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
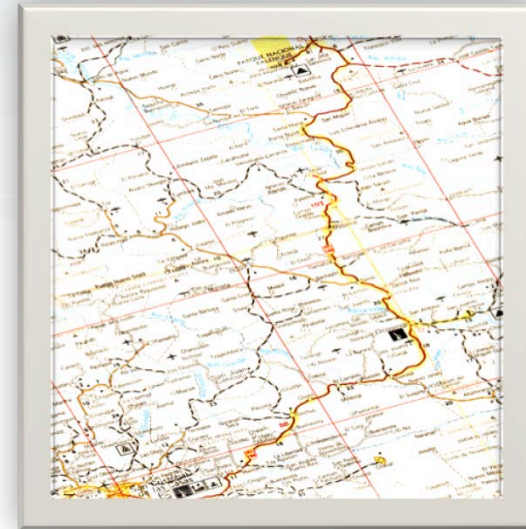
Stakeholder Concepts

State & Territory Agencies Canvassed	111
Federal Agencies Canvassed	54
FBI	27
Non-FBI Federal	27
Authorized Non-Criminal Justice Agencies	18
Special Interests	10
Total Completed	193

Over 1,000 Individuals Represented
Over 1,000 Stakeholder Concepts Identified

NGI Implementation Schedule

Increment 0
✓ Complete

Advanced Technology Workstations

- Replace obsolete hardware
- Provide high resolution of biometrics

Increment 1
✓ Complete

Initial Operational Capability

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

Increment 2
✓ Complete

RISC and Initial NGI Infrastructure

- Repository for Individuals of Special Concern (RISC)
- Rapid mobile searches
- RISC Web Services

Increment 3
In Progress

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
In Progress

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
In Progress

Iris Pilot

- Conduct Iris Pilot

Increment 6

Technology Refreshment

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 Successes (Increment 1)

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

RISC and Initial NGI Infrastructure
(Increment 2) - Completed

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

RISC

RISC Participation

Legend:
- Participating (red)
- Projected 6 Months (green)
- Projected One Year (blue)
- Unknown or Longer Term (gray)
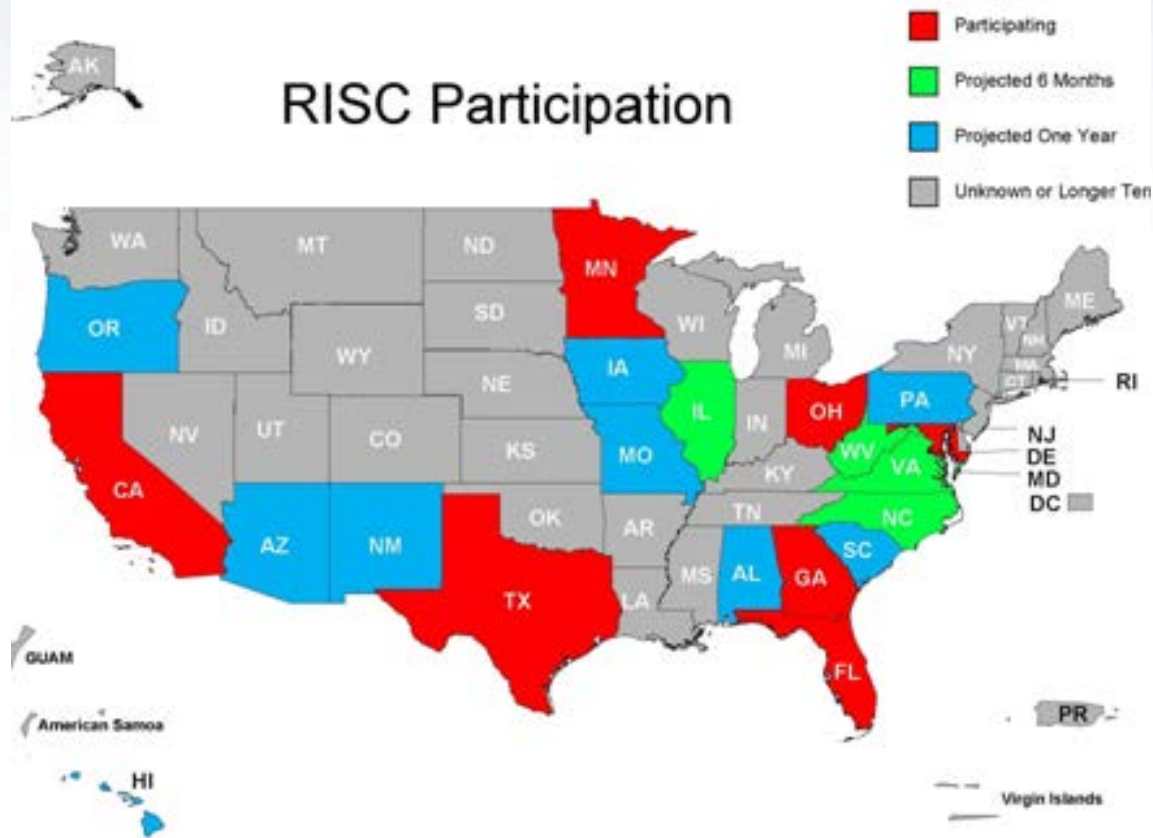
➢**Status**
  ➢RISC Totals: Over 535,000 searches
  ➢Average Red Hit Rate: 6-10% weekly
  ➢Average response time: 6.00 Seconds (since 10/1/2011)

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
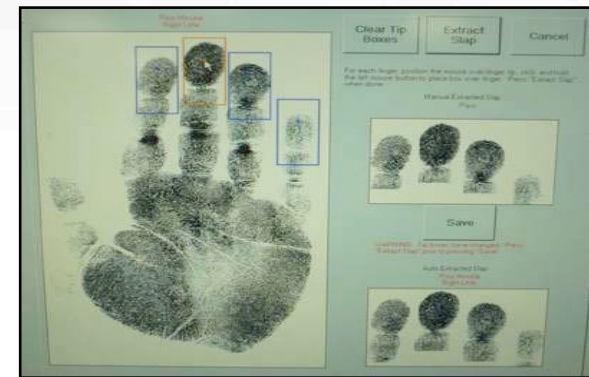
Resulting Benefits

➤ 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
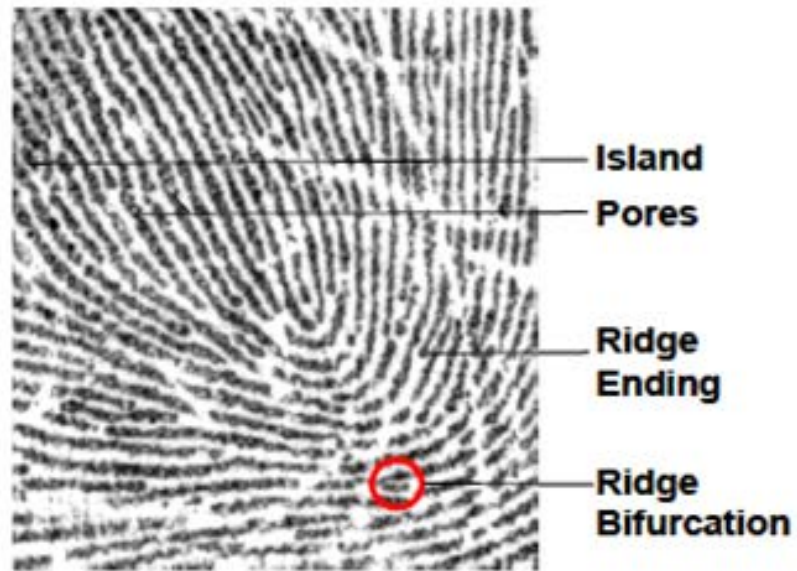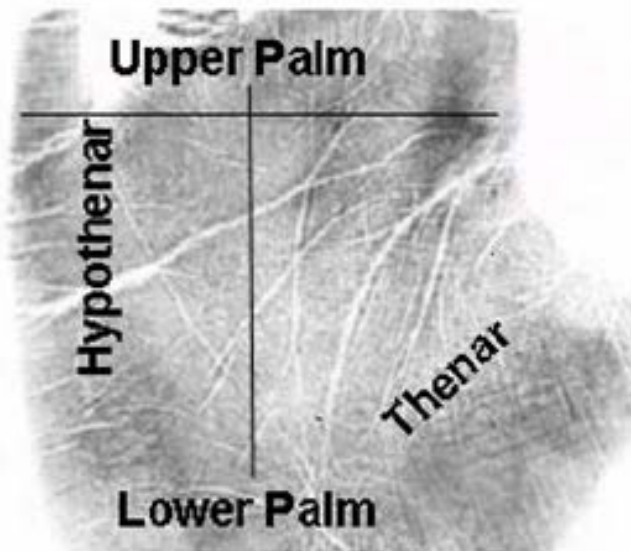
MorphoTrak Solution

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
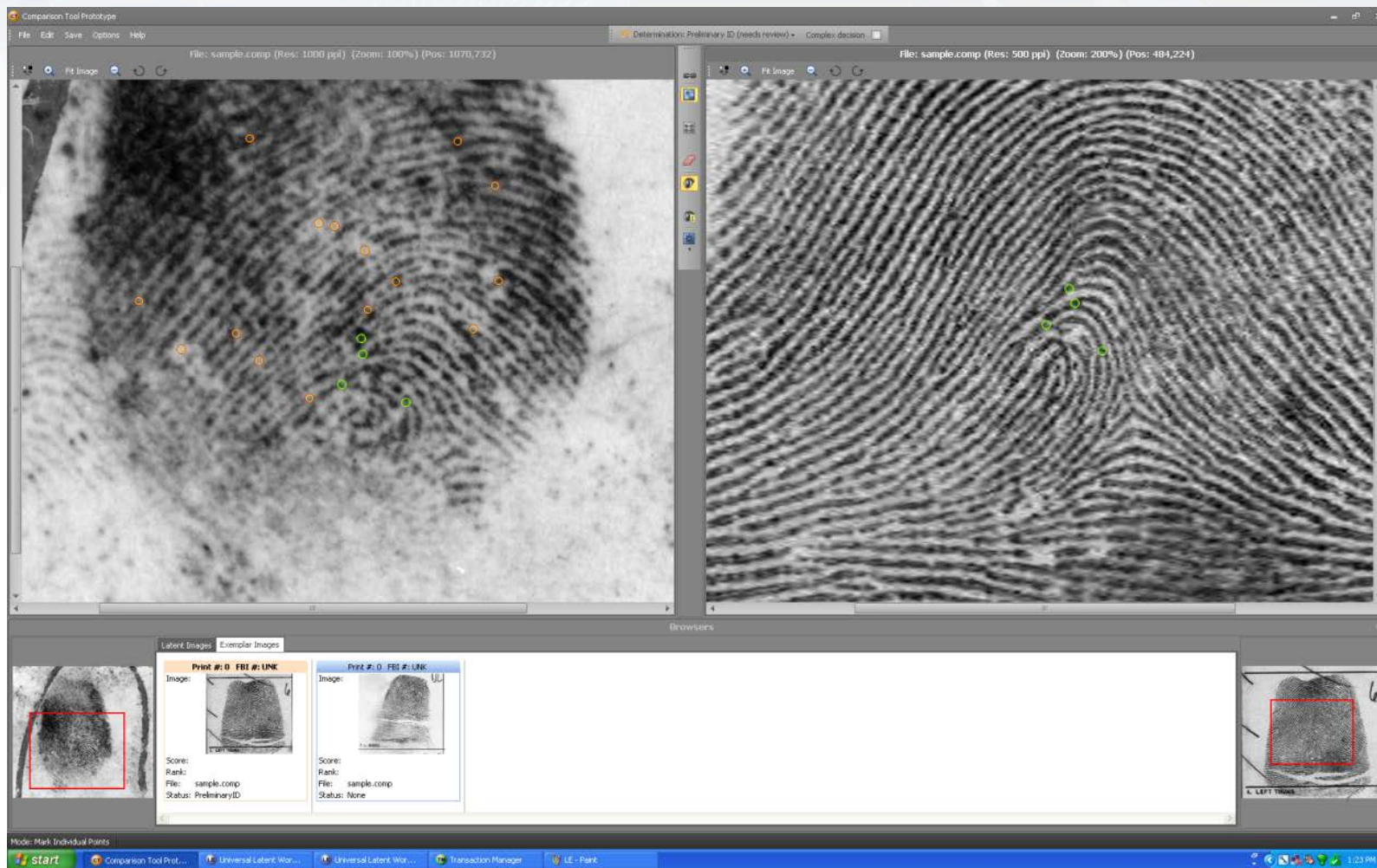
Rap Back, Facial, SMT Search Capabilities, Migration of Remaining IAFIS Functionality (Increment 4)

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
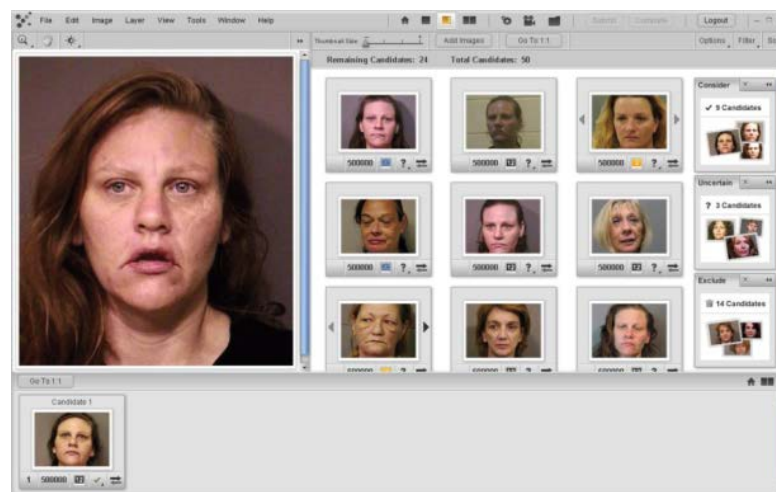
UFW Objectives

➢ 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
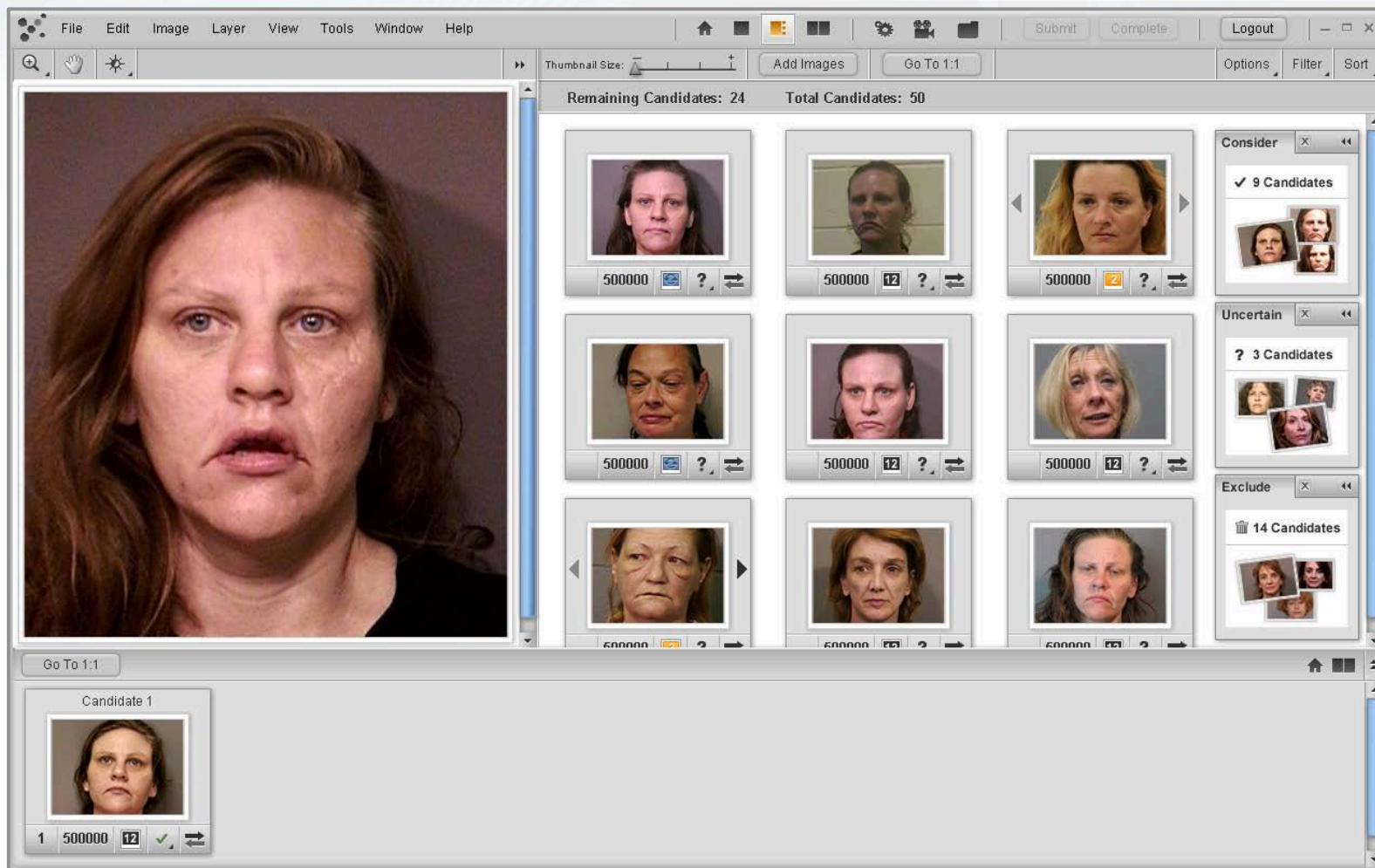 ➢ Review, store and match search results

UFW – Home Screen

UFW – Media Manager

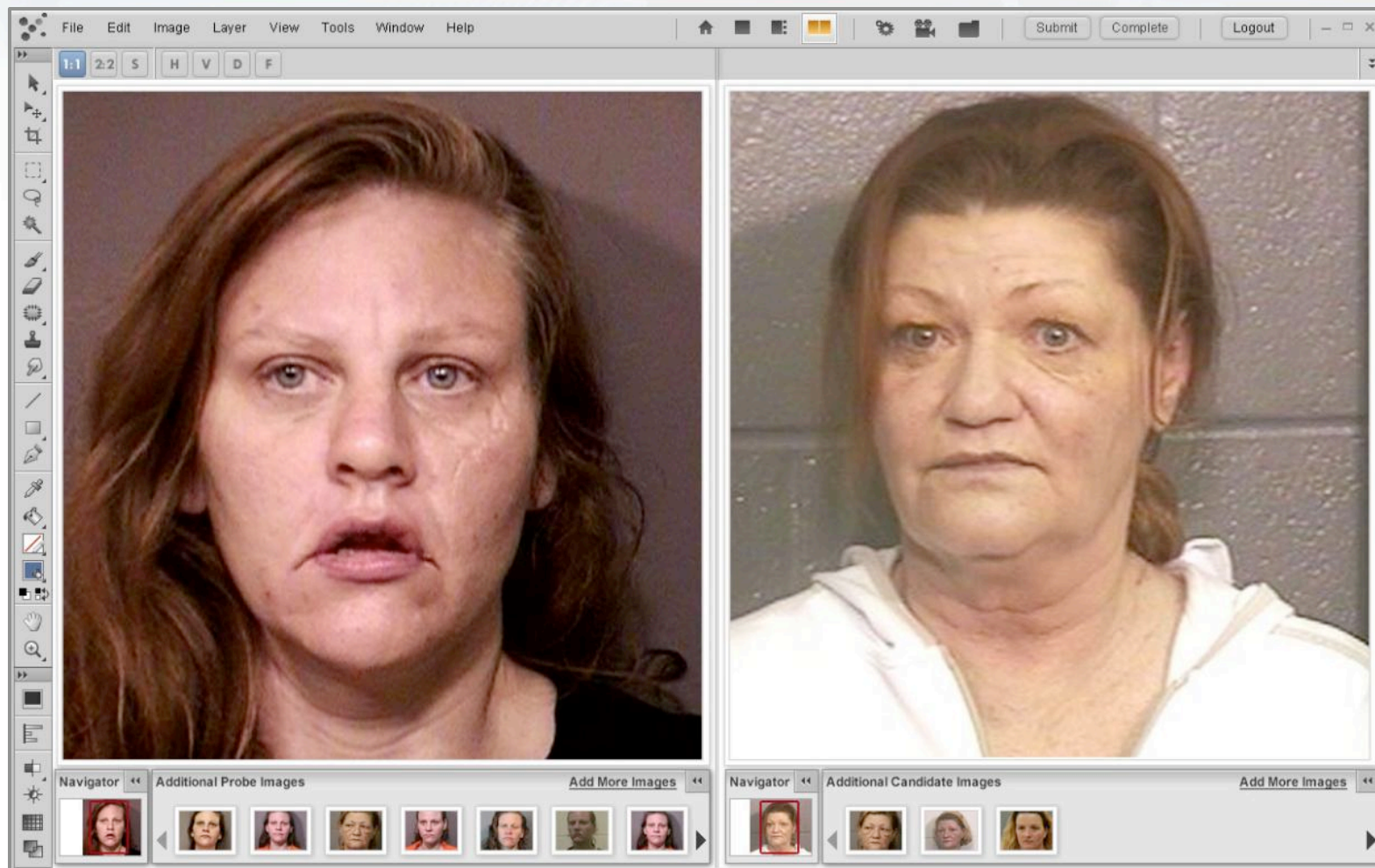# UFW – Editor/Viewer
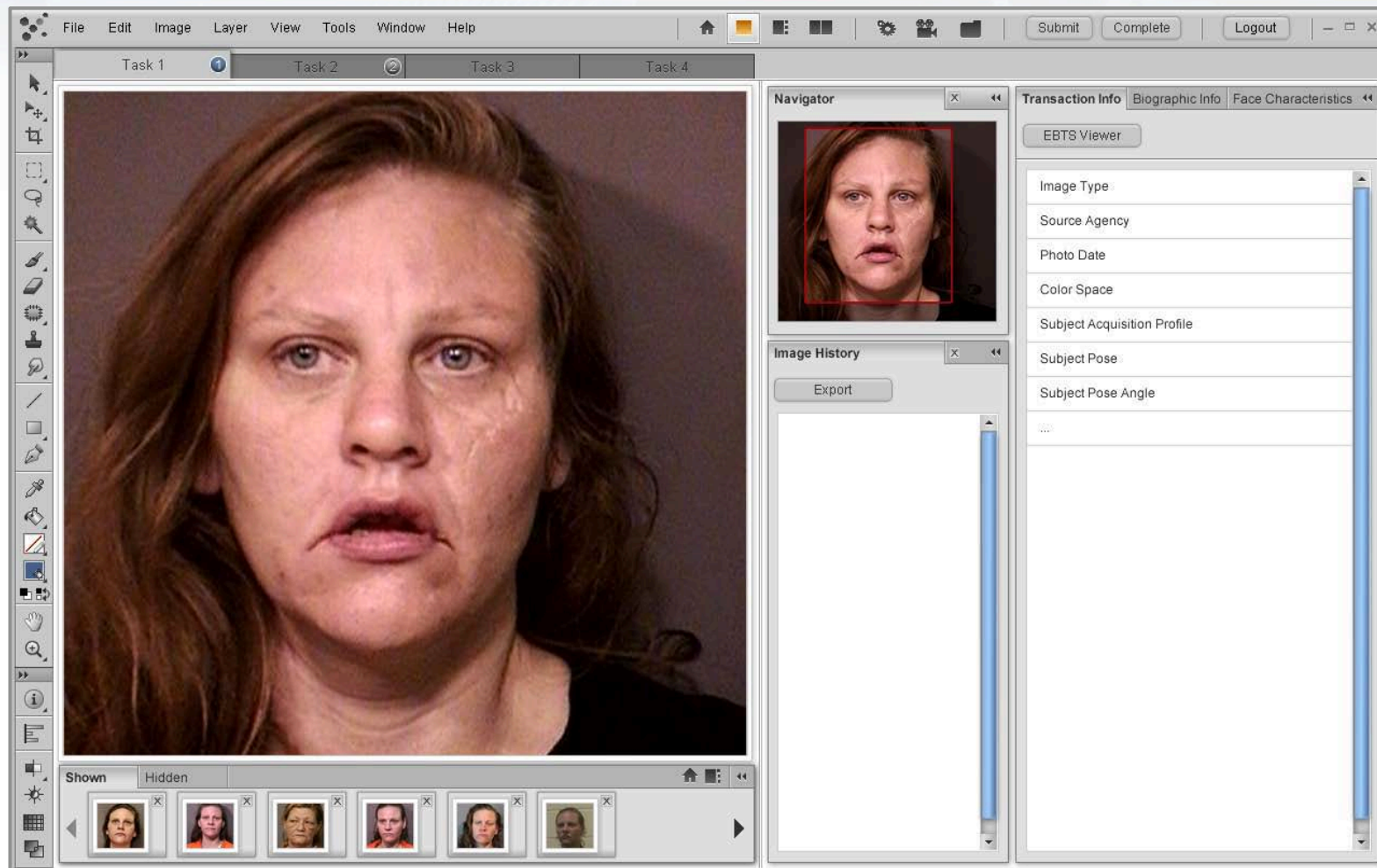
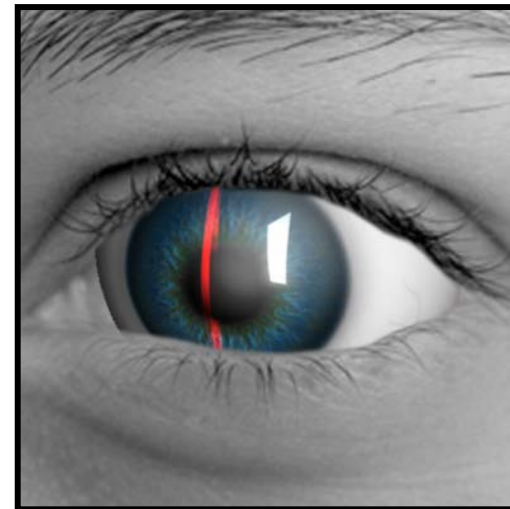# UFW – 1:N Comparison

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
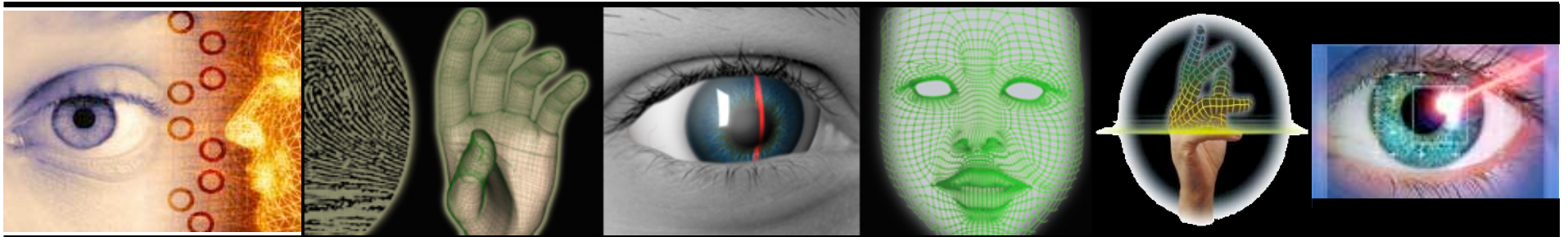
Technology Refreshment

All performance specifications will be met

Additional system tuning to meet non-functional requirements

Shared Management

Governance

Drivers & Requirements

Summary

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

Federal Bureau of Investigation

Criminal Justice Information Services Division

Next Generation Identification Program
Services Evaluation & Analysis Unit
Nick Megna
Unit Chief

Telephone: (304) 625-2767

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

nicky.megna@ic.fbi.gov