



Ensuring Biometric Quality

Compliance & Certification

Sanjith Sundaram | Head – Partner Ecosystem, MOSIP

Anusha Sunkada | Technical Architect, MOSIP

Dr. Ted Dunstone | Bixelab





Certification Requirements

Adopters need “assurance” on the biometric products. Certification infrastructure needs special focus

01 Interfaces

- Standardised interfaces
- Biometric replay/injection
- Cryptographic traceability
- Inclusive data model
- Purpose driven capture
- Works across web 2.0 protocols

02 Image Quality

- Good quality biometrics
- Quality over the lifetime (wear and tear)
- Inclusiveness

03 Hardware

- Security
- Touch/Touchless
- Environmental
- Robustness
- Safety/Health

04 Other Requirements

- Liveness/Presentation Attack Detection

Challenges Faced

Availability of advanced labs

Efforts required for new labs

Challenges with single channel certification





Challenges



Different Technologies



On-field Performance



Lack of Standards



New Biometric Modalities



Interoperability



Initiatives



MOSIP Advanced Compliance Programme (MACP) – Framework

Standardised assessment criteria & Standard operating procedures to test biometric devices or solutions.

Leading to Independent certifications through empaneled labs.





MOSIP Experience Centre





Compliance Tool Kit

Online Portal & Android App

01 Check if the products developed by our partners **adhere to the specifications** set by MOSIP, no matter where or when.

02 Pre-defined test cases for each specifications. 200+ test cases and will continue to add.

03 Default **Compliance check collection** added to each project. Additionally, SBI projects have **Quality assessment collection**.

04 Multiple Validators for each specifications, namely **ISO Standards Validator**.

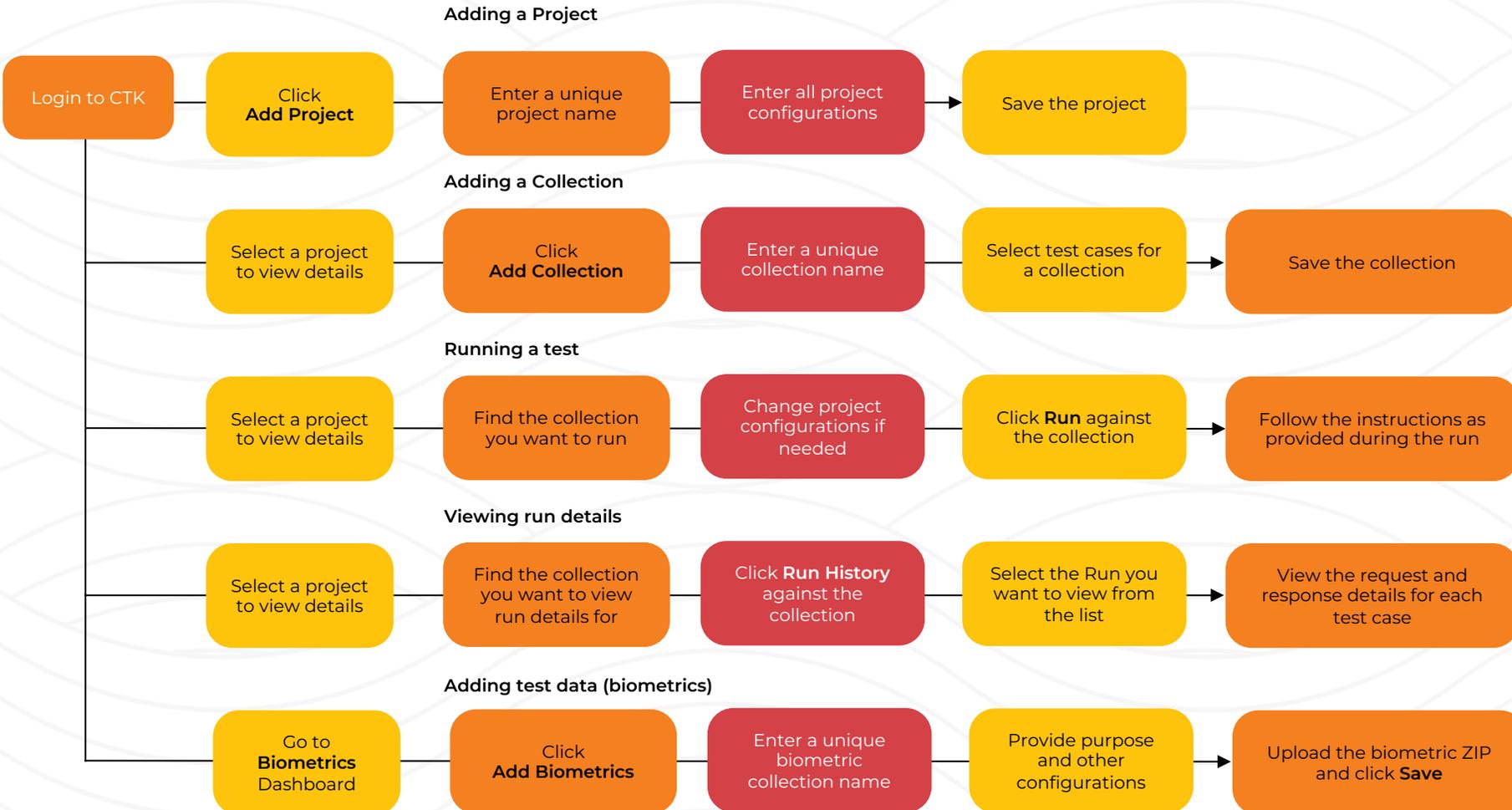
05 Detailed test run report for each run and analyse and rectify the issues.

06 Generate project report and send for approval. Every project report is tied with the product hash.



Compliance Tool Kit Working

Well-Defined documentation
<https://docs.mosip.io/compliance-tool-kit/>





MACP – Lab Onboarding Status

(SBI 1.0)

Lab Details	Status
 BixeLab https://bixelab.com/	Onboarding: Complete Dry Certification Runs in progress
 ingenium https://ingeniumbiometrics.com/	Onboarding: In Progress

THALES
Building a future we can all trust

MANTRA
Innovation that counts

Iritech, Inc.
Technology with the Iris



Unlimited Possibilities

01 Faster Adoption

Faster adoption by Partners – one certification leading to multiple opportunities

02 Delta Layers

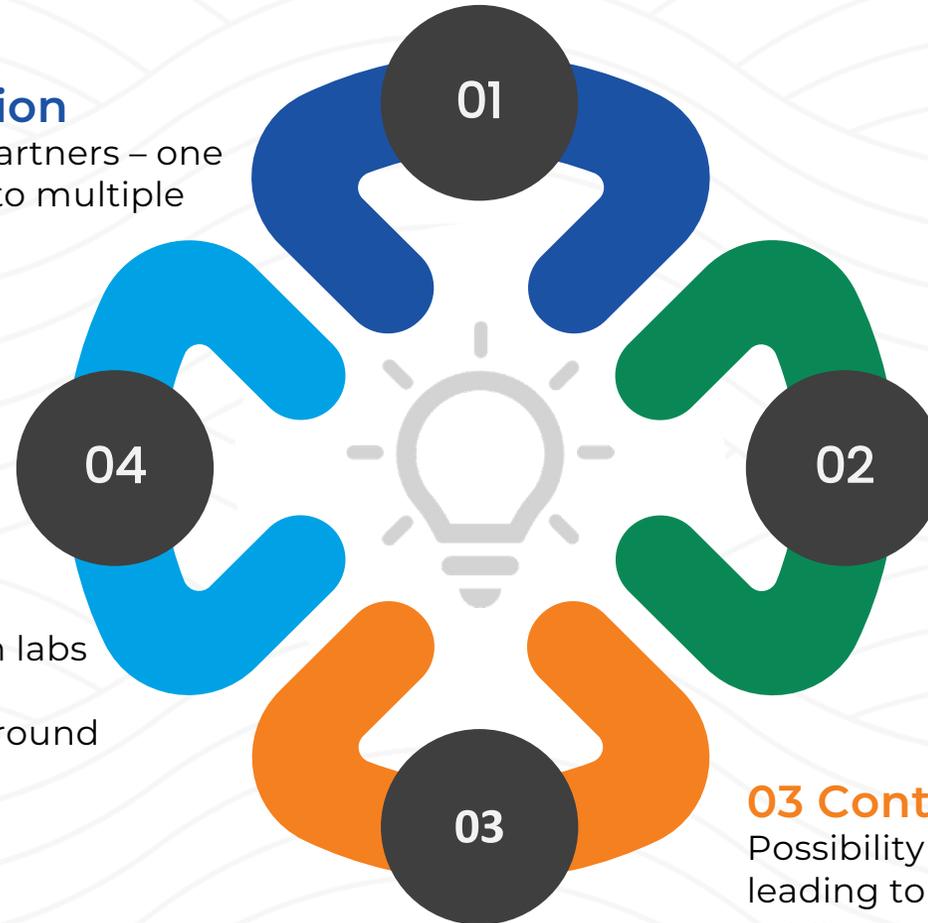
Possibility of adding delta layers – if required – above the standard certification model

04 Better Results

Ecosystem of certification labs leading to better quality, competition, faster turnaround times

03 Continuous Improvement

Possibility of continuous improvements leading to more matured models. Adding new technologies.





MOSIP Advanced Compliance Program



MOSIP



BixeLab



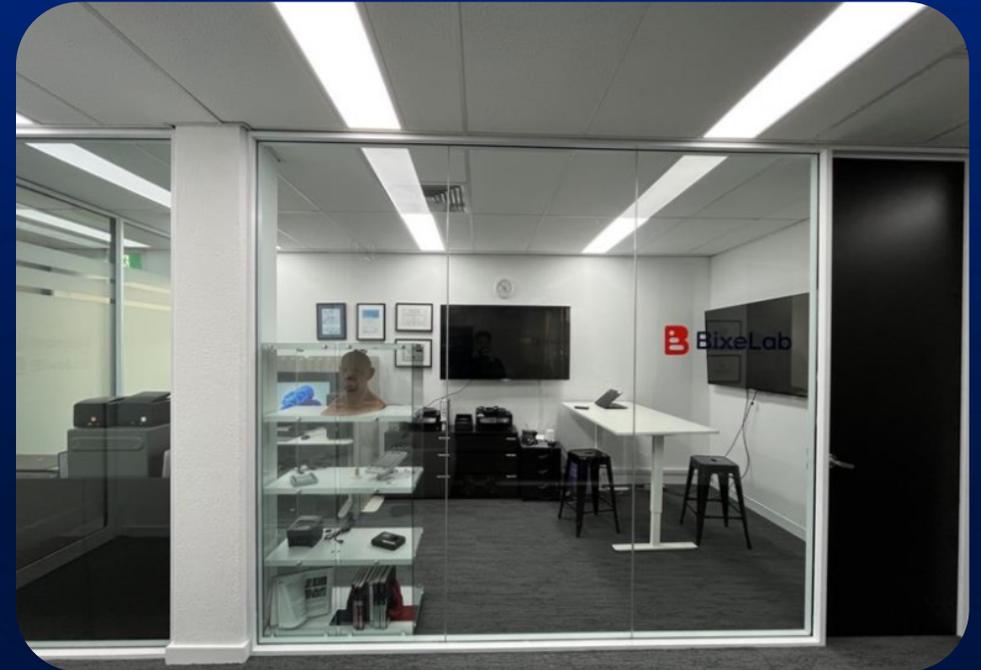


Overview

- Need for a higher standard for the quality of biometric images to ensure the best possible performance of deduplication and authentication functions.
- Consistent high quality biometric enrolment performance standards across variety of environments and demographics.

MACP Objectives

- Enhance biometric device quality across the MOSIP ecosystem.
- Standardise the assessment process for biometric device providers.
- Support especially smaller/adopting countries in ensuring suitably tested device



BixeLab laboratory



Core Components of the framework

MACP Laboratory Qualification Criteria

Lab accreditation Criteria

- Technical capabilities
- Quality Assurance
- Security
- Regulatory Compliance
- Resources
- Processes
- Costs



MACP Biometric Device Certification Framework for Quality

Quality Specifications

Specifications for test
planning

Specifications for test
reporting

Certification Letter
template



Device Profiles: MACP Biometric Device Certification Criteria for Quality

- Testing Criteria based on two scenarios:
- Indoor Acquisition
- Outdoor Acquisition
- Pre-requisites for fingerprint, iris, and face enrollment devices
- Test criteria for indoor and outdoor acquisition for fingerprint, iris and face enrollment devices





Standards-Based approach

Pre-Requisites for Devices

- Current MOSIP Compliance specifications for ISO/IEC 19794 series (biometric specification – MOSIP Docs 1.1.5).
- Image formats are compliant with MOSIP docs 1.1.5 biometric specification: image formats for fingerprint, iris and face capture (as applicable)

Pre-Requisites for Accredited Labs

- ISO/IEC 17025
- ISO/IEC 19795-1:2021 Biometric Performance Testing and Reporting
- ISO/IEC 19795-2:2007 Biometric Performance Technology and Scenario Testing and Reporting

Best Practices

- ISO/IEC 29794-2: 2017 Biometric Sample Quality (finger image data)
- ISO/IEC 29794-6:2015 Biometric Sample Quality (iris image data)
- ISO/IEC 29794-5:2022 WD5 for Biometric Sample Quality (Face Image Data)
- ISO/IEC 24358: Specifications for face-aware capture subsystems
- NFIQ 2.0 for enrolment

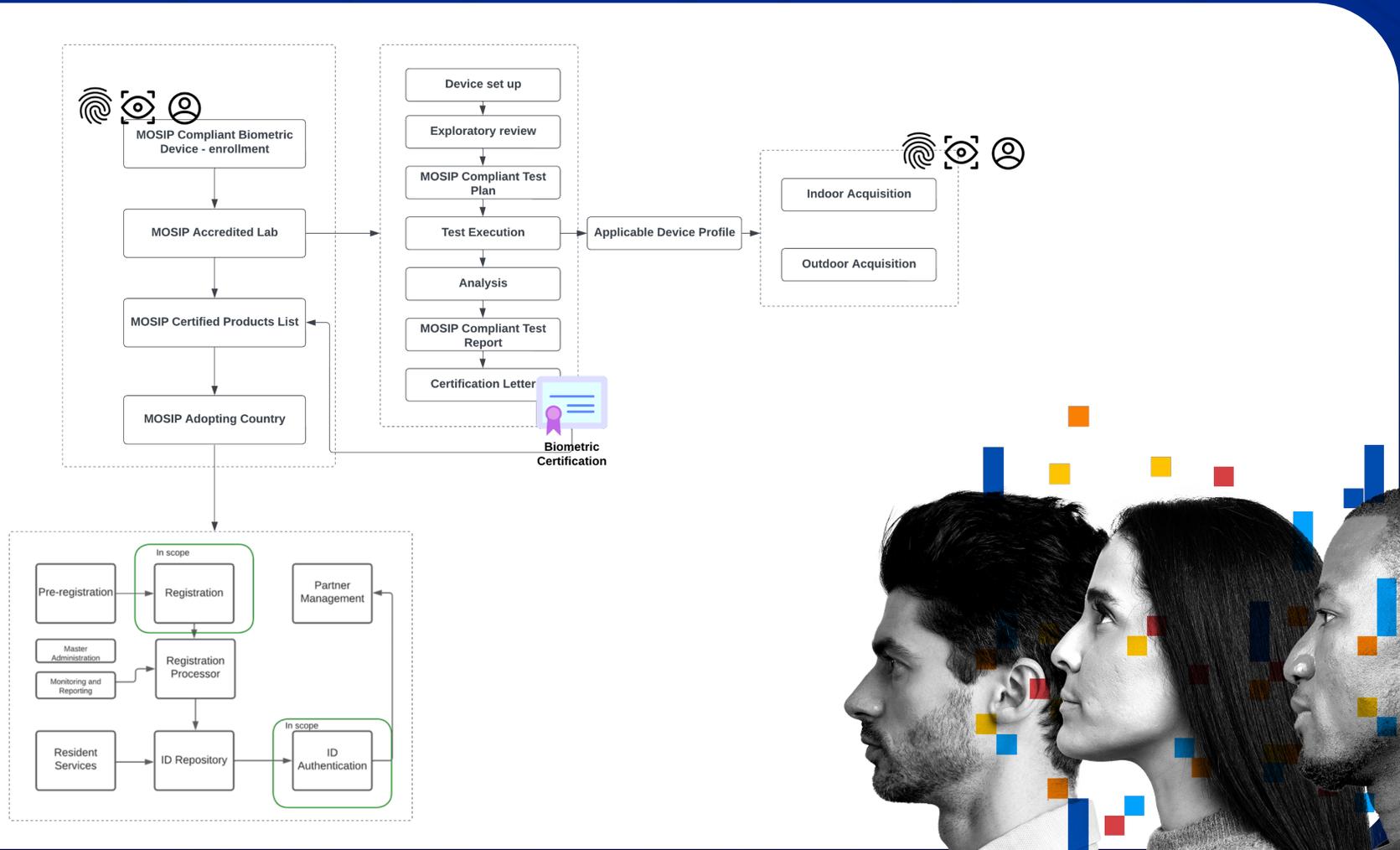


Image showcasing testing of an optical fingerprint scanner – for elevated angle test scenario



MACP Lifecycle

Base-lined performance to ensure acceptable biometric sample quality from an accuracy perspective





MOSIP

MOSIP Homepage: www.mosip.io

MOSIP Source Code: github.com/mosip

MOSIP Documentation: docs.mosip.io

MOSIP Community: community.mosip.io