Guidelines

Digitization of Original Paper Source Records

Comments:
Additional resources for sections 4.3, 4.4, 4.6, 4.8 and 4.11 are planned to help offices implement this guideline.
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Digitization of Original Paper Source Records

1. Introduction

The following guideline applies to records created or received by an SFU office that will be scanned from a paper format and will be stored in an electronic format during their active and semi-active period.

2. Audience and intended use of the guidelines

2.1 Departments who wish to scan paper records

The following guideline outlines the 13 basic issues that an office should consider before starting a project to scan original paper records into an electronic system. Note that these issues should be equally considered whether your office is engaging in a one-time scanning project or an ongoing scanning program that constitutes a change of business practice.

2.2 Privacy Impact Assessment of scanning records

Before scanning records or information that will be stored in a new or altered electronic system (e.g. database, application, etc.), contact the Information and Privacy Officer to determine whether a Privacy Impact Assessment (PIA) is needed, as additional Freedom of Information and Protection of Privacy Act (FIPPA) provisions may apply.

2.3 Disclaimer

This guideline expresses a records management perspective and does not constitute legal advice. Please contact the SFU Legal Counsel if your office requires legal advice.

3. Electronic records as evidence of transactions

3.1 Use of standards

The BC Electronic Transactions Act allows for electronic records to stand in the place of original, paper source records if certain criteria are met. These criteria focus mostly on the integrity of the record and on its
ongoing accessibility. To meaningfully interpret these criteria, it is helpful to consult nationally recognized standards that have been developed in response to the increasing use of electronic records in all types of business transactions.

Standards on electronic records as documentary evidence include:

- Microfilm and Electronic Images as Documentary Evidence (CAN/CGSB-72.11-93)\(^1\)
- Electronic Records as Documentary Evidence (CAN/CGSB-72.34-2005)
- ISO 13008:2012: Information and documentation -- Digital records conversion and migration process

See Section 5, Works Consulted for a list of standards consulted to develop this guideline. Please refer to the above standards for additional details on any element outlined in this guideline.

### 3.2 Exceptions

See Part 1 of the BC Electronic Transactions Act for exclusions. Records that are excluded under this Act include but are not limited to: wills, powers of attorney, records related to interests in land, negotiable instruments, and documents of title.

If your records fall under the exclusions outlined in Part 1 of the BC Electronic Transactions Act, please contact SFU Legal Counsel for advice.

### 4. Recommended elements of a scanning/digitization project/program

The following elements should be considered and integrated into your scanning/digitization project or program to conform to best practices for digitized records.

#### 4.1 Records retention schedule/RRSDA

Ensure that existing Records Retention Schedule and Disposal Authorities (RRSDA) cover all of your records. RRSDAs define how long a record should be kept (retention period) and what you should do with it at the end of the retention period (final disposition). Before scanning and storing records in an electronic system, spend some time thinking about how you will get the electronic records out of your electronic records system when their retention period has expired.

Consider the following issues:

- **No RRSDA?** If your office produces a record series that is unique in the university or your office has recently begun a new work process, you may have a record series that has not been previously scheduled. If so, please contact the Records Management Archivist to request records retention scheduling services.

\(^1\) This standard also refers to these publications: ANSI/AIIM MS44-1988 (R1993) Recommended Practice for Quality Control of Image Scanners and ANSI/AIIM MS52-1991, Recommended Practice for the Requirements and Characteristics of Documents Intended for Optical Scanning.
• Scanned records that will be destroyed. Electronic records with a final disposition of Destruction need to be permanently removed from the electronic system after their total retention period has expired. Ensure that your electronic system has the ability to identify and remove records when their total retention period has expired.

• Scanned records that will be transferred to the Archives. Electronic records with a final disposition of Full Retention by Archives or Selective Retention need to be permanently removed from the electronic system after their total retention period has expired and transferred to the SFU Archives’ digital repository. Ensure that your electronic system has the ability to identify and transfer records. Please contact an Archivist for more information.

Resources for RRSDAs
The Directory of University Records (DUR) includes over 180 existing RRSDAs for the records of the university.

4.2 Document/File organization
Ensure that the electronic records will be filed and stored in an organized way to allow for easy retrieval and disposition.

A good folder structure will assist your office in the following ways:

• faster retrieval (e.g. assist staff in finding all relevant records they need for a particular purpose), and

• timely disposition (e.g. assist in creating automatic rules to delete specified records or in enabling easy manual yearly review by a staff person to delete or transfer the records at the end of their retention period).

Resources for file organization
The Model File Classification Plan can serve as a template for organizing records in an electronic records system.

4.3 Procedure manual
Create a procedure manual to document your scanning procedures.

Best practice in managing electronic records as evidence of past activities includes creating a procedure manual that details exactly how your office will scan paper documents into an electronic system.

In the Canadian standard on Electronic Records as Documentary Evidence, section 5.4 states:

“In the event of legal proceedings (or a request by a taxing or other government authority), the procedures manual can be the most important support to satisfy the legal requirements (admissibility and weight) for electronic records in the evidence acts.”

Many of the elements highlighted in this guideline should be documented in a procedure manual.

4.4 Quality control checks

Implement quality control checks to ensure that the scanning process is reliable.

Typically, offices wish to scan paper records so that they can destroy the paper and retain the electronic version as the authoritative record. The BC Electronic Transactions Act allows for electronic records to stand in the place of the original, paper source records if certain criteria are met.

If this is your goal, your office needs to provide “reliable assurance as to the integrity of the record in electronic form”. You must ensure that “the record has remained complete and unaltered, apart from the introduction of changes that arise in the normal course of communication, storage and display”.

A quality control process should include:

- A documented procedure for quality control checks to compare the paper with the scanned record to ensure that the entire content and form has been captured.
- A quality control log to record the date and person/role who performed the check.

4.5 Controls on access

Assign access controls so that only staff with a legitimate business need to use this information can access the system.

It is important to put in place technical and procedural measures to help establish that the official digital record was not altered. This preserves the record’s integrity (i.e. establishing a record’s authenticity and reliability). Procedural measures are necessary to ensure authorized personnel know that under no circumstances are they permitted to manipulate and make changes to the official version, and technical measures are needed to prevent anyone from doing so.

The goal is to be able to prove that the form and content of the official record is uncorrupted, unaltered and can be rendered in the future as it was first created using technology and in spite of changes in technology. One method of ensuring this is to place strict controls on who can access and alter the electronic records.

4.6 Metadata

Determine the kinds of metadata that need to be created and maintained during the scanning process and during the management of the electronic records.

Metadata is used to ensure the authenticity, reliability, integrity, and usability of a record. Authenticity, reliability, and integrity describe trustworthy documents from a legal perspective, and good metadata can enable a record to be presented as evidence in legal proceedings. Good metadata also maintains the context of a record, and it helps users in the office to search, retrieve, and display the record.

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3 A complementary standard, Microfilm and Electronic Images as Documentary Evidence (CAN/CGSB-72.11-93), also states that a procedures manual is required by the standard as part of establishing an electronic image management program.
In addition, ensure that electronic records include metadata to properly identify them and help verify their integrity (e.g. version control plus completing document properties and security settings using Adobe Acrobat).

### 4.7 Authoritative version

Determine how your office will designate the authoritative record and distinguish it from all other drafts or versions.

Version control is very important to be able to prove which record is the authoritative record. If multiple versions of the same record exist, it creates potential conflict, casting doubt about which is the official, authoritative version that can be relied upon as trusted evidence of a documented business activity or transaction.

If your office creates multiple versions of an electronic record, you need a means to designate the authoritative record. Establishing and following naming conventions in the office is an effective way to differentiate between drafts, versions, and the final and authoritative record.

If your office will retain paper versions of electronic records, it is important to designate by written policy within your office the media and format on which your official records are stored and then to implement that practice consistently. It is a best practice to destroy the paper source documents once the appropriate quality control checks have been completed. See **4.13 Disposition of source records** for more information on disposing of the paper source records.

#### Resources for naming conventions

Naming conventions can be configured to help ensure that every document is clearly titled with a version number.

The Archives and Records Management Department provides a standard naming conventions document on its website or upon request via email. Naming conventions can be customized for the needs of your office.

[http://www.sfu.ca/archives/for-staff/RMtraining.html](http://www.sfu.ca/archives/for-staff/RMtraining.html)

### 4.8 File format

Determine the file format(s) your office will use for the scanned documents.

Electronic records that are to be maintained as records need to remain stable and fixed both in their content and in their form, so you need to select a file format that achieves these two goals. You should also select a file format that you can reasonably predict will be supported until the end of the records retention period.

Additionally, if any of your records have final disposition of *Full Retention by Archives* or *Selective Retention*, they will be transferred to the SFU Archives’ [digital repository](http://www.sfu.ca/archives/for-staff/RMtraining.html) at the end of their total retention period. It is your office’s responsibility to ensure that your records remain in a file format that can be read at the end of the records’ life cycle despite technological changes (i.e. guard against technological obsolescence) and that the files exist in a format that can be transferred to the Archives. In general, the Archives prefer open formats for records that are intended for permanent digital preservation.
• Choose a file format that keeps the content and form fixed and stable (e.g. PDF)
• Choose a file format that will continue to be supported throughout the records' total retention period.
• If the records are designated as Full Retention by Archives or Selective Retention, choose a file format that is listed on the Archives' File Format Registry\(^4\). If your file format is not on the File Format Registry, please contact the Archives.

Resources for selecting a file format
The file format register specifies which file formats are supported and will be accepted into the digital repository for permanent preservation. The register may change over time as technologies change. For your convenience, the suggested file formats for digitized documents is reproduced below:

<table>
<thead>
<tr>
<th>Category</th>
<th>Ingest Preferred</th>
<th>Ingest Acceptable</th>
<th>Preservation format</th>
<th>Access format</th>
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<td>Photographs</td>
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<td>negatives, slides, contact sheets, positives</td>
<td>TIFF</td>
<td>uncompressed TIFF</td>
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<td>Audio recordings</td>
<td>WAVE(LPCM)</td>
<td>WAVE (LPCM)</td>
<td>WAVE (LPCM)</td>
<td>MP3</td>
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<tr>
<td>Magnetic tape including open reel to reel and compact cassettes</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Videos (moving images)</td>
<td>AVI, FLV, MOV, MPEG-1, MPEG-2, MPEG-4, SWF, WMV</td>
<td>FFV1/LPCM in MKV</td>
<td>MPEG-4</td>
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<tr>
<td>16mm, 32mm, 8mm film magnetic tape including VHS, Umatic, Beta</td>
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</tbody>
</table>

\(^4\) Currently under development with an expected release date during 2015.
4.9 Preservation/migration plan for records with long retention periods

Assess whether your electronic records need to be retrieved longer than the life expectancy of your electronic records system. If so, make a preservation or migration plan.

Take steps against media, hardware and software obsolescence and degradation of digital media. Select hardware, software and file formats that offer the best hope for ensuring that digital materials will remain easily accessible over time (e.g. keeping records in PDF format using Adobe Acrobat or another format which is proven, stable and will likely continue to be supported into the future).

4.10 Back-up system

Ensure an appropriate backup system for the data and documents.

Protect digital materials from accidental loss and corruption by means of a back-up protocol.

Consult with IT Services to establish a back-up protocol and document your back-up protocol in your office’s digitization procedure manual.

4.11 Signatures

If your documents include signatures, please consult the BC Electronic Transactions Act (Section 11) for general guidance.

4.12 Attachments or associated documents

Documents that were associated in a single unit in paper form should remain together in their electronic form.
4.13 Disposition of source records

Make appropriate arrangements for the disposition of source records.

Transitory records. When your scanning project has been properly authorized and documented through an approved procedures manual with established quality control measures, the source paper records become transitory records after they have been scanned and stored in an electronic format. Transitory records may be disposed of according to RRSDA 1999-061 Transitory Records.

Consider the following additional items when disposing of the paper source records:

- No longer creating paper records in a record series. If your office will be keeping a record series henceforth only in the electronic format, please notify the Records Management Archivist. RRSDAs may need to be adjusted as a result to reflect your office’s current work practices.

- Full Retention by Archives or Selective Retention. If the records are covered by an RRSDA with a final disposition of Full Retention by Archives or Selective Retention, contact the Archives and Records Management Department to notify us that your records will be electronic hereafter.

5. Works Consulted


6. Additional Resources


## Document Control

### Version history

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<th>By</th>
<th>Version notes</th>
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<td>21-Nov-2014</td>
<td>Joy Rowe</td>
<td>First draft of the guideline.</td>
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<tr>
<td>1v0</td>
<td>28-Nov-2014</td>
<td>Ian Forsyth</td>
<td>First version of the guideline approved for use with minor editorial changes.</td>
</tr>
<tr>
<td>1v1</td>
<td>18-Feb-2015</td>
<td>Joy Rowe</td>
<td>Included recommended file formats for records with an archival disposition (e.g. the applicable final disposition is “Selective Retention” or “Final Disposition”)</td>
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