



Western Australian Government

Specification for Digitisation of State Records

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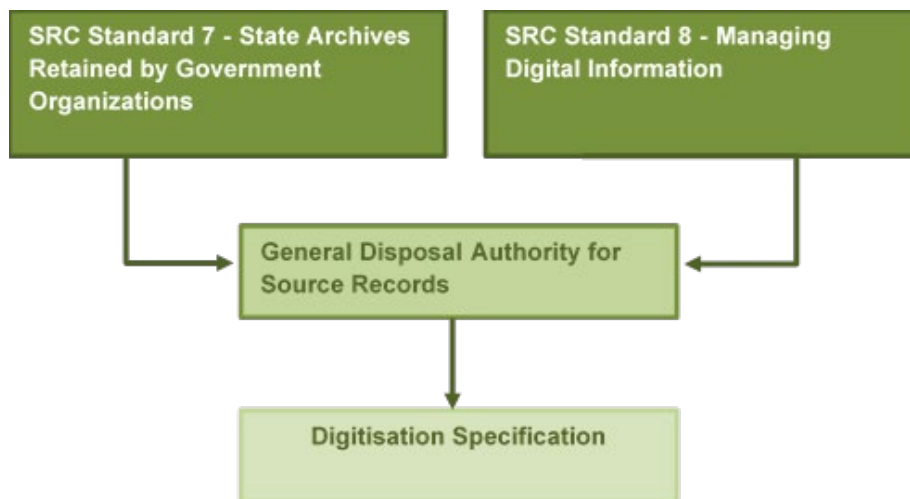
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1. CONTEXT AND AUTHORITY

- 1.1. Under section 61 of the *State Records Act 2000* (the Act), the State Records Commission (the Commission) is responsible for establishing principles and standards governing record keeping by parliamentary departments and government organizations as defined in the Act, including local government organizations.
- 1.2. A record keeping plan must provide for the destruction of a government record where a reproduction of it is to be kept, even though the destruction occurs at a time when the record would otherwise not be able to be lawfully destroyed. According to Section 3 of the Act, a reference to reproducing a record in another form includes scanning and digitisation.
- 1.3. All Western Australian government organizations must comply with this Specification when digitising records. The diagram below shows the relationship between this Specification and related documents.



2. OBLIGATION

- 2.1. This Specification sets out the minimum requirements to be met for government organisations to digitise records. These requirements must be met unless certain conditions are satisfied for exceptions as described in this Specification.
- 2.2. Where the digitised version of a record is intended to stand in place of a source record, the authenticity, reliability, integrity and usability of the digitised record must be ensured.
- 2.3. This Specification must be read in conjunction with the General Disposal Authority for Source Records, SRC Standard 7 - State Archives Retained by Government Organizations and SRC Standard 8 - Managing Digital Information.
- 2.4. This specification does not apply retrospectively. For records which were digitised to meet the requirements of the now superseded specifications, the SRO will not require government organisation to re-digitise records to the new requirements.

3. DEFINITIONS

Compression – methods of encoding data so that fewer bits are required for storage.

Digitisation - the process of converting information from a physical format into a digital one.

DPI - Dots Per Inch. A measure of the resolution of a printed document or digital scan. The higher the dot density, the higher the resolution of the print or scan. Typically, DPI is the measure of the number of dots that can be placed in a line across one inch, or 2.54 centimetres.

Lossless compression – computing algorithms that allow image data to be compressed for storage, while at the same time ensuring that the exact original data can be reconstructed for use.

PPI - Pixels Per Inch. A measurement of resolution for computer display.

Resolution – describes the number of dots per inch and bit resolution for visual scans and sampling rate and bit resolution for audio scans.

Source Record – the original record is referred to as the 'source record' i.e. it is the source from which a reproduction has been made.

State Archive - a State record that is to be retained permanently.

4. RELEVANT LEGISLATION AND STANDARDS

SRC Standard 7 – State Archives Retained by Government Organisations

SRC Standard 8 – Managing Digital Information.

General Disposal Authority for Source Records

5. PROCEDURES

5.1. Decision making and record keeping

5.1.1. Government organisations undertaking digitisation must determine and document the following:

- 5.1.1.1. the records which to be digitised;
- 5.1.1.2. the manner in which the digitised records are to be created, used, stored, maintained and manipulated;
- 5.1.1.3. whether the source records are to be retained;
- 5.1.1.4. whether any exceptions to the requirements described in this document are required and why; and
- 5.1.1.5. the risks and costs associated with all stages of the process.

5.2. Preparation of records

- 5.2.1. Records must be checked to ensure they are physically suitable for digitisation. For example, paper records must be checked to see if they are free of tears or creases, that staples and pins are removed without damage to the document, and attachments are identified.
- 5.2.2. Paper based documents such as maps and plans, must scanned at original size. Where this is not possible, a resized scan may be made for access purposes only, and the source record must be retained.
- 5.2.3. Audio visual records must be checked for damage to the carrier and damage to the media.
- 5.2.4. Audio visual records such as cassettes or video tapes must be digitised fully, including both sides of a tape where appropriate.
- 5.2.5. Records that are too large or too fragile to be scanned must be identified and removed from the scanning process.

5.3. Creation of metadata

- 5.3.1. Appropriate metadata is created for each record and captured (with the document) in a recordkeeping or business information system.

5.4. Choice of equipment

- 5.4.1. The choice of equipment for scanning (digitising) will depend on the sort of material that is being digitised, e.g. size of the source record and condition.

5.5. Calibration of equipment

- 5.5.1. A scanner is calibrated in accordance with specifications based on international standards at the time of manufacture.
- 5.5.2. These specifications form the calibration target for the equipment. As part of regular maintenance, the scanner should run automatic calibrations. Where the scanner does not calibrate automatically

you should refer to the manual for instructions or contact your vendor.

5.6. Use of colour and measurement checks

5.6.1. A colour element can include, but is not limited to:

5.6.1.1. - The colour used in the text or graphics in the document

5.6.1.2. - The background colour of the paper

5.6.1.3. - The colour of a heading or logo

5.6.1.4. - The pen colour used in handwritten notes or text on the document

5.6.1.5. - The colour of stamps such as 'copy' or 'received'.

5.6.2. A colour checker and measurement guide is recommended where scale and colour/greyscale is important to the future understanding of a record, e.g. engineering drawings, maps and plans. This should be scanned alongside the record being scanned or with a batch of images.

5.6.3. An original record (the source record) which contains a colour element must be scanned in colour if:

5.6.4. - The colour element is essential to understanding or comprehending the information on the record; or

5.6.4.1. - The colour element is essential for the reproduction to meet the required degree of authenticity, integrity, reliability, and usability of the record, or

5.6.4.2. - The record is or is likely to become a permanent record.

5.7. Verification of the digitised record

5.7.1. The digitised record is checked, preferably by a second staff member, to ensure that the source record has been completely digitised, that is, all pages of a document have been scanned (including both front and back if there are markings on both sides), or a cassette tape is recorded on both sides.

5.7.2. Source records must be re-digitised when necessary.

5.8. Documenting exceptions to the requirements of this specification

5.8.1. Where exceptions to the requirements described in this document are required (e.g. a different scan resolution) the reason must be documented along with appropriate authorisation of the exception, including an assurance that the digitised record is authentic, reliable and usable for its intended purpose.

5.8.2. The State Records Office must be advised regarding these exceptions where the affected records are to be retained are State Archives.

RELATED DOCUMENTS

AS/NZS ISO 15801:2014 Electronic imaging - information stored electronically – recommendations for trustworthiness and reliability.

DOCUMENT OWNER

Director State Records (State Archivist).

ACTIVE DATE

October 2021

REVIEW DATE

September 2024

Signature of Director State Records

DIRECTOR STATE RECORDS [governance TBD 20210818)

TECHNICAL SPECIFICATIONS

1. REQUIREMENTS

- 1.1. **Text documents:** digitisation of text documents must be done to a level that ensures not only that the text remains legible, but that any additional markings on the document are also reproduced and retain their meaning.

| | |
|--------------------------|--|
| Size | Up to A0 - scan to original size |
| Resolution | Minimum 300 DPI (or equivalent in PPI) |
| Colours | Minimum 8 bit colour |
| Black & White | Minimum 1 bit |
| Greyscale | Minimum 8 bit greyscale |
| Compression | Lossless |

- 1.2. Examples of formats that meet this requirement include, but are not limited to:

- 1.2.1. TIFF 6.0 with uncompressed or lossless ZIP or LZW compression. JPEG compression requirements apply to TIFF files that use lossy JPEG compression.
- 1.2.2. PNG using lossless compression
- 1.2.3. JPEG using Photoshop compression level 10 to 12 (not less than 77% of the JPEG compression scale)
- 1.2.4. PDF/A at maximum image quality. Optical character recognition is recommended to make the scanned record easier to search.

- 1.3. Specifications for reproductions of receipts/proof of purchase records

- 1.3.1. Organizations may create reproductions of receipts or other proof of purchase records using devices such as a mobile phone camera, where the reproduction is transferred into a financial management system.
- 1.3.2. If the device used to create the reproduction of the receipt is unable to meet the calibration and scanning processes and/or specifications outlined above, or if the reproduction specifications cannot be determined, the reproduction must be of sufficient quality to allow the accuracy and integrity of the reproduction to be verified.
- 1.3.3. The person making the reproduction must ensure that all essential information in the receipt has been captured.

1.4. Photographs

- 1.4.1. Digitisation of photographs must be done to a level that ensures that all elements in the photograph are able to be clearly discerned when shown on screen at 1:1 scale.

Technical specifications:

| | |
|--------------------------|--|
| Size | Up to A0 - scan to original size |
| Resolution | Minimum 600 DPI (or equivalent in PPI) |
| Colours | Minimum 16 bit colour |
| Black & White | Minimum 16 bit greyscale |
| Compression | Lossless |

1.5. Maps and Plans

- 1.5.1. Digitisation of maps and plans must be done to a level that ensures all elements in the map or plan are clearly discernable when shown on screen at 1:1 scale, and that all types of crosshatching or other markings are distinguishable from one another.

Technical specifications:

| | |
|--------------------------|---|
| Size | Up to A0 - scan to original size |
| PPI | Minimum 300 DPI (or equivalent in PPI) Maps and plans with fine lines and detail may require higher resolution |
| Colours | Minimum 16 bit colour |
| Black & White | Minimum 8 bit greyscale |
| Compression | Lossless |

1.6. Audio Recordings

- 1.6.1. Digitisation of audio recordings must be done to a level that ensures that the entire recording is clear, and all parts of the medium which was recorded onto are digitised so that there is no question of data being lost e.g. entire length of tape from both sides must be digitised.

Technical specifications:

| | |
|--------------------|--|
| Speed | Audio must be digitised at original speed |
| Compression | Lossless |
| Channels | Minimum Stereo, or as appropriate if recording contains more than 2 channels |

1.7. Video and Film

- 1.7.1. Digitisation of motion picture recordings must be done to a level that ensures that the entire recording (both audio and video) is clear, and all parts of the medium which was recorded onto are digitised so that there is no question of data being lost e.g. entire length of reel or video must be digitised.

Technical specifications:

| | |
|--------------------|---|
| Speed | Video and film must be digitised at original speed |
| Compression | Lossless |
| Channels | As per original (eg: 1280 x 720 px) also called HD ready or standard HD |

1.8. Sustainable Digital Formats

- 1.8.1. Where records are digitised for long-term or permanent use – please refer to advice on ‘Sustainable Digital File Formats for Creating and Using Records’ published by the Council of Australasian Archives and Records Authorities (CAARA).