International Biometrics & Identification Association

Biometrics and Policy

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Topics

- Introduction to IBIA
- Fundamentals of biometrics
- Public policy considerations

About IBIA

- A trade association that promotes using technology effectively and appropriately to determine identity and enhance security, privacy, productivity and convenience
- Non-profit 501(c)(6) trade association founded in 1998 and based in Washington, DC

Fundamentals of Biometrics

Definition of Biometrics

Automated method of identifying or verifying the identity of a living person based on unique biological or behavioral characteristics

Examples of Biometrics

Fingerprint

Face

Iris

Vascular

Palm

Hand

Voice

Signature

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Typical Biometric Applications

- Law enforcement criminal history check
- Civil background check
- Border security and immigration
- Access to secure facilities and areas
- Access to information systems
- Protection of sensitive information
- Time and attendance
- School lunch payments
- Benefit eligibility verification

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Benefits of Biometrics

- Allows rapid identification of criminals, combatants or terrorists
  - Enhances homeland security and fights crime
- Convenient way to access secure facilities or information systems
  - Nothing to remember
  - Can't be guessed, stolen, shared, lost, or forgotten
- Prevents impersonation
  - Protects against identity theft
  - Higher degree of non-repudiation
- Enhances privacy
  - Protects against unauthorized access to personal information

International Biometrics & Identification Association • International Biometrics & Identification Association • International B... ation • Interna... ional Biometrics & Identification Association • International Biometrics & Identification Association • International Biometric... ... nternational Bi metrics & Identification Association • International Biometrics & Identification Association • International Biometrics & Identi... ... al Biometrics & dentification Association • International Biometrics & Identification Association • International Biometrics & Identification A... ... rics & Identific ion Association • International Biometrics & Identification Association • International Biometrics & Identification Association... ... tification Asso ciation • International Biometrics & Identificati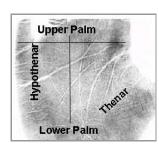on Association • International Biometrics & Identification Association • Interna... ... Association • nternational Biometrics & Identification Association • International Biometrics & Identification Association • International Biometrics & Identification Association • Interna... ional Biometrics & Identification Association • International Biometrics & Identification Association • International Biometrics & Identification Association • International Bi
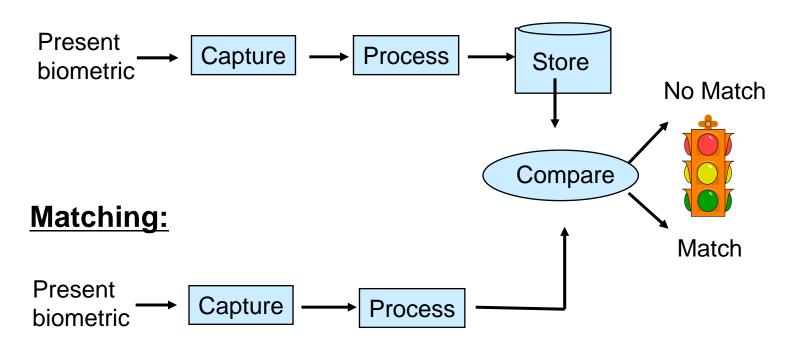
Recent Biometric Advances

- Rapidly falling cost

- Increased accuracy and speed

- Maturing international standards

- Widespread adoption
  - Led by government applications
  - Next wave will be mobile device security

How do Biometrics Work?

Enrollment:

Present biometric → **Capture** → **Process** → **Store**

Store → **Compare**

Matching:

Present biometric → **Capture** → **Process** → Compare

Compare → No Match

Compare → Match

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Fingerprint Recognition

- Measures characteristics of the ridge pattern on the skin surface of the fingers
- One of the oldest and most widely used biometrics

How a Fingerprint is Processed

- Starts with fingerprint image
- Typical size 70-90 KBytes

Feature Extraction

- Find Minutiae points:
  - Ridge Endings
  - Ridge Bifurcations
  - Ridge Direction

Template Generation

- Generate template record
- Store in template repository
- Typical size <500 bytes

Iris Recognition

- Measures features associated with the random texture of the colored part of the eye

- Measures up to 266 unique features

- Uses near-infrared sensor from a distance of 6 inches to several feet

- Popular for facility access and transportation/border security

Facial recognition

- Analyzes features of the face and/or the relative distances between features (e.g., eyes, nose and mouth)
- Capture methods
  - Still camera
  - Video
  - Thermal imaging

Is There One Best Biometric?

- No - A biometric should be selected based on specific application requirements
- Each technology exhibits differences in
  - Cost
  - Usability
  - Matching accuracy
  - Physical packaging
  - User acceptance
  - Maturity

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Biometrics & Public Policy

Public Acceptance of Biometrics

"Nearly two-thirds of U.S. citizens are concerned about identity theft and 58% of Americans would be willing to provide biometric data to protect that identity."

Source: Unisys Security Index Report – October, 2009

Privacy Issues

- Public perception is both positive and negative
  - Tool to help protect privacy, or...
  - Threat to privacy
- The technology is less of an issue than the application
- Regardless, there is a need to develop policies for the protection and privacy of biometric data

Other Perceptions

- Criminal connotation
- Religious or cultural objections
- Can it cause physical harm?

More education is needed

Privacy Considerations

- Biometric identifiers should be treated as personally identifiable information (PII)
  - Safeguard biometric data to ensure that it is not misused or compromised
  - Don't distribute or share biometric data without informed consent or the authority of law

Private Sector Recommendations

- Develop policies that clearly disclose how biometrics will be collected, stored, accessed and used

- Limit the use of biometric data beyond its intended purpose

- Protect confidentiality and integrity of databases containing biometric data

Public Sector Recommendations

- Develop clear legal standards that define and limit the conditions under which public institutions or agencies may acquire, access, store, share and use biometric data and other PII

- Protect confidentiality and integrity of databases containing biometric data

Legislative Considerations

- Legislation that would limit the use of biometrics should be narrow and not overly broad
  - Better to target specific applications
- Should not inhibit or unduly burden legitimate applications of biometric technology
  - Limiting the general use of biometrics presents an obstacle to its beneficial use

Legislative Example

- The State of Illinois Biometric Information Privacy Act (740 ILCS 14) provides an example of broad state legislation that requires biometric data protection by private entities
  - Requires establishment of retention schedule and destruction guidelines
  - Requires disclosure and consent for collection
  - Inhibits sale or distribution of biometric identifiers without prior consent
  - Requires same standards of care to store, transmit and protect biometric data as other confidential and sensitive information

IBIA is a Resource

- IBIA staff is available to assist policy makers and legislators in developing appropriate policies and laws concerning the use of biometrics and other person identification technologies

Questions?

For More Information Contact:

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