



FBI CJIS Division

Biometric Services

Next Generation Identification



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Section Chief
FBI/CJIS





BIOMETRIC SERVICES SECTION



MISSION:
Provide Biometric Identification, Investigative, And Identity Management Solutions Supporting Law Enforcement, National Security, And Civil Background Checks.





NEXT GENERATION IDENTIFICATION (NGI)

NGI

- Improved Performance
 - More Efficient, More Effective, More Accurate, More Available
- Highly Scalable
- New Modalities
 - Latents & Palms
 - Scars, Marks, & Tattoos
 - Facial Recognition
 - Iris
- New Services
 - RISC (Mobile)
 - Rap Back



- The Design Of The Future...





NGI AT A GLANCE



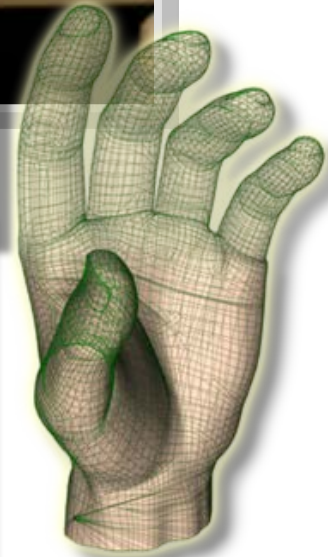
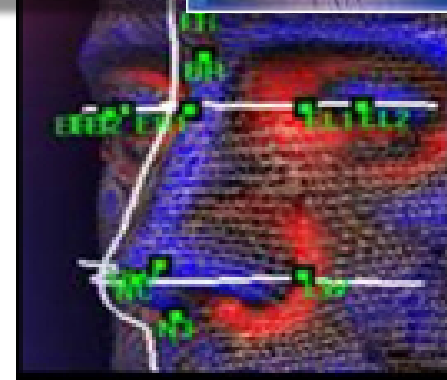
	IAFIS	NGI
Personnel	1,000	600
Number of Servers	38	5,000
Workstations	700+	600+
Lines of Code	2,000,000+	3,000,000+
Number of Databases	20	20
File System Sizes	105TB	9PB
COTS Software	150+	300+





OVERVIEW

- Ten-print
- RISC (Mobile)
- Latent & Palms
- Cold Case
- Rap Back
- Face Recognition
- IRIS
- Criminal History
- The Road Ahead





TEN-PRINT

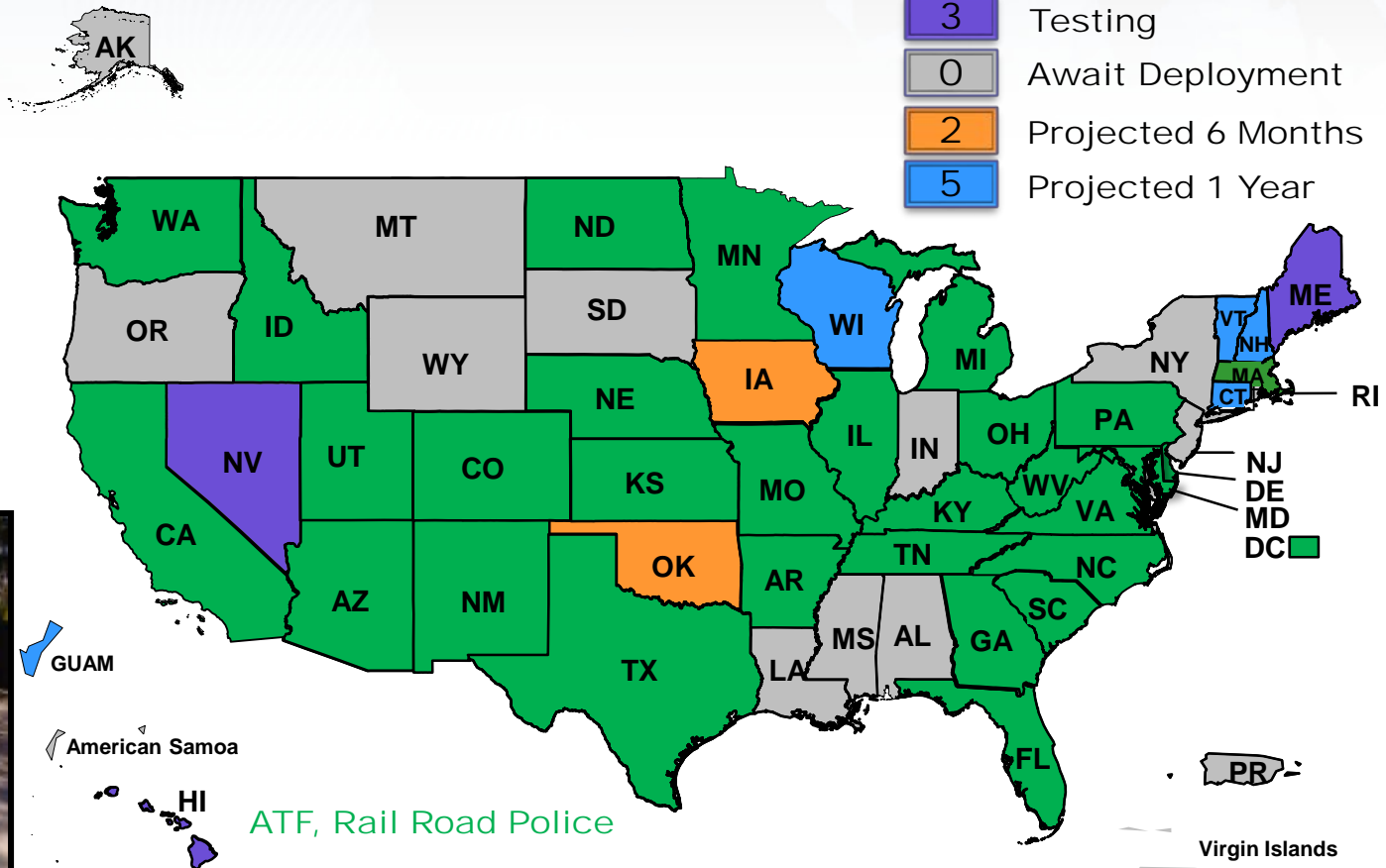
- **Fingerprint Searches And Identification For The Nation...**
 - 18,000 Law Enforcement Agencies
 - 16,000 Non-law Enforcement Agencies
- **Positive Identification**
 - 300,000 Searches Per Day
 - 140 Million Prints
- **System Accuracy** **99.6% / 99.999%**
- **Performance...**
 - **TPRS** **6-8 Seconds**
 - **Criminal** **6-7 Minutes**
 - **Civil** **15-20 Minutes**





Repository for Individuals of Special Concern (RISC)

- Average: ~2,200 searches per day
- Over 4.24 Million Total searches
- Average **Red** Hit Rate: 4.6 %
- Average Response Time: 4.79 seconds





RISC SUCCESS

- **May 2003; A Drug Deal Went Bad in Georgia.**
 - **Seller Pulled A Gun And Demanded All The Money. Prospective Buyer Shot The Seller And His Associate.**
 - **Seller Was Killed; Associate Was Seriously Injured.**
 - **The Suspects Fled And Were Never Located.**
- **Twelve Years Later:**
 - **FL State Trooper Made A Traffic Stop; Smelled Marijuana; Asked For Driver's License; Noticed A Bank Card With Different Name.**
 - **Officer Used A Mobile ID Device To Search RISC.**
 - **Driver Was Wanted For Murder In Georgia.**





LATENTS & PALM PRINTS



- **Latent: Three (3) Times Increased Accuracy, Expanded Cascading, And Event Print Searching.**
- **Expanded Cascaded Searches Producing Results...**
 - **DOD: ½ As Many ULMs; Twice As Many Hits**
 - **LAB: In The 16 Years Of Automated Latent Fingerprint Searching, 60% Of The Lab Idents Have Been Since NGI.**
- **Palm Prints: 29 Million Palm Prints Are Available In The NGI System...**
 - **More Than 15,000 Per Day Are Being Enrolled.**





ULF SUCCESSES

- CJIS and the LAB Searched Major Criminal and Terrorist Latent Prints Against The NGI Database Using The New Latent Matching Algorithm.
- 14,862 Latent Prints From Were Searched.
- **NGI Produced 613 Potential Identifications!**

1	• Kidnapping
3	• Murder/Suicide
5	• Attempted Bombings
6	• Homicides
67	• Red Cases





LATENT SUCCESSES



A NEW NGI SEARCH ALGORITHM!

THREE (3) TIMES MORE ACCURATE!

CASCADED SEARCHES OF ALL FILES!

SHARPLY IMPROVED RESULTS!



COLD CASE SUCCESS

AMBER CREEK



- **Feb 9, 1997, A Body Was Found In WI.**
 - **Child Had Been Sexually Assaulted And Asphyxiated.**
 - **Latent Prints Processed; No Results.**
- **Prints Searched Against FBI's And OK AFIS.**
 - **Negative Results; The Case Went Cold.**
- **17 Years Later, OK ID Bureau Heard About NGI.**
 - **3 Times More Accurate; Searched All Events.**
 - **Ran Prints Through NGI, Identified – James Eaton. Evidence Submitted To WI DOJ.**
- **April 8, 2014, James Eaton Was Arrested For First Degree Homicide And Hiding A Corpse. 40 Year Sentence.**





COLD CASE SUCCESS

ROBERT BOSSICK



- TX DPS Tip From NCMEC.
 - Image of Female Child Being Sexually Assaulted.
- Digital Photograph Prepared and NGI Latent Search 7/30/2015
 - Positive ID on 7/31/2015
- Bossick Arrested...
 - Pled Guilty: Production and Possession of Child Porn.
- Sentenced Imprisonment -- 50 Years.





COLD CASE



- **CJIS Has Formed A New Support Team To Assist Users Solve Cold Cases...**
 - **New Search Engine.**
 - **Cascaded Searches of the Criminal and Civil Files Makes a Huge Difference.**
 - **Best Practices.**
- **We Are Ready To Help...**
- **Contact: Greg Scarbro (304) 625-4832**





RAPBACK



- **Continuous Vetting Of Persons In Positions Of Trust...**
 - **Person Is Enrolled At Time Of Employment, Appointment Or Enrollment...**
 - **Fingerprint Background Check.**
 - **Fingerprints Searched With Every Criminal Transaction.**
 - **Subscribing Agency Is Notified Upon Hit (Push Notification).**
- **States And Agencies Participating...**
 - **UT, TSA, Fed 1, Fed 2, Fed 3, TX.**
- **States And Agencies Preparing For FOC**
 - **AZ, FL, HI, MD, MI, NY, OK, And RI...**
 - **OPM, ODNI, DOD, DC Police, NRC, FINRA, NMLA, And CSBS.**





RAPBACK STATUS

■ Current RapBack Participants:

Participation Status

OPM	1	Subscriptions	0	Notifications
Fed 3	718	Subscriptions	1	Notifications
Fed 2	498,386	Subscriptions	12,940	Notifications
Fed 1	47,577	Subscriptions	400	Notifications
TX (Non-Crim)	391,391	Subscriptions	2,769	Notifications
UT	224,641	Subscriptions	4,237	Notifications
TX (Crim)	1,034	Subscriptions	462	Notifications
Total	1,163,748	Subscriptions	20,809	Notifications





RAPBACK

EXPECTED PARTICIPANTS

NON-CRIMINAL

- Teachers
- Doctors, Nurses, Pilots
- Little League Coaches
- Care Givers for Young
- Care Givers for Elderly
- Government Employees
- Military
- Law Enforcement
- Contractors

CRIMINAL

- Prisoners
- Parolees
- Probationers
- Sex Offenders





RAPBACK

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NON-CRIMINAL

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- Care
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40 Million in 5 years???





RAP BACK



- **Ready For State and Agency Participation...**
 - **Some Engineering Fine Tuning Required.**
 - **Testing With States Is Required.**
 - **Expect Five States (FL, HI, MI, MD, and TX) And Six agencies OMB, DOD, NRC, FINRA, NMLA, and CSBS to be Enrolled During FY2018.**
- **Requirements For Subscriptions...**
 - **EBTS 10.0.2 Compliant.**
 - **Rap Back Policy And Implementation Guide Appendix 2 Completed.**
- **Scheduling Site Visits To Help Prepare For Participation.**





FACIAL RECOGNITION



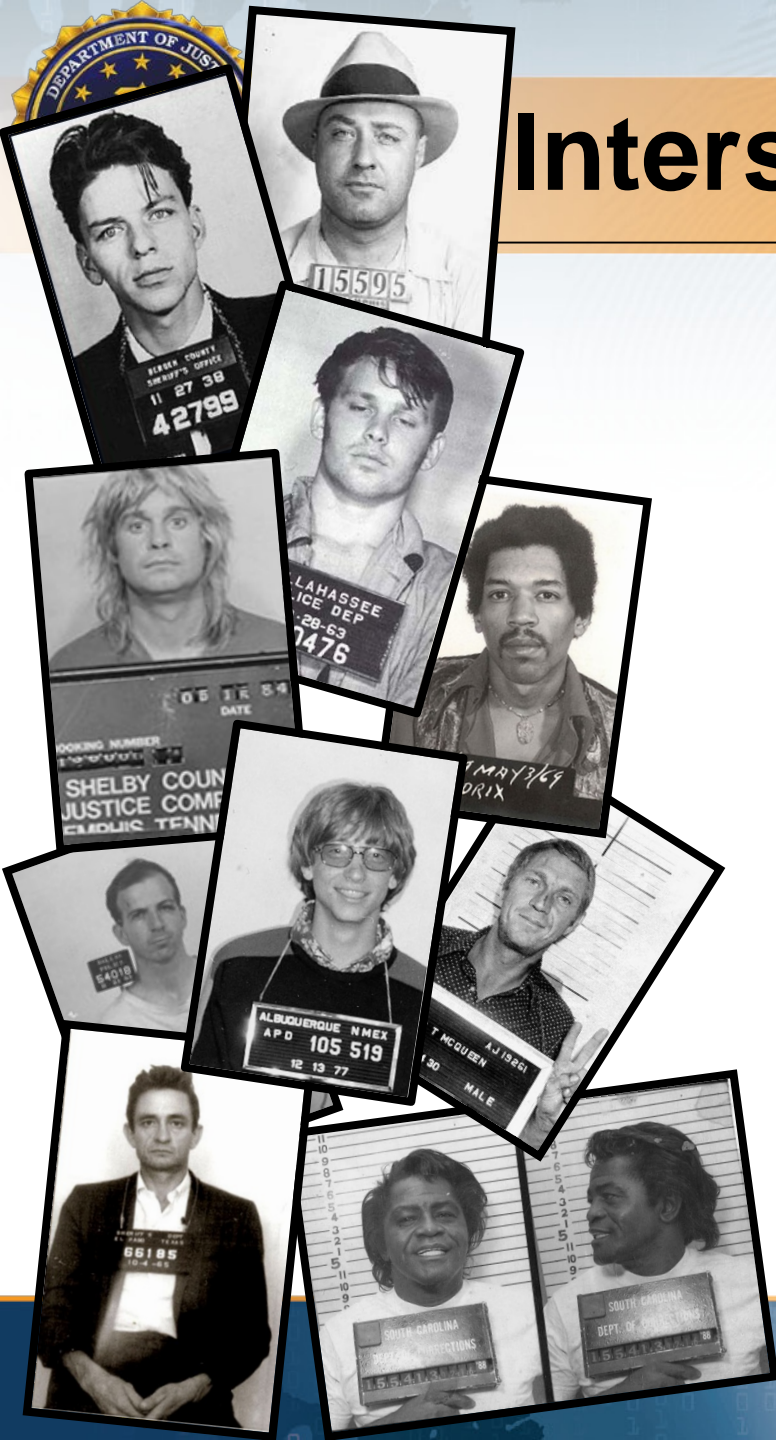
- **Facial Recognition...**
 - **Searches By Law Enforcement Agencies For Law Enforcement Purposes**
 - **Reasonable Suspicion Or Probable Cause In Accordance With Law & Investigative Procedures**
 - **Search Criminal History Mug Shots...**
 - **Response: Investigative Leads; Not Positive ID**
- **Over 30.7 Million Criminal Mug Shot Photos Available For Searching**
 - **Face Unit, AR, AZ, DC Metro Police, DE, HI, KY, LA, ME, MI, NM, SC, TX, WV Are Using Face Recognition Searches Today.**





Interstate Photo System

- Face Recognition Is Important Because...
- Provide Investigative Leads.
- Enable Police Officers Without Specialized Training To Recognize Criminals.
- The Photographs May Be Used For Photo Line-ups, Wanted Persons Posters, And Guard Mount Information.





IRIS PILOT

- **A Pilot To Validate The Business Case For Iris Searches.**
- **Developed Like A Project...**
 - **Concept Of Operations, Requirements, Complete Technical Specification Documents, etc.**
 - **MOU's For Participation And Bulk Iris Submissions.**
- **Capable Of Performing Iris Image Searches And Scale Up To Enterprise Service.**
- **Pilot Participants: DOD, CA DOJ, DHS CBP, TXDPS**
 - **Completed.**
- **Deployment Consideration is Underway.**



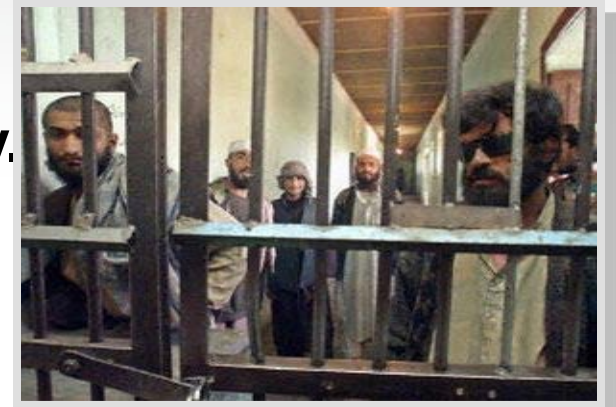


CRIMINAL HISTORY

Interstate Identification Index (III)



- **III Provides:**
 - Computerized Criminal History.
 - Criminal Rap Sheets
 - Subject Search.
 - **Criminal History Responses...**
 - III: Retrieves Criminal Histories And Responds To Query.
- OR**
- **Outreach: Reach Out To State Files; Obtain The Requested Histories; Respond to the Query**





DISPOSITIONS

■ Working On Multiple Fronts...

The Bureau

- Dashboards
- Director & EAD Visits
- Appeals to SACs
- SME Training
- SAC Conferences

Federal Agencies

- Dashboards
- Exec Orders
- Director & EAD Visits
- Appeals to Agency Heads
- SME Training

States

- Dashboards
- Appeals to AGs and LE Conferences
- SME Training
- ADAPT
- Outreach
- IACP, NCC, NSA

Tribes

- Dashboards
- Special Task Force
- Appeals to Tribes
- SME Training
- Outreach





THE ROAD AHEAD



- **Touchless Capture**
- **IRIS Recognition (Pilot Completed)**
- **Positive ID – Face**
- **Multimodal**
- **Lights Out Biometrics**





Questions / Comments

Federal Bureau of Investigation

Criminal Justice Information Services Division

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

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