

Approved by Director: Dr. Guy Vallaro

Purpose: To outline the methods utilized by the latent print examiner for the comparison of friction ridge skin impressions.

Responsibility: Latent Print Examiners

Safety:

Procedure:

1. The comparison of friction ridge skin impressions are conducted utilizing the Analysis, Comparison, Evaluation, and Verification (ACE-V) methodology. This includes both qualitative and quantitative analysis of the following three levels of friction ridge detail:

Level I Detail

Overall ridge flow / pattern shape

**Cannot be used alone to individualize.*

**Can be used to exclude under certain circumstances.*

Level II Detail

Individual ridge path and events (bifurcations, ending ridges, and dots)

**Used in conjunction with level one detail to individualize as well as to exclude.*

Level III Detail

Ridge dimensional attributes (width, edge shape, pores)

**Used in conjunction with level one and level two detail to form a conclusion.*

Other Features Associated with Friction Ridge Prints

Creases

Injury related features both temporary and permanent (scars/cuts/blister)

Skin ailments such as warts

**These other features may be used in conjunction with friction ridge detail to individualize or exclude.*

2. The following types of comparison may be conducted:

**State of Connecticut Department of Emergency Services and Public Protection
Division of Scientific Services**

Documents outside of Qualtrax are considered uncontrolled.

Approved by Director: Dr. Guy Vallaro

- a. Unknown vs Known
- b. Known vs Known
- c. Unknown vs Unknown

2.1 Known Prints

Known prints are those from a known source generally recorded under a controlled environment. Examples of known prints are:

- a. Ten Print / Palm Print Cards recorded by a law enforcement agency.
- b. Elimination Print Submissions
- c. Prints obtained from the Medical Examiner's Office (serve as both known and unknown)

2.2 Unknown Prints

Unknown prints are of unknown or questionable origin. Examples of unknown prints are:

- a. Prints obtained from crime scenes (unknown)
- b. John Doe prints searched in a database (serve as both known and unknown)

3. ACE-V Methodology

3.1 Analysis

All friction ridge impressions shall be evaluated to determine their value. When conducting an examination to determine the value of an impression the following factors shall be considered:

- a. Anatomical Source (e.g., fingerprint, palm print)
- b. Anatomical Orientation (e.g., distal, top, bottom, etc.)
- c. Presence of level 1 detail
- d. Presence of level 2 detail
- e. Presence of level 3 detail
- f. Substrate

Approved by Director: Dr. Guy Vallaro

- g. Development Method
- h. Preservation Method
- i. Distortion (and cause if it can be determined)

3.1.1 Itemizing Friction Ridge Impressions of Value

Friction ridge impressions determined to be of identification value or of comparison value will be documented and itemized on both a worksheet and on a printed photocopy or photograph. Impressions determined to be of value will be clearly marked by the examiner. There should be no confusion as to the print of value and its associated number, or letter, or number letter combination. Examiners are not required to itemize or make comparisons to impressions determined to be of no value.

3.1.2 Marking of Photocopies & Photographs

All photocopies and photographs containing latent prints of value shall also contain at a minimum the following information:

- a. Laboratory Case Number
- b. Submission Number (this may be part of the itemized number assigned to the impression of value, see 3.1.1 above)
- c. Examiner's Initials

3.2 Comparison

After a thorough examination has been made of the unknown or questioned impression(s) of value, it may be compared to the known impression(s).

3.3 Evaluation

After a thorough examination, the analyst may report one of three conclusions. The exact wording of the conclusion will be at the discretion of the examiner, but there should be no doubt that one of the following three conclusions was rendered.

- a. **That an identification was made.** *When an identification is made to a friction ridge impression, the impression number and source candidate are reported. If no identification is made then all submitting agency requested candidate exemplars*

Approved by Director: Dr. Guy Vallaro

which were examined will be reported out as excluded or inconclusive (see 3.3b and 3.3c).

b. **That the questioned source was excluded.** *An exclusion will only be reported when one the following conditions have been met.*

1. A known anchor point is available in both impressions which encompasses sufficient target groups for the conclusion to be made. If an anchor point cannot be documented then the result will be reported as inconclusive.
2. The anchor point of the questioned impression can be classified as to its anatomical region (e.g. finger, palm, thenar) and sufficient ridge detail is present. If the anatomical region of the latent impression cannot be determined then the result will be reported as inconclusive.

c. **That the results of the examination were inconclusive.** *The reason(s) for an inconclusive result will be documented. Reasons for inconclusive results are as follows:*

1. Inconclusive due to a lack of sufficient detail and or clarity in the latent impression.
2. Inconclusive due to insufficient exemplars.

3.3.1 Documentation of an identification shall be available in the case file and shall include:

- a. Itemized friction ridge impression examined
- b. Known individual's name and/or identifying number (e.g. John Doe, SPBI #000123456, Submission #)
- c. Anatomical Source (e.g. right thumb, left palm)
- d. Initials, signature, or equivalent (e.g. unique identifier, electronic signature) of examiner
- e. Date of identification

Approved by Director: Dr. Guy Vallaro

3.3.2 Documentation of an exclusion or inconclusive finding shall be available in the case file and shall include:

- a. Itemized friction ridge impression examined
- b. Known individual's name and/or identifying number (e.g. John Doe, SPBI #000123456, Submission #)
- c. Note of exclusion or inconclusive finding
- d. Initials, signature, or equivalent (e.g. unique identifier, electronic signature) of examiner
- e. Date of finding

4. Verification

The results of all evaluations by the primary examiner (analyst) shall be verified by a secondary examiner (technical reviewer). If the secondary examiner agrees with the primary examiner, he shall sign the report prepared by the primary examiner and also initial and date the photograph of any identified friction ridge impressions. The primary examiner's initials, date, and source of the impression shall also be on the photograph of the identified impression which was verified.

5. Simultaneous Impressions

Friction ridge impressions are simultaneous if they are deposited with one touch to the item or surface. The most obvious example of this would be impressions from adjoining fingers from one touch of the hand.

5.1 Individual segments of simultaneously placed impressions may or may not have sufficient value to arrive at a conclusion of identity.

5.2 It shall be the policy of this laboratory that at least one segment or area of detail of a simultaneously placed impression be able to stand alone in arriving at a conclusion of identity. An aggregate of detail from multiple impressions deemed simultaneous should only be utilized if a least one segment of detail can be individualized in and of itself.

Approved by Director: Dr. Guy Vallaro

5.3 Proper documentation of simultaneous impressions shall include notes of analysis and photography.

6. Conflict Resolution

When a disagreement as to a conclusion of identity arises between two examiners which cannot be reconciled, then the following protocol will be followed:

- a. The materials pertaining to the disagreement will be independently reviewed by all latent print examiners not involved in the disagreement.
- b. The results of each examiner's independent review will be placed in a sealed envelope which will be given to the latent print supervisor.
- c. A meeting of the latent print section will be called and the results of the independent review will be disclosed to all members of the latent print unit.
- d. If the findings of the independent review are unanimous then that decision will stand. Discussion of the results of the review will follow to determine the cause of the disagreement. Corrective action shall be taken if necessary.
- e. If the findings of the independent review are not unanimous, then the issue at hand will be reported as inconclusive.
- f. A conflict resolution report shall be completed and placed in the case file from which the independent review was conducted. The report shall contain the following information:
 1. Names of the examiner's in disagreement
 2. A description of the issue at hand
 3. Names of the independent reviewer's
 4. Results of the independent review
 5. Final action taken

6.1 There are times when the quality of a latent print is in such poor condition that the examiner may seek the input of other, or more experienced examiners, and this should be encouraged. But when an examiner is insistent of an identification he made, only to be rebuked by a unanimous decision

Approved by Director: Dr. Guy Vallaro

of his peers, then this is a serious matter which must be dealt with appropriately. Appropriate action can take the form of any one of the following

- a. Retraining
- b. Re-evaluation of prior casework.
- c. Retraining and re-evaluation of prior case work.
- d. Retraining and removal from case work for a predetermined amount of time.
- e. Referral to a medical doctor (i.e. possible vision problem).
- f. Any other appropriate action.

7. Authorized Tools

The following tools (materials, methods, and software) may be used to assist the examiner throughout the ACE-V process:

- a. Fingerprint Magnifying Glass
- b. Analog Photography
- c. Digital Photography
- d. Flatbed Scanners
- e. Adobe Photoshop
- f. CorelDraw Graphics Suite
- g. Foray Adams System
- h. AFIS System
- i. Other Task Related Tools or Software

References:

FBI. **Standard Operating Procedures for Examining Friction Ridge Prints.** Latent Print Operations Manual Revision:4, 02-17-2012

Dechant, Penny; Ray, Eric. **Policies to Reduce Erroneous Exclusions.** IAI 2012 Conference

Approved by Director: Dr. Guy Vallaro

SWGFAST. **Individualization / Identification Position Statement**. Posted 04/21/2012;
http://www.swgfast.org/Comments-Positions/120306_Individualization-Identification.pdf

Phoenix Police Department. **Latent Print Comparative Procedures / Conclusions and Report Writing**. Policy #LPC-SOP-19-005, Effective 05-15-2012.

SWGFAST. **Standards For Examining Friction Ridge Impressions And Resulting Conclusions**.
Ver. 1.0; 10-26-2011; http://www.swgfast.org/documents/examinations-conclusions/110913_Examinations-Conclusions_1.0.pdf

SWGFAST. **Standard For The Documentation Of Analysis, Comparison, Evaluation, And Verification (Ace-V) (Latent)**. Ver.1.0; 02-12-2010;
http://www.swgfast.org/documents/documentation/100310_Standard_Doumentation_ACE-V_1.0.pdf