The FBI Fingerprint Program

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Senior Level Technologist
FBI Identification Strategic Themes

Know Your Person

Information Sharing
Biometrics an Element of Human Identification

Biometric
- Fingerprint
- Palm Print
- Voice
- Ear Shape
- Skin Pattern
- Iris
- DNA
- Foot Print
- Tattoo

Behavioral
- Handwriting
- Scent

Biographic
- Height
- Weight
- Eye Color
- Hair Color
- Age
- Address
- Driver License
- School Records
- Financial Records
- Online Transactions
- Cell Phone Records
- Travel Records
- Medical Records
- Social Networking
- Affiliations
- Personal Network
- Passport
- Tax Records
Fingerprint Program Spans 92 Years

1924

FBI Civil Identification Service
The FBI receives fingerprints of more than 140,000 government employees and forms Civil Identification Section

1933

National Fingerprint Repository
FBI begins operation of national fingerprint repository with entirely manual processes and about 810,000 subjects

1963

Collaboration on Fingerprint Matching
FBI partners with National Bureau of Standards to automate fingerprint identification

1980

M40 Algorithm
FBI operationalizes NBS M40 algorithm

1999

IAFIS
FBI deploys Integrated Automated Fingerprint Identification System with 95% search reliability, 2 hour criminal and 24 hour civil response

2014

NGI
FBI deploys Next Generation Identification improving fingerprint search reliability to 99.6%, adding palm print, mobile rapid fingerprint, face, Iris and SMT search services
Parallel & Closely Related FBI Fingerprint Activities

Positive Identification – “a complete and accurate criminal history” supported by fingerprints – for administration of the criminal justice system; as well as an element of suitability determinations in licensing, employment in positions of trust, and those dealing with vulnerable persons

Latent Identification – analysis of fingerprints left at crime scenes – conducted with, and also without, access to known subject repositories; produces investigative leads but is generally not dispositive
Absent Organization & Process Fingerprint Data Is Useless
Normally ≈ 100,000 Persons Is Limit For Manual System
With Organization & Resources More is Possible

Bureau of Criminal Identification c.1908

Identification Operations DC Armory c.1943
Manual 10-Print Processing (1924 – 1973)

1. **Incoming Card**
   - Name Index
   - Conduct Name Search

2. **3 X 5 Card**
   - John Smith
   - Fingerprint Card

3. **Fingerprint Card Master File**
   - File Print
   - Incoming Print
   - Retrieve Card Based on Henry Class

4. **File Print**
   - Compare Prints

5. **Compare Prints**
   - Yes: 
     - **Ident**?

6. **Ident**?
   - Yes: 
     - **Ident Response with C/H**
   - No: 
     - **Non-Ident Response with new FBI #**

7. **Non-Ident Response with new FBI #**
   - Yes: 
     - **Add New Fingerprint Card to File in Henry Sequence**
   - No: 
     - **Prepare New 3 X 5 Name Index Card**

8. **Prepare New 3 X 5 Name Index Card**
   - **Conduct Name Search Based on Henry Class**
   - **Classify Prints**

9. **Classify Prints**
   - Yes: 
     - **Ident**?
   - No: 
     - **Conduct Fingerprint Search Based on Henry Class**

10. **Conduct Fingerprint Search Based on Henry Class**
    - **Ident**?

11. **Ident**?
    - Yes: 
      - **Ident Response with C/H**
    - No: 
      - **Non-Ident Response with new FBI #**

12. **Non-Ident Response with new FBI #**
    - Yes: 
      - **Add New Fingerprint Card to File in Henry Sequence**
    - No: 
      - **Prepare New 3 X 5 Name Index Card**
Manual Comparison
Five Waves of Automation

- Unit Record Equipment  
  {later called Electronic Accounting Machines (EAM)}  
  [1930s – 1980s]
- Incremental Technology Insertion  
  - Automated Identification System (AIDS)  
    {later AIS}  
  - Automated Technical Search (ATS)  
  [1973 – 1982]
- Identification Automated System (IDAS)  
  [1989 – 1999]
- Integrated Automated Fingerprint Identification System (IAFIS)  
  [1999 – 2014]
- Next Generation Identification (NGI)  
  [2007 - Present]
Automation Efforts Predate Computer Matching

IBM Type 80 Card Sorter c.1930’s

Diebold Machines c.1950’s-1980’s


Criminal Justice System Became A Societal Issue

“crime in the streets”
A 1964 Presidential campaign issue

Johnson Commission 1965 - 1967

Science & Technology RDT&E Program
- Criminal Justice Information Systems
- Semiautomatic Fingerprint System
Toward A Semiautomatic Fingerprint System

Extensive Proof of Concept – Prototype - Pilot Program Efforts
- 1963 - Special Agent Carl Voelker begins NBS collaboration
- 1966 – RFQ for “device for reading certain fingerprint minutiae
- 1969 – Autonetics & Cornell feasibility demonstration models
- 1972 – Cornell prototype fingerprint reader
- 1975 – Rockwell Finder production fingerprint reader systems

Biographic Searching

AIS - I (1973)

AIS - II (1979)

AIS - III (1989) [AKA IDAS]

Biometric Searching

AFRS (1975)

Matcher (1976)

ATS (1982)
Federal Bureau of Investigation
935 Pennsylvania Ave., NW
Washington, DC 20535

Local Booking Station
Anytown, USA 99999

Identification Automated Services (IDAS) System

- Inked Fingerprint Card
- U.S. Mail
- State AFIS
- ∼ 43 days
- U.S. Mail
- IDAS
- Automatic Name Search (III)
- ATS
- File Print
- Current Print
- Dual blind fingerprint examiners
  Conflict resolution & quality review
- Rap Sheet
- U.S. Mail
- 3 - 5 days
- Local Booking Station

Months for end-to-end response
Number of Tenprint Submissions (in Hundred Millions)

- 100
- 200
- 300
- 400
- 500
- 600
- 700
- 800
- 900
- 1000

Years:
- 1924
- 1928
- 1932
- 1936
- 1940
- 1944
- 1948
- 1952
- 1956
- 1960
- 1964
- 1968
- 1972
- 1976
- 1980
- 1984
- 1988
- 1992
- 1996
- 2000
- 2004
- 2008
- 2012
- 2016

Accelerating Demand
Criminal Master Fingerprint Files – c.1997
IAFIS Evolution

1980s  Commercial AFIS Systems Emerge & Rapidly Adopted
       Unable to Exchange Fingerprints Between Vendors
       FBI Processing Times and Backlogs Fell Behind Some States

1986   ANSI/NBS-ICST 1-1986  Fingerprint Identification - Data Format for
       Information Interchange

1989   FBI and Advisory Board Conceive Three Tier Search Hierarchy
       Plan Created to Revitalize FBI Identification Services

1992   Advisory Board Approves IAFIS Specifications

1994   Segment Contracts Awarded

1996   IAFIS Integration Contract Awarded

1997   First Latent Identification
       First Electronic Transmission of Fingerprint Checks

1999   Initial IAFIS Production Operations

2000   IAFIS Full Capability

Program Objectives:

- Provide the FBI a fully automated fingerprint identification and criminal history reporting system
- Provide a two hour turnaround for electronic criminal ten-print submissions, 24 hour for civil
- Improve latent fingerprint services to the user community
- Develop standards and an infrastructure
- Eliminate need to process and retain paper fingerprint cards
- Improve digital image quality
IAFIS Electronic Ten-Print Submission (Criminal)

Live Scan → Booking Station → State Law Enforcement Network → FBI CJIS Division

- 76% “Lights Out” / 24% Single Examiner Matching
- Booking Data → IDENT Response
- IDENT Response → CJIS WAN

CJIS WAN → State Law Enforcement Network

- Booking Data → IDENT Response
- IDENT Response → FBI CJIS Division

IAFIS
Computer Search of the FBI Name and Fingerprint Features Databases

Booking Station → Workstation

≤ 2 Hour end-to-end response at IOC
≈ 6 Minute end-to-end response at retirement
IAFIS c.1999
Houston
On Oct. 16, 2009, at 10:46 a.m., IAFIS received an electronic fingerprint submission from the Sheriff's Office in Houston for aggravated robbery and assault against a public servant. The fingerprints were processed on IAFIS; within minutes, the individual was identified as wanted by the Harvey Sheriff's Office in New Orleans for murder since March 25, 2008. The individual had previous arrests in Louisiana for escape, aggravated battery, armed robbery, kidnapping, possession of stolen property and parole violation. At 10:50 a.m., a response containing this information was sent to the submitting and wanting agencies.

Chicago
On March 10, 2011, at 12:50 a.m., IAFIS received an electronic fingerprint submission from the Police Department in Chicago in regards to the Violation Extradition Act. Within minutes, the subject was identified as wanted by the Sheriff’s Office in Purvis, Miss., for homicide since July 17, 2010. This individual had previous arrests in Illinois for manufacturing/delivering less than 15 grams of controlled substances, battery/causing bodily injury, criminal trespass to state land, mob action and manufacturing/delivering a non-narcotic. At 12:54 a.m., a response containing this information was sent to the submitting and wanting agencies.

Florida Highway Patrol
On Aug. 26, 2011, at 8:09 p.m., a Florida Trooper observed a 1997 Lexus driving without headlights southbound on Interstate 95 near Ormond Beach. When he approached the car, he smelled marijuana. The driver produced a South Carolina driver license, but the alert trooper noticed the driver also had a bankcard bearing another name. The subject’s fingerprints were scanned using a mobile ID device. Within seconds, a hit was returned from the FBI RISC identifying the driver. Gwinnett County, Ga., had issued a warrant for his arrest in connection with a murder and aggravated assault. The warrant had been outstanding for eight years. The trooper also found 9.8 grams of marijuana in the car. The subject was arrested and charged with possession of cannabis, driving with an expired driver’s license and being a fugitive from justice.
Events of 9/11 Made IAFIS Obsolete

• IAFIS Concept Formulation & Planning Began late 1980’s
• Baseline System Requirements Approved September 1991
  • 62,500 max tenprint checks per day during backlog work off
  • 2 Hour Criminal response
  • 24 Hour Civil Response
• IAFIS Fully Operational September 2000
• Identification Demands Exploded Following 9/11/2001
  • Average daily tenprint checks grew to 170K
  • IAFIS Record 300,113 in April 2010
• New Services Required by Community
  • 10 Second Response for some applications
  • palm print matching
  • Investigative Face Matching
• Mobile services
Next Generation Identification

Interoperability

- Enhanced IAFIS Repository
- National Palm Print System

Accuracy

- Advanced Fingerprint Identification Technology
- Interstate Photo System

Disposition Reporting Improvements
Partial completion September 2007

Scalability

- Multimodal Biometric Framework
- Quality Check Automation
Completed July 2007

Flexibility
Next Generation Identification

Increment 0
Advanced Technology Workstations
- Replace obsolete hardware
- Provide high resolution of biometrics

Increment 1
Advanced Fingerprint Identification
- Identification Fingerprint Search Capability
- More accurate searches
- Better support for rolled/flat processing

Increment 2
RISC and Initial NGI Infrastructure
- Repository for Individuals of Special Concern (RISC)
- Rapid mobile searches
- RISC Web Services

Increment 3
Palms and Latents
- Investigative Palm Print search capabilities
- National Palm Print repository
- Latent Enhancements
- Unsolved Latent File cascaded searches
- Rapid DHS CBP response

Increment 4
Rap Back, Facial, Photo/SMT Search
- Faster Response Times
- Facial and SMT searches
- IAFIS Functionality Replaced
- Verification
- Enhanced Interoperability
- Disposition type of transactions
- Web Services

Increment 5
Iris Pilot
- Conduct Iris Pilot

Increment 6
Technology Refreshment

2010 - 2014
Next Generation Identification

- Need for Next Generation System Identified late 2003
- Initial Discussions with Stakeholders Spring 2004
- Contract Award 2007
- System Fully Operational September 2014
- All Objectives Achieved – On Schedule – Slightly Under Budget
- Lights Out Tenprint Search Reliability 99.6%
- 93% “Lights Out” / 7% Single Examiner Matching
Fingerprint Identification Services

Repository Holdings:
- Criminal: 71.3 million
- Civil (only): 39.9 million
- Total: 111.2 million

FY2015 Daily Averages

<table>
<thead>
<tr>
<th>Service</th>
<th>Search</th>
<th>Response*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminal</td>
<td>51,823</td>
<td>23 min 33 sec</td>
</tr>
<tr>
<td>Civil</td>
<td>93,944</td>
<td>33 min 42 sec</td>
</tr>
<tr>
<td>Rapid ID</td>
<td>2,038</td>
<td>9 sec</td>
</tr>
<tr>
<td>Latent Feature</td>
<td>900</td>
<td>2 hr 1 min</td>
</tr>
<tr>
<td>Latent Image</td>
<td>108</td>
<td>2 hr 21 min</td>
</tr>
</tbody>
</table>

99.6% TAR at 0.103% FAR

Electronic Submission Rate: ≈ 100%

Contributing Partners (criminal): 23,507

* NGI increment 4 workflow issues (72 hr. delay queue) impacted OCT & NOV performance
Typical Day

DAILY STATUS REPORT

Wednesday, June 01, 2016

Biometric Services Section
Quality Improvement Unit
Statistical Trending, Analysis, and Reporting Group (STAR)

DAILY IDENTIFICATION SERVICES WORK COUNT

<table>
<thead>
<tr>
<th>Daily Receipts</th>
<th>Criminal</th>
<th>Civil</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Totals</td>
<td>48,223</td>
<td>171,501</td>
<td>219,724</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Daily Closeouts</th>
<th>Criminal</th>
<th>Civil</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Totals</td>
<td>47,598</td>
<td>170,977</td>
<td>218,575</td>
</tr>
</tbody>
</table>

FISCAL YEAR 2016 OVERVIEW

Criminal Goal (95% within 2 Hours)
99.35% of all criminal transactions were completed within 2 hours.

Civil Goal (95% within 24 Hours)
99.06% of all civil transactions were completed within 24 hours.

Avg. Criminal Response Time Goal (2 Hours or Less)

<table>
<thead>
<tr>
<th>Hours</th>
<th>Minutes</th>
<th>Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>

Avg. Civil Response Time Goal (24 Hours or Less)

<table>
<thead>
<tr>
<th>Hours</th>
<th>Minutes</th>
<th>Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>16</td>
<td>54</td>
</tr>
</tbody>
</table>

MONTHLY AVERAGE TO DATE

FISCAL YEAR AVERAGE TO DATE

<table>
<thead>
<tr>
<th>Hours</th>
<th>Minutes</th>
<th>Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td>37</td>
</tr>
<tr>
<td>1</td>
<td>21</td>
<td>36</td>
</tr>
</tbody>
</table>

* Reject rates are based on daily injections. Work injected on a previous day, but rejected the day of the report, can result in 0.00% reject rates.
## Typical Day

### DAILY OVERVIEW

#### IDENTIFICATION SERVICES (Ten-Print)

<table>
<thead>
<tr>
<th>Service</th>
<th>Goal</th>
<th>Response Times</th>
<th>Injected</th>
<th>Processed</th>
<th>Rejects</th>
<th>Reject Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Criminal (CAR)</td>
<td>2 hrs.</td>
<td>0 2 12</td>
<td>30,709</td>
<td>30,662</td>
<td>444</td>
<td>1.45%</td>
</tr>
<tr>
<td>CPNU (Criminal FP Non-Urgent)</td>
<td>72 hrs.</td>
<td>0 5 0</td>
<td>6,494</td>
<td>6,509</td>
<td>183</td>
<td>2.82%</td>
</tr>
<tr>
<td>FIS (Biometric Image Submission)</td>
<td>24 hrs.</td>
<td>0 14 54</td>
<td>10,088</td>
<td>9,653</td>
<td>73</td>
<td>0.72%</td>
</tr>
<tr>
<td>FIDR (Foreign Information Direct Route)</td>
<td>32 32 54</td>
<td>462</td>
<td>301</td>
<td>6</td>
<td>1.30%</td>
<td></td>
</tr>
</tbody>
</table>

#### Electronic Civil (All Civil TOT’s)

<table>
<thead>
<tr>
<th>Service</th>
<th>Goal</th>
<th>Response Times</th>
<th>Injected</th>
<th>Processed</th>
<th>Rejects</th>
<th>Reject Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOCE (DO Channeling Electronic)</td>
<td>24 hrs.</td>
<td>0 16 54</td>
<td>171,501</td>
<td>170,977</td>
<td>4,237</td>
<td>2.47%</td>
</tr>
<tr>
<td>NFUE (Non-Fed User Fee Expedite)</td>
<td>24 hrs.</td>
<td>0 36 6</td>
<td>450</td>
<td>451</td>
<td>18</td>
<td>4.00%</td>
</tr>
<tr>
<td>NFUF (Non-Fed User Fee)</td>
<td>15 mins.</td>
<td>0 0 12</td>
<td>56,634</td>
<td>56,649</td>
<td>536</td>
<td>0.95%</td>
</tr>
<tr>
<td>FANC (Fed Applicant No Charge)</td>
<td>24 hrs.</td>
<td>0 21 36</td>
<td>81,769</td>
<td>81,354</td>
<td>2,741</td>
<td>3.35%</td>
</tr>
<tr>
<td>FAUF (Fed Applicant User Fee)</td>
<td>24 hrs.</td>
<td>0 34 18</td>
<td>1,460</td>
<td>1,416</td>
<td>115</td>
<td>7.88%</td>
</tr>
<tr>
<td>MAP (Misc Applicant)</td>
<td>24 hrs.</td>
<td>0 28 18</td>
<td>27,307</td>
<td>27,136</td>
<td>561</td>
<td>2.05%</td>
</tr>
<tr>
<td>FOID (Freedom of Information)</td>
<td>24 hrs.</td>
<td>0 53 42</td>
<td>3,087</td>
<td>3,168</td>
<td>207</td>
<td>6.71%</td>
</tr>
<tr>
<td>LFFS (Latent Features Search)</td>
<td>2 hrs.</td>
<td>0 58 42</td>
<td>561</td>
<td>558</td>
<td>43</td>
<td>7.66%</td>
</tr>
</tbody>
</table>

#### IDENTIFICATION SERVICES (Other)

<table>
<thead>
<tr>
<th>Service</th>
<th>Goal</th>
<th>Response Times</th>
<th>Injected</th>
<th>Processed</th>
<th>Rejects</th>
<th>Reject Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFIS (Latent Image Search)</td>
<td>4 hrs.</td>
<td>0 32 6</td>
<td>654</td>
<td>654</td>
<td>5</td>
<td>0.76%</td>
</tr>
<tr>
<td>RPIS (Rapid FP Identification)</td>
<td>4 hrs.</td>
<td>0 30 42</td>
<td>163</td>
<td>163</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>10 secs.</td>
<td>0 0 6</td>
<td>2,002</td>
<td>2,002</td>
<td>28</td>
<td>1.40%</td>
</tr>
</tbody>
</table>
A Hybrid of Automation and Human

- Threshold scores used for “Lights Out” ID, Human Examiner Referral, Non-Ident/No referral
- Staffing level and transaction mix determine response times
  - 1996 > 1,000 examiners
  - 2007 263 examiners
  - 2015 134 examiners
- Civil transactions done on a “fee for service” basis
- No erroneous tenprint identifications in more than 20 years
- Human the expert for the most difficult comparisons
  - Lean Six Sigma program for examiner referrals
    - 2002 – 99.48% Accuracy
    - 2003 – 99.98% Accuracy
    - 2013 and later – Unmeasurable Miss Rate
- However: Transactions are rejected, primarily for image quality
  - 2% Criminal rejections
  - 3% Civil rejections
Possible Consequence of Transaction Rejection

**FY15 Identification Rates to Criminal Master File**
- Criminal 73.77%
- Civil 8.76%

**Average Daily Volume**
- Criminal 51,823
- Civil 93,944

**Projected Daily Rejects**
- Criminal 1036
- Civil 2818

**Daily Hits to Wants**
- ≈ 657

**Rate**
- ≈ 1.26%

We could potentially miss up to 12 - 13 wanted persons a day
Jeremy Bryan Jones
AKA
John Paul Chapman

Location of Jeremy Jones in conjunction with murders in Oklahoma

- Murder of Jennifer Judd, Stabbed
  - 05/11/1992

- Murder of Doria Harris and Daniel Oakley, Multiple Gun Shots
  - 02/21/1996

- Murder of Danny and Kathy Freeman, Multiple Gun Shots
  - 12/30/1999

- Ashley Freeman and Lauria Bible, Missing

Location of Jeremy Jones in conjunction with murders in Alabama and Georgia

- Murder of Tina Mayberry, Stabbed
  - 10/31/2002

- Murder of Katherine Collins, Stabbed
  - 02/14/2004

- Murder of Amanda Greevenwell, Strangled and Stabbed
  - 03/12/2004

- Patricia Endres, Missing
  - 06/14/2004

- Murder of Lisa Nichols
  - 09/18/2004

Mistaken Identity

A fingerprint check revealed the man they had in custody was Jeremy Bryan Jones, 31, a drifter and truck driver from Miami, Oklahoma. Officers weren’t sure how he got the birth certificate for the real Chapman, but once he had that, he was able to get a Missouri driver’s license. From Missouri, Jones had moved to Alabama where he traded in his Missouri license for an Alabama license. Police say he continued to use the Chapman alias at home, work, and in jail.

FBI System Miss

Jones was arrested three times in Georgia between October 2003 and June 2004. His fingerprints were sent to the FBI CJIS Division, Clarksburg, West Virginia but the FBI’s computer failed to match his prints to his real name. When a match was not made, a new file in the FBI database was created for “Chapman.” Had a match been made, authorities would have known Chapman was Jones and he was wanted in Oklahoma for jumping bail in 2000, where he was charged with two counts of rape and two counts of sodomy.

Lisa Nichols

Jones arrested in Newton County, MO. 3 yrs probation
11/05/1995
Jones arrested for rape of Sherry Davis in Miami, OK
01/11/1996
Brady Lee Noe reported being raped by Jeremy Jones, Jones arrested
03/03/1997
Jones convicted of both rapes, sexual battery, and possession of controlled substance, 5 year probated sentence
07/26/1999
Jones committed to State Mental Hospital
11/10/2000
Jones fled State of Oklahoma to avoid arrest
01/10/2001
Jones assumed ID of J.P.C., in Arkansas
01/08/2001
Jones located in Irvington, Alabama
06/02/2002
Jones moved to Douglasville, Georgia
10/27/2003
Jones arrested by Villa Rica PD, indecent exposure, bonded out
06/05/2004
Jones arrested for possession of meth
06/23/2004
Jones bailed out of jail
09/15/2004
Jones moved to Mobile, AL
Jones arrested by MGSO

Jones arrested in Newton County, MO. 3 yrs probation
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Jones bailed out of jail
09/15/2004
Jones moved to Mobile, AL
Jones arrested by MGSO
Where Do We Go From Here

• Dramatic Improvements In FP Search Algorithms Not Expected
• Image Quality Has Steadily Declined Over 50 Years

![Graph showing decline in image quality over time.](image)

• We Need Better Image Data
• Which Means We Need Better Image Capture Technology
What would prevent these men from getting a Visa today?
US Government Fingerprint Sharing

FBI – IAFIS/NGI

Full Interoperability December 2005

Interim Data Sharing September 2006

Shared Services October 2008

Visa Applicant Tenprint Checks (via IDENT) 1/2008

Shared Services Checks (via IAFIS) 1/2012

DHS- IDENT

Two Finger Matching 2004

DOD - ABIS

Iraq

Afghanistan

DOS - CCD
Latents & Palms

- Latent: 3X Increased Accuracy in NGI
- Expanded Cascaded Searches Producing Results... In the 16 Years of Automated Latent Fingerprint Searching, 33% of the Identifications since NGI Inc 3
- 20,000 Average Monthly Receipts
- Palm Prints:
  - 4.0 million palm print sets available in National System... more than 10,000 per day being enrolled.
- Response Times
  - Finger: 1 Hour (82%) 4 Hours (95%) 24 Hours (99%)
  - Palm: 1 Hour (75%) 4 Hours (86%) 24 Hours (99%)
- 660,000 ULF Records
Mobile Fingerprints (Search Only)

- Average: Over 2,038/day
- > 1.4 Million Searches
- Red Hit Rate: 3% - 7%
- Response Time: < 4 Seconds