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## **Postmortem Impression Submission Strategy for Comprehensive Searches of Essential Automated Fingerprint Identification System Databases**



**DRAFT DOCUMENT**

# **Postmortem Impression Submission Strategy for Comprehensive Searches of Essential Automated Fingerprint Identification System Databases**

## **1 Foreword**

Friction ridge analysis (to include fingerprints, palm prints, and footprints) is a reliable, rapid, and cost-effective means to identify unknown deceased individuals.<sup>1</sup> The use of postmortem impressions to rapidly identify decedents centers on the use of Automated Fingerprint Identification System (AFIS) technology. It is essential that law enforcement agencies as well as the medicolegal community understand current fingerprint technology and leverage resources to ensure postmortem impressions are appropriately searched through AFIS fingerprint databases for identification purposes. The medicolegal authority should adhere to the best practices identified in this text to the extent possible, practical, and appropriate. In the absence of specific guidance, the principle, spirit, and intent of this document should be met.

These best practices are put forth by the Disaster Victim Identification subcommittee within OSAC. This document originated from the Scientific Working Group on Disaster Victim Identification (SWGDIV).

## **2 Acknowledgements**

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## Table of Contents

<b>1 Foreword</b> .....	1
<b>2 Acknowledgements</b> .....	1
Editor: Aaron Uhle, Federal Bureau of Investigation .....	1
<b>4 Scope</b> .....	3
<b>5 Terms and Definitions</b> .....	3
<b>Automated Fingerprint Identification System (AFIS)</b> .....	3
<b>Friction Ridge Analysis</b> .....	3
<b>Next Generation Identification (NGI)</b> .....	3
<b>DHS Automated Biometric Identification System (IDENT)</b> .....	3
<b>6 Recommendations</b> .....	3
<b>6.1 Supplemental Information</b> .....	4
<b>6.2 Postmortem Fingerprint Recovery Process</b> .....	4
<b>6.3 Submission of Postmortem Impressions for Automated Searching</b> .....	4
<b>6.4 Automated Searching of Postmortem Impressions</b> .....	5
FBI CJIS Division – Special Processing Center.....	5
DHS Biometric Support Center – West .....	5
Email: afis@dhs.gov or lpu@dhs.gov.....	5
<b>Annex A</b> .....	7
<b>Fingerprint Submission Compendium - AFIS Database Search</b> .....	7
<b>Criminal &amp; Civil</b> .....	7
<b>Criminal &amp; Civil</b> .....	7
<b>Decedent</b> .....	7
<b>Criminal &amp; Civil Searches</b> .....	7
<b>Criminal &amp; Civil</b> .....	7
<b>Black Notice</b> .....	7
FBI CJIS Division – Special Processing Center.....	7
Email: spc@leo.gov.....	7
DHS West Biometric Support Center .....	7
Email: afis@dhs.gov or lpu@dhs.gov.....	7
<b>Fingerprint Submission Template - AFIS Database Search</b> .....	8
<b>Unidentified Deceased Fingerprint Submission</b> .....	8
<b>From:</b> <i>Your Agency Name Email Address Phone Number</i> .....	8
<b>Fax Number</b> .....	8
<b>ORI:</b> Agency ORI .....	8
<b>Comments:</b> .....	8
<b>Bibliography</b> .....	9

## 4 Scope

The purpose of this document is to provide guidance regarding the submission of recorded postmortem impressions for comprehensive searches of essential automated fingerprint identification system databases. While a number of factors affect the successful search of a fingerprint through an automated fingerprint system, one of the most important factors is ensuring the fingerprint is searched through appropriate antemortem fingerprint databases.

## 5 Terms and Definitions

### 5.1

#### **Automated Fingerprint Identification System (AFIS)**

Biometric computer system that allows forensic examiners to encode, digitize, and search recovered fingerprint impressions against fingerprint record databases for identification purposes.

### 5.2

#### **Friction Ridge Analysis**

Fingerprints, palm prints, and foot prints have been used for personal identification purposes for well over a century. Collectively, the analysis of these prints is known as friction ridge analysis.

### 5.3

#### **Next Generation Identification (NGI)**

Enhances FBI biometric identification services by providing an incremental replacement of current AFIS technical capabilities. Considered the largest biometric database in the world, NGI stores individual fingerprint records and other biometric data for criminal and civil matters. Advanced identification technology provides rapid, efficient, and accurate fingerprint processing.

### 5.4

#### **DHS Automated Biometric Identification System (IDENT)**

IDENT is a mission operational system for the Department of Homeland Security (DHS) that compares a subject's fingerprints against stored records used to determine a subject's identity. The IDENT database stores over 150 million individual fingerprint records and other biometric data for criminal matters, domestic and international fugitives, known immigration violators, known or suspected terrorists, legitimate travellers to the U.S., naturalized citizens, sexual offenders, subjects inadmissible to the U.S., and visa applicants (not an exhaustive list). Approximately 70% of fingerprint records contained in IDENT are not duplicated in any other AFIS database.

## 6 Recommendations

Current AFIS databases used by law enforcement agencies tasked with forensic identification exist at federal, state, and local levels of government. *Unlike what may be portrayed in the movies or on television, a single comprehensive and searchable database of antemortem fingerprint records collected in the United States or abroad does not exist.* Due to data sharing agreements, privacy concerns associated with personally identifiable information (PII), and system interoperability difficulties, antemortem records contained within various AFIS databases are not congruent. It is therefore incumbent upon the individual or organization submitting postmortem impressions for fingerprint analysis to ensure that local, state, and federal AFIS databases are appropriately searched for identification purposes. The effective use of AFIS technology in searching postmortem impressions against antemortem records can result in a significant increase in the identification of decedents (up to 47%) allowing the medicolegal community to expedite regular case work, solve cold cases, and efficiently identify human remains in mass fatality incidents (MFI).<sup>2</sup>

Remains should be thoroughly examined as soon as possible, before ongoing decomposition limits the ability to recover quality postmortem impressions. (1) It is assumed that the remains have been rendered safe from any hazards and that appropriate personal protective equipment (PPE) is worn. (2) Trained fingerprint examiners should be utilized for the recovery of postmortem impressions from the deceased and for the subsequent search/submission of recovered prints through appropriate AFIS databases.

### **6.1 Supplemental Information**

Before examining the remains, it is advised that fingerprint examiners familiarize themselves about the incident. This information may consist of:

- ☐ Geographic location – where the remains were recovered.
- ☐ Circumstances surrounding the death (e.g. natural versus accidental versus man-made event).
- ☐ Circumstances surrounding the recovery of the remains (e.g. found under rubble, recovered from water, remains removal facilitated by implements or machinery, etc.)
- ☐ Details regarding any identifying documents or personal effects found on the remains and if these items have been removed from the remains prior to arrival of the remains at the morgue. Separation of identifying documents or personal effects from the remains prior to examination should be avoided whenever possible.

### **6.2 Postmortem Fingerprint Recovery Process**

Postmortem fingerprint records should be acquired using guidelines in the forthcoming SWGDVI Friction Ridge Analysis Committee document regarding the recording of quality postmortem impressions from human remains. It is important to remember that if impressions are recorded digitally, the images must be captured at a minimum resolution of 500ppi.

### **6.3 Submission of Postmortem Impressions for Automated Searching**

Once examination-quality postmortem fingerprint impressions are recorded, utilize Appendix 2 -

SWGDVI Fingerprint Submission Template (or fields and information contained within the template) to send postmortem impressions to law enforcement or appropriate authorities for AFIS database searches.

- ☐ All bold/italicized fields in the attached submission template should be populated by the submitting agency. All [bracketed] items are specific to each case being submitted for fingerprint analysis. Include any possible known demographic information regarding the decedent or fingerprint recording anomalies in the additional information section of the template.
- ☐ Complete the submission template and copy/paste into a secure email service/format (such as Law Enforcement Online <https://www.leo.gov>). Recovered postmortem impressions should be attached as a digital image and need to be scanned at a minimum resolution of 500ppi. The image must also be saved in JPEG 2000 or TIFF format. If poor quality prints were received, the submitting agency may be contacted by the recipient to re-scan prints at a resolution of 1000ppi.
- ☐ The submission template and recovered postmortem impressions may also be mailed as a hard copy to the appropriate authorities if electronic submission attempts fail or prove burdensome.

#### 6.4 Automated Searching of Postmortem Impressions

Recorded postmortem impressions will generally be submitted to local or state law enforcement agencies for AFIS database searches.

1. If no match is made in the local fingerprint database, local authorities should have the capability of electronically submitting the postmortem impressions to state law enforcement for search through the state AFIS fingerprint database. It is the responsibility of the submitting agency to ensure that this has taken place. If not, the postmortem impressions should be forwarded to state authorities by local law enforcement or the original submitting agency.
2. If no match is made in the state fingerprint database, state authorities should have the capability of electronically submitting postmortem impressions to federal law enforcement for search through federal AFIS fingerprint databases. It is the responsibility of the submitting agency to ensure that this has taken place. If not, the postmortem impressions should be forwarded to federal authorities by state law enforcement.

The original submitting agency is usually only allowed to submit the postmortem impressions to federal authorities if they have a valid Originating Agency Identification (ORI) Number assigned by the FBI. Medical Examiner/Coroner agencies may request an ORI number (9 character identifier) from the FBI Criminal Justice Information Services (CJIS) Division by calling (304) 625-3984.

3. Postmortem impressions should first be submitted to the FBI CJIS Division Special Processing Center for search through the Next Generation Identification (NGI) AFIS fingerprint database. CJIS information provided on the following page:

FBI CJIS Division – Special Processing Center  
1000 Custer Hollow Road  
24/7 Voice Number: (304) 625-5584  
24/7 Fax Number: (304) 625-5587  
Email: [spc@leo.gov](mailto:spc@leo.gov)

4. If no match is made in the NGI database, the postmortem impressions should be electronically submitted to the DHS Biometric Support Center for search through the DHS Automated Biometric Identification System (IDENT) AFIS fingerprint database. DHS information provided below:

DHS Biometric Support Center – West  
Voice Number: (858) 609-2609  
Email: [afis@dhs.gov](mailto:afis@dhs.gov) or [lpu@dhs.gov](mailto:lpu@dhs.gov)

5. If no matches are made on the federal level, it may be valuable to have local or state law enforcement reach out to neighboring states for assistance in searching the recovered postmortem impressions through neighboring local/state AFIS fingerprint databases.
6. If no matches are made on the local, state, or federal level, it may be valuable to reach out to the International Criminal Police Organization (INTERPOL) for search through the AFIS fingerprint databases of member countries (if remains are believed to have international nexus). INTERPOL information provided below:

INTERPOL NCB Washington  
U.S. Department of Justice  
Washington, DC 20530-0001  
Voice Number: (202) 616-9000  
Fax Number: (202) 616-8400

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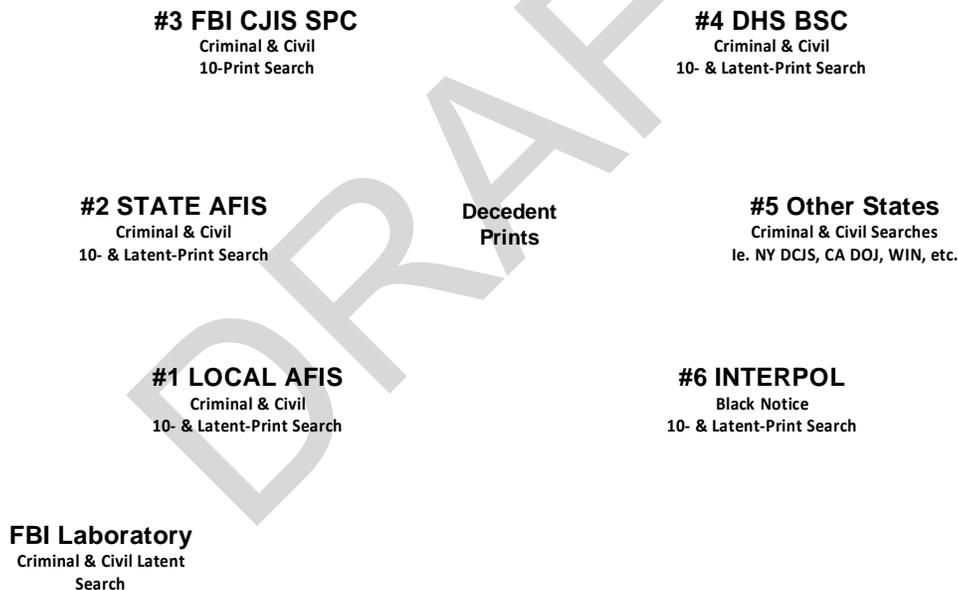
## Annex A

(informative)

### Fingerprint Submission Compendium - AFIS Database Search

1. Record quality postmortem impressions from recovered human remains (for assistance refer to the forthcoming SWGDVI Friction Ridge Analysis Committee document regarding the recording of quality postmortem impressions from human remains). It is noted that a trained fingerprint examiner should participate in this process.
2. Utilize the provided SWGDVI Fingerprint Submission Template (or fields and information contained within the template) to send postmortem impressions to law enforcement or appropriate authorities for AFIS database searches.

## Fingerprint Submission Strategy



3. Important contact information:

FBI CJIS Division – Special Processing Center  
24/7 Voice #: (304) 625-5584  
24/7 Fax #: (304) 625-5587  
Email: [spc@leo.gov](mailto:spc@leo.gov)

DHS West Biometric Support Center  
Voice #: (619) 498-9871  
Email: [afis@dhs.gov](mailto:afis@dhs.gov) or [lpu@dhs.gov](mailto:lpu@dhs.gov)

## Annex B

(informative)

### Fingerprint Submission Template - AFIS Database Search

The ***Your Agency Name*** has recovered human remains and is requesting AFIS fingerprint database searches for identification purposes. Please review the information presented below:

**To:** *Agency Name*  
*Email Address*  
*Phone Number*  
*Fax Number*

**From:** *Your Agency Name*  
*Email Address*  
*Phone Number*  
*Fax Number*

**ORI:** Agency ORI

**Date:** *[mm/dd/yyyy][hh:mm]* hours EST

**Transaction Type:** Unidentified Deceased (DEU Transaction)

**Re:** *Your Agency Name* Case *[Case#]*

**Pages:** *[#]* total (*[#]* image(s), 1 email)

**Comments:**

Please attempt to identify the submitted postmortem impressions recovered from human remains discovered in *[location]* on *[DOD mm/dd/yyyy]*. Please perform a ten-print search of all available AFIS databases (local, state, federal, etc.) and perform a latent-print search in the event of negative ten-print search results. In advance, thank you for your assistance in this matter.

Please provide fingerprint search results along with database search information (local, state, federal, etc) to ***Fax Number*** or ***Email Address***. If an identification is effected, please forward the antemortem fingerprint record and Criminal History record if available.

*Additional Information:*

*\*Note important information such as possible demographic information for the decedent or recording anomalies such as the submitted prints are from the dermal layer of skin.*

## Bibliography

Uhle, A.J. (2010). Fingerprints and Human Identification. In D. Senn and P. Stimson (Eds.), *Forensic Dentistry, Second Edition* (pp. 79-101). Boca Raton: CRC Press.

Mulawka, M. & Craig, J. (2011). The Efficacy of Submitting Fingerprints of Unidentified Human Remains to Federal Agencies. *Journal of Forensic Identification*, 61(1), 92-102.

National Institute of Standards and Technology (NIST). Law Enforcement Standards Office – AFIS Interoperability. NIST, 2013 (available at <http://www.nist.gov>).

Federal Bureau of Investigation (FBI). Next Generation Identification (NGI). FBI, 2013 (available at <http://www.fbi.gov>).

Jackson, William (2013, March 25). Law Enforcement, NIST making Fingerprint Files Easier to Search. GCN.com. Retrieved June 9, 2013 from <http://www.gcn.com>.

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