



Document #8
**Standard for the Documentation of Analysis, Comparison,
 Evaluation, and Verification (ACE-V)**
(Latent)

1. Preamble

- 1.1. When friction ridge detail is examined using the ACE-V methodology, examiners' documentation shall be such that another qualified examiner can determine what was done and interpret the data. Documentation shall be made at or near the time of the examination and may be in the form of annotated images, narratives, worksheets, annotated legible copies, sketches, Automated Fingerprint Identification System (AFIS) or electronic records, or any combination of these methods. This documentation will be a part of the case record. A case record consists of the administrative and technical records, whether hard copy or electronic, pertaining to a particular case. The case record may include digital or physical files of latent lifts, printed photographs, chain of custody, exemplars, case notes, requests, and reports.
- 1.2. Although all examinations require documentation, the extent of the documentation is related to the complexity of the examination. The friction ridge impression alone is not sufficient documentation. The impression or a legible copy shall be annotated or have accompanying notes.
- 1.3. It is understood that not all information may be available to the examiner. If the information is available, the relevant information shall be noted.
- 1.4. For the purposes of this standard, "latent print" refers to a questioned friction ridge impression and "known print" refers to exemplars of friction ridge skin. Additionally, the standard refers to the documentation of ACE-V on preserved latent prints (e.g., latent prints recovered on a lift or in a photograph). This standard does not apply to latent prints developed on evidence that are not preserved.
- 1.5. Agency policy should define what constitutes a latent print "of value". For example, an agency may determine that latent prints are "of value" for comparison or that latent prints are "of value" for individualization.

2. Analysis

2.1. Latent prints of value

- 2.1.1. Analysis documentation of a latent print of value shall be completed prior to comparison. The quality and quantity of the information present in the latent print will dictate the extent of the documentation (Figure 1). At a minimum, the following shall be documented in the case record:

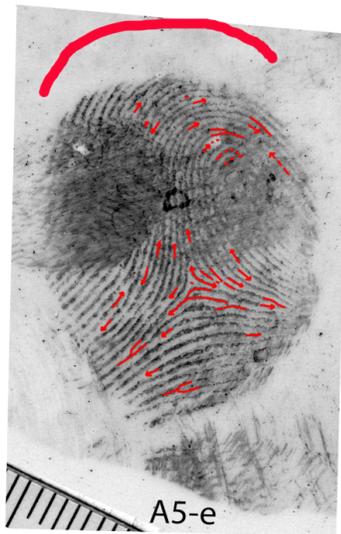
Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

- 2.1.1.1. Anatomical source (e.g., fingerprint, palmprint)
- 2.1.1.2. Anatomical orientation (e.g., distal direction)
- 2.1.1.3. Presence of level 1 detail
- 2.1.1.4. Presence of level 2 detail
- 2.1.2. When known, the following shall be documented within the case record:
 - 2.1.2.1. Substrate
 - 2.1.2.2. Development medium
 - 2.1.2.3. Preservation method (e.g., lift, photograph, legible copy)
- 2.1.3. The analysis of latent prints may also include documentation of additional factors such as matrix, deposition pressure, lateral movement, rotational movement, level 3 detail, or other friction ridge skin detail (e.g., creases, scars) (Figure 1).
- 2.1.4. If the original latent print of value will not be maintained in the case record, a legible copy of the latent print shall be retained.

Discussion

- An examiner marking or noting the anatomical source and anatomical orientation of latent prints documents how he or she searched or compared, or intends to search or compare, the latent print.
- “Of value” can be indicated by symbols or markings. These symbols or markings could also denote the anatomical source, anatomical orientation, and presence of levels of detail. If used, the agency shall define each symbol and its meaning. If the anatomical source or orientation cannot be determined, this should be noted. For example, if the examiner is unsure of the anatomical source or orientation, a “?” could be placed next to the symbol marking the print.
- The substrate, development medium, or preservation method can have a significant impact on the appearance of a latent print. If the latent print or legible copy is part of the case record and contains this information, it may be considered documented. Substrate, development medium, or preservation method may be recorded in case notes.
- Additional analytical factors, particularly on complex prints, provide the basis for distortion interpretation and explanations for variation in appearance. This information may be documented via annotated images, annotated legible copies of images, notations on a worksheet, or in a narrative description. See Section 6 (Documentation of Complex Latent Print Examinations).

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B



fp/R. Loop or Whorl / Level 1,2,3/AFIS- Yes
Double touch. Horizontal smears from
core area to second touch/overlapping
impression. Diagonal smear marks in
upward direction below + to right of
delta. Vertical smear marks below
joint crease + to left (bottom left)
of latent.

Figure 1

An example of an annotated legible copy of latent print from a lift card demonstrating a more detailed documentation of the analysis.

2.2. Latent prints of no value

The presence of friction ridge impressions that are of no value shall be documented (Figure 2).

Discussion

- It is important to indicate in the case file that latent prints were analyzed and determined to be of no value. Documentation, for example, may be accomplished by making a “no value” notation (e.g., “NV”) on a lift, photograph, or legible copy retained as part of the case record. Documentation may be accomplished by indicating in case notes that “no value” impressions are present on a lift or photograph.
- Although it is permissible to retain all latent prints, original or legible copies of latent prints that are of no value do not need to be retained in the case record.

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

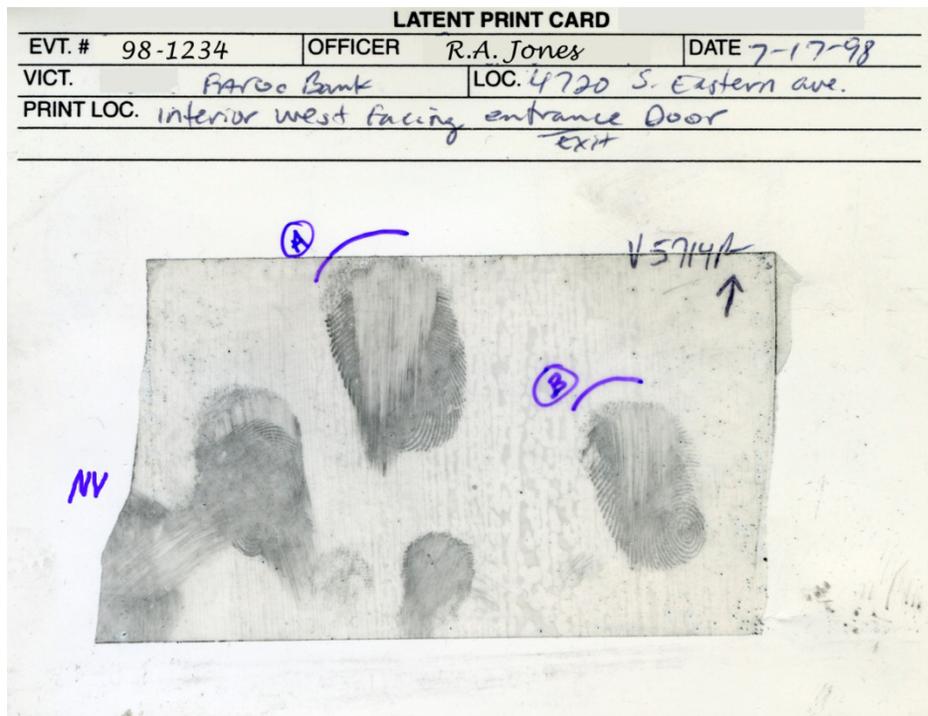


Figure 2

Copy of lift card with latent prints of value and latent prints of no value documented. There is a semicircle over the top of each latent print of value for comparison (also marked "A" and "B"). The symbol represents the anatomical source, the anatomical orientation, and the presence of level 1 and level 2 detail. The "NV" indicates that there are latent prints of no value also present on the lift card. The substrate is listed on the lift card. The preservation method (lift) and development technique (powder) are evident. In this example, the legible copy is retained as part of the case record.

3. Comparison

- 3.1. Documentation that records the information relied upon during comparison shall be made for each comparison. Documentation of the comparison relies on both the latent print and known print.
- 3.2. A legible copy of the known prints used to effect an individualization to a latent print shall be retained in the case record. At a minimum, the following information shall be documented in the case record:
 - 3.2.1. Unique identifier of the exemplar such as name, date of birth, assigned identification number, or reference to the specific exemplars (e.g., date of arrest, date of recording)
 - 3.2.2. Anatomical source(s) represented in the exemplars (fingerprints, palmprints, or footprints)
- 3.3. When known, the following shall be documented within the case record:
 - 3.3.1. Medium (e.g., ink, livescan)
 - 3.3.2. Origin (e.g., printed from archive, direct submission)
- 3.4. If latent prints are not individualized to the known prints, a legible copy of the known prints used for comparison shall be retained or retrievable. The information listed in Section 2.1 shall be documented.
- 3.5. Known prints that are deemed insufficient for comparison, or that contain any factors that adversely affect the comparison, shall be documented. The quality and quantity of the information present will dictate the extent of the documentation. These factors include:

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

- 3.5.1. Incomplete recording of the friction ridge skin
- 3.5.2. Missing anatomical sources (e.g., palms, areas of fingers)
- 3.5.3. Unclear recording of the friction ridge skin
- 3.6. If re-analysis of the latent print during the comparison results in new information, supplemental notes shall be added and dated.

<p><i>Discussion</i></p> <ul style="list-style-type: none"> • Documentation of known prints used for comparison could be accomplished by maintaining a legible copy of the known prints in the case record. A legible copy may contain all the required information listed in 2.1 and 2.2. • Another method of documentation for exclusions and inconclusive results could be a list of the known prints with the required information in the case notes. • It is important to document the re-analysis of the latent print when new information is observed. New information may include a significant change to the orientation of the latent print, the anatomical source, or additional ridge detail. • If the examiner changes the “of value” decision, this shall be documented. The reason for changing the “of value” decision shall also be documented. Any conclusions reached up to the point the examiner changes the “of value” decision shall be documented.
--

4. Evaluation

- 4.1. The final conclusion of the comparison of each latent print to each individual shall be documented (Figures 3 and 4).
- 4.2. Documentation of an individualization shall include:
 - 4.2.1. Specific latent friction ridge impression examined
 - 4.2.2. Unique identifier of the exemplar(s) used to reach the conclusion
 - 4.2.3. Specific anatomical source (e.g., right thumb, left palm)
 - 4.2.4. Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of examiner
 - 4.2.5. Date conclusion reached
- 4.3. Documentation of an inconclusive shall include:
 - 4.3.1. Specific latent friction ridge impression examined
 - 4.3.2. Unique identifier of the exemplar(s) used to reach the conclusion
 - 4.3.3. Specific anatomical source, if applicable (e.g., right thumb, left hypothenar)
 - 4.3.4. Reason (e.g., better exemplars needed, specific anatomical sources needed, insufficient friction ridge detail in agreement)
 - 4.3.5. Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of examiner
 - 4.3.6. Date conclusion reached
- 4.4. Conclusions shall be documented prior to verification.

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

Discussion

- As an example, individualizations could be documented in the case notes or on a lift, photograph, or legible copy retained as part of the case record (Figures 3 and 4). A legible copy of the specific known prints used to formulate the conclusion shall be retained in the case record.
- The minimum documentation of the known prints under Section 2.2 meets the documentation requirement for the “unique identifier of the exemplar(s) used to reach the conclusion”. For example, the examiner can record his or her conclusion for each individual for each latent print in case notes.

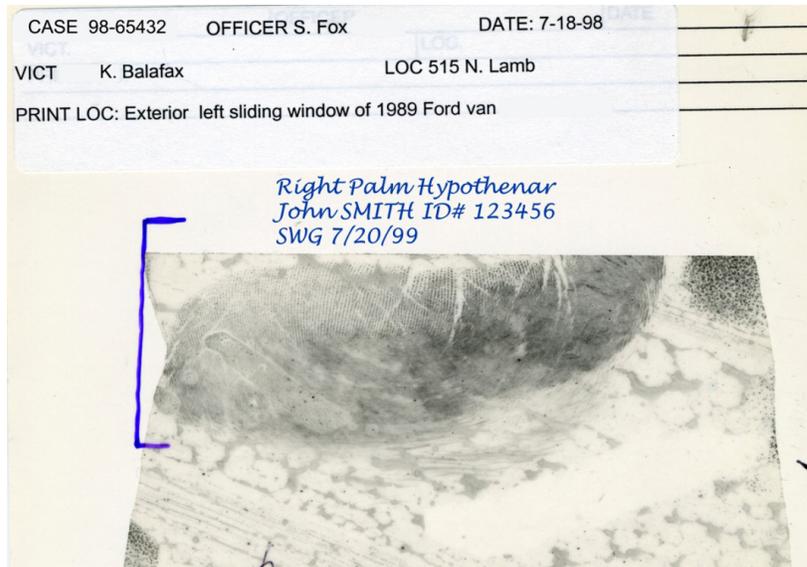


Figure 3

Legible copy of a lift card with one latent palm print of value documented with a bracket. The symbol documents the anatomical source and the presence of level 1 and level 2 detail. The bracket also indicates the anatomical orientation. The substrate is listed on the lift card. The preservation method (lift) and development technique (powder) are evident. The conclusion is documented on the legible copy of the lift card. In this example, the legible copy of the lift card is retained as part of the case record. The case file will require documentation of the known prints of John SMITH (e.g., a legible copy of the known prints).

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

Pg. 4 JTS 9/16/09
CASE #: 09B-987

SUBJECT: JONES

NOTES: Latents From ex. 1 - Glass beaker - Adhesive Lift

	Latent : 1	Latent : 2	Latent : 3
ANALYSIS	<input checked="" type="checkbox"/> LEVEL ONE JP: finger: Right Index palm: phalange: other:	<input checked="" type="checkbox"/> LEVEL ONE JP: finger: palm: Hyperkeratosis phalange: other:	<input checked="" type="checkbox"/> LEVEL ONE JP: finger: index palm: phalange: other:
	<input checked="" type="checkbox"/> LEVEL TWO JP: sufficient JP: in sequence other:	<input checked="" type="checkbox"/> LEVEL TWO JP: sufficient JP: in sequence other:	<input checked="" type="checkbox"/> LEVEL TWO JP: sufficient JP: in sequence other:
EVALUATION	<input checked="" type="checkbox"/> LEVEL THREE JP: non-pertinent _____ pertinent type:	<input checked="" type="checkbox"/> LEVEL THREE JP: non-pertinent _____ pertinent type: Pores	<input checked="" type="checkbox"/> LEVEL THREE JP: non-pertinent _____ pertinent type:
	<input checked="" type="checkbox"/> PRESSURE JP: deposition ▽ 1 2 3 4 5 ▲ JP: distortion: Core NOT LEFT SIDE	<input checked="" type="checkbox"/> PRESSURE JP: deposition ▽ 1 2 3 4 5 ▲ JP: distortion: MINIMAL	<input checked="" type="checkbox"/> PRESSURE JP: deposition ▽ 1 2 3 4 5 ▲ JP: distortion: LATERAL - DIRM PPA
	<input type="checkbox"/> AFIS QUALITY _____ victim prints prior to search _____ suspect prints prior to search other: NOT AFIS	<input type="checkbox"/> AFIS QUALITY _____ victim prints prior to search _____ suspect prints prior to search other:	<input type="checkbox"/> AFIS QUALITY _____ victim prints prior to search _____ suspect prints prior to search other:
	<input type="checkbox"/> NOT AFIS QUALITY _____ lacks Referenceable Level I _____ lacks clear/sufficient Level II _____ no observable Core/Axis	<input type="checkbox"/> NOT AFIS QUALITY - Palm _____ lacks Referenceable Level I _____ lacks clear/sufficient Level II _____ no observable Core/Axis	<input type="checkbox"/> NOT AFIS QUALITY _____ lacks Referenceable Level I _____ lacks clear/sufficient Level II _____ no observable Core/Axis
	<input type="checkbox"/> INCONCLUSIVE _____ smudged/incomplete areas _____ fingerprints requested _____ palms requested other:	<input type="checkbox"/> INCONCLUSIVE _____ smudged/incomplete areas _____ fingerprints requested JP: palms requested other:	<input type="checkbox"/> INCONCLUSIVE _____ smudged/incomplete areas _____ fingerprints requested _____ palms requested other:
	<input checked="" type="checkbox"/> INDIVIDUALIZATION #3 Right Middle	<input type="checkbox"/> INDIVIDUALIZATION	<input type="checkbox"/> INDIVIDUALIZATION
	<input type="checkbox"/> EXCLUSION <input type="checkbox"/> All Fingers: Level I _____ Level II _____ <input type="checkbox"/> #1RT: Level I _____ Level II _____ <input type="checkbox"/> #2RI: Level I _____ Level II _____ <input type="checkbox"/> #3RM: Level I _____ Level II _____ <input type="checkbox"/> #4RR: Level I _____ Level II _____ <input type="checkbox"/> #5RL: Level I _____ Level II _____ <input type="checkbox"/> #6LT: Level I _____ Level II _____ <input type="checkbox"/> #7LI: Level I _____ Level II _____ <input type="checkbox"/> #8LM: Level I _____ Level II _____ <input type="checkbox"/> #9LR: Level I _____ Level II _____ <input type="checkbox"/> #10LL: Level I _____ Level II _____ <input type="checkbox"/> OTHER:	<input type="checkbox"/> EXCLUSION <input type="checkbox"/> All Fingers: Level I _____ Level II _____ <input type="checkbox"/> #1RT: Level I _____ Level II _____ <input type="checkbox"/> #2RI: Level I _____ Level II _____ <input type="checkbox"/> #3RM: Level I _____ Level II _____ <input type="checkbox"/> #4RR: Level I _____ Level II _____ <input type="checkbox"/> #5RL: Level I _____ Level II _____ <input type="checkbox"/> #6LT: Level I _____ Level II _____ <input type="checkbox"/> #7LI: Level I _____ Level II _____ <input type="checkbox"/> #8LM: Level I _____ Level II _____ <input type="checkbox"/> #9LR: Level I _____ Level II _____ <input type="checkbox"/> #10LL: Level I _____ Level II _____ <input type="checkbox"/> OTHER:	<input checked="" type="checkbox"/> EXCLUSION <input type="checkbox"/> All Fingers: Level I _____ Level II _____ <input checked="" type="checkbox"/> #1RT: Level I JP Level II _____ <input checked="" type="checkbox"/> #2RI: Level I JP Level II JP <input checked="" type="checkbox"/> #3RM: Level I JP Level II _____ <input checked="" type="checkbox"/> #4RR: Level I JP Level II JP <input checked="" type="checkbox"/> #5RL: Level I JP Level II _____ <input checked="" type="checkbox"/> #6LT: Level I JP Level II _____ <input checked="" type="checkbox"/> #7LI: Level I JP Level II _____ <input checked="" type="checkbox"/> #8LM: Level I JP Level II _____ <input checked="" type="checkbox"/> #9LR: Level I JP Level II _____ <input checked="" type="checkbox"/> #10LL: Level I JP Level II _____ <input type="checkbox"/> OTHER:
KNOWN EXEMPLAR	<input checked="" type="checkbox"/> Finger <input type="checkbox"/> Palm <input type="checkbox"/> Phalange <input type="checkbox"/> Other <input checked="" type="checkbox"/> Inked <input type="checkbox"/> Archive <input type="checkbox"/> Copy: _____ Overall quality: (High) Average Low <input type="checkbox"/> Smudged areas <input type="checkbox"/> Missing areas <input checked="" type="checkbox"/> Researched DOA: 10/28/07 <input checked="" type="checkbox"/> Other: RETAINED IN CASE FILE		

Key: ▽ = Light ▲ = Heavy

Figure 4

This worksheet demonstrates the analysis and evaluation for three latent prints. Note, this particular worksheet records the conclusions for only one subject; additional worksheets would be needed for additional subjects. In this example, the case record would also include the lift card or legible copy that contains markings indicating which latent prints were compared and the anatomical orientation. The case record would also contain documentation of the known prints of JONES (e.g., a legible copy of the known prints).

5. Verification

5.1. Verification shall be documented and include (Figure 5):

- 5.1.1. Specific latent friction ridge impression examined
- 5.1.2. Unique identifier of the exemplar(s) used to reach the conclusion
- 5.1.3. Anatomical source
- 5.1.4. Conclusion of the verifying examiner
- 5.1.5. Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of the verifying examiner
- 5.1.6. Date of verification

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

Discussion

- All individualizations shall be verified.
- Exclusions and inconclusive results may be verified.
- If the following information is available to the verifier, he or she would not have to separately document the specific latent friction ridge impression examined, the unique identifier of the exemplar(s), the anatomical source, and the conclusion. The verifier's initials and the date of the verification could be placed on a lift, photograph, legible copy retained as part of the case record, or in the case examiner's notes.

Case: 5423789-99

Latent #	1	2	3			
Anatomical	Finger	Palm	Finger			
Analyst	JTS 9/16/09	JTS 9/16/09	JTS 9/16/09			
Verifier	QTH 9/16/09	QTH 9/16/09	QTH 9/16/09			
Subject (name & identifier)						
	JONES SID 091753	Rm#3	INC	EX		
Anatomical = Indicate finger or palm Analyst/Verifier = Initials and date Identification = Indicate anatomical location (e.g.#9 LR) Ex = Exclude Inc = Indicate incomplete exemplars or insufficient ridge detail in agreement						

Figure 5

This worksheet demonstrates the analysis, evaluation, and verification for three latent prints. In this example, the case record would also include the lift card or legible copy that contains markings indicating which latent prints were compared and the anatomical orientation. The case record would also contain documentation of the known prints of JONES (e.g., a legible copy of the known prints).

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

6. Consultations

- 6.1. Consultations shall be documented and include:
 - 6.1.1. Specific friction ridge impression(s) reviewed
 - 6.1.2. Nature and result of the consultation (e.g., reviewed individualization)
 - 6.1.3. Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of examiner(s)
 - 6.1.4. Date of consultation

Discussion

- Consultation is a significant interaction between examiners regarding one or more impressions in question [1]. Each agency shall define what constitutes a significant interaction.
- The purpose of documenting a consultation is to record information or guidance obtained as a result of the consultation. If examiners have significant interaction on a particular print, the consulted examiner shall not be used as the verifier for that particular print.

7. Documentation of Complex Latent Print Examinations

- 7.1. Complex latent print examinations require extensive documentation by the examiner during the analysis and subsequent comparison phase of the examination process to establish a foundation for conclusions. Analysis of a complex latent print may be documented using images, in conjunction with annotations, notations on a worksheet, or narrative description. Analytical factors provide the basis for interpretation of distortion and understanding of variation in appearance.
- 7.2. A number of factors may be involved in the analysis of a complex latent print that are not part of analysis for a non-complex latent print. These factors may include:
 - 7.2.1. Superimposed impressions (e.g., double taps)
 - 7.2.2. Extreme deposition pressure
 - 7.2.3. Slippage
 - 7.2.4. Non-contiguous ridge detail
 - 7.2.5. Substrate distortion
 - 7.2.6. Matrix distortion
 - 7.2.7. Development medium (incomplete ridge development)
 - 7.2.8. Indistinct minutiae
 - 7.2.9. Tonal reversal
- 7.3. Extensive documentation is required and may include one or more of the following: area mapping, ridge tracing, minutiae marking, and detailed level 3 shape marking (Appendix A). Such documentation may be accomplished with the aid of high resolution copies of the complex impression image. The copies are annotated to indicate those areas of the impression which are problematic due to one or more of the factors listed in Section 6.1. The analysis of the latent print may be documented using a form similar to the sample in Appendix B.
- 7.4. The American National Standards Institute/National Institute of Standards and Technology (ANSI/NIST) 2011 biometric data format provides a standard means of annotation and exchange of friction ridge

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

markup that can be used for the documentation of complex examinations. Software such as the Universal Latent Workstation incorporates the ANSI standard markup tools.

7.5. Methods of annotating complex areas:

7.5.1. Indicate the area of complexity by outlining, shading, or highlighting the area(s). Delineated boundaries must be well defined.

7.5.2. Multiple image copies may be necessary to fully document the interpretation of the complexity of the impression.

7.6. Methods of annotating features:

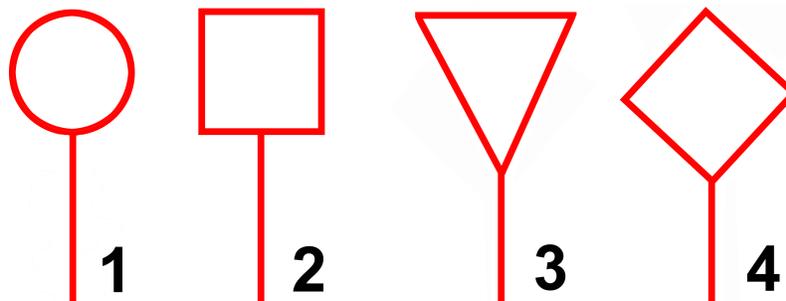
7.6.1. All significant features should be marked on the enlargement(s) or copies of the original digital image in an appropriate manner to allow another examiner to clearly distinguish the features as interpreted during analysis.

7.6.2. Ridge paths may be traced using the application of a contrasting color to the image such as a highlighter for hard copy images or a paintbrush tool associated with digital imaging software.

7.6.2.1. Ridge paths can appear indistinct due to fragmentation caused by poor development or improper recording or flowing into an area of low clarity.

7.6.3. Scars and creases may be marked through shading, outlining, or highlighting using a contrasting color as described for ridge path mark up.

7.6.4. Minutiae may be marked using symbols that characterize the type of feature as well as the confidence level of the examiner regarding feature type and position (Figure 6).



Symbol 1 is used to signify an ending ridge with high confidence.

Symbol 2 is used to signify a bifurcation with high confidence.

Symbol 3 is used to signify a feature when the exact left to right positioning is in doubt.

Symbol 4 is used to signify a feature when the exact left to right positioning and the exact start and stop position of the feature are in doubt.

Changing the color of the symbol may be used to signify reanalysis of the feature.

Figure 6

7.7. Poor recording of exemplar or record prints can cause a number of the same problems as described with poor quality latent prints. If the examiner must use the recorded prints provided with no opportunity to acquire a better quality record, the exemplar should be annotated in a similar fashion as described with latent prints above.

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

7.8. Documentation of the comparison

All significant features should be marked on the enlargements or copies of the digital images (known and unknown) in an appropriate manner to allow another examiner to clearly distinguish the features relied upon during comparison. Any significant differences in features observed during analysis and those relied upon during comparison and providing the basis for a conclusion shall be noted and discussed in the notes.

7.9. If enhanced verification is employed, the provisions of this standard shall apply [2].

8. References

[1] SWGFAST, *Glossary*, 5/8/09, ver. 2.0.

[2] SWGFAST, *Standards for Examining Friction Ridge Impressions and Resulting Conclusions*, 09/13/11 ver. 1.0.

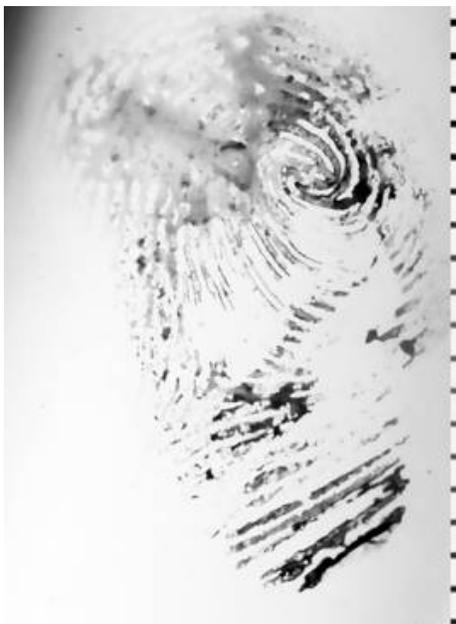
[3] National Institute of Standards, *American National Standard for Information Systems: Data format for the interchange of fingerprint, facial & other biometric information*, ANSI/NIST-ITL 1-2011, 2011.

<http://fingerprint.nist.gov/standard>

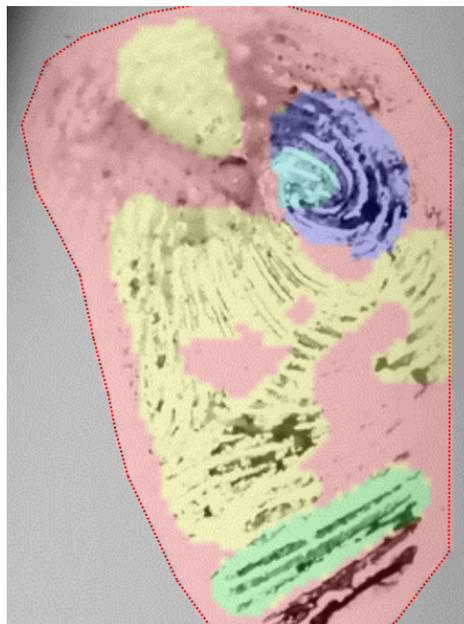
Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

Appendix A

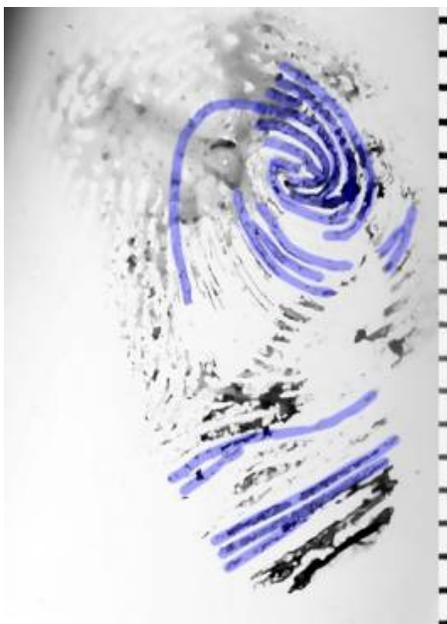
The example impression used to illustrate a complex latent print annotation displays a variety of problem areas that an examiner should acknowledge as part of their case notes using the markup techniques described in this document. This represents an extreme example of a complex latent print.



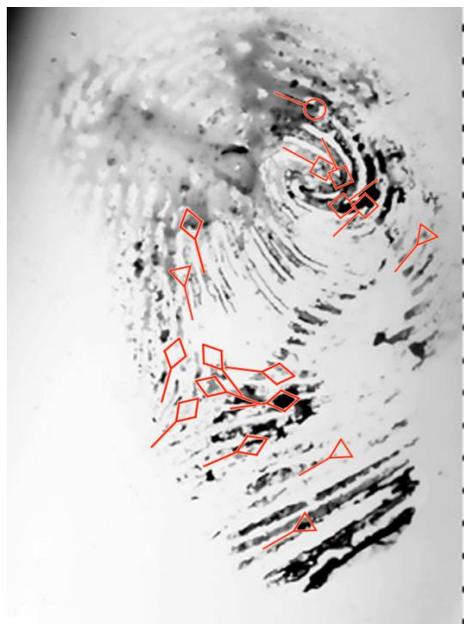
Original Image



Quality Mapping Using ULW-EFS



Ridge Tracing



Marking Minutiae

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

Appendix B

Complex Friction Ridge Impression Analysis

Case Reference: _____
 Page ___ of ___
 Examiner: _____
 Specimen Reference: _____
 Impression: _____

- Original Analysis
 Additional Analysis

Image Analyzed

- High Resolution Digital Image(s)
 High Resolution Enlarged Printout(s) or Photo(s)
 Other: _____

Detection/Processing Techniques

- Dusting and Lifting only
 White light only
 Other: _____

Anatomical Aspects

- Finger
 Palm
 Fragmentary (Finger or Palm)
 Toe
 Foot
 Scar(s)
 Wart(s)
 Crease(s)
 Other: _____

General Degredation Aspects

- Low contrast with background
 Rough or textured substrate
 Flexible or pliable surface
 Background printing or design
 Mixed Normal and Tonal Reversal
 Double tap or superimposed
 Extreme pressure or twisting
 Slippage
 Non-contiguous ridge detail
 Impression on multiple objects
 Specimen exposed to water
 Specimen exposed to heat
 Other Environmental Exposure:
 Detrimental Specimen packaging/handling:
 Other: _____

Matrix

- Unknown
 Blood
 Paint
 Dirt
 Ink
 Live scan
 3D Impression in _____
 Other: _____

Level 1 Detail

- Distinct
 Indistinct

Level 3 Detail

- Abundant
 Minimal
 None

Level 2 Detail

- All Distinct
 Most Distinct
 Few Distinct
 Most Indistinct

Colors Used to Signify Ridge Quality (ANSI/NIST IFL 1-2011)



Green or better means that the presence or absence of minutiae can be used for exclusion in future comparisons — otherwise the region should be marked yellow or worse. Continuity of the areas marked as Yellow or better means that the impression was left as a single simultaneous impression, not a double tap, smear, or second impression — otherwise those areas must be separated by a region of red.

Analysis Comments:

COMPLEX ANALYSIS MARKINGS:

All significant features should be marked on the image(s)/enlargement(s) in a manner to allow another examiner to clearly distinguish the features observed during analysis.

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B

9. Revision Table

Version	Effective Start	Effective End	Posted	Archived	Change
1.0	05/08/09	02/12/10	07/27/09	03/10/10	Original Issue
1.0 Draft	09/18/09	N/A	10/15/09	10/21/09	Draft For Comment
1.1 Revised Draft	09/18/09	N/A	10/21/09	03/10/10	Formatting
1.2	02/12/10	N/A	03/10/10	03/07/12	Added discussion
1.2 Draft	03/07/12	N/A	04/21/12		Draft for Comment
2.0	09/11/12	N/A	11/24/12	N/A	Added Complex documentation section 6 & Appendix A & B Reformatted (start of new version number)

Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V), Ver. 2.0	Date of First Issue 05/08/2009	Current Issue Date 09/11/12 Web Posting Date 11/24/12
Date of Last Review N/A	Date of Next Review 09-2016	Appendix present/Letter Yes/A,B