

**Chapter 434-663 WAC**  
**IMAGING SYSTEMS, STANDARDS FOR ACCURACY AND DURABILITY**

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**WAC**

THE USE OF ELECTRONIC IMAGING SYSTEMS FOR MANAGING PUBLIC RECORDS

434-663-100      Legality.

DEFINITIONS

434-663-200      Electronic document imaging system.  
434-663-210      Document scanning.  
434-663-220      Image.  
434-663-230      Enhancement.  
434-663-240      Archival records.  
434-663-250      Open system.  
434-663-260      De facto standard.  
434-663-270      Record series.

QUALITY OF DIGITAL IMAGES

434-663-300      Quality of digital images.  
434-663-305      Scanning density.  
434-663-325      Compression and decompression of data.

SYSTEM REQUIREMENTS

434-663-500      Open systems architecture.  
434-663-530      System documentation.

RETENTION, SCHEDULING, AND DISPOSITION OF RECORDS

434-663-600      Retention scheduling and disposition of public records.  
434-663-615      Records retention scheduling for records on imaging system.  
434-663-630      Agency acquisition—Department of information services approval.  
434-663-640      Disposition of records identified by records committee as archival.

PROVISION FOR CONTINUED ACCESS

434-663-700      Usability of image and index data over time.  
434-663-705      Recordkeeping capabilities.  
434-663-710      Defining indexing requirements.  
434-663-720      Preservation strategy.  
434-663-730      Header information on image files.  
434-663-740      Security backup copies.  
434-663-750      Ensuring usability.  
434-663-760      Environmental standards or best practices for storage of electronic media.  
434-663-770      Continued access to data.  
434-663-780      Data conversion costs.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

434-663-310      Enhancement of original image. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-310, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-320      Compressing image data for storage. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-320, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-400      Usability of image and index data over time. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-400, filed 2/1/94, effective 3/7/94.] Amended and decodified by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6). Recodified as § 434-663-700.

434-663-410      Defining indexing requirements. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-410, filed 2/1/94, effective 3/7/94.] Amended and decodified by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6). Recodified as § 434-663-710.

434-663-420      Preservation strategy. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-420, filed 2/1/94, effective 3/7/94.] Amended and decodified by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6). Recodified as § 434-663-720.

434-663-430      Header on image files. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-430, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-440      Backup for recovery. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-440, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-450      Ensuring usability. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-450, filed 2/1/94, effective 3/7/94.] Decodified by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6). Recodified as § 434-663-750.

434-663-460      Stability of media. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-460, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-470 Storage media. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-470, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-480 Optical media durability. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-480, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-490 Archival, permanent, and long-term off-line storage environment. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-490, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-510 Backward compatibility. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-510, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-520 Availability of index database for off-line media. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-520, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-610 Records retention scheduling for records on imaging system. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-610, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

434-663-620 Security copies. [Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-620, filed 2/1/94, effective 3/7/94.] Repealed by WSR 00-20-038, filed 9/28/00, effective 10/29/00. Statutory Authority: RCW 40.14.020(6).

## THE USE OF ELECTRONIC IMAGING SYSTEMS FOR MANAGING PUBLIC RECORDS

**WAC 434-663-100 Legality.** The purpose of this chapter is to establish standards and recommended practices for the creation, preservation, access to, and retention of public records on electronic imaging systems. Electronic imaging systems may legally be used for recording, producing, reproducing, maintaining, and storing public records if:

- (1) Those systems meet the standards set forth in this chapter;
- (2) The systems are used in accordance with this chapter; and
- (3) The retention and disposition of the original and copies of records maintained on those systems regardless of media are scheduled, maintained, and disposed of in accordance with chapter 40.14 RCW. Nothing in this chapter can be construed to limit the admissibility of any public record as evidence.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-100, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-100, filed 2/1/94, effective 3/7/94.]

## DEFINITIONS

**WAC 434-663-200 Electronic document imaging system.** An electronic document imaging system is a computer-based configuration of equipment and software that stores machine-readable document images and their associated character-coded index data for on-demand retrieval. Electronic images can be computer generated, or created through document scanning.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-200, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-210 Document scanning.** A specially designed input workstation is required to convert documents or images to machine-readable form for computer processing and storage. At a minimum, the

input workstation includes a document scanner, an image processor unit, a video display unit, keyboard, and access to storage. Using a solid-state array or other photo-sensitive components, the document scanner measures the amount of light associated with successively encountered PELs (Picture Element) and transmits a corresponding electrical signal that is converted to computer compatible digital codes.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-210, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-220 Image.** An image can be a document, picture, or graphic. An image can be produced by scanning paper or film documents, producing images through a computer program, receiving an image by means of a fax, or by other means.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-220, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-230 Enhancement.** Any method including adjusting brightness and contrast, or algorithm employed with the objective of producing an accurate and legible copy.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-230, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-240 Archival records.** Archival records are records that have permanent and/or historical value and are scheduled as archival. Long-term records are records having a retention period in excess of ten years. Permanent records are those records that are required by specific statute to be retained permanently.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-240, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-250 Open system.** Open system is defined to be a system that implements sufficient public specifications for interfaces, services and supporting formats to enable applications software to be ported across a wide range of systems, to interoperate or interchange with other applications on local and remote systems, and to interact with users in a style that facilitates portability. Public specifications are maintained by open, public consensus process to accommodate new technology over time, and which are consistent with international standards.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-250, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-260 De facto standard.** A de facto standard is a widely accepted industry standard without official recognition by a standards group.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-260, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-270 Record series.** A group of records that are created, used, filed, and disposed of as a unit because they relate to a particular subject or function, result from the same activity, or document a specific kind of transaction.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-270, filed 9/28/00, effective 10/29/00.]

## **QUALITY OF DIGITAL IMAGES**

**WAC 434-663-300 Quality of digital images.** Ensuring the quality of digitized images requires exercising control over the conversion of the original image to digital data, enhancement of the digital image if necessary, compression of the digital data for storage, decompression of digital data for retrieval, displaying the image, and printing the image.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-300, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-300, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-305 Scanning density.** Bitonal images of documents containing type fonts no smaller than six-point shall be scanned at a minimum density of 200 dots per inch (dpi). Bitonal images of documents containing type fonts smaller than six-point, engineering drawings, maps, and similar documents with fine detail or poor contrast, shall be scanned at a minimum density of 300 dots per inch. Until an ANSI or AIIM standard for color images using a lossless nonproprietary compression algorithm is established, it is recommended that color documents be scanned at a minimum density of 150 dots per inch (dpi) and use TIFF, Version 5, specifications. Scanner quality control procedures shall conform to ANSI/AIIM MS44-1988, Recommended Practice for Quality Control of Images Scanners.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-305, filed 9/28/00, effective 10/29/00.]

**WAC 434-663-325 Compression and decompression of data.** Electronic imaging systems for bitonal images shall use the Consultative Committee on International Telegraphy and Telephony (CCITT) Group 3 or Group 4 compression and decompression techniques without proprietary alterations to the algorithm. For the storage of electronic images of records for which the state or local records committee has approved a retention period of six years or less from the date of creation, a nonproprietary lossless compression algorithm may be used if a utility program or application software option is maintained to convert images to the TIFF Group 3 or Group 4 standard. For the compression and de-

compression of color images a lossless algorithm, such as TIFF, Group 5, is recommended.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-325, filed 9/28/00, effective 10/29/00.]

## **SYSTEM REQUIREMENTS**

**WAC 434-663-500 Open systems architecture.** Ensuring the usability of digital images to serve the functions for which they were designed involves long-term commitment to an open systems architecture and an approach to component upgrading, data transfer, and migration path that guarantees the portability of current data to be used with future technologies.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-500, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-530 System documentation.** Detailed technical documentation is needed to facilitate future system access. Minimum documentation must include:

- (1) A hardware systems administrator manual specifying hardware, cabling, and communications configurations;
- (2) Software applications documentation, including user manuals and design documentation;
- (3) Operational procedures for scanning, indexing and verifying images;
- (4) Current security and system change control procedures, including logs of those changes, indicating the date, identity of the person making the changes and the reason for the change; and
- (5) Written procedures for periodic back ups, including schedules and the location of secure offsite storage for those back ups.

Agencies will maintain one copy of current documentation on-site and one current copy in designated secure storage.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-530, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-530, filed 2/1/94, effective 3/7/94.]

## **RETENTION, SCHEDULING, AND DISPOSITION OF RECORDS**

**WAC 434-663-600 Retention scheduling and disposition of public records.** Conversion to an imaging system does not automatically authorize the destruction of the source documents for which images have been created. Destruction of, or changes to the retention period of, any public records due to conversion to or the use of a new media requires legal approval of the state or local records committee of the state of Washington under chapter 40.14 RCW, chapter 434-635 WAC, and other applicable state laws.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-600, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-600, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-615 Records retention scheduling for records on imaging system.** The required retention scheduling of public records to be created, maintained, accessed, distributed, or preserved by government entities on electronic imaging systems should be done prior to the creation or copying of images of those records. Retention schedules shall be based on the information content and function of the record series. Record series documenting electronic information system operation, and maintenance must also be included on the records retention schedule approved for the agency using the system. Electronic image media rendered obsolete through the verified accurate migration of its images to a more current media for readability may be considered a redundant version and disposed of as directed by chapter 40.14 RCW.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-615, filed 9/28/00, effective 10/29/00.]

**WAC 434-663-630 Agency acquisition—Department of information services approval.** State agencies intending to utilize an imaging system for the storage or conversion of public records must include such plans in their biennial information technology plan submitted to the department of information services and comply with other requirements of DIS as may apply.

[Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-630, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-640 Disposition of records identified by records committee as archival.** Public records that are designated "archival" or "potentially archival" by the state or local records committee may not be destroyed without committee approval, even where images of those records have been produced and stored on an electronic imaging system.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-640, filed 9/28/00, effective 10/29/00.]

#### **PROVISION FOR CONTINUED ACCESS**

**WAC 434-663-700 Usability of image and index data over time.** Maintaining access to and usability of electronic records requires the ability to process images and indexes both on the computer system on which they were created and on their replacement computer systems without loss of information for the full retention period approved for that record. Ensuring the readability of electronic records over time requires the maintenance of proper environmental conditions, periodic recopying, and strategies to preserve data by migration from one gen-

eration of technology to another through a commitment to open architecture.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, amended and recodified as § 434-663-700, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-400, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-705 Recordkeeping capabilities.** Electronic imaging systems must have the following security and retention features or capabilities:

- (1) Tracking information at the records series level.
- (2) Ability to properly eliminate or dispose of records that exceed their retention periods as established under RCW 40.14.050 through 40.14.070.
- (3) Record authentication functions as needed to meet legal, audit, and administrative requirements including automatic, computer-generated maintenance of the date and time of record creation or updating, the identity of the user or system that created or updated the record, and a system-enforced log of disposition actions.
- (4) Protection against unauthorized access to records by means of a password hierarchy or other system security.
- (5) Indexing capabilities that provide flexibility in associating a record series with multiple subject categories, that facilitate access and retrieval, and that provide links to related records or supporting documentation.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-705, filed 9/28/00, effective 10/29/00.]

**WAC 434-663-710 Defining indexing requirements.** The selection of indexing methods and terms should be based on an analysis of the retrieval requirements associated with a particular application, and must ensure efficient and accurate retrieval of images and information. The design and content of the index should utilize standard attributes wherever available and take into account the security of the index and the retrieval requirements of both current and future users of the records including agency personnel, researchers, and the public.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, amended and recodified as § 434-663-710, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-410, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-720 Preservation strategy.** For an electronic image system containing public records with a retention period of ten years or longer or records containing archival information, one or more of the following preservation strategies must be employed:

- (1) Retain the original paper documents;
- (2) Microfilm the original documents;
- (3) Migrate optical media and magnetic media at least every ten years or sooner as is necessary to avoid technical obsolescence, loss of readability, and excessive read error rates; or

(4) Record the electronic images on industry standard microfilm at the same density at which they were scanned.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, amended and recodified as § 434-663-720, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-420, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-730 Header information on image files.** An electronic imaging system containing public records with a retention period of ten years or longer or records containing archival information must use a nonproprietary file header format such as Tagged Image File Format (TIFF) or a header that complies with ANSI-AIIM MS53, File Format for Storage and Exchange of Images, or Bi-level File Format: Part 1.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-730, filed 9/28/00, effective 10/29/00.]

**WAC 434-663-740 Security backup copies.** Security backup copies must be made of electronic imaging system records stored on electronic media. The methods and frequency of backup should be determined by the amount of information that would be lost if data had to be restored using the previous backup. Since backup copies are also subject to media failure, it is recommended that redundant (multiple) backup copies be made and stored at different locations, with one copy stored off-site. In order to ensure accessibility of data, at least one redundant backup copy should be recorded in a nonproprietary format. Security backup copy media must be inspected for quality using de facto or industry standards on a regular schedule and replaced before predicted failure. If the primary backup copy of an operational imaging system is found to deviate from the primary production copy due to suspected corruption or read errors, the discrepancy must be located and both the production and backup copies must be corrected to contain accurate versions of the original images.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-740, filed 9/28/00, effective 10/29/00.]

**WAC 434-663-750 Ensuring usability.** At a minimum, the system must include an electronic error checking utility that will check the integrity of the data when written to the media.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, recodified as § 434-663-750, filed 9/28/00, effective 10/29/00. Statutory Authority: Chapter 40.14 RCW. WSR 94-04-102, § 434-663-450, filed 2/1/94, effective 3/7/94.]

**WAC 434-663-760 Environmental standards or best practices for storage of electronic media.** Electronic media should be stored in a dust-free environment under the following environmental conditions:

(1) Temperature ranges meeting standards or best practices recommended for the media stored;



(2) A relative humidity range meeting standards or best practices recommended for the media stored;

(3) Media should be stored in a closed container to protect from dust and fingerprints; and

(4) Magnetic tape should be rewound in accordance with de facto or industry standards, or to best practices.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-760, filed 9/28/00, effective 10/29/00.]

**WAC 434-663-770 Continued access to data.** If access to data in an existing electronic imaging system cannot be maintained for the specified retention period of the records stored in that system, the images must be migrated, without loss to the images or indexes, at the time of acquisition or implementation of a new system. Access to electronic data which has not been migrated to a new system requires preserving the data, the storage medium in which the data is kept, and whatever hardware, operating system, and applications software is needed to view and use the data.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-770, filed 9/28/00, effective 10/29/00.]

**WAC 434-663-780 Data conversion costs.** The adoption of new electronic imaging systems may require significant expenditures for conversion of information maintained in existing electronic formats to the formats required by new imaging systems. System planning should include analysis of future information access, maintenance, data conversion, and security costs.

[Statutory Authority: RCW 40.14.020(6). WSR 00-20-038, § 434-663-780, filed 9/28/00, effective 10/29/00.]