



2004 Biometrics Symposium  
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## BMO: Mission & Roles

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## Outline

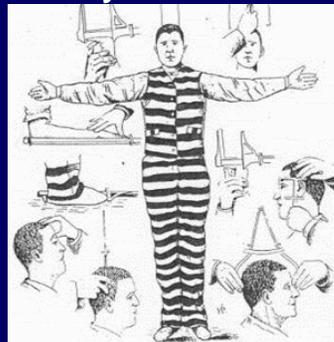
1. 19th Century Biometric History
2. 21st Century Biometric Status
3. National Security Needs & Biometric Reality
4. BMO Activities
5. Summary

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## A New ID System Comes to the Fore in 1880s Thanks to Alphonse Bertillon

### Anthropometric identification system

- Three basic steps:
- Different measurements taken w/ specially designed instruments
  - Precise physical description taken
  - "Peculiar marks" recorded



Leading to Bertillon's first successful matches in 1883

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## "Bertillonage" in Action



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## But “Bertillonage” Was No “Silver Bullet”

### System administration issues

- Complicated enrollment system
  - Highly-trained Bertillon operators, supervisors, and special equipment required for precision
  - Deployment difficult in rural, remote regions lacking police resources
- No latent capability
  - Anthropometrics not left behind at crime scenes
- High error rates

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## Timeline of Selected Events In the History of Fingerprints

- 1880 – Faulds publishes on fingerprints in *Nature*
- 1889 – Galton speaks on fingerprints to scholars
- 1892 – Galton publishes *Finger Prints*  
Twain publishes *Pudd'nhead Wilson*
- 1901 – Britain adopts “Henry System” of classification
- 1902 – Fingerprints used to prove guilt in Britain
- 1911 – Fingerprints used to prove guilt in U.S.
- 1999 – FBI’s IAFIS becomes operational

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## What are the Advantages of Biometrics?

### We have a need to identify people

- Link identity to person
  - Such that John Doe = John Doe
  - Such that 
  - Such that  
- Link past to present
- Link present to future

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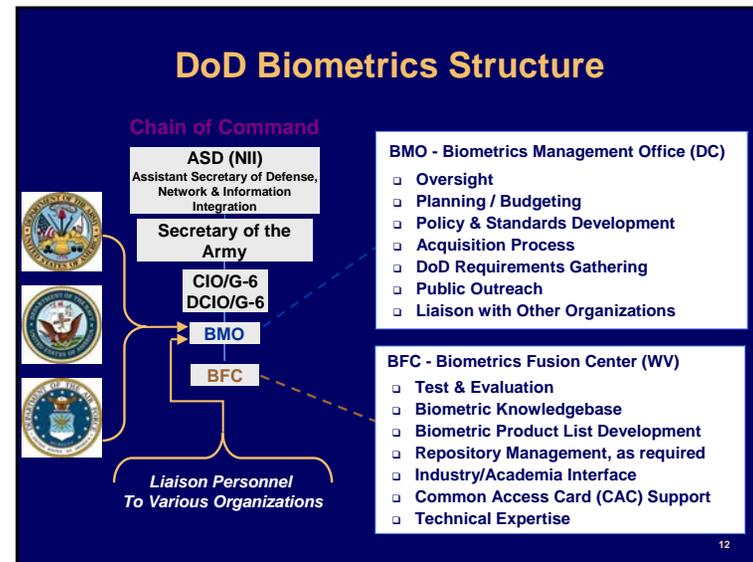
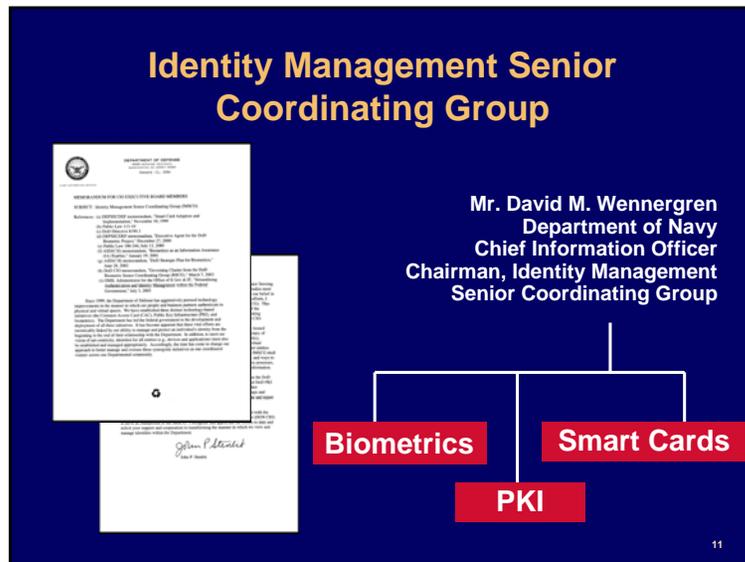
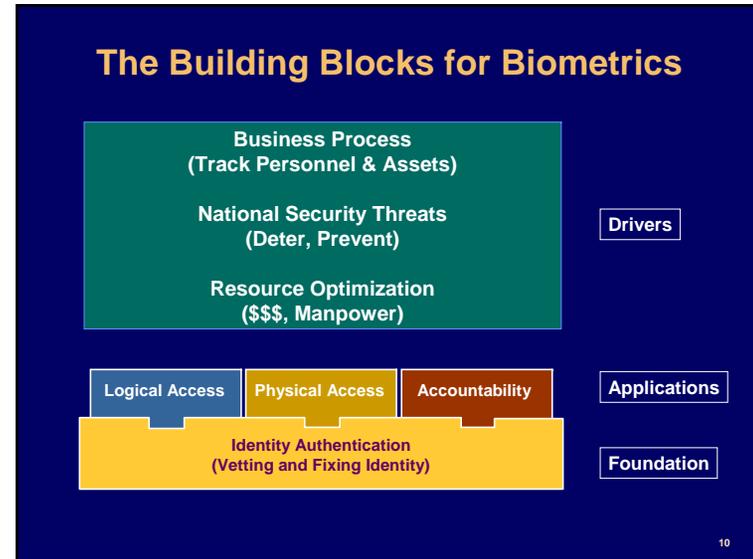
## Paradigm Shift: The Case for Biometrics

### Benefits (alleged) of biometrics:

- Increasing security
- Increasing convenience
- Decreasing costs
- Freezing / fixing identity

New & Needed  
Capability!

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## Director's Observations

Biometric program started in 1999, "carved out of Army IA's rib"

- Emphasis on logical access
- Pre Sept. 11th environment

Post 9/11, situation has changed

- Global War on Terrorism
- Force protection; Warfighter support
- Physical access (e.g., perimeter)

Logical access is the "hardest sell"

Need Service/Agency buy-in and requirements

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## Way Ahead: Stress Interoperable Approach

Identity authentication-foundation for DoD biometrics

- Red Force biometrics
- Blue Force biometrics
- Priority of the USG & DoD



Tactical requirements

Physical access

Logical access

Business case articulation

- Increased security
- Increased convenience
- Decreased cost
- The ability to fix or freeze identity

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## Summary

- **Biometrics:**
  - High Tech Word for Old Concept
- **Biometrics:**
  - Enabling Technology for Identity Management
- **National Security Needs:**
  - Freezing & fixing identity: the underappreciated power of biometrics?
  - Can biometrics rise to the challenge?
- **DoD Building Blocks for Biometric Uses**

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