

Biometric User Interfaces

(Future User Interface Issues for Biometric Systems)

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Julian G Jones
Convenor CEN TC224 WG6
BSI IST/44 WG6 Panel member
Consumer Representative, BSI CPIN

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 and 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

Julian G Jones
Consumer Representative

Email: juliang.jones@btinternet.com

Links: www.bsigroup.com



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