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**Postmortem Impression Submission Strategy for  
Comprehensive Searches of Essential Automated  
Fingerprint Identification System (AFIS) Databases**



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# Postmortem Impression Submission Strategy for Comprehensive Searches of Essential Automated Fingerprint Identification System (AFIS) Databases

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## 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. In this revision, the necessary state regulations governing the accessibility of automated fingerprint databases are discussed and the path forward to successful access is outlined. Establishing these connections is imperative for the success of automated searching of postmortem fingerprints.

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This document was revised, prepared, and finalized as a standard by the Mass Fatality Management and Disaster Victim Identification Consensus Body of the AAFS Standards Board. The draft of this standard was developed by the Medicolegal Death Investigation Disaster Victim Identification Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science. It was originally conceived by the Scientific Working Group on Disaster Victim Identification (SWGdVI).

Questions, comments, and suggestions for the improvement of this document can be sent to AAFS-ASB Secretariat, [asb@aafs.org](mailto:asb@aafs.org) or 410 N 21st Street, Colorado Springs, CO 80904.

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# Postmortem Impression Submission Strategy for Comprehensive Searches of Essential Automated Fingerprint Identification System (AFIS) Databases

## 1 Scope

This standard provides the proper pathways, image requirements, and resources for searching the totality of available antemortem fingerprint databases when attempting to identify an unknown person. It outlines the process which will ensure a complete and proper search of previously obtained fingerprints. By following these proposed best practices, the medicolegal authority's submission will exhaust all possible searches and have the best chance of victim identification through AFIS searches.

## 2 Normative References

There are no normative reference documents. Annex B, Bibliography, contains informative references.

## 3 Terms and Definitions

For purposes of this document, the following definitions apply.

### 3.1

#### **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.

### 3.2

#### **friction ridge analysis**

The examination of impressions from fingers, palms or soles, for identification purposes.

### 3.3

#### **Next Generation Identification**

##### **NGI**

A biometric repository managed and operated by the Federal Bureau of Investigation (FBI) Criminal Justice Information Services Division (CJIS) that enhances identification services by providing an incremental replacement of the former system, the Integrated Automated Fingerprint Identification System (IAFIS).

### 3.4

#### **Automated Biometric Identification System**

##### **IDENT**

The Automated Biometric Identification System (IDENT) is the central Department of Homeland Security (DHS)-wide system for storage and processing of biometric and associated biographic information for national security; law enforcement; immigration and border management; intelligence; background investigations for national security positions and certain positions of public trust.

### 3.5

#### **antemortem (AM) records**

Friction ridge impressions collected from live subjects, and can come from any part of friction ridge skin. Friction ridge skin is present on the palmar and plantar surfaces of the hands and feet and can all be used for personal identification purposes.

### 3.6

#### **postmortem (PM) records**

Friction ridge impressions collected from deceased subjects used for identification matters.

### 3.7

#### **10-print searches**

A 10-print search is conducted on a fingerprint record which is often a reproduction of all ten fingers. This can be performed by a computer, in a “lights out” setting if the quality of the record is high enough.

### 3.8

#### **latent print searches**

A latent print search can be utilized for searching unknown deceased records when multiple fingers are not printable or present, and/or the quality of the recording is poor. A latent print search can often be more time consuming and require additional expertise.

NOTE Due to the lower quality and quantity of information often found with PM fingerprints, the analysis of each impression by a latent print examiner along with the marking of the specific minutiae for AFIS searches can yield better results.

## **4 Recommendations for Searching Records**

### **4.1 General**

Current AFIS databases used by law enforcement agencies tasked with forensic identification exist at local, state, and federal levels of government. A single comprehensive and searchable database of AM fingerprint records collected in the United States or abroad does not exist. Due to data sharing agreements, civil rights, privacy concerns associated with personally identifiable information (PII), and system interoperability difficulties, AM records contained within various AFIS databases are not congruent.

The individual or organization submitting PM impressions for fingerprint analysis should ensure that local, state, and federal AFIS databases are appropriately searched for identification purposes. The effective use of AFIS technology in searching PM of impressions against AM records can result in a significant increase in the identification of decedents, allowing the medicolegal community to expedite regular casework, solve cold cases, and efficiently identify human remains in mass fatality incidents (MFI)<sup>[5]</sup>.

### **4.2 Preliminary Information**

Before examining the remains, fingerprint examiners should familiarize themselves with the incident to help understand the condition of the prints being submitted. This information may consist of the following. (e.g., found under rubble, recovered from water, remains removal facilitated by implements, or machinery, etc.).

- Geographic location and circumstances surrounding the recovery of the remains – where and how the remains were recovered.
- Circumstances surrounding the death (e.g., natural versus accidental versus man-made event).
- 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.

By gathering information about the circumstances of death and recovery, the examiner gains awareness of the possibility of contaminated remains. Examiners should consult with the medicolegal authority about the safety of handling remains.

Investigators should also attempt to locate AM records elsewhere, such as decedent's residence, place of employment, etc.

### **4.3 Fingerprint Recovery Process**

**4.3.1** Examination quality PM fingerprint records should be recorded from human remains using PM fingerprint recovery techniques. See ANSI/ASB Best Practice Recommendation 094, *Postmortem Fingerprint Recovery: Guidance and Best Practices for Disaster Victim Identification*, First Edition, 2022.

**4.3.2** Remains should be thoroughly examined as soon as possible, before ongoing decomposition deteriorates the friction ridge skin and limits the ability to recover quality PM impressions.

**4.3.2.1** Practitioners must only handle human remains deemed safe for standard precautions and wear appropriate PPE unless trained and qualified for higher levels of PPE.

**4.3.2.2** Trained fingerprint examiners<sup>a</sup> should be utilized for the recovery of examination quality PM impressions from the deceased and for the subsequent search/submission of recovered fingerprint records through appropriate AFIS databases.

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

**4.4.1** Once examination-quality PM fingerprint impressions are recorded, the submitting agency should utilize Annex A, Fingerprint Submission Template – AFIS Database Search (or fields and information contained within the template) to send PM impressions to law enforcement or appropriate authorities for AFIS database searches. If a fingerprint record is submitted directly through an established electronic portal, it shall conform to the ANSI/NIST-ITL standard and the relevant application profile, such as the FBI's EBTS file format.

**4.4.2** A PM submission should request an automated 10-print search as well as a latent print search. The submitting agency shall ensure that this has taken place.

**4.4.3** Images uploaded or emailed directly to CJIS Special Processing Center (SPC), or DHS's Biometric Support Center (BSC) shall meet the requirements of submission to that agency. While facsimiles are accepted by some agencies, the low-quality transmission can degrade an image

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<sup>a</sup> The term *trained fingerprint examiners* indicates that individuals recording or approving the fingerprint records must be able to discern the fingerprints' value for comparison purposes as a quality measure. This term does not encompass/include the training recommended for PM fingerprint recovery techniques.

enough that it may not be identified through an AFIS search. Unless it is urgent, if a flatbed scanner or digital camera is unavailable, the cards should be submitted as originals to the respective agencies.

**4.4.4** All bold/italicized fields in the submission template in Annex A should be populated by the submitting agency. All [bracketed] items are specific to each case being submitted for fingerprint analysis.

**4.4.5** Any possible known demographic information regarding the decedent or fingerprint recording anomalies<sup>b</sup> shall be included in the additional information section of the template.

**4.4.6** The completed submission template shall be copied/pasted into an agency's secure email service/format.

**4.4.7** Recovered PM impressions should be attached as a digital image and shall be scanned at a minimum resolution of 500ppi.

**4.4.8** The image shall also be saved in a lossless format (i.e., JPEG2000 or TIFF). If poor quality fingerprints were received, the submitting agency may be contacted by the recipient to rescan prints at a resolution of 1000ppi.

**4.4.9** The submission template and recovered PM impressions may also be mailed as a hard copy to the appropriate authorities if electronic submission attempts fail or prove burdensome in accordance with the procedures and requirements of the receiving agency. If a card is deemed to be bio-hazardous, ensure the agency can receive it and it is marked appropriately with universal bio-hazard labeling.

## **4.5 Automated Searching of Postmortem Impressions**

**4.5.1** Emerging technologies allow for medical examiners and coroners to capture postmortem fingerprints using mobile capture devices and other electronic fingerprint capture devices without the direct involvement of law enforcement. Medicolegal authorities qualify to obtain a limited FBI Originating Agency Identification (ORI) number ending in "Z" allowing postmortem fingerprint submission for the purpose of identifying unknown deceased.

**4.5.2** The FBI has a designated State Identification Bureau's (SIB) for each state and territory, which approves/assigns the ORI for each agency. Likewise, all direct (through capture software) electronic fingerprint submissions shall be routed through the SIB to be sent to the FBI.

**4.5.3** Currently, the majority of states in the U.S. do not have legislation specifically permitting the automated electronic submission of fingerprints from a medicolegal authority through the SIB to the FBI. This is not intentionally prohibitive, rather a problem that has come about with the introduction of new technology that is not sufficiently defined in state legislation governing database access.

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<sup>b</sup> PM changes, missing or damaged digits, special reconditioning techniques, case circumstances, etc.



**4.5.3.1** The medicolegal authority that is considering this technology shall understand their applicable state regulations governing the accessibility of automated fingerprint databases by their agency.

**4.5.3.2** The medicolegal authority should consult with their SIB to determine how to best update or introduce the legislation in a manner that will permit access, if necessary.

**4.5.3.3** In addition to legislative permissions, all policies shall be honored for both the SIB and FBI CJIS to achieve compliance and electronic access.

**4.5.4** In addition to legislative and policy requirements, mobile capture devices vary considerably in technological aspects such as operating systems and transfer gateways. End users (medicolegal authorities) should consider leveraging IT resources to ensure that full automation is achieved.

**4.5.5** Recorded PM impressions should be submitted for AFIS database searches in the following order:

- local,
- state,
- federal,
- international (if remains are believed to have international nexus).

**4.5.6** The submitting agency shall ensure that all of these steps are accomplished in their entirety.

- a) local authorities should have the capability of electronically submitting the PM impressions to their local and state AFIS fingerprint databases if not, the PM impressions should be forwarded to local and state authorities separately by the submitting agency.
- b) local authorities may also have the capability of electronically submitting the PM impressions to the FBI. If not, the PM impressions should be electronically submitted (emailed or uploaded, not faxed) or manually submitted to the FBI CJIS SPC for search through the NGI fingerprint database. Searches through FBI will cascade to DHS for a lights-out search of IDENT. This will minimize the number of separate searches required for an end-user. CJIS contact information:

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)

NOTE The original submitting agency is only allowed to submit the postmortem impressions to the CJIS SPC if they have a valid ORI Number assigned by the FBI per 28 *CFR*, § 20.3. Medical Examiner/Coroner agencies may request an ORI number (9 character identifier) from the FBI CJIS Division by contacting their State Identification Bureau (SIB) at <https://www.fbi.gov/services/cjis/identity-history-summary-checks/state-identification-bureau-listing>.

- c) If no match is made in the NGI database or lights-out search of IDENT, the PM impressions should be electronically (emailed or uploaded, not faxed) submitted to the DHS Biometric Support Center for search through the DHS Automated Biometric Identification System (IDENT) AFIS fingerprint database. A field request cover sheet shall be filled out separately for each request. This request sheet can be requested from DHS by emailing their general inbox. DHS contact information:

DHS  
Biometric Support Center – West  
24/7 Voice Number: (858) 609-2609  
24/7 Fax: (858) 609-2600  
Email: [Bscwest-general@obim.dhs.gov](mailto:Bscwest-general@obim.dhs.gov)

- 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 PM impressions through neighboring local/state AFIS fingerprint databases.
- d) 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:

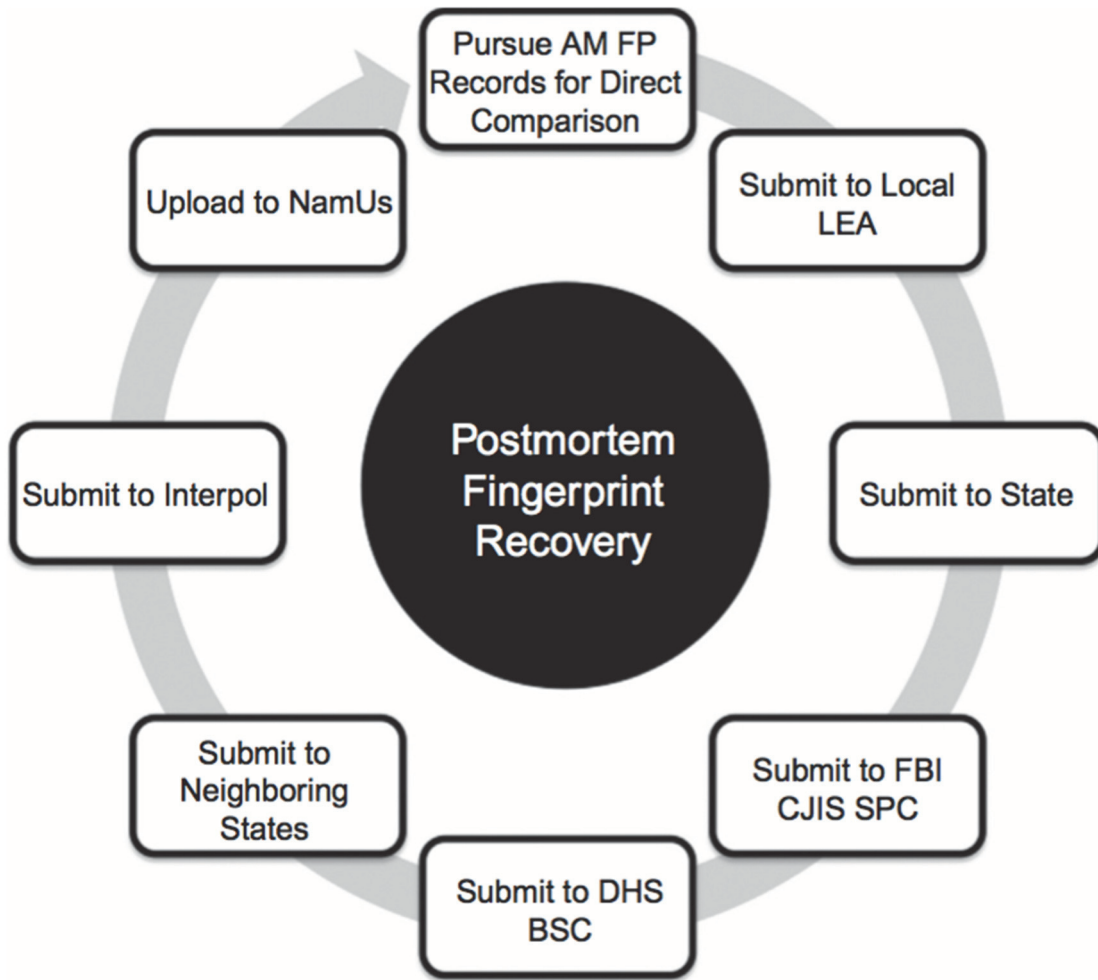
INTERPOL  
NCB Washington  
U.S. Department of Justice  
Washington, DC 20530-0001  
Voice Number: (202) 616-9000  
Fax Number: (202) 616-8400  
Email: [ncb.washington@us.igcs.int](mailto:ncb.washington@us.igcs.int)

- e) In the event of no matches at any of the aforementioned local, state, federal, or international levels, it may be valuable to upload the unidentified PM fingerprint records to the National Missing and Unidentified Persons System (NamUs). This allows other resources to be utilized for the assistance of identification. Each region of the U.S. has a Regional Program Specialist (RPS) that coordinates all cases for that region. Contact NamUs for the appropriate RPS for the location of the case using the below link and referencing the “Case Assistance” tab.

NamUs  
National Institute of Justice  
<https://namus.nij.ojp.gov/contact>

See Figure 1 for a visual representation of the postmortem submission strategy to be followed for all unidentified deceased cases involving friction ridge impression submission.

**Figure 1—Postmortem Fingerprint Submission Strategy<sup>c</sup>**



<sup>c</sup> Postmortem Fingerprint Submission Strategy. Reprinted from *Postmortem Fingerprinting and Unidentified Human Remains* (p. 93) by Mulawka M. H. and L. Miller, 2014, New York, NY: Routledge. Copyright 2014 by Taylor & Francis. Reprinted with permission [2].

## Annex A (informative)

### Fingerprint Submission Template – AFIS Database Search <sup>[2,5]</sup>

The ***Your Agency Name*** has recovered human remains and is requesting AFIS fingerprint database searches for identification purposes. Please review the information presented in Table A.1.

Unidentified Deceased Fingerprint Submission	
<b>To:</b>	<i>Agency Name</i> <i>Email Address</i> <i>Phone Number</i> <i>Fax Number</i>
<b>From:</b>	<i>Your Agency Name</i> <i>Email Address</i> <i>Phone Number</i> <i>Fax Number</i>
<b>ORI:</b>	Agency ORI
<b>Date:</b>	<i>[mm/dd/yyyy][hh:mm]</i> hours EST
<b>Submission Type:</b>	Unidentified Deceased
<b>Re:</b>	<i>Your Agency Name</i> Case <i>[Case#]</i>
<b>Pages:</b>	<i>[#]</i> total ( <i>[#]</i> image(s), 1 email)
<b>Comments:</b>	<p>Please attempt to identify the submitted postmortem impressions recovered from human remains discovered in <b><i>[location]</i></b> on <b><i>[DOD mm/dd/yyyy]</i></b>. 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.</p> <p>Please provide fingerprint search results along with database search information (local, state, federal, etc.) to <b><i>Fax Number</i></b> or <b><i>Email Address</i></b>. If an identification is affected, please forward the antemortem fingerprint record and any other available information about the individual, including criminal history.</p>

**Table A.1—Fingerprint Submission Template**

*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.*

## Annex B (informative)

### Bibliography

The following bibliography is not intended to be an all-inclusive list, review, or endorsement of literature on this topic. The goal of the bibliography is to provide examples of publications addressed in the standard.

- 1] Uhle, A.J. "Fingerprints and Human Identification." D. Senn and P. Stimson (Eds.), *Forensic Dentistry, Second Edition*, 2010, pp. 79-101. Boca Raton: CRC Press.
- 2] Mulawka, M. and S. Miller. *Postmortem Fingerprinting and Unidentified Human Remains*. 2014, Routledge.
- 3] Kaushal, N. and P. Kaushal. "Human identification and fingerprints: A review." *Journal of Biometrics & Biostatistics*, 2011.
- 4] National Institute of Justice. *The fingerprint sourcebook*. US Department of Justice, Office of Justice Programs, 2011.
- 5] Mulawka, M. and J. Craig. "The Efficacy of Submitting Fingerprints of Unidentified Human Remains to Federal Agencies." *Journal of Forensic Identification*, 61(1), 2011, pp. 92-102.
- 6] National Research Council. *Strengthening forensic science in the United States: a path forward*. 2009.
- 7] Nursall, J. "AFIS searching of impressions from charred friction ridge skin." *Journal of Forensic Identification*, 61, 2011, pp. 109-111.
- 8] National Institute of Standards and Technology (NIST). *Law Enforcement Standards Office – AFIS Interoperability*. 2013 <sup>d</sup>.
- 9] Federal Bureau of Investigation (FBI). *Next Generation Identification (NGI)*. 2013 <sup>e</sup>.

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<sup>d</sup> Available from: <http://www.nist.gov>

<sup>e</sup> Available from: <http://www.fbi.gov>



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