

FBI Next Generation Identification (NGI)

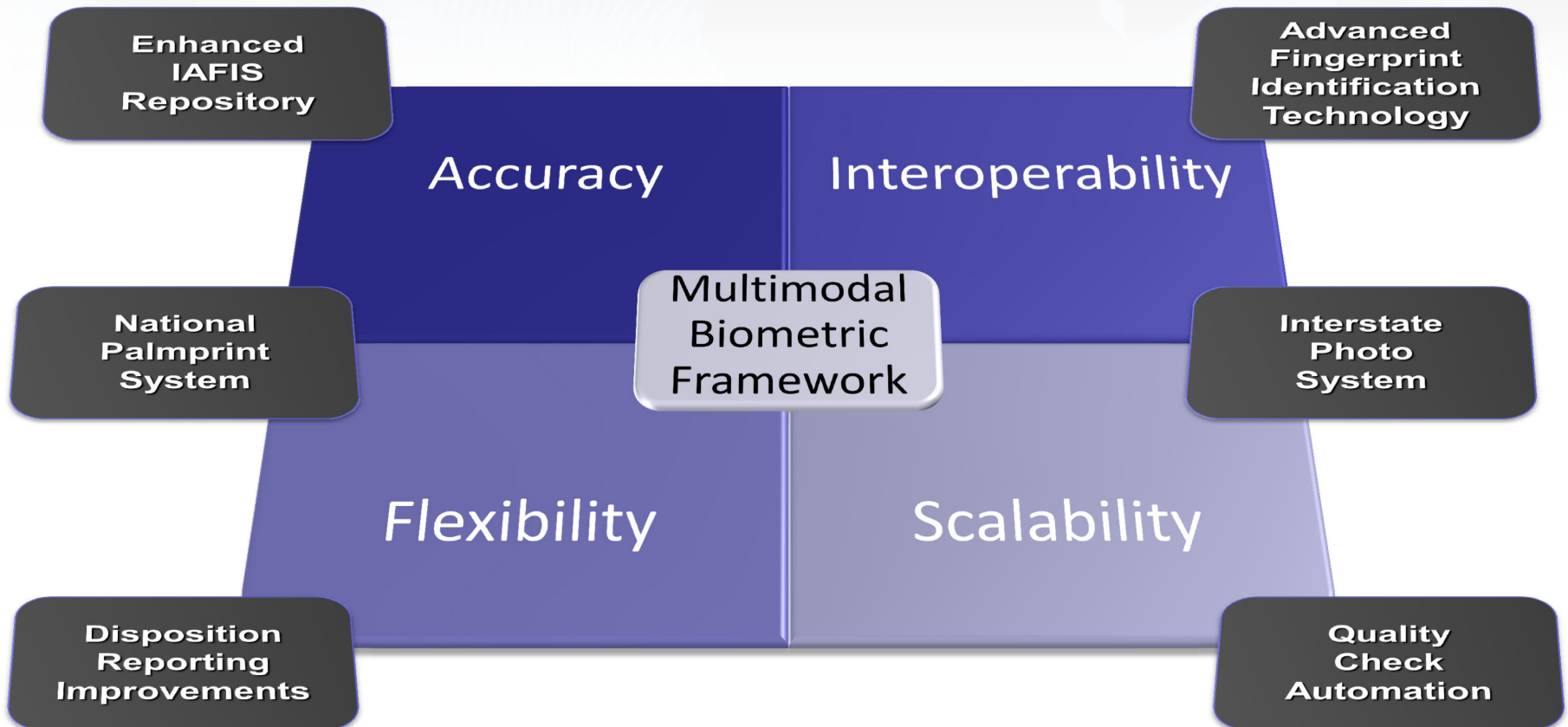
Bigger, Better, Faster



**NGI - Overview for Strategic Planning
July 2013**

NGI Capabilities

Bigger, Better, Faster





IAFIS Database

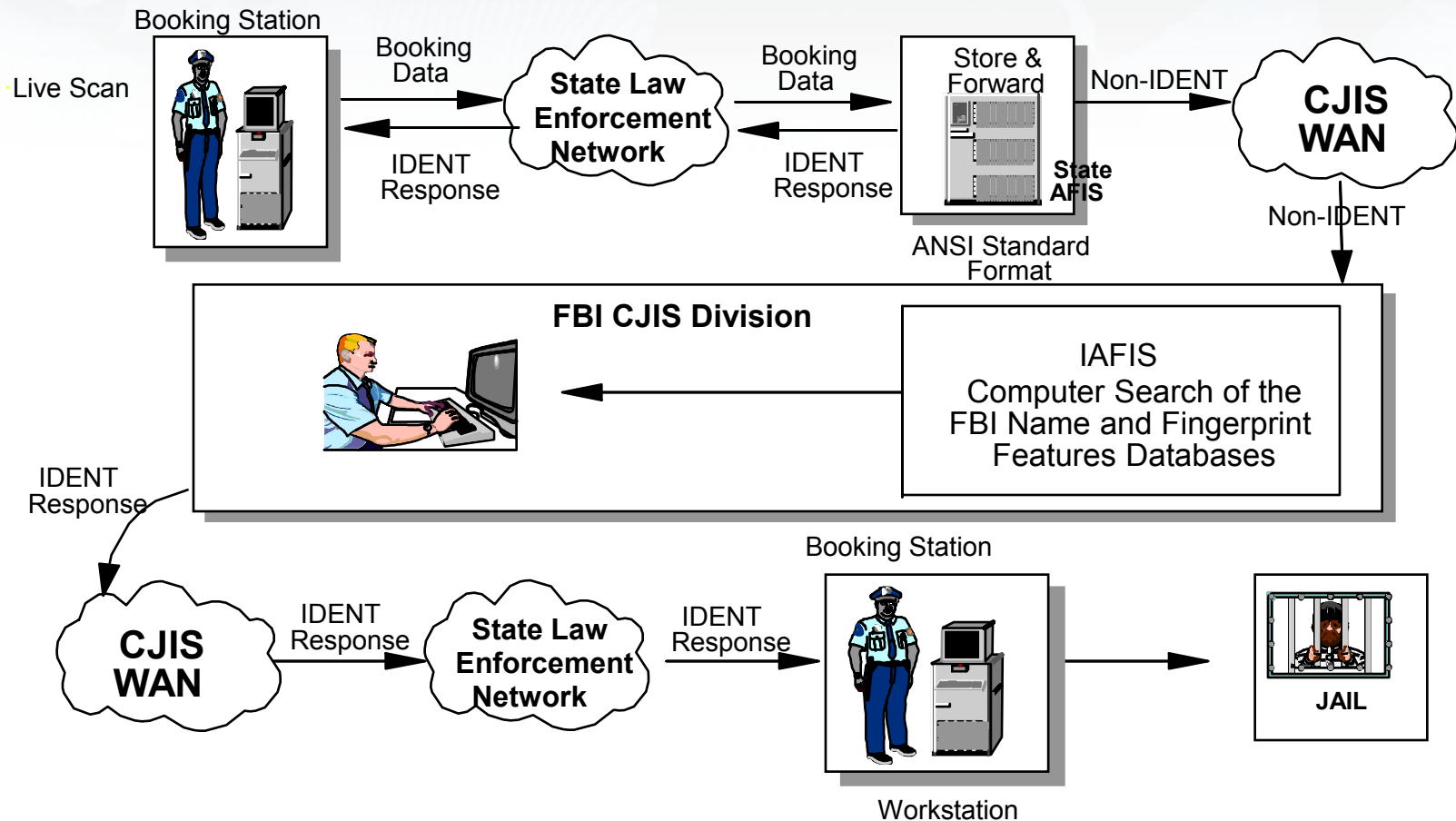
Criminal History File

- 75.4 million subjects with over 284+ million arrest cycles, including:
 - ▶ 1.2 million wanted persons – Estimate 45% of potential entries
 - ▶ 640,000+ sex offenders
 - ▶ 15+ million photos (8 Million subjects)
 - ▶ 132,000+ Known and Suspected Terrorists
- ▶ **Tenprint Submissions to IAFIS**
 - FY10: 61.3 million
 - FY09: 52.7 million
 - FY08: 35.5 million
 - Tenprint Criminal Submission Rate: 57%
 - Tenprint Civil Submission Rate: 43%



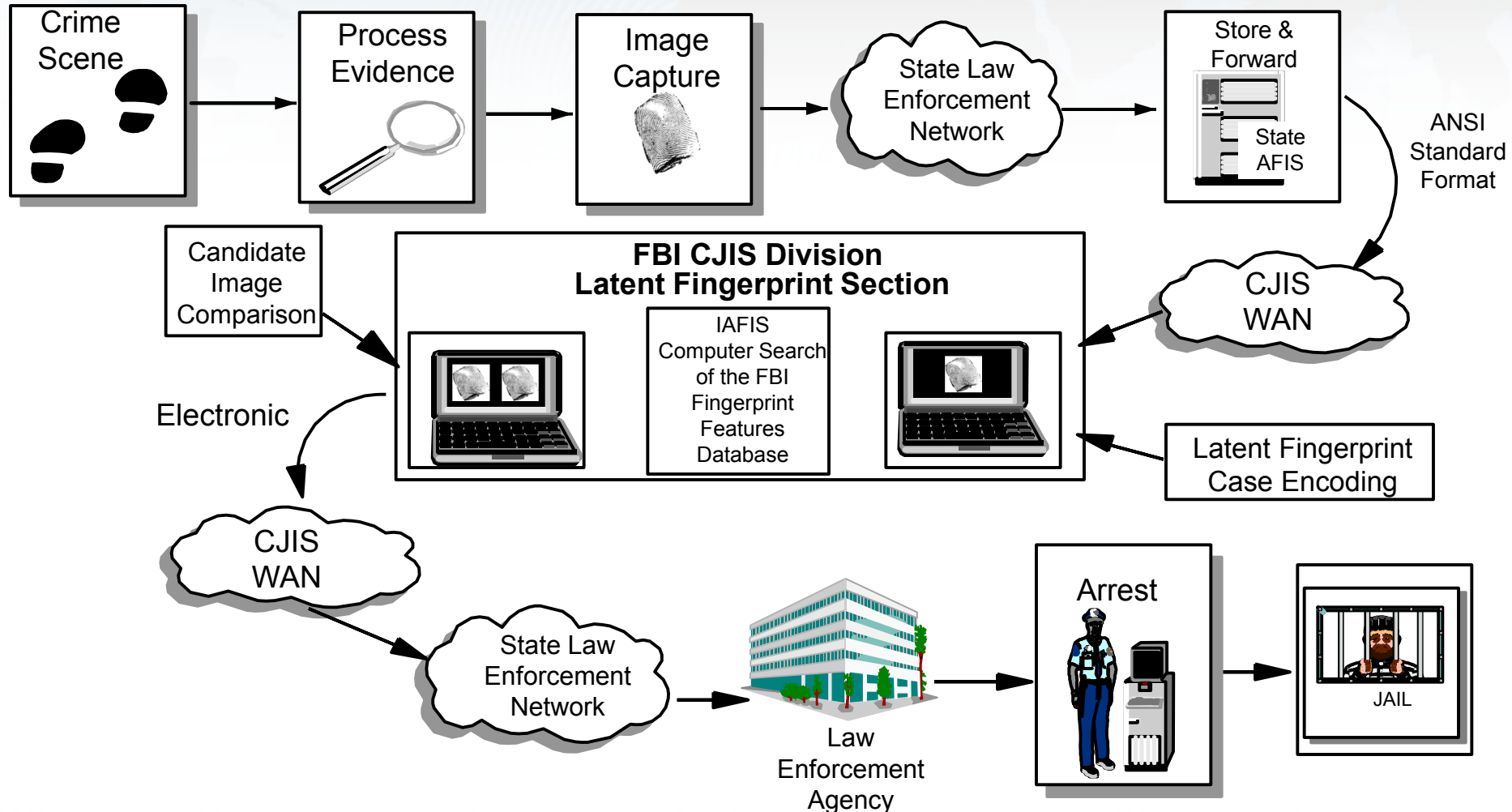
Core IAFIS Service

Electronic Tenprint Submission Criminal



UNCLASSIFIED / FOUO

Electronic Latent Submission





NGI Core Services

- ▶ **Identification:** Positive identification or non-identification of an individual based on a one-to-many biometric search.
- ▶ **Verification:** Confirmation of an identity based on a one-to-one comparison.
- ▶ **Information:** Supports user requests for biographic and/or biometric information for a specific individual.
- ▶ **Investigative:** Provides a list of candidates based on a one-to-many biometric and/or biographic search. The result set may include an ordered listing of candidates and corresponding information to facilitate the investigative decision process.





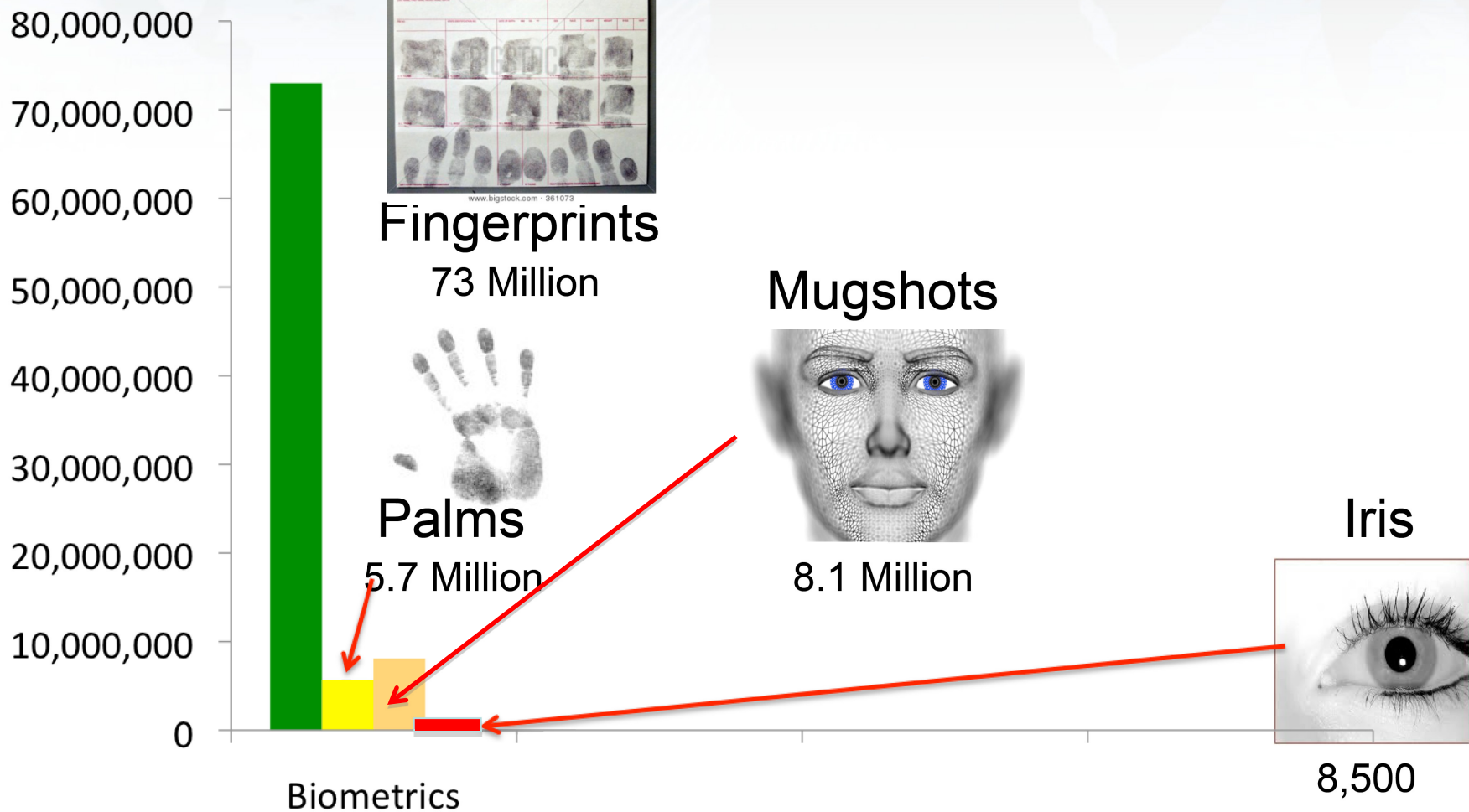
NGI Core Services

- ▶ **Notification**: Event notification to users for their data contained within any of the NGI repositories
 - ▶ (e.g., Criminal and Civil Files, Special Population Cognizant [SPC] Files, Unsolved Latent File [ULF], Unsolved Iris File [UIF], and Unsolved Photo File [UPF]).
 - ▶ With this service, a data owner will receive an unsolicited notification from the system based on event criteria (triggers).
 - ▶ In addition, events that trigger a notification on Immigration Violator File (IVF) records will be provided to the Law Enforcement Support Center (LESC).

- ▶ **Data Management** – Administrative use by states (SIB)



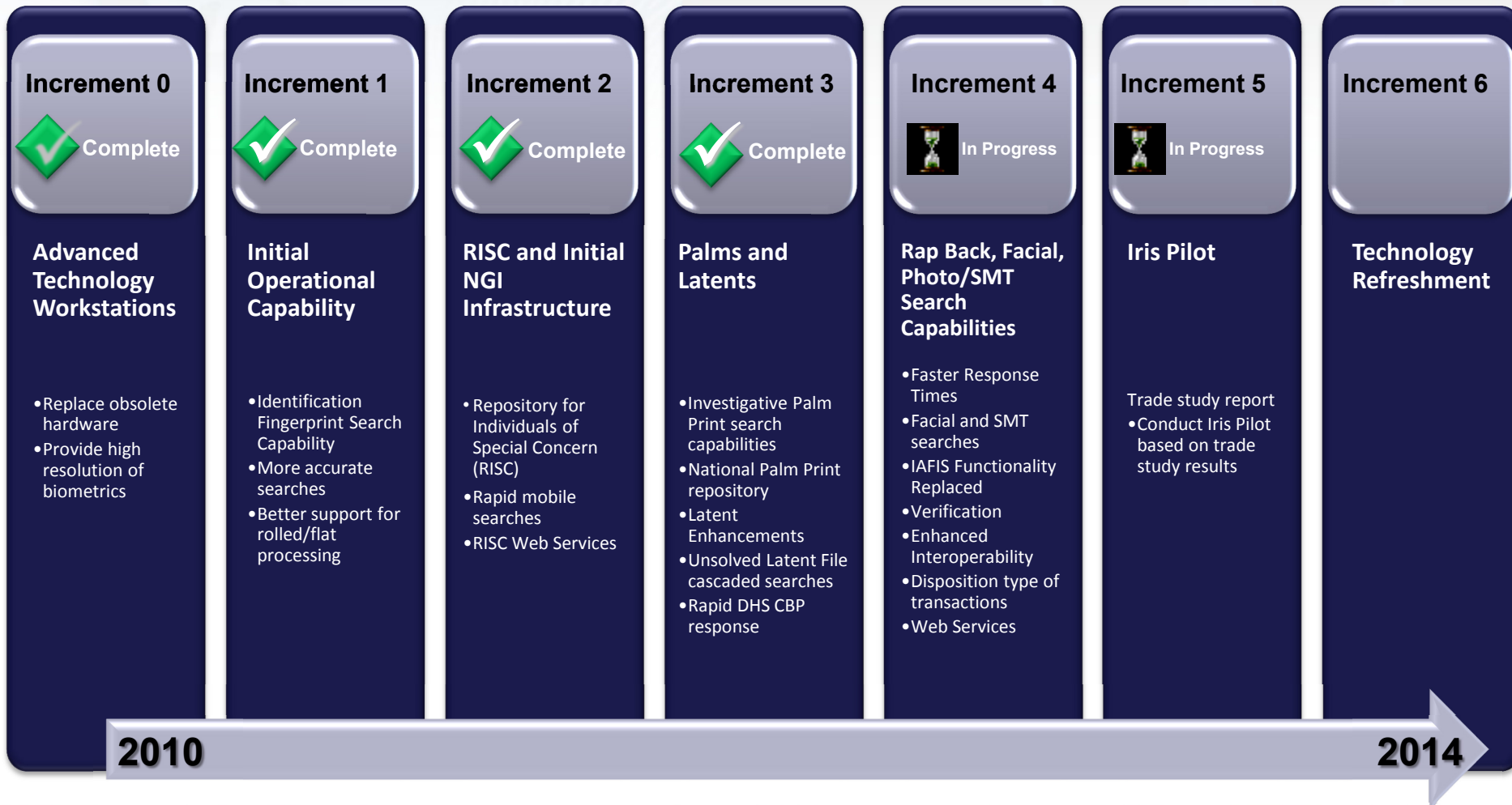
Next Generation Identification (NGI)



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NGI Implementation Schedule



Increment 3 Readiness

- ▶ Compliant with 9.3 - ULW 2012 6.3
 - ▶ Dependencies
 - ▶ Local/Regional & State have most up to date version of Interoperability standards
- ▶ Default is “Not-Ready” until testing is complete
- ▶ No loss of service, but no gains without 9.3





Improvements & Enhanced Latent Services

- Increases fingerprint search accuracy to over 99%
- Faster Identification and Responses
- Increased Latent Search Accuracy > 70 %
- Expanded Latent Search of Civil Repository –
Not all states participating
- Search using Image only, Quick Minutiae mark-up or
Region of Interest





Palm Prints, Latents and Rapid Response (Increment 3) **Completed**

Deployment **Completed**– May 5, 2013

- All contributors immediately benefited from 3 times increased accuracy
- Expanded Cascaded searches already producing results
 - 677 ULMs as of 5/29/2013
 - First 5 Days:

| ULM Source | Reviewed | Probable Match |
|------------|----------|----------------|
| Civil | 22 | 8 |
| RISC | 30 | 3 |
| Criminal | 41 | 24 |

- Provides rapid response for DHS Customs and Border Protection transactions





NGI Biometrics

► Types

- Palm Prints
- Images (Mugshots – SMT)
- Iris Images

► Services

- New Universal Latent Workstation 6.3 (EFS)
EBTS 9.3
- Universal Facial Workstation
- Rapid Biometric Search – Mobile ID and RISC





Palms - 2013

- ▶ Currently 32 States 11 Federal agencies participating
 - ▶ Repository built –
 - ▶ Seeking new and legacy prints from Arrest & Booking Process – need to be associated with FNU
 - ▶ Received over 5.5 + million electronic palm prints – Many are unusable.
 - ▶ Ability to store fingerprint submissions at 1,000

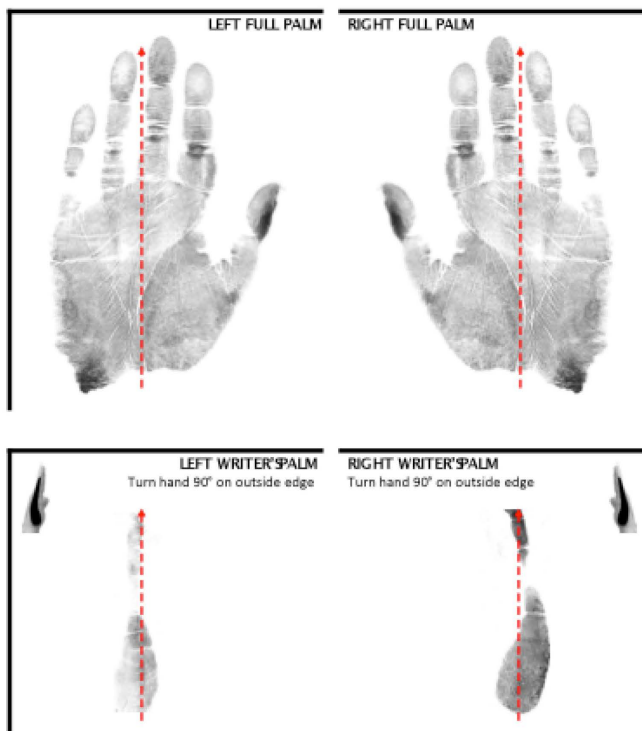




Palms - 2013

4 IMAGE TYPE-15 SUBMISSION GUIDE

Palm Print images should be captured as closely as possible to an upright, vertical position.



NGI NATIONAL PALM PRINT SYSTEM (NPPS)

Provided by the FBI Criminal Justice Information Services (CJIS) Division 3000 Custer Hollow Rd., Bridgeport, WV 26330

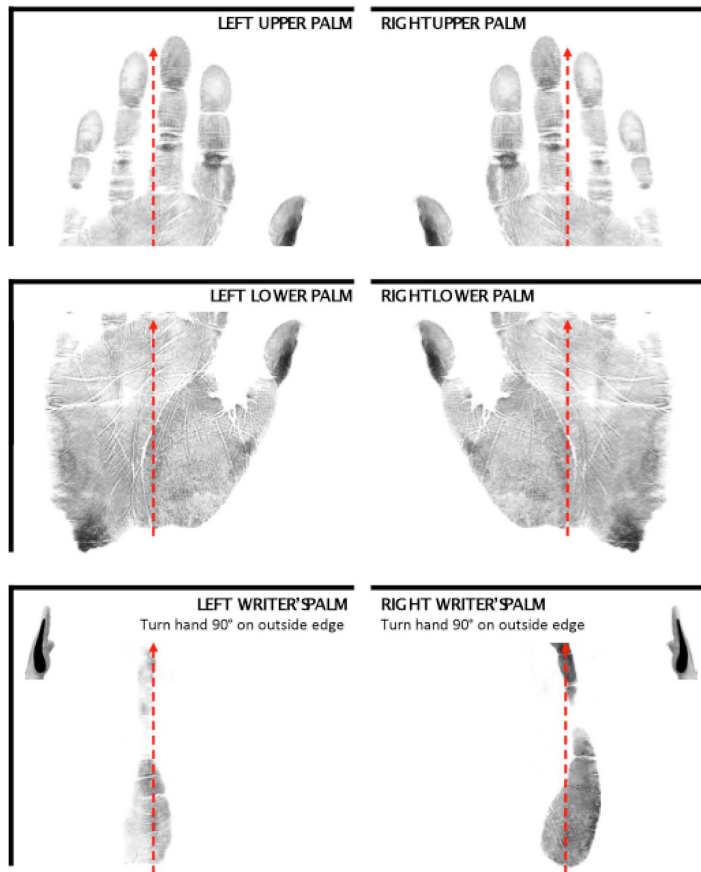




Palms - 2013

6 IMAGE TYPE-15 SUBMISSION GUIDE

Palm Print images should be captured as closely as possible to an upright, vertical position.



NGI NATIONAL PALM PRINT SYSTEM (NPPS)

Provided by the FBI Criminal Justice Information Services (CJIS) Division 1000 Custer Hollow Rd., Bridgeport, WV 26330





Palms – May 2013

- ▶ Store, Search and Retrieve
 - ▶ Palm Prints -
 - ▶ Legacy Bulk Submission
- ▶ ULW 2012 Ver. 6.3 EBTS 9.3
 - ▶ Submit Latent Palms to Unidentified Latent File
 - ▶ Major Case Prints
 - ▶ Latent Palm Search
 - ▶ Retrieval of Prints





Next Generation Identification Interstate Photo System Initiative

NGI Interstate Photo System (IPS) Initiative





Image Repository - 2014

- ▶ **Enhance photo enrollments**
 - ▶ Bulk submissions of photos
 - ▶ Scars, marks, and tattoos (SMT)
 - ▶ LiveScan –needs to collect data, state needs to be able to store and/or pass data

Image Retrieval – From AFIS System if you have that capability





ANSI/NIST SMT Descriptors - Page 201

Table 67 Tattoo classes and subclasses

| Class Code | Subclass Description | Subclass Code | Class Code | Subclass Description | Subclass Code |
|------------|---|---------------|------------|-------------------------------|---------------|
| HUMAN | Male Face | MFACE | ANIMAL | Cats & Cat Heads | CAT |
| | Female Face | FFACE | | Dogs & Dog Heads | DOG |
| | Abstract Face | ABFACE | | Other Domestic Animals | DOMESTIC |
| | Male Body | MBODY | | Vicious Animals (Lions, etc.) | VICIOUS |
| | Female Body | FBODY | | Horses (Donkeys, Mules, etc.) | HORSE |
| | Abstract Body | ABBODY | | Other Wild Animals | WILD |
| | Roles (Knight, Witch, man, etc.) | ROLES | | Snakes | SNAKE |
| | Sports Figures (Football Player, Skier, etc.) | SPORT | | Dragons | DRAGON |
| | Male Body Parts | MBPART | | Birds (Cardinal, Hawk, etc.) | BIRD |





ANSI/NIST SMT Descriptors - Page 203

ANSI/NIST-ITL 1-2011

| Class Code | Subclass Description | Subclass Code |
|------------|---------------------------|---------------|
| | Female Body Parts | FBPART |
| | Abstract Body Parts | ABBPART |
| | Miscellaneous Human Forms | MHUMAN |
| | Skulls | SKULL |

| Class Code | Subclass Description | Subclass Code |
|------------|----------------------------|---------------|
| | Spiders, Bugs, and Insects | INSECT |
| | Abstract Animals | ABSTRACT |
| | Animal Parts | PARTS |
| | Miscellaneous Animal Forms | MANIMAL |

| Class Code | Subclass Description | Subclass Code |
|------------|------------------------------------|---------------|
| PLANT | Narcotics | NARCOTICS |
| | Red Flowers | REDFL |
| | Blue Flowers | BLUEFL |
| | Yellow Flowers | YELFL |
| | Drawings of Flowers | DRAW |
| | Rose | ROSE |
| | Tulip | TULIP |
| | Lily | LILY |
| | Misc. Plants, Flowers, Vegetables. | MPLANT |

| Class Code | Subclass Description | Subclass Code |
|------------|----------------------|---------------|
| FLAG | American Flag | USA |
| | State Flag | STATE |
| | Nazi Flag | NAZI |
| | Confederate Flag | CONFED |
| | British Flag | BRIT |
| | Miscellaneous Flags | MFLAG |

| Class Code | Subclass Description | Subclass Code |
|------------|---|---------------|
| OBJECT | Fire | FIRE |
| | Weapons (Guns, Arrows, etc.) | WEAP |
| | Airplanes and other Air vehicles (incl. Blimps) | PLANE |
| | Boats, Ships, & Other Water Vessels | VESSEL |
| | Trains | TRAIN |
| | Cars, Trucks, and other Land Vehicles (except Trains) | VEHICLE |
| | Mythical (Unicorns, etc.) | MYTH |
| | Sporting Objects (Football, Ski, Hurdles, etc.) | SPORT |
| | Water & Nature Scenes (Rivers, Sky, Trees, etc.) | NATURE |
| | Miscellaneous Objects | MOBJECTS |

| Class Code | Subclass Description | Subclass Code |
|------------|------------------------|---------------|
| ABSTRACT | Figure(s) | FIGURE |
| | Sleeve | SLEEVE |
| | Bracelet | BRACE |
| | Anklet | ANKLET |
| | Necklace | NECKLC |
| | Shirt | SHIRT |
| | Body Band | BODBND |
| | Head Band | HEDBND |
| | Miscellaneous Abstract | MABSTRACT |





Image Repository - 2014

- ▶ **Photo search capability**
 - ▶ New search function for photo repositories
 - ▶ (including SMT and mug shot photos)
- ▶ **Facial recognition investigative tool**
 - ▶ Conduct searches to generate ranked candidate lists of potential matches
- ▶ **Image Retrieval –**
 - ▶ AFIS System - if you have that capability
 - ▶ FR System
 - ▶ NGI Provided tool – UFW -2012





Image Repository - Issues

Interference

(Background, Hair, Glasses, Etc..)

Lighting

(Harsh Lighting/Glare, Low Lighting/Shadows)

Image Resolution

Face Expressions

Face Positioning

Pose (Yaw, Pitch, Roll)





NGI National Photo Repository

- Interstate Photo System Repository
 - Many states have submitted photos for searching
 - NGI staff working with states that are not submitting (NFF)
 - Approximately 15 million photos (Mug Shots) – 8 million subjects
 - NGI staff working with contributors to increase gallery images through Bulk Photo Submissions





IPSFRP

- Users submit searches against a National repository of photos (AFIS – FR System – Mugshot System)
 - Gallery contains booking images collected at the arrest event (along with tenprint submission to the FBI)
- Law Enforcement Users will receive a ranked investigative candidate list
 - Minimum - 2, default - 20, maximum – 50
 - Access within CJIS Security Policies





Investigative Candidate List

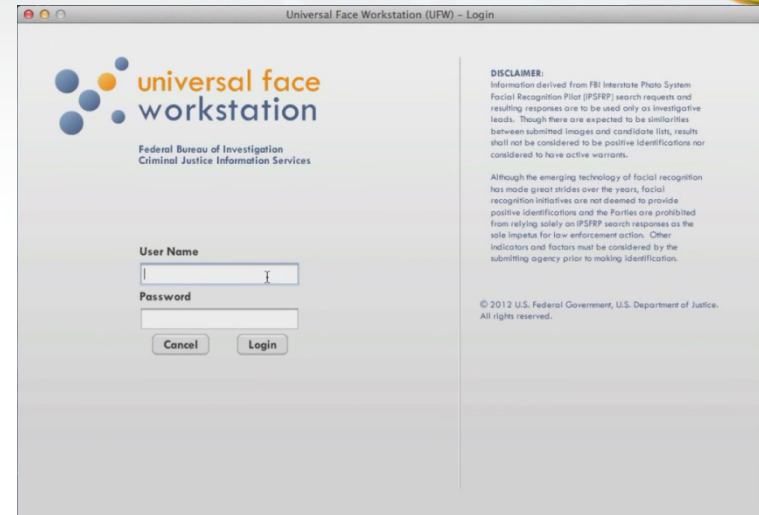
- Search Results Biometric (SRB) response
 - Includes the number/default of candidates requested
 - Candidates will be ranked
 - The Universal Control Number (UCN /FNU) of each candidate will be returned
 - Caveat regarding investigative response





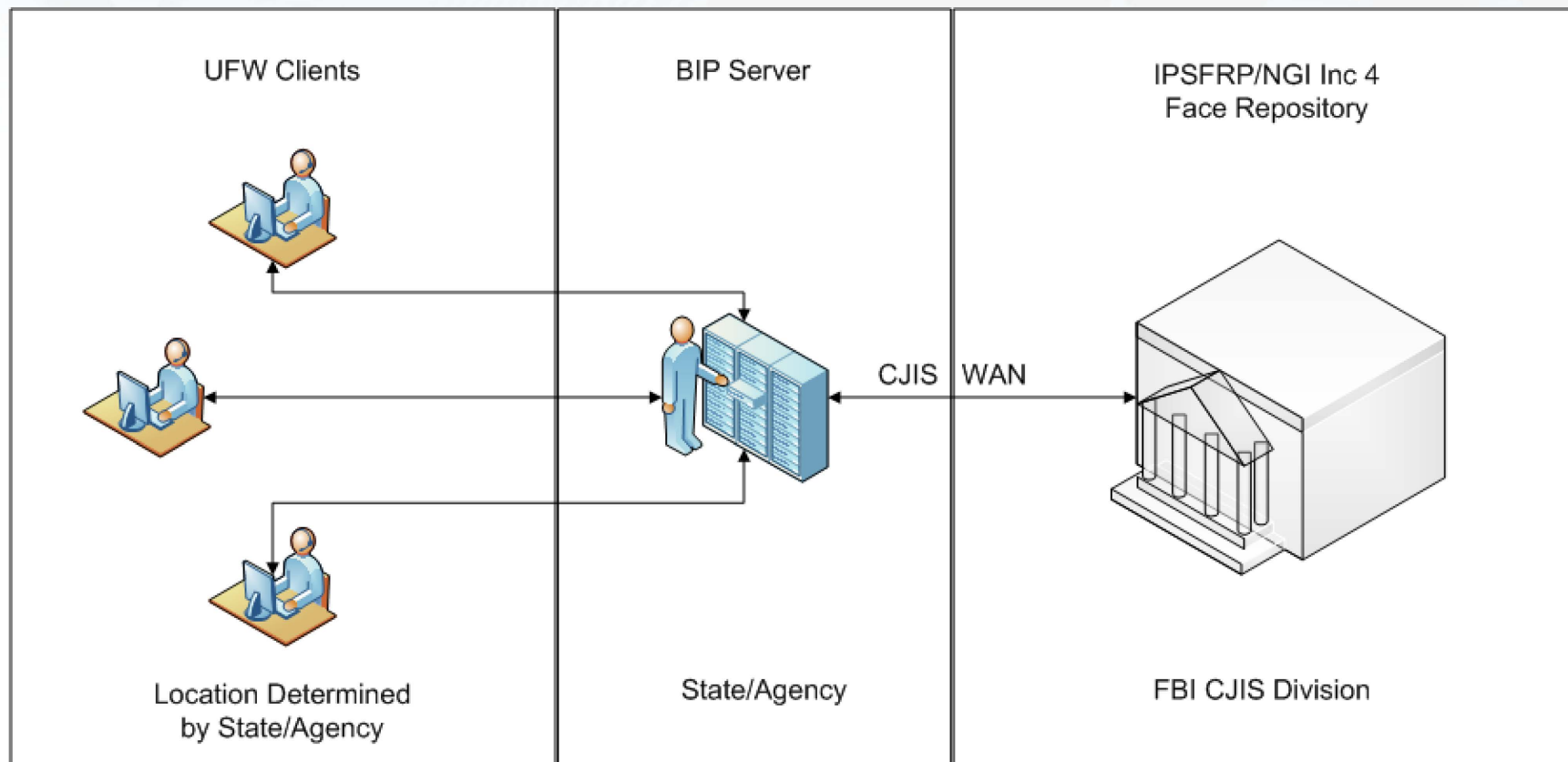
Universal Face Workstation (UFW)

- FBI user software to support access to NGI Face Pilot and NGI System face search capabilities
- Search preparation, submission, and candidate list review
- Cross Platform (Windows, OSX, Linux)
- Built on open source frameworks
- Extensive support for user developed plugins
- Available for authorized Law Enforcement use free of charge





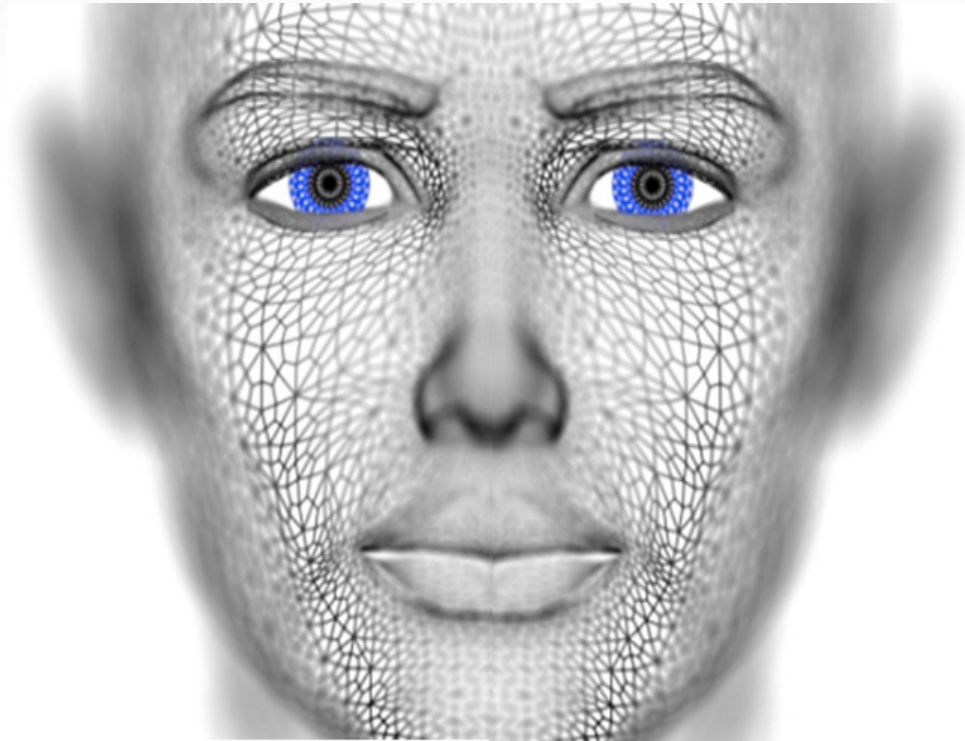
Basic UFW/BIP Installation





Important Note

- UFW does **NOT** provide a means for a States or Agencies to search face images not contained within the FBI pilot repository
- The FBI Pilot only searches Type-10 records submitted to the FBI in **CRIMINAL** transactions (CAR)



RISC

Repository
of
Individuals
of
Special
Concern

Advanced Fingerprint Identification Technology Repository for Individuals of Special Concern (RISC)

Supports mobile fingerprint identification operations on a national level with FNU

2.1 Million - Subset of Criminal Master File – IAFIS and III

- Biometric searches of the worst of the worst – searching fingerprints of
 - Wanted persons – With FNU 600k Felony & some Misdemeanor
 - Known or appropriately Suspected Terrorists 132,000
 - Sex offenders 640,000
 - Immigration Violator File 283,000
 - Violent Offender File – To be added
- **75% NY warrants contain an FNU - 25K Wants, 35K sex offenders**
- **83% of NJ warrants have an FNU – 27K Wants, 13K sex offenders**
- **45% of PA warrants have an FNU – 17K wants, 10K sex offenders**





RISC Implementation

Increment 2 (2011) Deployment

Increment 3 (2013)

- ▶ Perform a Cascaded Unsolved Latent (ULF) Search

Increment 4 (2014)

- ▶ Provide Photos with a RISC response



Rapid Mobile Identification Service

RISC Totals:

Over 891,711 searches (4/2013)

500+ agencies

Average daily transactions:

900 to 1000 Peak 1300

Average Red Hit Rate:

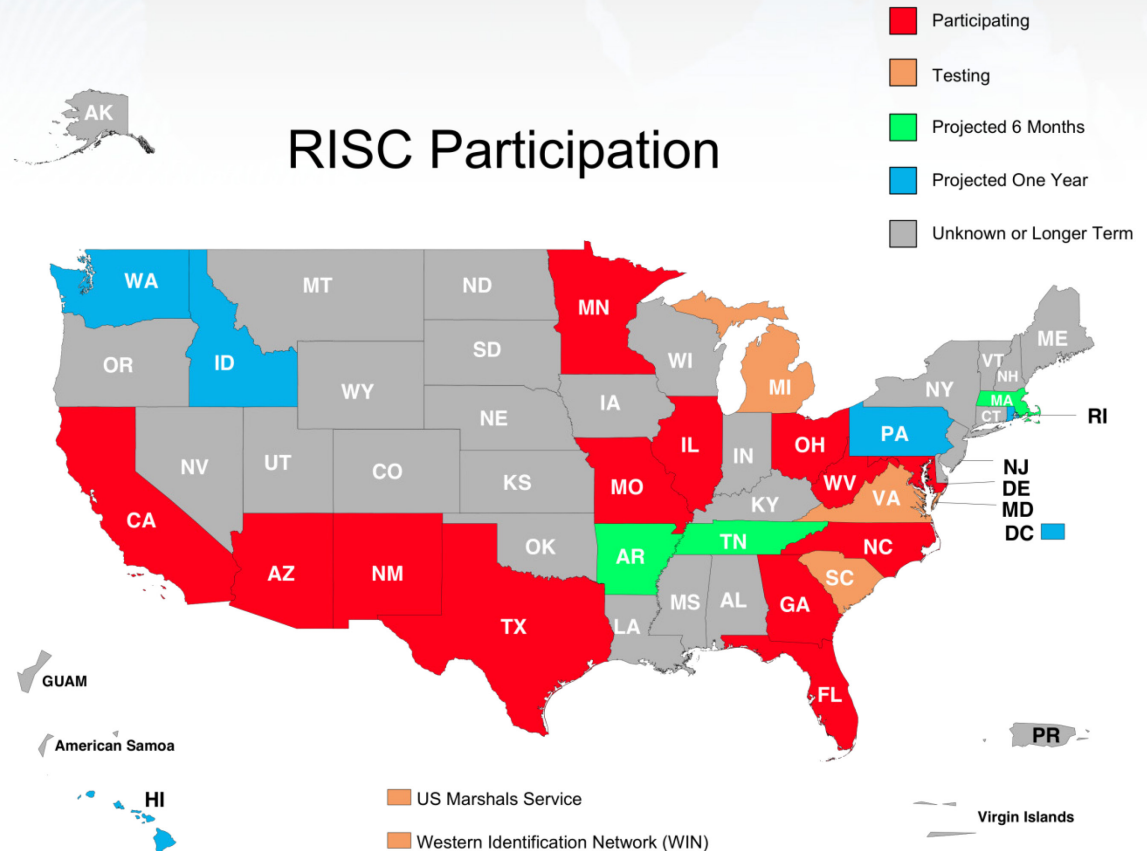
6% weekly

72% Wanted

28% Sex Offender

Average response time:

< 7.0 Seconds





RISC

Rapid Biometric Search

**Two to
Ten
Prints
Used**

Right & Left Index



If devices receive CJIS Data = CJIS Security Policy Compliance



Repository for Individuals of Special Concern (RISC)

What you need to know!

Basic Format for RISC Response:

Red = Exact Match

Yellow = Partial Match - Need additional investigation

Green = No Match

Return options

- Red, yellow, green

- NCIC

- Rap Sheet

- Rap sheet & Photo

- State response

Responses return CHRI – FBI Number

Information handled as such – Dissemination, Logging, Training, Audit

State will determine information and format returned – Local Agency has options

State your preference



Repository for Individuals of Special Concern (RISC)

- RISC may be used for authorized Criminal Justice Purposes
 - Consideration needs to include – review of all relevant laws, policies and court rulings.
 - Guidance for appropriate use of the devices.
 - Who can use devices and access the data
 - When to use – pre-arrest
 - What to do with information returned
 - Guidance for actions to be taken by personnel RISC Response
 - RISC responses do not provide actionable information!!!*
 - What to do after you use it
 - CJIS Security Policy
 - Search & Seizure
 - Custodial – Non-custodial
 - Voluntary – Involuntary





RISC Response

All Responses

*"THIS RESPONSE IS BASED ON A SEARCH OF ONLY THE REPOSITORY FOR INDIVIDUALS OF SPECIAL CONCERN AND DOES NOT PRECLUDE A RECORD FROM EXISTING IN OTHER BIOMETRIC OR NAME BASED REPOSITORIES. USERS ARE PERMITTED TO RELY ON THE RISC RESPONSE IN CONJUNCTION WITH OTHER LAW ENFORCEMENT TOOLS BUT **SHALL NOT RELY SOLELY ON THE RISC RESPONSE FOR ADDITIONAL LAW ENFORCEMENT ACTION**"*

Yellow Responses

"YOUR SEARCH OF THE REPOSITORY FOR INDIVIDUALS OF SPECIAL CONCERN COULD NOT PROVIDE A DEFINITIVE GREEN OR RED RESPONSE."

NCIC

Supplementary Identity Information field contains "limited", supplemental identity history data extracted from NCIC when requested by the submitting agency. **This information presently includes the Offense Field, the Original Offense Code Field, the Caution and Medical Conditions Field, and the Subgroup Field Handling Code Caveat.**





Iris Pilot (Increment 5)

➤ **NGI Iris Pilot (Increment 5)**

- Completed Iris Concept of Operations
- Develop and deploy a iris pilot system capable of performing iris image recognition services
- Finalizing Technical Specification Document and MOU's for pilot participation and bulk iris submissions
- Working with; CA, MO, NY, TX, RI, US Customs and Border Protection, Department of Defense, & U.S. Probation and Parole
- Provide operational observations to assist the FBI in planning efforts for NGI's national iris service





Summary

NGI Offers Bigger, Better, Faster Biometric Services to Support Federal, State, and Local Stakeholders

- ▶ Development of future services currently underway
 - ▶ Check with Program Office for technical assistance
 - ▶ **Store all biometrics with FNU**
 - ▶ **Palms must have distal region to validate – Training and awareness of orientation issues**
 - ▶ Upgrades to booking equipment – include interface for submission of mugshots
 - ▶ Update to newest EBTS 9.3, 9.4 - 2014 EBTS 10.0
 - ▶ ULW Integration 6.3
- ▶ Time to plan for participation in future NGI Services





Questions / Comments

Federal Bureau of Investigation

Criminal Justice Information Services Division

Next Generation Identification Program

Executive Outreach and Education

NGI Web Page: <http://www.fbi.gov/hq/cjisd/ngi.htm>

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