DRAFT FOR COMMENT
(Highlighted Portions Only Open for Comment)

STANDARD FOR FRICTION RIDGE DIGITAL IMAGING (LATENT/TENPRINT)

Preamble

These standards shall be applied to the digital recording and depiction of friction ridge impressions that are to be used for examination purposes. These standards do not extend to image adjustments on an AFIS system. Policies and procedures must be in place for the digital capture, storage, retrieval, display, and transmission of friction ridge images retained as evidence. This standard establishes requirements for the preservation of identity, authenticity, integrity, and security of friction ridge digital images. Prior to conducting digital imaging tasks in friction ridge examination cases, examiners shall have completed training appropriate to each task before them.

1 Policies

Agencies shall establish policies to determine which friction ridge digital images will be retained as evidence.

2 Image Documentation

Friction ridge digital images, documentation, or associated data shall include the following:

2.1 A unique case identifier. This association may be accomplished by one or more of the following methods:

2.1.1 As part of the digital image.

2.1.2 As part of the file name.

2.1.3 As data associated with a digital image within an imaging database.

2.1.4 As data associated within a standardized record (i.e., ANSI NIST, Record Level 2).

2.2 Date and initials or personal marking.

2.3 Description or identifier of the item bearing the friction ridge impression.

2.4 Information about the orientation or position of the friction ridge impression on the object through description, diagram(s), or photograph(s).

2.5 Scene location or address, if other than the laboratory.

2.6 Accurate scale information.

2.7 Make and model of the capture device.

3 Image Quality

3.1 Friction ridge impressions to be used for comparison purposes shall be captured (color or grayscale) at a minimum resolution of 1000 ppi when the image is sized 1:1. Interpolation from a lower resolution up to 1000 ppi does not meet this requirement. Justification for any deviation from this standard shall be documented on a case-by-case basis.

3.1.1 Stationary equipment (digital scanners and digital cameras) shall be calibrated at least annually in order to consistently and reliably capture 1000 ppi images.

3.1.2 If the equipment is relocated or malfunctioning, it is recommended to re-calibrate the equipment prior to use.

3.1.3 Details of accepted calibration procedures are available in the SWGIT Procedure for Testing Scanner Resolution for Latent Print Imaging, and the Procedure for Testing Digital Camera System Resolution for Latent Print Photography documents. (www.swgit.org, Sections 21 and 22)

3.2 Grayscale digital imaging shall be at a minimum of 8 bits. Color digital imaging shall be at a minimum of 24 bits.

3.3 Friction ridge impression digital images to be used for comparison purposes shall be stored and transmitted without compression or with lossless compression. Capture in a raw file format is recommended.

4 Image Integrity

4.1 A primary image is the result of the first recording of an image onto media. An original image is an accurate replica (bit-for-bit value) of the primary image. Each original image shall be stored in a manner which permits authentication.

4.2 Enhancement shall only be conducted on working copies of the original image. Working copies used in forensic case examination shall be saved as a separate copy and shall not replace the original image.

4.3 Digital images captured from lifts or from conventional photographs or negatives shall not replace the lift, negative, or photograph as original images.

4.4 Agencies shall have procedures to ensure the accessibility of digital images, e.g. images may be archived in a format to ensure their accessibility, hardware and software may be archived to ensure accessibility of images [1].

5 Casework Documentation

5.1 Procedures shall be in place to ensure the accuracy and completeness of documentation.

5.2 Casework documentation shall distinguish friction ridge impression digital images from lifts or photographs.

5.3 The application of digital image processing (enhancement) techniques shall be documented. This documentation shall be sufficient to enable evaluation or replication of the digital image processing techniques.

6 References

1. SWGIT, *Best Practices for Archiving Digital and Multimedia Evidence (DME) in the Criminal Justice System*, 6/4/07, ver. 1.0, www.theiai.org/guidelines/swgit/guidelines/section_15_v1-0.pdf.

2. SWGIT, Section 21, Procedure for Testing Scanner Resolution for Latent Print Imaging, ver. 1.0 2012.01.12, http://theiai.org/guidelines/swgit/guidelines/section_21_v1.pdf

3. SWGIT, Section 22, Procedure for Testing Digital Camera System Resolution for Latent Print Photography, ver. 1.0 2012.01.13, ttp://theiai.org/guidelines/swgit/guidelines/section_22_v1.pdf