**Executive Summary:**

The Quality Topic Team has identified the following parameters to provide guidance on criteria for Quality management of a Paper Destruction Process.

* To develop a validated quality driven process for document scanning and uploading into an eTMF.
* To provide recommendations to establish a consistent process and quality control for the destruction of original paper documents and maintaining the certified copy, based on regulations and industry best practices.

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| 1. | Quality | A validated quality driven process for document scanning and uploading into an eTMF system. |
| Process map step 306-307 |  | **Scanner Settings**  An appropriate scanner should be selected. Minimum standards for scanner settings-   * 300 dots per inch (dpi) * Simplex, or Duplex where required for documents that have information on back pages * Grayscale * To PDF using pdf version 1.4   Documents scanned at a resolution of 300 (dpi) ensure that the pages of the document are legible both on a computer screen and when printed and, at the same time, minimize the file size. A resolution of 300 dots per inch (dpi) is recommended to balance legibility and file size.  Duplex will ensure any information on the back of a page such as coding or stamp is included in the scanned image.  The use of grayscale and colour significantly increases the file size and is used only when these features improve the reviewability of the material. It is recommended that documents with color also be scanned in color (eg: color seal, color-coded data outputs). After scanning, avoid re-sampling to a lower resolution. A captured image should not be subjected to non uniform scaling (i.e. sizing).  PDF version 1.4 is for use with Adobe Acrobat 5.0 or higher1. No additional software should be needed to read and navigate the PDF files. Documents may be batched for ease of scanning.  **Preparation**   * Removal of wallets/staples/binding/paperclips prior to scanning * QC of original to determine simplex or duplex scanning setting.   3 levels of scenarios for consideration depending on scanning platform:   * Ongoing/ batch scanning * Barcode scanning * Routed and directed to indexed files   If scanning in batches, include document separator/cover sheets to distinguish each document within the batch. Metadata for indexing should be considered in the process.  **Criteria for QC: Image Quality**   * Are all pages present? Are there any double feeds? * Are all pages rotated the right way? * Is the image too light/too dark? * Are pages skewed? * Any post it notes inadvertently scanned? * Is all content legible? * Are all signatures legible? * Are pages in the correct sequence? * Is everything in paper present in the electronic image? I.e. information such as headers/footers are not cut off? * Are there any bent corners blocking document content? * If scanner settings are duplex, are true blank pages removed? * Is the document the right size? (e.g., US Letter A4) * Removal of hole punches on images is not recommended * Removal of any content from the original document is not recommended (e.g. fax header information) * De-speckling is not recommended   The quality of the image should replicate the quality of the original. It is not recommended that images be enhanced. If an image is too light/ dark, retention of the paper original to be considered.  There should be a signature of confirmation of QC, or if the QC step is completed electronically, an audit trail to show who is attesting to the accuracy and completeness. Ensure the audit trail feature is turned on. |
|  |  | BIBLIOGRAPHY/REFERENCES: |
|  | 1. | <http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030186227-> British Standards Institution (BSI) BIP 0008: Code of Practice on Legal Admissibility and Evidential Weight of Information Stored Electronically- for scanning and audit trail requirements in the UK |
|  | 2. | <http://www.fda.gov/downloads/Drugs/DevelopmentApprovalProcess/FormsSubmissionRequirements/ElectronicSubmissions/UCM163179.pdf>-  FDA requirements for electronic submissions on the format of PDF documents |
|  | 3. | Industry opinion: various documents compiled by quality topic team members outlining process and quality control checks, including scanning settings, pdf version required for scanning (PDF/A is an ISO Standard for using PDF format for the long-term archiving of electronic documents), batch scanning, indexing, QC of scanned documents and importing to an eTMF system. |
|  | 4. | [www.fda.gov/OHRMS/DOCKETS/98fr/04d-0440-gdl0002.pdf-](http://www.fda.gov/OHRMS/DOCKETS/98fr/04d-0440-gdl0002.pdf-) FDA Guidance for Industry: Computerized Systems Used in Clinical Investigations for definition of certified copy |

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| 2. | Quality | Certification of authenticity of scanned images as a certified copy |
| Process map steps 308-311 |  | **Criteria for QC: Indexing Quality**  Indexing document attributes or metadata may be completed prior or after scanning, dependent on company processes in place, but all attributes should be checked for accuracy before QC signature and upload into an eTMF system.  There should be a signature or if the QC step is completed electronically, an audit trail to show who is attesting to the accuracy and completeness. Ensure the audit trail feature is turned on.  **Levels of QC**   * QC signatures or audit trail to document the chain of custody and process through the life of the original and electronic document.   + Tracks how the document came in, who scanned documents and reviewed the image.   + Tracks quantity and quality   + Tracks who uploaded and approved the document. * If companies wish to use the scanned copies in lieu of the paper source data, (i.e. destroy the paper) the scanned copies must meet the definition of a certified copy.   + Criticial documents should be considered.   + List of Protected Documents not to be destroyed should be defined by Sponsor and maintained through the life of the study.   "A certified copy means a copy of original information that has been verified, as indicated by dated signature, as an exact copy having all of the same attributes and information as the original."   * It is recommended that where the paper will be destroyed, that all documents are fully QC’d against the electronic images to show they are verified as certified copies. Company records management policies should be followed. * If companies will not be destroying paper, an acceptable quality level can be applied to QC (i.e. algorithm for QC). * It is recommended that the QC step is performed by a different person than the person that performed the scanning and QC of image quality. |
|  |  | BIBLIOGRAPHY/REFERENCES: |
|  | 1. | Microfiche regulations? |
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| 3. | Quality | A documented quality driven process for destruction of paper documents and maintaining certified copies in an eTMF system. |
| Process map steps 308-311 |  | In compliance with regulations and legal requirements  **eTMF systems**  If companies wish to retain these copies in an eTMF system, in lieu of paper, the eTMF system would have to comply with FDA 21 CRF part 11 and Section 5.5 of the Note for Guidance on Good Clinical Practice (CPMP/ICH/GCP/135/95)1.  This includes:   * System validation * Maintenance of SOPs for the use of the system * Maintenance of an an audit trail of data changes ensuring that there is no deletion of entered data * Maintenance of a security system to protect against unauthorized access * Maintenance of list of the individuals authorized to make data changes * Maintenance of adequate backup of the data, safeguard the blinding of the study and archiving of any source data (i.e. hard copy and electronic) * Appropriate training records for those involved in the scanning and uploading processes * Documents being easily located and traceable in the system |
|  |  | BIBLIOGRAPHY/REFERENCES: |
|  | 1. | From Kansas Historical Society on Electronic Records (<http://www.kshs.org/p/digital-imaging-guidelines-for-state-agencies/11329>):  Recommendation 7: When determining document scanning resolution, consider data storage requirements, document scanning throughput rates, and the accurate reproduction of the image. Validate vendor claims using a sampling of the agency's documents.  A digitized image consists of black and white dots or picture elements (pixels) measured in dots per inch (dpi). The higher the number of dpi, the higher the legibility of the reproduced image. Images scanned at higher dpi rates, however, use more storage space on the disk and may require longer scanning times. The selection of scanning density involves a trade-off between image clarity, storage capacity, and speed. When selecting a scanner, ask the vendor to perform a quality test on a broad sampling of documents at various dpi settings so that an appropriate end-to-end throughput rate and resolution can be determined.  For good quality images in scanning modern office records, use a scanning density of at least 300 dpi. A higher scanning density (600 dpi or higher) is appropriate for deteriorating documents, and documents with a visual element such as, engineering drawings, maps, or documents with background detail. The display resolution of the inspection/verification monitor and printer should match the scanning density of the document scanner. When scanning continuous tone images, such as photographs, maps, and illustrations, use gray scale or color imaging technology.  Recommendation 10: Use an indexing database that provides for efficient retrieval, ease of use, and up-to-date information about the digital images stored in the system. The indexing database should be selected after an analysis of agency operations and user needs.  Reliable access to scanned images depends on an accurate, up-to-date index database. Indexing a digital image involves linking descriptive image information with header file information. Normally, index data is manually key-entered using the original documents or the scanned images, either at the time of image capture or later in the production process. Index data verification, in which database entries are compared with the original source documents for completeness and accuracy, is crucial because an erroneous index term may result in the inability to retrieve related images. |
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| 4. | Quality | Training – appropriate training must be completed and documented. |
|  |  | All personnel involved in the scanning, uploading, and QC process should have appropriate training to enable that person to perform the assigned functions. All training should be documented, and training records should be maintained.  Competency levels checked and assessed, and personnel certification documentation should be maintained. |
|  |  | BIBLIOGRAPHY/REFERENCES: |
|  | 1. | [21 CFR 211.25](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=7dd85d103109b118e10d506176b104fb&rgn=div8&view=text&node=21:4.0.1.1.11.2.1.2&idno=21); [Eurdralex, Vol 4, Chapter 2 Personnel](http://ec.europa.eu/health/files/eudralex/vol-4/pdfs-en/cap2en200408_en.pdf) |
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| 5. | Quality | Consultants and Vendors – requirements |
| Process map steps 104-105 |  | Any trial-related duty or function that is transferred to a third party (e.g., CRO, consultants, vendors) should be specified in writing. Consultants, Vendors and CROs should have training to advise on the subject for which they are retained. Records should be maintained stating the name, address, and qualifications of any consultants and the type of service they provide.  It is recommended that the standards described in this document are included in vendor contracts, agreements, oversight plans, *etc.*, as appropriate. |
|  |  | BIBLIOGRAPHY/REFERENCES: |
|  | 1. | Section 5.2 of [ICH GCP Guideline](http://www.ich.org/fileadmin/Public_Web_Site/ICH_Products/Guidelines/Efficacy/E6_R1/Step4/E6_R1__Guideline.pdf); [21 CFR 211.34](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=7dd85d103109b118e10d506176b104fb&rgn=div8&view=text&node=21:4.0.1.1.11.2.1.4&idno=21) |
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| 6. | Quality | Quality monitoring |
| Process map step 112 |  | It is recommended to conduct routine monitoring of metrics and systems to ensure validation processes are being met and maintained. |
|  |  | BIBLIOGRAPHY/REFERENCES: |
|  | 1. | Request Regulatory reference |
|  | 2. |  |

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| 7. | Quality | Risk Assessment |
| Process map step 112, 201 |  | A Risk Evaluation and Mitigation Strategy Plan (REMS) should be established in a Paper Destruction pilot process.   * Milestones and considerations throughout the pilot, as well as at the end of the pilot to determine how to proceed with a Paper Destruction process. |
|  |  | BIBLIOGRAPHY/REFERENCES: |
|  | 1. |  |
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