

Why are automated biometric identification systems (ABIS) still not communicating?

Mike French, Chair

Biometric Information Systems (BIS) Subcommittee

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Description of ABIS Interoperability

ABIS Interoperability

Hierarchical Interoperability (Vertical)

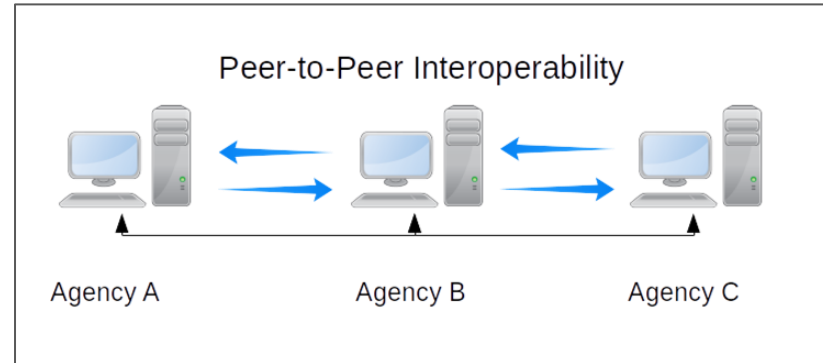
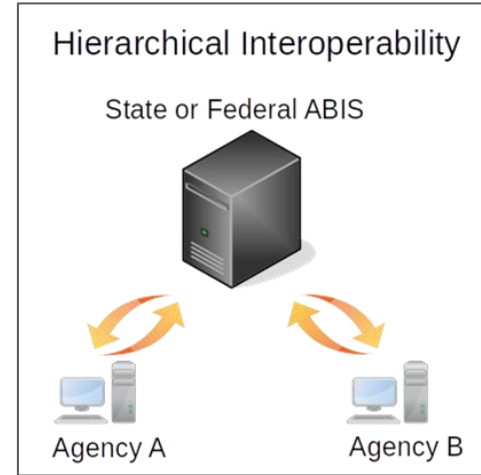
- Necessary for criminal records transfer and validation
 - County → State → Federal

Peer-to-Peer Interoperability (Horizontal)

- Desired for cross-jurisdictional searching

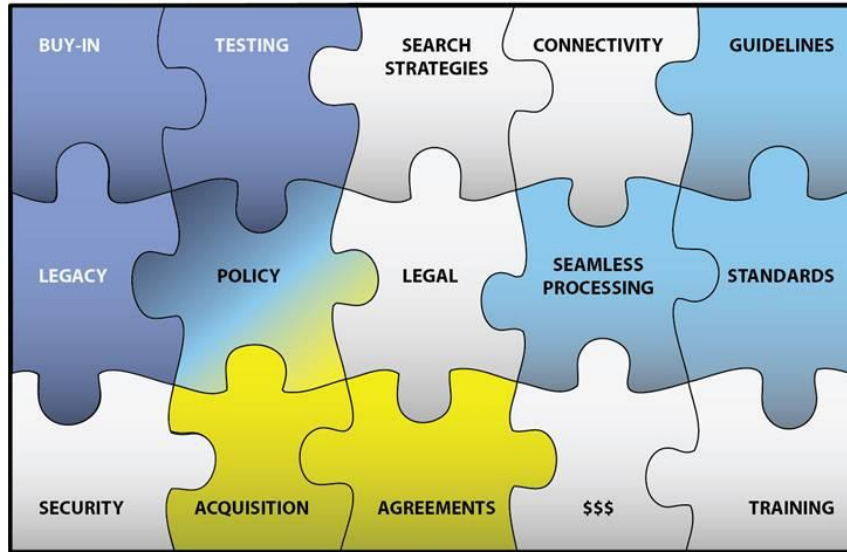
Barriers to full ABIS Interoperability

- Multiple vendors / Proprietary systems
- Purchased by government agencies at the City, County, State, and Federal levels
- **Designed through RFP process for minimal interoperability** (e.g. tenprint searches to NGI)



Complex Issue

Latent AFIS Interoperability



AFIS Interoperability Task Force



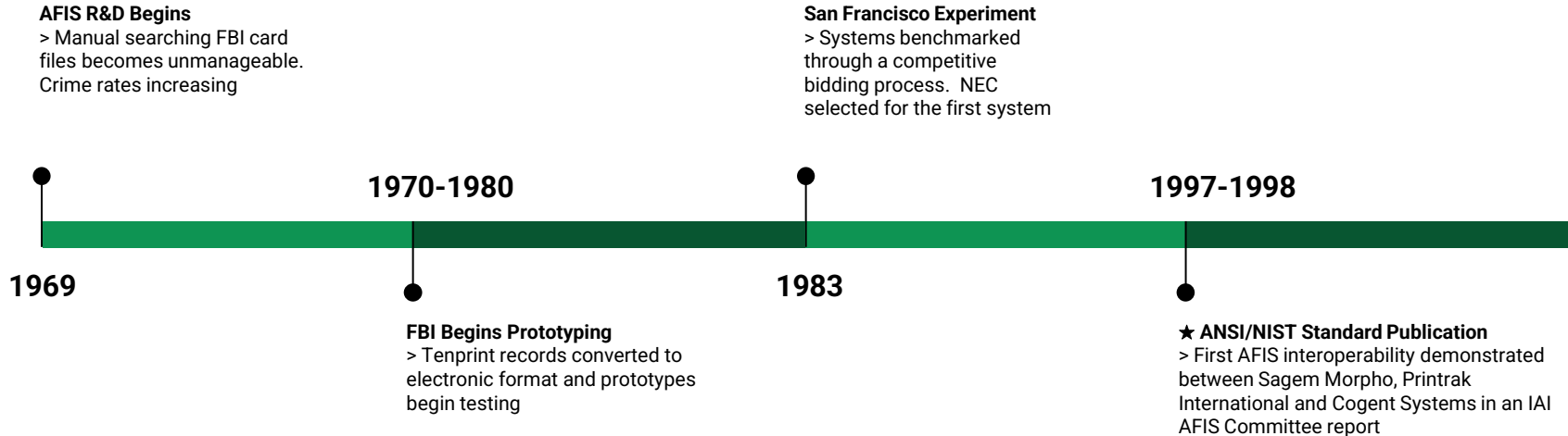
LITS Team



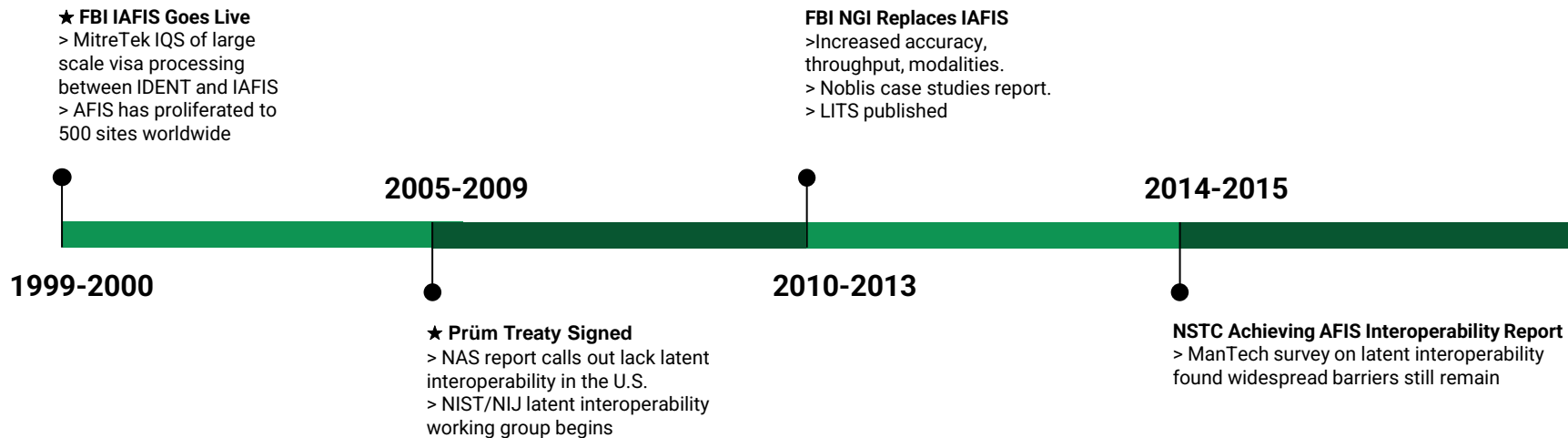
NIST/NIJ Latent Print AFIS Interoperability Work Group

History of ABIS and Interoperability

ABIS Interoperability Timeline

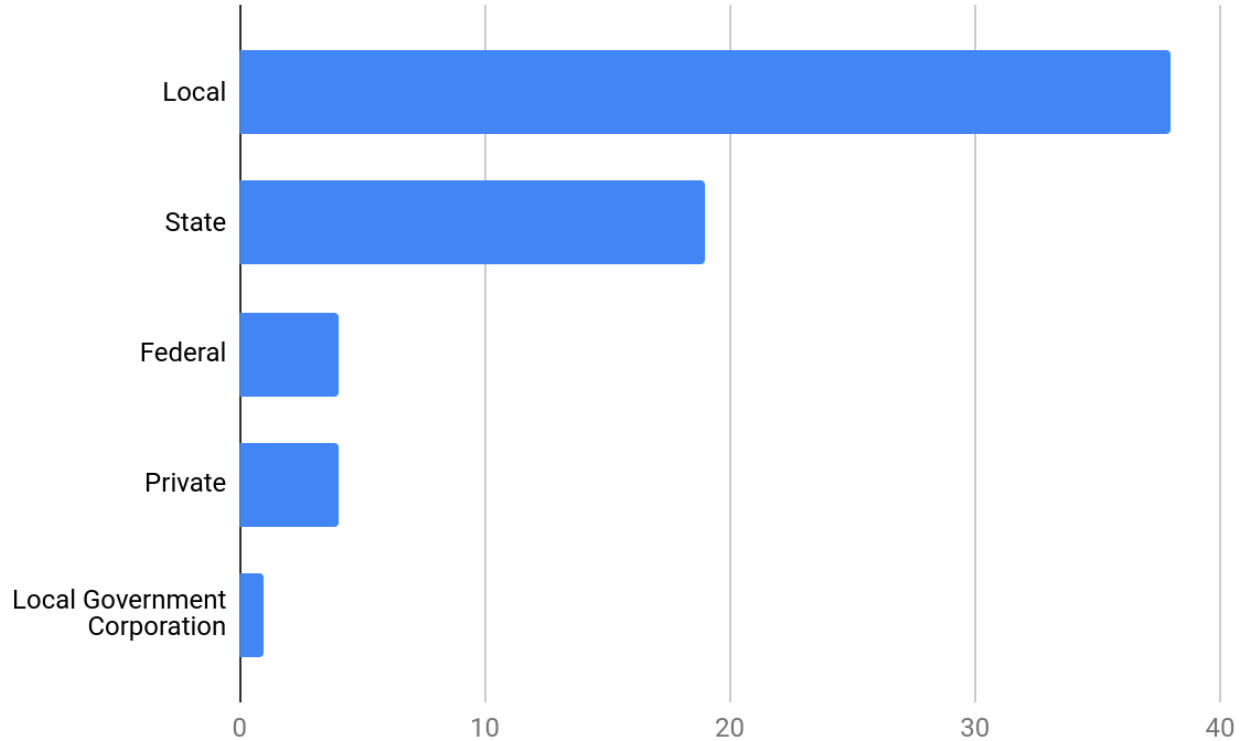


ABIS Interoperability Timeline (continued)

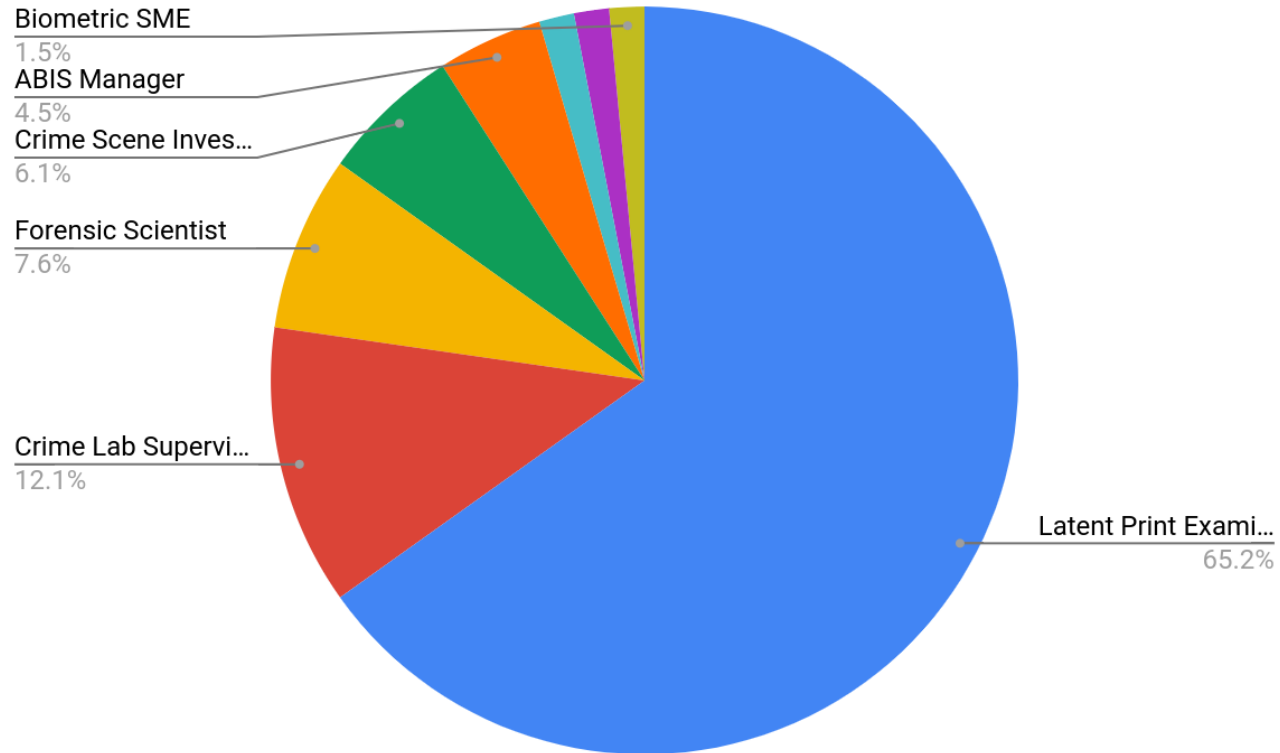


2021 IAI BIS Interoperability Survey Results

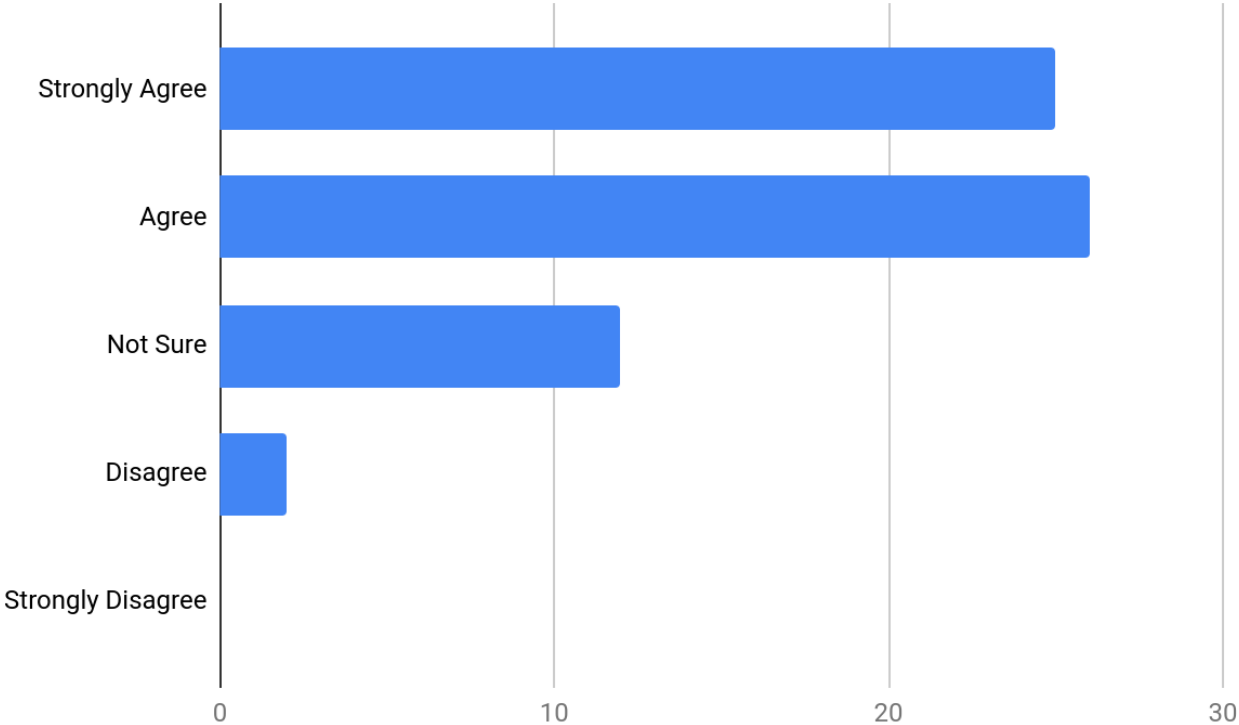
Agency Type



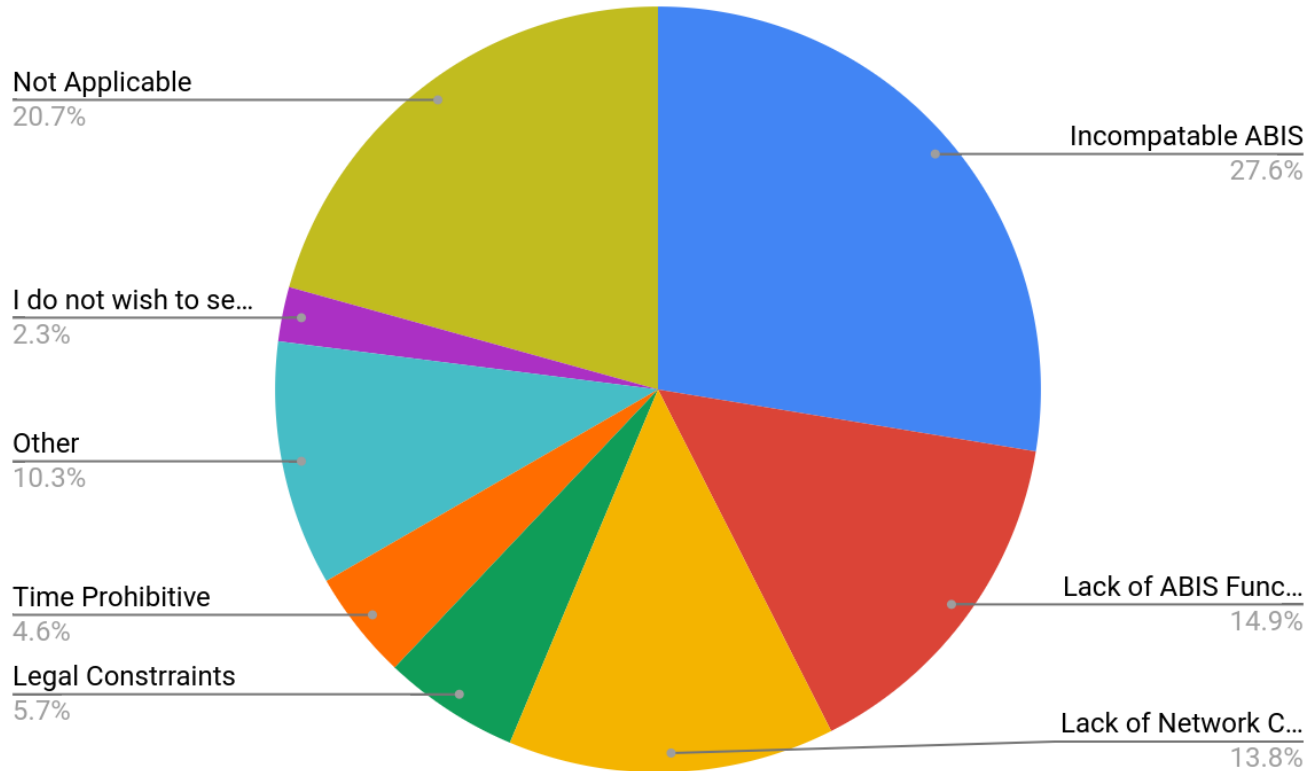
Job Title



Does lack of interoperability impede criminal investigations?



Perceived reasons for lack of interoperability



“Other” perceived reasons for lack of interoperability

- *“The only thing we lack is connectivity with surrounding states and we've never approached on it, but the state we'd have the most luck with is an incompatible system.”*
- *“Required to search state [AFIS Vendor] first and to not bypass even though hits are low to nil. Implied repercussions limiting and throttling number of searches for noncompliance.”*
- *“Unwillingness of vendors to interoperate and relinquish control.”*
- *“Technical interface or incompatible transmission specifications.”*
- *“Section policy.”*

“Describe any issues or concerns you are aware of regarding the current state of ABIS interoperability.”

- *“It doesn't make any sense that we are unable to search state to state vs only within our own state and at the federal level.”*
- *“Any attempt for developing Interoperability MOU ended up in the Legal Department of either agency, and no movement was made from there.”*
- *“The biggest issue is proprietary software that doesn't communicate well with one another. Yes, we can search, but we don't necessarily have all the features/tools necessary to easily compare.”*
- *“It's lacking - most purchased systems (we use “___”) don't allow for easy transition into other platforms (like NGI).”*
- *“State systems/requirements are mostly proprietary and do not encourage interoperability.”*
- *“Two different markups are required for the two different remote databases I search. It's time-consuming.”*
- *“Having connectivity to Homeland Security may have benefits at times in our county.”*
- *“Beneficial to develop a way for all vendors to similarly and easily submit both locally and nationally.”*
- *“Need to re-enter and reprocess the same friction ridge impression twice for different AFIS systems.”*

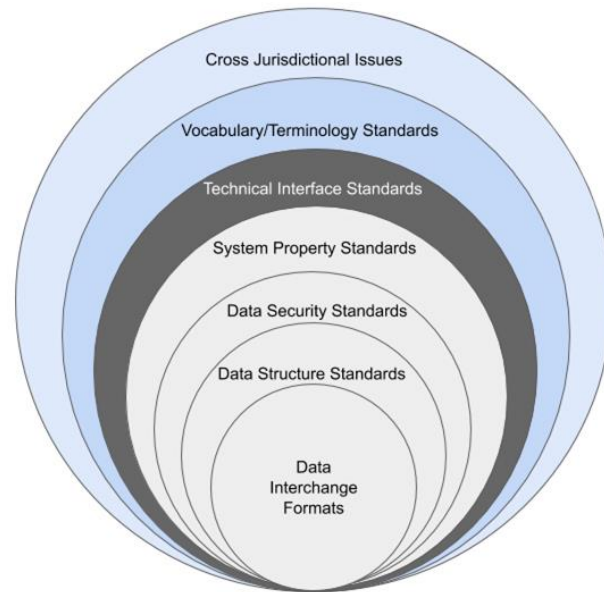
“Describe any changes or enhancements you would like to see to improve current ABIS interoperability practices.”

- *“Move to a more CODIS style system with centralized planning and upgrades/connections... so agencies will at least know who to contact if they want to establish a new connection.”*
- *“SIB control of business processes, utilization of existing standards for interstate (direct) queries, modernization of architecture of ABIS systems to include current standards for technical interoperability, platforms, security, etc.”*
- *“One markup useable on all systems.”*
- *“I would like to search any database at any time.”*
- *“Ability to use a single ABIS scanning/encoding session to launch database searches at all levels (local, state, & FBI) simultaneously.”*
- *“I'm not sure how to best address the problem, but I've felt that some sort of standard should be established for biometric information.”*

ABIS Interoperability Standards

Biometric Interoperability Standards

- ANSI/NIST-ITL
 - Data Formats (primarily LE, HS, DoD)
- ISO/IEC JTC 1/SC 37
 - Data Formats, System Properties, Terminology
- Electronic Biometric Transmission Standard (EBTS)
 - Data Structure (primarily LE, HS, DoD)
- Latent Interoperability Transmission Specification (LITS)
 - Data Structure (cross-jurisdictional)
- CJIS Security Policy
- Operational / Technical Interface
 - Interface Control Document (ICD)

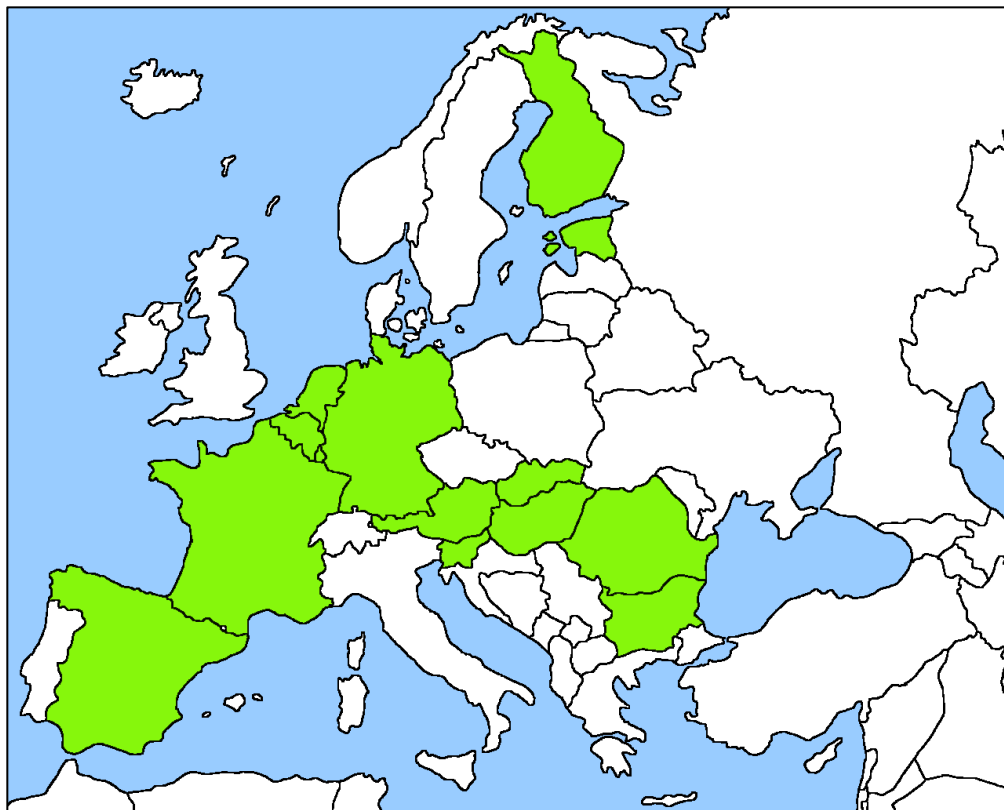


Credit: IEEE Certified Biometrics Professional Learning System; Biometric Standards

Cross-Jurisdictional Sharing Agreements

Prüm Treaty

- Created in 2005
- Enables exchange of biometric and identity information
- Interface to support some cross-jurisdictional AFIS searching



- Austria
- Belgium
- Bulgaria
- Estonia
- Finland
- France
- Germany
- Hungary
- Luxembourg
- Netherlands
- Romania
- Slovakia
- Slovenia
- Spain

U.S. Cross-Jurisdictional Record Sharing Examples

- Interstate Identification Index (Triple-I)
 - National Fingerprint File
- The National Crime Prevention and Privacy Compact Act of 1998
 - FBI Compact Council
- National Instant Criminal Background Check System (NICS)

Next Steps

- Begin work with ancillary groups to kick start interoperability awareness.
 - IJIS Institute Background Check Work Group
 - Consortium of Forensic Organizations (CFSO)
- Need more user stories!
- Complete white paper (2/3 complete).
 - Establish root causes.
 - Make recommendations.
 - Expand RFP guidance.

Resources

- [NIST/NIJ Latent Print AFIS Interoperability Working Group](#)
 - [Writing Guidelines for Requests for Proposals for Automated Fingerprint Identification Systems](#)
- [2014 NIJ Survey on Latent Interoperability](#)
- [Achieving Interoperability for Latent Fingerprint Identification in the United States](#)
- [Latent Interoperability Transmission Specification](#)
- [Electronic Biometric Transmission Specification](#)
- [ANSI/NIST-ITL Biometric Transmission Standard for Fingerprint and Other Image Data](#)

Contact

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