



Latent Print Section
Automated Fingerprint Identification System
(AFIS) Operations
Comparative & Analytical Division



1. Automated Fingerprint Identification System (AFIS) Operations

1.1. Scope

1.1.1. This procedure details the searching and retrieval of finger and palm print records and latent impressions in local, state, and federal databases located within the Latent Print Section of the Houston Forensic Science Center (HFSC). This procedure also includes the definition of Preliminary AFIS Associations and how it is applied to AFIS searches and reporting.

1.2. Preliminary AFIS Association (PAA)

1.2.1. A Preliminary AFIS Association is the result of searching an image of a latent print impression in AFIS and a conclusion is reached, based on comparing the returned candidate records onscreen, that the two friction ridge impressions have corresponding characteristics contained within that are sufficient to conclude they **MAY** have originated from the same source.

1.2.2. Official identifications are **NEVER** reported from PAA results alone.

1.3. Equipment

1.3.1. IDEMIA AFIS (formerly titled as MorphoTrak) is a database containing latent and record finger/palm prints. This database is housed and maintained by the Harris County Sheriff's Office (HCSO). It is available to HFSC but is operated outside the scope of HFSC.

1.3.2. Texas Department of Public Safety (DPS) houses and maintains a database containing latent and record finger/palm prints. It is accessed by and searched through the Universal Latent Workstation (ULW) software provided by the Federal Bureau of Investigation (FBI). It is available to HFSC but is operated outside the scope of HFSC.

1.3.3. The Next Generation Identification (NGI) is a database containing latent and record finger/palm prints. This database is housed and maintained by the Federal Bureau of Investigation's (FBI) Criminal Justice Information Services Division (CJIS). It is available to HFSC but is operated outside the scope of HFSC.

1.4. Procedure

1.4.1. Obtaining Database Record Prints

1.4.1.1. Latent Print Examiners may have access to the HCSO, DPS, and FBI's databases in order to obtain record prints.

1.4.2. Unknown Latent Impression Searches

1.4.2.1. There are instances where some latent prints within the same case are determined to be duplicate impressions. An examiner may choose to not search all the duplicates but choose the latent impression with the best clarity and quantity of friction ridge detail for optimal search results.

1.4.2.2. Interpretation of suitability for searches in AFIS is based on the experience and judgment of the examiner conducting the analysis and is subject to verification.

1.4.2.3. Section workflows and customer requests can determine which databases unidentified latent impressions are searched and retained in.



- 1.4.2.4. Latent print examiners can encode, search, and compare the latent impressions to returned candidates for a possible PAA for each of the databases used. The following naming conventions should be used for the designated systems:
- IDEMIA AFIS – When searching the IDEMIA AFIS database, the file name format field must be ten (10) characters long. The designator “HF” should precede the file name format to designate a latent encoded by HFSC followed by the last two digits of the year of the forensic case number (FCN). Since the FCN must be 10 characters long, zeros should be inserted in between the two-digit year and the laboratory number until the case ID field reaches ten characters.
 - Example: FCN 2017-00123 to be entered. Add one (1) zero after the year.
 - HF17000123
 - Latent impressions searched within the IDEMIA database should be entered at 1000ppi and saved in a JPEG format.
 - DPS – When searching the DPS database, the format field is ten (10) digits long. The complete FCN of the case should be used. Replace the dash between the year and the case digits with a zero.
 - Example: FCN 2017-00123
 - 2017000123
 - Latent impressions searched within the DPS database should be entered at 500ppi or 1000ppi and saved in a TIFF format.
 - NGI – When searching the NGI database, the format field is ten (10) digits long. The complete FCN of the case should be used.
 - Example: 2017-00123
 - Latent impressions searched within the NGI database should be entered at 500ppi or 1000ppi and saved in a TIFF format.

1.4.3. Investigative Lead Reports

1.4.3.1. Investigative Lead Reports have been designed and implemented to provide the customer with preliminary investigative leads in a timely and efficient manner. The customer evaluates the PAA contained within the report and determines if the association would provide additional merit to his/her investigation. A full confirmatory examination can be requested, where all suitable latent prints undergo a full comparison and verification to confirm either identification, inconclusive, or exclusion.

1.4.3.1.1. It is recognized that performing on-screen comparisons utilizing AFIS search software does not offer the examiner the full capacity to effect an identification. Potential loss of quality due to compression of the image(s), monitor resolutions, capture resolutions, limited enhancement tools, etc. are all possible utilizing various AFIS software comparison tools.

1.4.3.1.2. As a presumptive examination, it is also recognized that due to these factors false PAAs may be discovered upon performing an official confirmatory examination with the original latent images and record prints. This does not rise to the same level as an erroneous identification.



1.4.3.2. When an examiner determines that a PAA has been made, based on the information displayed on the AFIS system screen, a digital screen shot will be taken of the latent image searched and the associated record finger and/or palm image. For complex, severely degraded or fragmented latent prints, and/or poor-quality images of the record candidate on-screen, examiners have the discretion to seek a consultation from another examiner and/or obtain clear record finger and/or palm prints from a database. Any consultations between examiners must be documented in the case record.

1.4.3.3. The screen shot will clearly indicate the identity of the examiner and date of PAA. This indication will be visible by capturing the time and date at the bottom of the window within the screen shot and the examiner's initials in the file name of the screen shot. In addition to the screen shot of the latent and the displayed candidate print, the available demographic information of the candidate will also be saved; this may include name, date of birth, and HCSO, State Identification Number (SID), or FBI numbers. This will be included in the case record.

1.4.3.3.1. For searches conducted in IDEMIA, all information cannot be captured within one screen shot. One screen shot will capture the side by side of the latent and record print displayed, as well as the time and date displayed at the bottom of the window. Other screen shots will capture the available demographic information of the candidate as described in 1.4.3.3. The file name format should be written as follows for the consecutive screen shots:

- L-001 Case # ACCS (Last Name of Person) Initials of Examiner
- L-001 Case # ACCS Info 1 (Last Name of Person) Initials of Examiner
- L-001 Case # ACCS Info 2 (Last Name of Person) Initials of Examiner

1.4.3.3.2. For searches in DPS and FBI, all information can be captured within the initial screenshot. The file name format should be written as follows:

- L-001 Case # ACCS (Last Name of Person) Initials of Examiner
 - Example: L-001 2018-12345 ACCS (Smith) TJS

1.4.4. Reverse Associations

1.4.4.1. IDEMIA and NGI can register unidentified latent impressions to their respective Unsolved Latent Files (ULF).

1.4.4.2. When a latent impression is searched, and no PAA is made, the latent impression may be registered, depending on section workflow.

1.4.4.3. If a latent impression is registered to the ULF, all incoming record finger and/or palm prints are compared by the database software to the latent impressions registered in the ULF. Using a matching algorithm, the system searches for relationships between the registered print and all incoming record prints. Once a set threshold of correlation exists, the system will then send potential candidates back to the submitting agency to be reviewed.

1.4.4.4. When an examiner determines that a PAA has been made based on the information displayed on the AFIS system screen, the procedure listed in steps 1.4.3.2 and 1.4.3.3 should be followed.

1.5. Records/Results



1.5.1. Examiners will document their case activities using the approved section notes and will issue a report of their findings following the Reporting Results and Interpretations Standard Operating Procedure.

1.6. Quality Assurance/Quality Control

1.6.1. Technical and administrative reviews are performed on all casework before a final report is released.

1.7. References

HFSC Latent Print Section, *Reporting Results and Interpretations Standard Operating Procedure*.

HFSC Latent Print Section, *Analysis, Comparison, Evaluation and Verification Methodology Standard Operating Procedure*.

SWGFAST, *Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V)* 09/11/12 Ver 2.0

SWGFAST, *Document #12 Standard Friction Ridge Automation Training (Latent/Tenprint)* 11/14/12 Ver 2.0

SWGFAST, *Document #101 Limited Examination Considerations for Latent Print Sections (Latent) Position Statement* 09/11/12 Ver 1.0