



STANDARD FOR FRICTION RIDGE AUTOMATION TRAINING (LATENT/TENPRINT)

Preamble

Prior to automation training, friction ridge examiners must possess the knowledge, skills and ability to recognize identifiable friction ridge detail.

This standard addresses the minimum training required for examiners working with friction ridge automation technology. Examiners shall receive training that provides the necessary skills and ability to operate friction ridge automation technology. The examiner must demonstrate knowledge of required objectives by passing written tests or practical exercises and by communicating an understanding of the objectives and underlying principles.

The following are required learning objectives.

1 History of Automation Technology and Theory of Operation

1.1 History of the development of friction ridge automation technology.

1.2 Theory of the operation of friction ridge automation technology.

1.2.1 Distortion that may occur when three-dimensional friction ridge skin is captured as a two-dimensional image.

2 Function and Use of Image Capture

2.1 Types of friction ridge recordings (e.g., rolled, flat, simultaneous, palm impressions).

2.2 Methods of friction ridge capture (e.g., ink, livescan).

2.3 Types of capture devices (e.g., live-scan, flatbed, camera).

2.4 Point of capture variables (e.g., condition of fingers, condition of platen, rolling speed, movement).

2.5 Control measures needed to achieve quality friction ridge images (e.g., scan resolution, compression rate, equipment maintenance, calibration).

2.6 Procedures for addressing amputations, temporary injuries, skin conditions, rescans.

2.7 Individual agency livescan operator training policies.

3 Function and Use of Automated Fingerprint Identification System (AFIS)

The term AFIS as used herein includes automated systems for any friction ridge area.

3.1 AFIS processes related to acquisition, classification, searching, storage, retrieval, identification, final reporting of friction ridge records.

3.2 Friction ridge search criteria (e.g., designated finger search, how many fingers, palm areas).

3.3 Importance quality assurance has on maintaining the integrity of friction ridge data.

3.4 Quality controls, which ensure completeness, image quality, data integrity.

3.5 Individual agency's system, component maintenance, calibration policies.

3.6 System requirements and limitations including text data fields, fingerprint or palmprint (image) quality, finger sequence and image replacement, image rotation, tolerance for pattern interpretation.

3.7 Minutiae recognition, placement, rotation, ridge counts, other minutiae factors related to searching and matching.

3.8 Limitations of system interoperability.

3.9 Integration of friction ridge image, mugshot, scars, marks, tattoos, minutiae, other biometrics, as well as personal descriptors, criminal history information.

3.10 Search parameters, pattern classification and referencing, minutiae extraction, search algorithms, significance in the range of candidate scores, threshold scoring, candidate list comparison, matching.

3.11 AFIS search capabilities in regards to latent print versus tenprint, tenprint versus latent print, latent print versus latent print, tenprint versus tenprint, palmprint versus palmprint.

3.12 "Lights out" processing of searches (e.g., mobile search capabilities).

3.13 Logical search progression (i.e., local AFIS first, then state, regional, national, international).

3.14 Filtering criteria used to establish logical candidates (e.g., finger position, sex, classification, race, offense, geographic location).

3.15 Search result contents (e.g., ranked order, unique identifier, finger or palm position).

3.16 Differences between AFIS digital images and original friction ridge impressions (e.g., potential loss of quality due to compression of image, monitor resolution, capture resolution).

3.17 Printer technology limitations versus examinations from original friction ridge documents (e.g., paper quality, inked fingerprint cards).

3.18 AFIS processes related to latent print searches.

- 3.18.1** Various search options among databases within a system (e.g., image, feature).
- 3.18.2** Manual and automatic encoding of minutiae.
- 3.18.3** File penetration benefits and liabilities of partial versus full database searches.
- 3.18.4** Record authentication processes (e.g., correct association of name, unique identifier, friction ridge images, criminal history record).