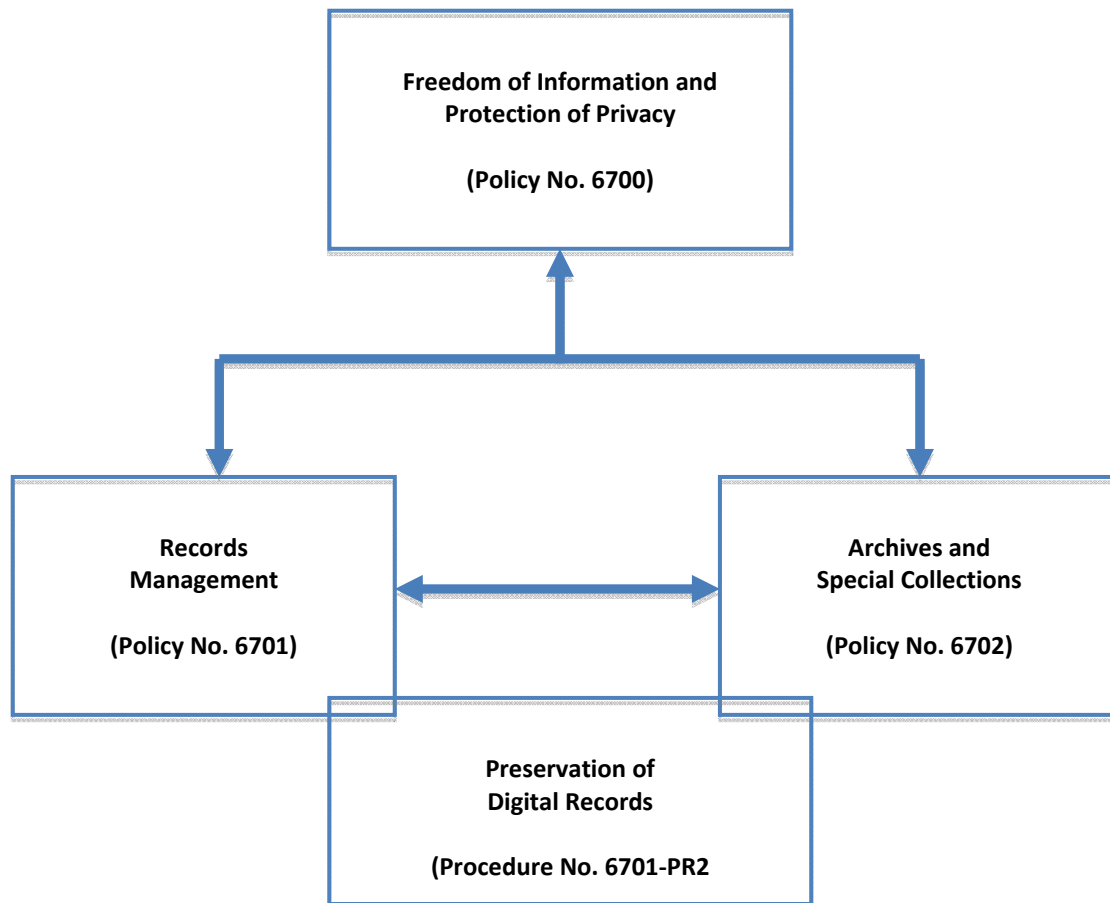**BCIT Information Technology Services Department**
The BCIT Information Technology Services Department (IT Services), in consultation with the Associate Director, Records Management and Privacy, and the BCIT Archivist, is responsible for the following activities:

1. Conducts business analysis to accurately document the technical requirements for digital records preservation
2. Provides the technological preservation infrastructure to support the effective implementation and delivery of the Digital Preservation Policy
3. Installs and supports the technical infrastructure necessary to effectively carry out and maintain the Digital Preservation Policy

Amendment History

1. Created   2009 Nov 20

Appendix: BCIT Institutional Policy Alignment

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            │  Freedom of Information and  │
            │    Protection of Privacy     │
            │                              │
            │      (Policy No. 6700)       │
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Records Management (Policy No. 6701)	⟷	Archives and Special Collections (Policy No. 6702)

Preservation of Digital Records

(Procedure No. 6701-PR2

Footnotes

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[i] Definitions are drawn from BCIT policies, the InterPARES 2 Terminology Database Glossary (available at http://www.interpares.org/ip2/display_file.cfm?doc=ip2_book_glossary.pdf), and the InterPARES 3 Terminology Database Working Glossary (available on the restricted InterPARES 3 Web site at http://www.interpares.org/rws/rws_terminology.cfm?status=twglossary).

[ii] Available at http://www.interpares.org/ip2/display_file.cfm?doc=ip2_book_appendix_19.pdf.

[iii] Available at http://www.interpares.org/ip2/display_file.cfm?doc=ip2_book_appendix_14.pdf (model diagrams and definitions) and http://www.interpares.org/ip2/display_file.cfm?doc=ip2_book_part_5_modeling_task_force.pdf (model narrative).

[iv] Available at http://www.interpares.org/ip2/display_file.cfm?doc=ip2_book_appendix_20.pdf and http://www.interpares.org/ip2/display_file.cfm?doc=ip2_book_appendix_21.pdf, respectively.

[v] Evelyn Peters McLellan (2006), "InterPARES 2 Project - General Study 11 Final Report: Selecting Digital File Formats for Long-Term Preservation." Available in English at http://www.interpares.org/display_file.cfm?doc=ip2_gs11_final_report_english.pdf and in French at http://www.interpares.org/display_file.cfm?doc=ip2_gs11_final_report_french.pdf .

[vi] According to BCIT's Records Management Procedures, digital records are required to be indexed and saved on hard drives in folders/directories (or equivalent) according to the same classification scheme as would apply to hardcopy records of the same function.

[vii] See Authenticity Task Force (2002), "Appendix 2: Requirements for Assessing and Maintaining the Authenticity of Electronic Records," in *The Long-term Preservation of Authentic Electronic Records: Findings of the InterPARES Project*, Luciana Duranti, ed. (San Miniato, Italy: Archilab, 2005), 204-219, especially 209-212, 214-217. Online reprint available at http://www.interpares.org/book/interpares_book_k_app02.pdf.

[viii] The BCIT Records Management Guidebook states that departments using digital records for ongoing business processes are required to document those business processes that rely on digital records, regularly audit the security of the systems that store these records and document the departmental procedures in place for ensuring the security, audit trail and overall integrity of both the system and the records. Staff members are required to ensure that all policies and procedures in place for managing hardcopy records are applied consistently to digital records and additionally that an appropriate level of metadata is captured and maintained in a "suitable database."

[ix] See "A. Maintenance Strategies," pp. 24-25 in Yvette Hackett, Domain 3 Task Force, "Appendix 21c: Digital Records Maintenance and Preservation Strategies," [electronic version] in *International Research on Permanent Authentic Records in Electronic Systems (InterPARES) 2: Experiential, Interactive and Dynamic Records*, Luciana Duranti and Randy Preston, eds. (Padova, Italy: Associazione Nazionale Archivistica Italiana, 2008), 24-27. Available at http://www.interpares.org/display_file.cfm?doc=ip2_book_appendix_21.pdf.

[x] A document has been drafted that outlines a proposed disposition schedule for certain records that exist only in digital format. Policies and procedures for transfer of these records to a trusted repository, as well as the nature of the repository itself, are yet to be determined.

[xi] As per the InterPARES 1 Project's "Baseline Requirements Supporting the Production of Authentic Copies of Electronic Records." See Authenticity Task Force (2002), "Appendix 2: Requirements for Assessing and Maintaining the Authenticity of Electronic Records," in *The Long-term Preservation of Authentic Electronic Records: Findings of the InterPARES Project*, Luciana Duranti, ed. (San Miniato, Italy: Archilab, 2005), 204-219, especially 213-214, 217-219. Online reprint available at http://www.interpares.org/book/interpares_book_k_app02.pdf.

[xii] See "B. Preservation Strategies," pp. 25-27 in Hackett, op. cit.

[xiii] The BCIT Records Management Guidebook states that departments using digital records for ongoing business processes are required to document those business processes that rely on digital records, regularly audit the security of the systems that store these records and document the departmental procedures in place for ensuring the security, audit trail and overall integrity of both the system and the records. Staff members are required to ensure that all policies and procedures in place for managing hardcopy records are applied consistently to digital records and additionally that an appropriate level of metadata is captured and maintained in a "suitable database."

[xiv] See "A. Maintenance Strategies," Hackett, op. cit.