Biometric User Interfaces
(Future User Interface Issues for Biometric Systems)

19th January 2012
BSI, Chiswick, London

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Biometric Standards

• BSI Biometrics Committee IST/44 - was established in June 2002. It mirrors and represents UK interests to ISO/IEC JTC1/ SC37 Biometrics Sub-Committee.

• IST/44 Technical Committee had its inaugural meeting on Oct 2002 to provide UK input to the first meeting of ISO/IEC JTC1/SC37 in Orlando, USA.

• ISO/IEC JTC1/SC37 has already published many Biometrics Standards.
IST/44 Workgroups

- WG1 – Harmonized Biometric Vocabulary
- WG2 – Biometrics Technical Interfaces
- WG3 – Biometric Data Interchange Formats
- WG4 – Biometric Profiles
- WG5 – Biometric Performance Testing and Reporting
- WG6 – Cross-Jurisdictional and Societal Aspects of Biometrics
Standardised types of biometric

- Finger image data; minutiae data; pattern skeletal data; pattern spectral data (single finger, Slap 10 - fingers +thumbs)
- Iris image data
- Face image data
- Vascular image data
- Hand geometry silhouette data
- Signature data
- Voice
- DNA data
Use of biometrics

• Government
  ▪ Law and Order
  ▪ Biometric passports
  ▪ Seafarer’s card

• Commercial
  ▪ Building site access
  ▪ Disney ticketing in Orlando Fl.
  ▪ School meals and libraries

• Prototypes an pilots
  ▪ Hanover Fair 1999 NCR Biometric ATM concepts machines
Societal considerations

• Face —
  ▪ cameras must adapt to subjects height
  ▪ The subject’s face must be visible and background faces must be ignored
  ▪ Sensitive to lighting conditions

• Finger
  ▪ Subject’s must recognise and reach the sensor
  ▪ A registered finger must be presented at the correct angle

• Vascular
  ▪ hand recognition requires a cradle suitable for the subject’s hand size
Societal considerations continued

- Iris
  - cameras must be able to locate the subject’s eyes
  - no dark sun glasses or tinted contact lenses
- Voice
  - can be affected by temporary health conditions and fatigue
  - ambient noise
Other issues

- Workstation design
- Luggage, packages, umbrellas and walking sticks
- Presentation of cards and tokens
- Signage location
- Outdoor operation
  - Lighting
  - Rain
  - Frost and snow
The future

• Increase user familiarity to reduce public suspicion
• Gather research data
• Update guidance to reflect current equipment
  ▪ Improved cameras and algorithms
  ▪ Multimodal sensors
  ▪ Improve anti-spoofing techniques
• Learn from “real” application experience
• Consumer technology
Societal biometric guidance

- PD ISO/IEC TR 24714-1:2008
  Information technology. Biometrics. Jurisdictional and societal considerations for commercial applications - General guidance

- PAS 92:2011
  Code of practice for the implementation of a biometric system
Contact

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