

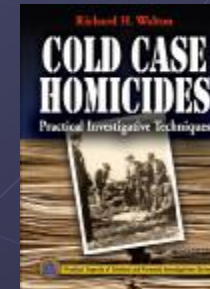
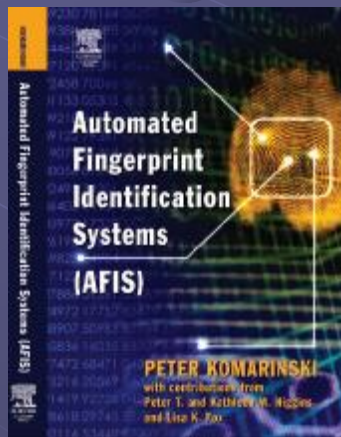


# Task 7: Interoperability of Automated Fingerprint Identification Systems - AFIS

Peter D. Komarinski

# Komarinski Credentials

- Over 20 Years AFIS Experience
- Testifying Expert Witness
- Chair, AFIS Committee, International Assoc. for Identification
- AFIS Lecturer and Consultant
- Author, *Automated Fingerprint Identification Systems (AFIS)*



# Interoperability of AFIS

- I. Interoperability
- II. Brief Overview of AFIS
- III. Forensic AFIS – Tenprint & Latent Print
- IV. Current Issues
- V. Recommendations

# I. Definition

## ● DOD:

The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users.

# Business Process Interoperability

● Wikipedia:

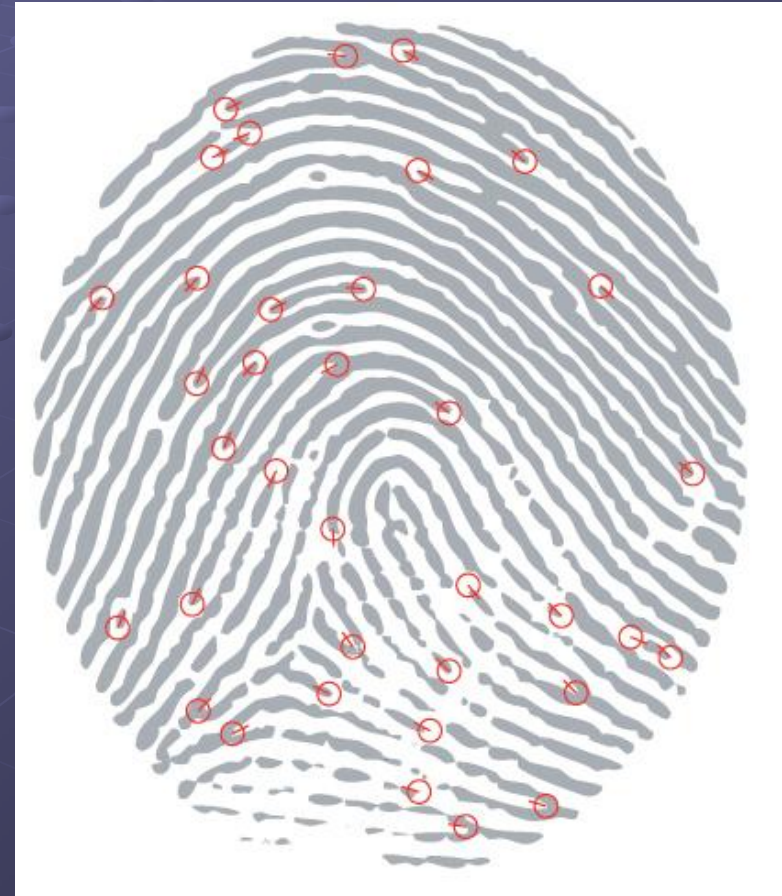
**Business Process Interoperability (BPI)** is a state that exists when a business process can meet a specific objective automatically utilizing essential human labor only.

## II. Brief Overview of AFIS

- Uses finger image features such as
  - n Ridge endings
  - n Bifurcations (“splits”)
  - n Islands
  - n Direction of ridge flow
- Compares these image features of print in question to image features of enrolled prints
- Sends response to inquiring agency



# Minutiae & Ridge Flow i.e., Image Features



# Finger Image Sources

APPLICANT		TYPE OR PRINT ALL INFORMATION IN BLACK		FBI	
SIGNATURE OF PERSON FINGERPRINTED		LAST NAME <u>NAM</u> FIRST NAME <u>MI</u> MIDDLE NAME		DATE OF BIRTH <u>DOB</u>	
RESIDENCE OF PERSON FINGERPRINTED		ALIASES <u>AKA</u>		DATE OF BIRTH <u>DOB</u>	
DATE		CITIZENSHIP <u>CTZ</u>		SEX <u>W</u> RACE <u>W</u> HEIGHT <u>5' 10"</u> WEIGHT <u>180</u> EYES <u>BRN</u> HAIR <u>BRN</u> PLACE OF BIRTH <u>MOB</u>	
SIGNATURE OF OFFICER TAKING FINGERPRINTS		YOUR NO. <u>OCA</u>		FBI NO. <u>FBI</u>	
EMPLOYER AND ADDRESS		ARMED FORCES NO. <u>MNU</u>		CLASS	
REASON FINGERPRINTED		SOCIAL SECURITY NO. <u>SOC</u>		REF.	
		MISCELLANEOUS NO. <u>MNU</u>			





# III. Forensic AFIS Use

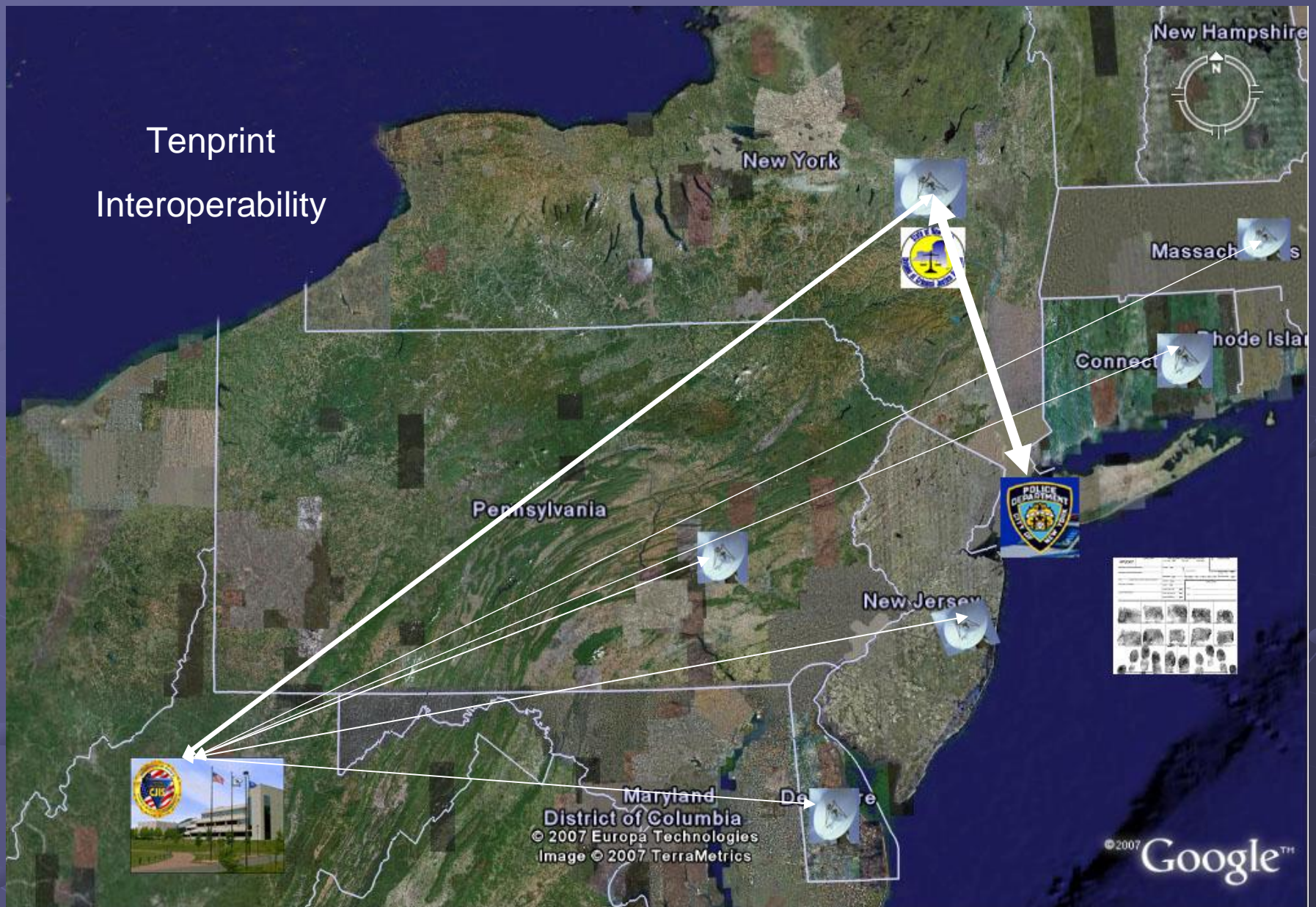
## ● Tenprint Applications

- n Arrest
- n Job Applications
- n Other uses (e.g., SAFE Child; Inmate reception)
- n May interface with CCH (Computerized Criminal History) to produce Rap sheet
- n Search FBI IAFIS, therefore some interoperability

## ● Latent Print Applications

- n Crime scene prints
- n Access to other databases very limited
- n Interoperability sparse

# Tenprint Interoperability





# Latent print Operability



June 5, 2007

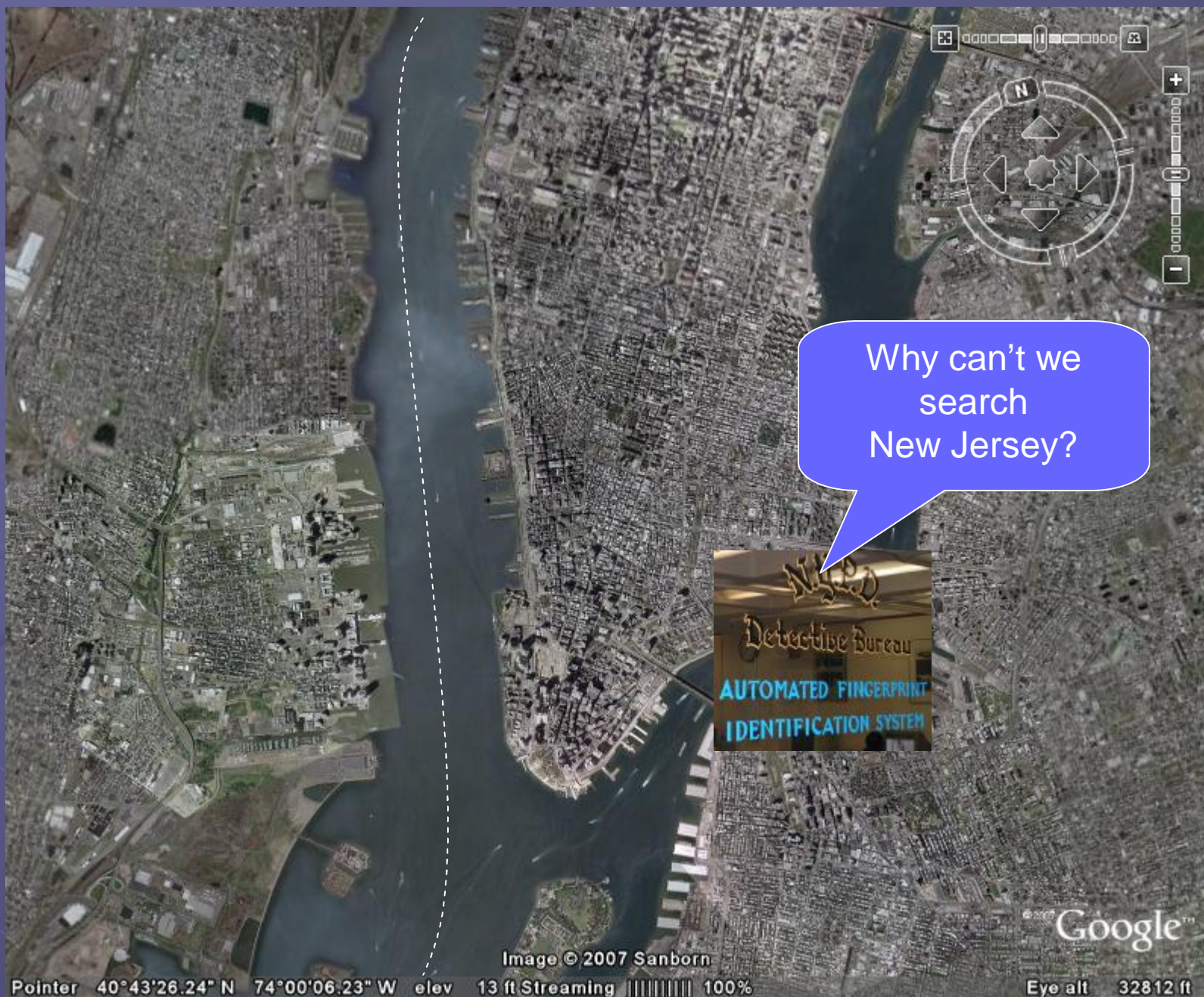
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# IV. Current AFIS Issues

- Lack of Forensic Interoperability
- Erosion of AFIS Experienced Personnel
- Expanded Use of AFIS systems
- Current systems and practices are limited





Why can't we  
search  
New Jersey?



June 5, 2007

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# Latent Print Interoperability Issues

Technical

Different Systems  
Different Platforms

Legal

MOU's  
Hold Harmless

Funding

Revenue stream  
Value of this program  
over other programs

Administrative

New Procedures  
Record Keeping

Political

Willingness to share  
Mutually beneficial

# Improvements

- Fast Capture Devices
- Extended Fingerprint Feature Set
- Lights Out for Tenprint Applications
- Major Case (Palm) Prints
- Multi-modal identification
- FBI CJIS will offer multi-modal features

# We Don't Know What We Don't Know

- Do not follow a business model
- Many more Idents could be made
- AFIS not fully understood by users
- No uniformity in data collection
- “We will give them what they ask for!”

# V. Recommendations

- Establish a Scientific Working Group
- Improve latent print search to CJIS NGI
- Process all available records
- Provide funding to states similar to NCHIP

# Recommendations

- More research in AFIS latent print area
- Create national training and certification
- Develop a business model
- Make interoperability easier



# The Name of the Game is...

Idents  
Idents  
Idents

Richard Higgins  
Chief of Identification Services (Ret.)  
NYS Division of Criminal Justice Services

# Contact

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Thank You !

Questions?