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***STANDARD FOR THE DOCUMENTATION OF ANALYSIS,  
COMPARISON, EVALUATION, AND VERIFICATION  
(ACE-V) IN TENPRINT OPERATIONS  
(TENPRINT)***

**Preamble**

Many examinations conducted by examiners in the tenprint operational environment are documented using an automated process. When automated records for these routine examinations are retained and retrievable from electronic logs, they are adequate for the identity assurance mission of these operations. At a minimum, all friction ridge examinations conducted in an automated process shall be documented with the following:

- Unique identifiers of the questioned print(s) and known print(s) used to reach the conclusion(s)
- Unique identifiers of the examiner(s) (e.g., initials, signature, or equivalent electronic signature)
- Date(s) of examination(s)
- Results of examination(s)

There are other examinations conducted within tenprint operations that require a greater degree of documentation for analysis, comparison, evaluation, and verification (ACE-V). These examinations may include, but are not limited to:

- Establishing identity for the purpose of testimony (e.g., sentence enhancements for prior convictions)
- Single inked prints on items that are considered evidence or elements of an offense (e.g., forged or counterfeit checks, pawn shop tickets that relate to stolen property)
- The friction ridge prints of an unknown deceased person
- Friction ridge prints submitted to challenge the accuracy of an official government record

When friction ridge prints are examined using the ACE-V methodology, an examiner's documentation shall be such that another competent 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, electronic records, or any combination of these items. This documentation will be a part of the

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case record. A case record consists of the administrative and technical records, whether hard copy or electronic, pertaining to a particular case. Although all examinations require documentation, the extent of the documentation is related to the complexity of the examination. The friction ridge impressions alone are not sufficient documentation. The impressions or legible copies shall be annotated or have accompanying transaction records.

## **1 Analysis**

### **1.1 Questioned print of value**

**1.1.1** Analysis documentation of a questioned print of value shall be completed prior to comparison. The quality and quantity of the information present in the questioned print will dictate the extent of the documentation. At a minimum, the following shall be documented in the case record:

- Submission method (e.g., AFIS, fingerprint card, check copy, facsimile)
- Recording method (e.g., ink, livescan, chemical)
- Anatomical orientation (e.g., distal direction)
- Sequential orientation (e.g., multiple impressions)
- Presence of Level 1 detail of prints used in comparisons
- Presence of Level 2 detail of prints used in comparisons
- Other friction ridge skin detail (e.g., creases, scars, intentional mutilations)

**1.1.2** When known, the following shall be documented within the case record:

- Demographic information
- Origin of submission (e.g., contributor, database retrieval)

**1.1.3** The analysis of questioned print(s) should also include documentation of additional factors such as matrix, deposition pressure, lateral movement, rotational movement, Level 3 detail, or other friction ridge skin detail that may affect the comparison.

**1.1.4** If the original questioned print(s) of value will not be maintained in the case record, a legible copy of the questioned print(s) shall be retained.

### **1.2 Questioned print(s) of no value**

The presence of friction ridge impressions that are of no value shall be documented.

## **2 Comparison**

**2.1** Documentation shall include the information relied upon during the comparison. At a minimum, the following information shall be documented in the case record:

- Unique identifier of the questioned print(s) and known print(s) such as name, date of birth, assigned identification number, or reference to the specific questioned print(s) and known print(s) (e.g., date of arrest, date of recording, submitting agency)
- Anatomical source(s) represented in the questioned print(s) (fingerprint(s), palm print(s), or footprint(s))

**2.2** A legible copy of the questioned print(s) and the known print(s) used in the comparison shall be retained in the case record.

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**2.3** Known print(s) 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:

- Incomplete recording of the friction ridge skin
- Missing anatomical sources (e.g., areas of fingers, palms)
- Unclear recording of the friction ridge skin

**2.4** If re-analysis of the questioned print during the comparison results in new information, supplemental notes shall be added and dated.

### **3 Evaluation**

**3.1** The final conclusion of the comparison of each questioned print(s) and known print(s) shall be documented.

**3.2** Documentation of an individualization shall include:

- Specific friction ridge impression examined
- Unique identifier of the questioned print(s) and known print(s) used to reach the conclusion
- Specific anatomical source (e.g., right thumb, left palm)
- Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of examiner
- Date conclusion reached

**3.3** Documentation of an exclusion shall include:

- Specific friction ridge impression examined
- Unique identifier of the questioned print(s) and known print(s) used to reach the conclusion
- Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of examiner
- Date conclusion reached

**3.4** Documentation of an inconclusive shall include:

- Specific friction ridge impression examined
- Unique identifier of the questioned print(s) and known print(s) used to reach the conclusion
- Specific anatomical source, if applicable
- Reason for Inconclusive conclusion (e.g., better print(s) needed, specific anatomical sources needed, insufficient friction ridge detail in agreement)
- Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of examiner
- Date conclusion reached

**3.5** Conclusions shall be documented prior to verification.

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#### 4 Verification

Verification shall be documented and include:

- Specific friction ridge impression examined
- Unique identifier of the questioned print(s) and known print(s) used to reach the conclusion
- Specific anatomical source (e.g., right thumb, left palm)
- Conclusion of the verifying examiner
- Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of the verifying examiner
- Date of verification

#### 5 Consultations

Consultations shall be documented and include:

- Specific friction ridge impression(s) reviewed
- Nature and result of the consultation (e.g., reviewed individualization)
- Initials, signature, or equivalent (e.g., unique identifier, electronic signature) of examiner(s)
- Date of consultation

#### 6 General References

- [1] SWGFAST, *Standard Terminology of Friction Ridge Examination*, 2/11/11, ver. 3.

### Appendix

The worksheets below are examples of a form used for the documentation of ACE-V for examinations of questioned print(s) and known prints(s). Note, additional worksheets would be needed for additional examinations. In this example, the case record would also include the known print(s) or legible reproduction(s) that contain markings/notations indicating which impressions were compared.

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# ACE-V DOCUMENTATION SHEET Example #1

<b>ID #</b>	
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Analysis must be consistent with SWGFAST terminology and definitions, and shall include, but not be limited to, the following elements:

<b>ANALYSIS</b>				
MATRIX	<input type="checkbox"/> INK <input type="checkbox"/> OTHER: (describe fully)			
SUBSTRATE	<input type="checkbox"/> PAPER <input type="checkbox"/> OTHER: (describe fully)			
OVERLAY (describe fully)				
PRESERVATION	<input type="checkbox"/> LIVE SCAN <input type="checkbox"/> DIGITAL format _____ <input type="checkbox"/> PDF <input type="checkbox"/> OTHER: (describe fully)			
ENVIRONMENT	<input type="checkbox"/> WET <input type="checkbox"/> DRY <input type="checkbox"/> PROTECTED <input type="checkbox"/> OTHER: (describe fully)			
SKIN CONDITION (incl. scar, wart, etc. location):				
DEPOSITION PRESSURE:				
LEVEL 1:	LEVEL 2:	LEVEL 3/VISIBLE? <input type="checkbox"/> YES <input type="checkbox"/> NO		
QUALITY	<input type="checkbox"/> HIGH	<input type="checkbox"/> MEDIUM HIGH	<input type="checkbox"/> MEDIUM LOW	<input type="checkbox"/> LOW
<input type="checkbox"/> COMPLEX IMPRESSION		<input type="checkbox"/> NON-COMPLEX IMPRESSION		
AREA(S) OF SPECIFICITY:				
DISTORTION – SLIPPAGE, TWISTING, RIDGE STRETCH, RIDGE COMPRESSION (describe fully):				
<input type="checkbox"/> SUITABLE FOR COMPARISON	<input type="checkbox"/> OF VALUE FOR EXCLUSION ONLY	<input type="checkbox"/> SUITABLE FOR AFIS SEARCH	<input type="checkbox"/> NO VALUE FOR COMPARISON	
<b>COMPARISON</b>				
LEVEL 1 AGREEMENT	<input type="checkbox"/> YES <input type="checkbox"/> NO	LEVEL 2 AGREEMENT	<input type="checkbox"/> YES <input type="checkbox"/> NO	LEVEL 3 AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
TARGET GROUP AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO			AREA(S) OF SPECIFICITY AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO	
ADDITIONAL FEATURE AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO				
DISAGREEMENT NOTED (IF APPLICABLE):				
<b>EVALUATION</b>				
SUFFICIENCY OF AGREEMENT FOR <b>IDENTIFICATION</b> <input type="checkbox"/> YES		INCONCLUSIVE CONCLUSION <input type="checkbox"/> YES		
SUFFICIENCY OF DISAGREEMENT FOR <b>EXCLUSION</b> <input type="checkbox"/> YES		<input type="checkbox"/> Lack of complete or legible known prints <input type="checkbox"/> Insufficient features in agreement or disagreement		
OBJECTIVE DATA ONLY USED <input type="checkbox"/> YES <input type="checkbox"/> NO		CUMULATIVE WEIGHT OF DATA SUPPORTS CONCLUSION <input type="checkbox"/> YES <input type="checkbox"/> NO		
CONCLUSION REPRODUCIBLE? (CONSENSUS AGREEMENT/OPEN TO SCRUTINY) <input type="checkbox"/> YES <input type="checkbox"/> NO				
ATTEMPT TO FALSIFY (FIND ALTERNATE CONCLUSION) <input type="checkbox"/> YES <input type="checkbox"/> NO (if yes describe process)				
PRIMARY EXAMINER		DATE:		
VERIFICATION EXAMINER		DATE:		
TECHNICAL REVIEW:				

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## ACE-V DOCUMENTATION SHEET Example #2

<b>ID #</b>	
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Analysis must be consistent with SWGFAST terminology and definitions, and shall include, but not be limited to, the following elements:

<b>ANALYSIS</b>			
LEVEL 1:	LEVEL 2:	LEVEL 3/VISIBLE? <input type="checkbox"/> YES <input type="checkbox"/> NO	
QUALITY	<input type="checkbox"/> HIGH	<input type="checkbox"/> MEDIUM HIGH	<input type="checkbox"/> MEDIUM LOW
<input type="checkbox"/> COMPLEX IMPRESSION		<input type="checkbox"/> NON-COMPLEX IMPRESSION	
AREA(S) OF SPECIFICITY:			
<input type="checkbox"/> SUITABLE FOR COMPARISON		<input type="checkbox"/> NO VALUE FOR COMPARISON	
<b>COMPARISON</b>			
LEVEL 1 AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO		LEVEL 2 AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO	
LEVEL 3 AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A			
ADDITIONAL FEATURE AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO			
<b>EVALUATION</b>			
<b>IDENTIFICATION</b> <input type="checkbox"/>		<b>EXCLUSION</b> <input type="checkbox"/>	
<b>INCONCLUSIVE</b> <input type="checkbox"/>			
PRIMARY EXAMINER		DATE:	
VERIFICATION EXAMINER		DATE:	
TECHNICAL REVIEW:			

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# ACE-V DOCUMENTATION SHEET Example #3

This example provides for the documentation of the analysis performed on both impressions to be compared to each other.

<b>ID #</b>	
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Analysis must be consistent with SWGFAST terminology and definitions, and shall include, but not be limited to, the following elements:

<b>ANALYSIS</b>										
<b>Questioned Print:</b> <input type="checkbox"/>					<b>Known Print:</b> <input type="checkbox"/>					
Name:			DOB:		Case ID:			Name:		
<b>QUALITY</b>			<input type="checkbox"/> HIGH		<input type="checkbox"/> MEDIUM HIGH		<input type="checkbox"/> MEDIUM LOW		<input type="checkbox"/> LOW	
<input type="checkbox"/> COMPLEX IMPRESSION					<input type="checkbox"/> NON-COMPLEX IMPRESSION					
Anatomical orientation:					Anatomical orientation:					
<input type="checkbox"/> SUITABLE FOR COMPARISON					<input type="checkbox"/> NO VALUE FOR COMPARISON					
Date of Arrest:					Date of Recording:					
Submitting Agency:					Submitting Agency:					
Submission Method:					Submission Method:					
Recording Method:					Recording Method:					
<input type="checkbox"/> Fingerprint			<input type="checkbox"/> Palm print		<input type="checkbox"/> Footprint			<input type="checkbox"/> Fingerprint		
<input type="checkbox"/> Fingerprint			<input type="checkbox"/> Palm print		<input type="checkbox"/> Footprint			<input type="checkbox"/> Fingerprint		
<b>COMPARISON</b>										
LEVEL 1 AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO				LEVEL 2 AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO			LEVEL 3 AGREEMENT <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A			
Additional Details:										
<b>EVALUATION</b>										
<b>IDENTIFICATION</b> <input type="checkbox"/>				<b>EXCLUSION</b> <input type="checkbox"/>			<b>INCONCLUSIVE</b> <input type="checkbox"/>			
Inconclusive comments:										
Additional Documentation attached <input type="checkbox"/>										
PRIMARY EXAMINER:					DATE:					
VERIFICATION EXAMINER:					DATE:					
TECHNICAL REVIEW:					DATE:					

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