ANSI/NIST WORKSHOP

MINEX04

April 28, 2005

MINEX04 OVERVIEW

- Minutiae Interoperability Exchange Test 2004
- Joint project between NIST, JMD/DOJ, & VISIT/DHS
- Determine the feasibility of using minutiae data as the interchange medium for fingerprint information between different fingerprint matching systems
- Image data acknowledged to provide best performance
- Standards exist for fingerprint image & minutiae data

- ***fingerprint.nist.gov/minex04***

MINUTIAE TEMPLATES

- Claims are that minutiae templates will operate as well as images for fingerprint matching
- Minutiae templates have operational advantages and a considerable cost impact
- Limited information regarding interoperability, accuracy, performance using minutiae data
- MINEX04 Objective: Quantify verification accuracy changes using minutiae templates rather than images for fingerprint interchange

FACTORS EFFECTING TEMPLATE INTEROPERABILITY

- Different schemes for identifying & formatting minutiae information
  - *Proprietary; INCITS M1 (basic); M1 (extended) Ridge counts to 8 near neighbors*
- System that encodes probe and gallery templates
- Matcher used to compare templates
- Determine probability of a successful match when various combinations of templates, encoders, and matchers are used
- Not designed to rank vendors

PARTICIPANT REQUIREMENTS

- All images and templates property of NIST
- Participants required to provide NIST with an SDK library complying with the MINEX04 API
- SDK library will run on a Pentium-based PC Platform using Windows 2000 or Red Hat Linux 7.2
- SDK must have capability to extract minutiae and match templates
- Must provide a proprietary extractor and matcher
- Must provide an ANSI/INCITS M1 basic template generator and matcher (X,Y, Theta)

TEST PROCEDURE

- Participants provide NIST with SDK
- Tests on propriety matcher to get baseline/best performance
- 14 Participants -
  - *6 Extended minutiae templates*
- Run several tests to answer the question:

  Given probe template type m from system A and gallery template type m from system B, can a successful match be generated by system C?

Participants

Biologica Sistemas LTDA.	Brazil
Bioscrypt Inc.	Canada
Cogent Systems, Inc.	CA
Cross Match Technologies	FL
Dermalog Id Systems GMBH	Germany
Identix Incorporated	NJ
INNOVATRICS	France
NEC Corporation	Japan
NEUROTECHNOLOGIJA, LTD.	Lithuania
NITGen Co. LTD.	Korea
Sagem Morpho	WA
SECUGEN CORPORATION	CA
SPEX Forensics	NJ
Technoimagia Co., Ltd.	Japan

Questions?

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