Next Generation Identification
Bigger – Better – Faster

Rap Back
Rapid Mobile ID
Iris
Facial
Latents
Palms
Integrated Automated Fingerprint Identification System (IAFIS)

IAFIS
- National fingerprint repository
- Supports over 18,000 Law Enforcement agencies
  - Local, State, Federal, Tribal, and International agencies
- Currently exceeding requirements
- Over 10 years old
- Initial capacity = 62,500
- Record high receipts = 300,113
- Accuracy = 92%

- IAFIS has lived up to and vastly exceeded performance expectations
- Now is the time to design for the future, rather than reacting to it
The Path to NGI

Mission Evolution
- Changed since IAFIS went live in 1999
- Supports both criminal and noncriminal justice requirements
- Counterterrorism mission

Changing Business Needs
- Increased federal, state and local demand for identification services
- New legislation has significantly increased background checks
- Interoperability

Focus on Technology Advancements
- Improve biometric services
- Enhanced CJIS services
- Technological advancements to improve the system
Stakeholder Concepts

<table>
<thead>
<tr>
<th>Category</th>
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<tr>
<td>State &amp; Territory Agencies Canvassed</td>
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<td>Federal Agencies Canvassed</td>
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<tr>
<td><strong>Total Completed</strong></td>
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Over 1,000 Individuals Represented
Over 1,000 Stakeholder Concepts Identified
NGI Implementation Schedule

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

Increment 1
- Initial Operational Capability
  - 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 Capabilities
  - 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

NGI Implementation Schedule

2010

2014
Biometric Search Analysis Study

NGI contract included a series of biometric search analysis studies (Trade Studies)

- Assess biometric technology
- Provide recommendations for biometric implementation

Five specific technologies:

- Identification fingerprint and Slap fingerprint segmentation
- Palmprint
- Investigation (latent) fingerprint
- Face
- Iris
Increment 0 and Increment 1 - Completed

No Action Needed From Our Law Enforcement Users

Increment 0 – Advanced Technology Workstations (ATWs) (Completed March 2010)

Resulting Benefits of New ATWs
- Workstations include 30-inch monitors
- Higher resolution results in increased operational efficiency

Increment 1- Initial Operating Capability (Completed February 2011)
Resulting Benefits of the Advanced Fingerprint Identification Technology (AFIT)
- Increases fingerprint search accuracy to 99.6% (previously 92%)
- Improves flat fingerprint searching
- Advanced matching algorithms
AFIT identified criminal subjects with current charges of:

- Murder in the 1st degree
- Manslaughter
- Assault on Police
- Fugitive from Justice
- Harboring Aliens
- Smuggling Aliens
- Felony Abduction

Additionally, during civil background investigations, AFIT identified subjects with prior charges of:

- Assault with a Deadly Weapon
- Masked Armed Robbery
- Immigration violation
Status
- Nationally available as of August 25, 2011

Resulting Benefits
- Supports mobile fingerprint identification operations on a national level
- Biometric searches of the worst of the worst – Wanted persons, Known or appropriately Suspected Terrorists, sex offenders, and persons of special interest
- Provides the “Street Cop” the ability to quickly assess subject’s threat level
**Status**

- **RISC Totals:** Over 535,000 searches
- **Average Red Hit Rate:** 6-10% weekly
- **Average response time:** 6.00 Seconds (since 10/1/2011)
Palm Prints, Latents and Rapid Response
(Increment 3)

Status
- Completed successful Critical Design Review
- Working towards System Acceptance Review
- Target Deployment - Spring, 2013
- Collected 3.4 million palm prints (as of 1/28/2012)
- EBTS 9.3 - Published

Resulting Benefits
- Enables palm prints to be searched across the U.S.
- 30% of all prints left at crime scene are palm prints
- Provides rapid response for DHS Customs and Border Protection transactions
- More latent identifications to support terrorist and violent crime investigations
- Upgraded Universal Latent Workstation software
Palmprints and Latents (Increment 3)

MorphoTrak Solution
End User Benefits (Increment 3)

Decision Recording
- Reports to justify investments
- Show the Identification community’s hard work to Decision Makers
- Search considerations

Enhanced Processing
- Eliminate Ridge Counting
- Increased Accuracy
- Search\Retrieve all Events
End User Benefits (Increment 3)

Increased Penetration
- 30% limitation eliminated
- 50% average

Latent Search Capabilities
- Civil online file
- Additional 27 million

ULF Search
- Direct Search capability
- Correlation value

ULF Cascades
- All Types of Transactions
Universal Latent Workstation
Status

- Rap Back
- Facial Search
- Text based scars, marks, and tattoo (SMT) searches
- Enhanced interoperability
- Fingerprint verification services
- Improved response times
- Target deployment - Summer, 2014

Resulting Benefits

- Enhance public safety
- Improved response time and system performance
- National level investigative searches of photos/SMTs
- More accurate and complete criminal history records
- Flexible and scalable architecture for future needs
Rap Back

Reviewing Best Practices and Lessons Learned
- Currently identified 31 states with Rap Back business lines
- Strategic discussions to align with a national implementation

Identifying Policy focus areas

Going Forward
- Engage Law Enforcement partners
- Continue working with Subject Matter Experts

Rap Back Pilot
NGI Face Pilot

Face matching system – Currently Available
- 12 million Local/State/Federal searchable photos
- Focus on contributor image quality

Currently soliciting participation
- Contact (304) 625-3437 for more information

Universal Facial Workstation software
Universal Face Workstation (UFW)

- FBI user software to support access to NGI Face Pilot and NGI System face search capabilities
- Cross Platform (Windows, OSX, Linux)
- Built upon a Biometric Integration Platform
- Built on open source frameworks
- Extensive support for plugins
- Will be available for Law Enforcement use free of charge
UFW Objectives

- Plan, design, prototype and demonstrate a face workstation which can be freely deployed by the FBI
- Develop services which can be carried over to NGI for biometric processing
- Employ a user experience design philosophy to develop UFW specifically for face examiners
- Permit examiners to:
  - Ingest, analyze and enhance images
  - Select sub-frames or sub-images areas for further analysis
  - Submit files to local and remote matching systems
  - Review, store and match search results
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UFW – Home Screen

[Image of UFW – Home Screen]

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UFW – Media Manager
UFW – 1:N Comparison
UNCLASSIFIED / FOUO

UFW – 1:1 Comparison
Iris Pilot

Iris storage, search and verification functionality

- Iris Benefits
  - Quicker acquisition
  - Reliable
  - Accurate
  - Business value
  - Less interaction
  - Enhanced officer safety
All performance specifications will be met

Additional system tuning to meet non-functional requirements
Shared Management

Governance

Drivers & Requirements
NGI Offers Bigger, Better, Faster Biometric Services to Support, Local State, & Federal Stakeholders

- Development of future services currently underway
- The time to begin planning for participation in future NGI Services is now
Questions / Comments

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