Test Programme

for

FRR Testing to cover authentication devices
(Discrete IRIS and Finger print devices)

and

IRIS in mobile
Background

• FRR is key parameter of UIDAI Biometric Device Specification

• Testing is done in the field as per ISO/IEC 19795-1 : 2006 Biometric Performance Testing

• Biometric Performance Testing has been done:
  - Mayur Vihar Phase II delhi 15- 24 July 2012
  - Dadu Majra Chandigarh from November 15-19, 2014
Biometric Performance Testing Standard

ISO/IEC 19795-x, Information Technology

Biometric performance testing and reporting

-- Part 1: Principles & Framework - Guidance applicable to the broad range of tests

-- Part 2: Testing Methodologies for Technology and Scenario Evaluation - Multiple visits, habituation, enrolment

-- Part 3: Modality-Specific Testing - Modality (& application) specific methodologies

-- Part 4: Interoperability Performance Testing - Performance on other vendors data

-- Part 5: Framework for biometric device performance evaluation for access control

-- Part 6: Testing Methodologies for Operational Evaluation

-- Part 7: Testing of ISO/IEC 7816-based Verification Algorithms
Definition

False Accept Rate:

The expected proportion of transactions with wrongful claims of identity (in a positive ID system) or non-identity (in a negative ID system) that are incorrectly confirmed. A transaction may consist of one or more wrongful attempts dependent upon the decision policy. A false acceptance is often referred to in the mathematical literature as a “Type II” error. Note that “acceptance” always refers to the claim of the user.

False Reject Rate:

The expected proportion of transactions with truthful claims of identity (in a positive ID system) or non-identity (in a negative ID system) that are incorrectly denied. A transaction may consist of one or more truthful attempts dependent upon the decision policy. A false rejection is often referred to in the mathematical literature as a “Type error.” Note that “rejection” always refers to the claim of the user.
Performance Metrics

Categorization

• Technology testing
  - Algorithmic level verification error
    - False-Match-Rate (FMR) - algorithm accepts „zero-effort“ imposter
    - False-Non-Match-Rate (FNMR) - algorithm rejects true identity

• Scenario testing and operational testing
  - System level verification error
    - False-Accept-Rate (FAR)
    - False-Reject-Rate (FRR)
  - System level error requires observation of:
    - Sample generation: Failure-to-Capture (FTC)
    - Enrollment: Failure-to-Enrol (FTE) - no reference for this subject
    - Verification: Failure-to-Acquire (FTA) - no probe feature vector
Scope of Testing

• Discrete IRIS device in a form factor
• Discrete fingerprint device in a form factor
• IRIS in Mobile
• IRIS in Tablet
Guidelines for FTA (Failure to Acquire) Indicators

Indicator 1:
Resident is made to spend more than 03 minutes per device (in case of normal operating conditions: like network availability, etc.)

Indicator 2:
Crowd gets built (or sequence gets blocked) at any particular device.

Indicator 3:
More than 06 multiple attempts:
• As observed by the respective STQC supervisor
• As informed by the resident

Indicator 4:
“Yes” response after more than 04 attempts as observed during reconciliation process:
• Restarting the application in-between (or after multiple attempts) during the authentication process of a resident
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Authentication Station</th>
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<tr>
<td></td>
<td>Station 1</td>
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Way Ahead

- Next (third) round of FRR testing proposed is 5th – 17th April 2016

- Same procedure which has been established in first two rounds will be followed with sample size 5000+ test subjects.

- Test will be jointly conducted by UIDAI, CDAC and STQC.

- The first two days of the test will be dry run.

- The test fee will be **rupees 5 lakhs per device plus all applicable taxes** (single combination of sensor and extractor)

- The expected venue for test will be community centre Mayur Vihar Phase II Delhi
Way Ahead

• **FDC and UDC** code will be assigned 15 days ahead of the test. The applicant shall provide following details 30 days before the conduct of the test.

• **Acquisition Devices:**
  - Manufacturer
  - Model
  - Version
  - Sensor Name
  - Sensor Ver

• **Biometric Algorithms:**
  - Provider
  - Version