Usable Biometrics
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What kind of Biometrics?

Physiological - Body Parts
Specifically What Kind?

Technologies dealing with your face...

Facial Recognition
Iris Recognition
Retinal Scan
Biometric Requirements

FAR / FMR
FRR / FNMR
FTE / FER
FTC
What kind of Authentication?

Identification - One to Many

Verification - One to One
BBC animations

http://news.bbc.co.uk/2/shared/spl/hI/guides/456900/456993/html/
Usability Concerns

• Requires specific process from User
• Sometimes makes user go out of their way
• Requires long enrollment process
• Acceptance issues
Facial Recognition

Problems:

- Neutral
- Full Frontal
- Lighting/Glasses/Accessories
Understanding the Eye
Retina
Retinal Scan

Problems

• Must be close to camera (IR)
• Scanning can be invasive
• Not User friendly
• Expensive
HOW IRIS SCANNERS RECORD IDENTITIES

1. Scanner reads from outer iris inwards to pupil edge
2. Scanner plots distinct markings on iris and maps unique shape
3. After plotting many marks within the iris all data is saved to a database
4. Other scanners will compare this data to verify individual identities

Iris
Iris Recognition

Problems

- Late to the game
- Requires advanced technology to properly capture iris
- Users do not have to consent to have their identity tested
National Geographic's "Afghan girl"—For 17 years photographer Steve McCurry has tried to once again find the subject of his famous 1984 photo. Now he has. Meet the "Afghan girl" in the April 2002 issue of National Geographic magazine. Subscribe online at nationalgeographic.com.

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Commercial Solutions

Iris on the move

Physical: Portal
Unit Height: 86.25 in (220 cm)
Unit Width: 48 in (122 cm)
Unit Depth: 49 in (125 cm)

Physical: Cabinet
Unit Height: 64 in (163 cm)
Unit Width: 12 in (30 cm)
Unit Depth: 18 in (46 cm)

Performance
Standing Distance: 10 ft (3 meters)
Capture Volume: 20 in (W) x 20 in (H) x 8 in (D) (50 cm x 50 cm x 20 cm)
Iris Identification Speed: < 1 sec
Subject Motion: Longitudinal
Throughput: 30 people per minute
Database Size: Scalable
Typical Application: High throughput access

Power Requirements
120 volts; 10 amps; 100 watts max (not including system controller)

Operating Conditions
Temperature: 30° to 100°F
Humidity: 30-90%, non-condensing

Interface
Runs standalone or via Ethernet (10/100/1000 Mbps)

Scalable Database
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| PO Box 5300
| Princeton, NJ 08543
p: 609-734-2553 | e: info@sarnoff.com
www.sarnoff.com

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Research @ CMU

Sources


http://en.wikipedia.org/wiki/Iris_recognition


http://www.cylab.cmu.edu/research/chronicles/savvides.html