

# **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 I” 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)
    - Enrolment: 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 finger print 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





# Way Ahead

- Next (third) round of FRR testing proposed is 5<sup>th</sup> – 17<sup>th</sup> 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

Thank you

