The MOSIP Approach to Foundational Identity

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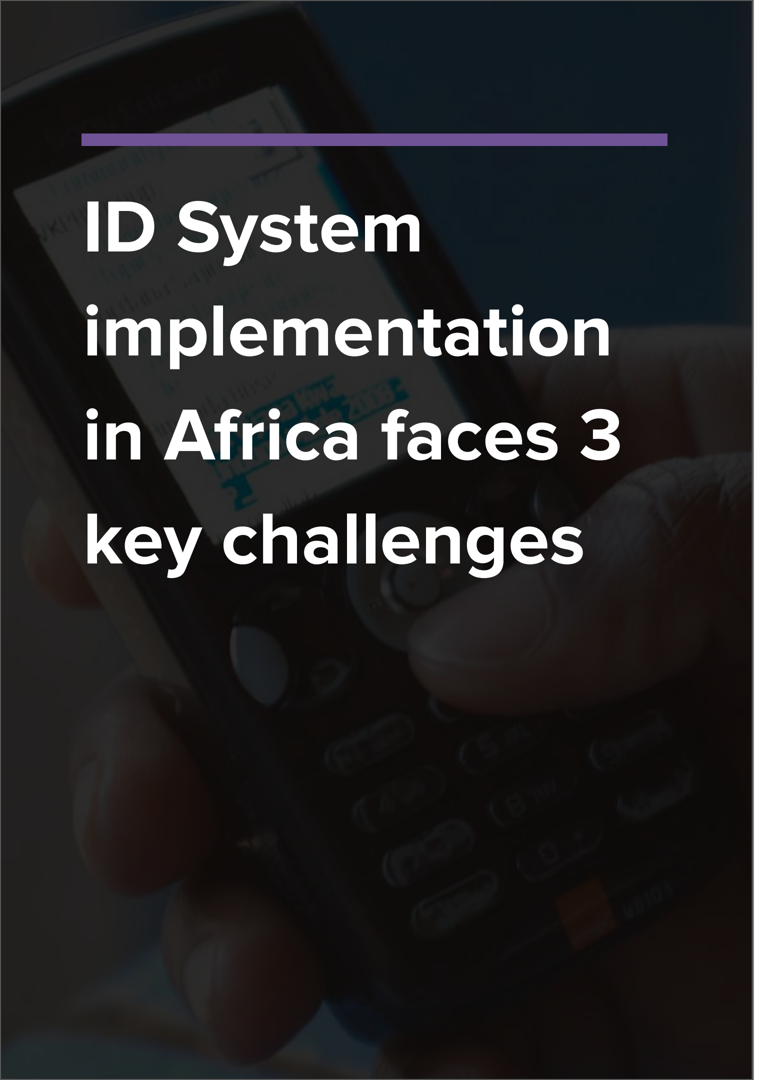
ID4Africa Meeting 2019



ID System implementation in Africa faces 3 key challenges

Lack of interoperability

- Fragmentation of identity systems, with redundant and conflicting databases
- Most options available are closed and proprietary, and use non-standard protocols and components

High Costs

- ID Systems can pose significant financial burden to the government
- Costs climb when authentication is outsourced, and it may often be borne by the citizen.

Technology Lock-in

- Proprietary technology is difficult to adapt over time
- Denies countries the opportunity of encouraging and developing their national technological talent and industry

An open platform approach can overcome these challenges and unlock new opportunities

Built on key architectural principles

Platform-based

Open source + open standards

Modular

Customisable

Privacy by design

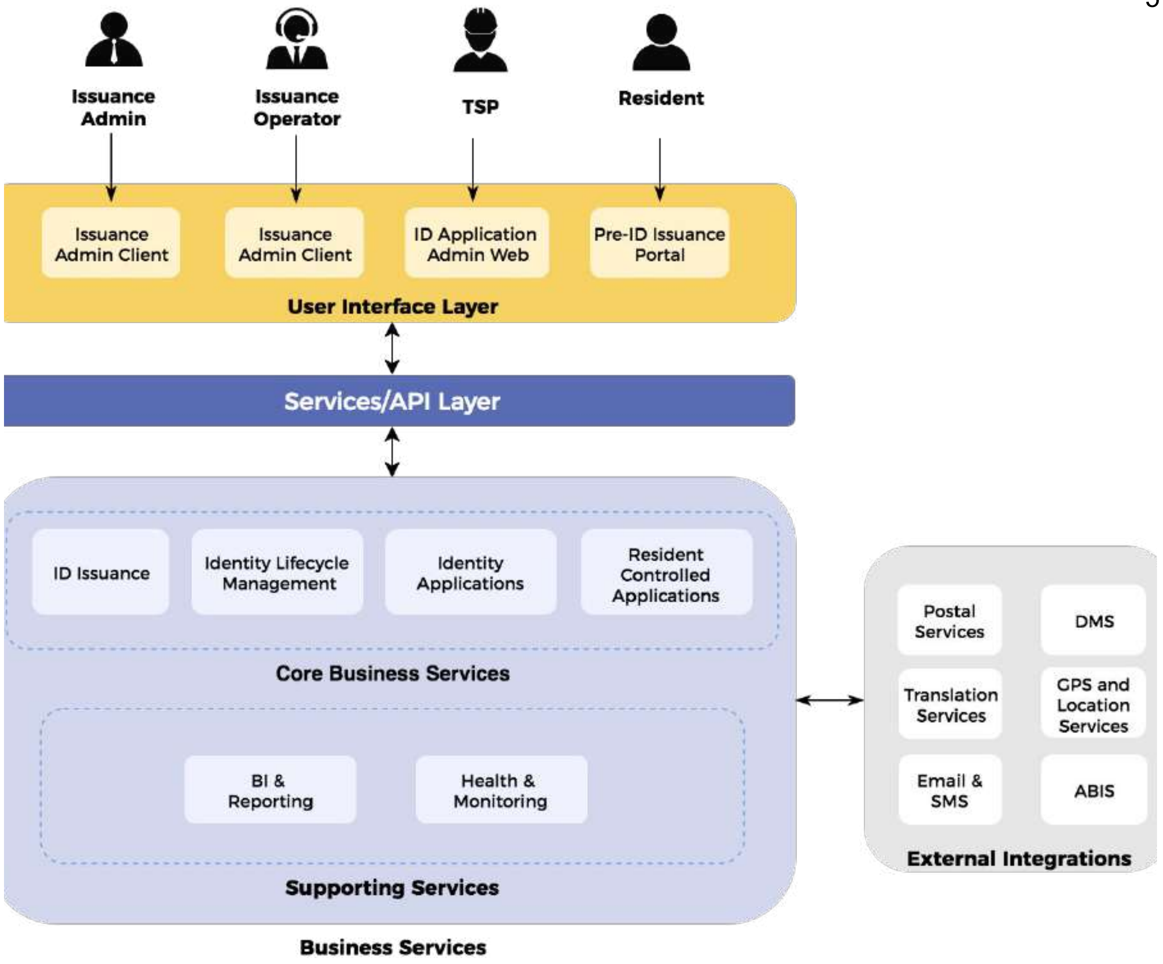
Secure

Extensible

Scalable

PLATFORM BASED

- **Digital public infrastructure** on which a number of different services can be built
- All common features are abstracted as reusable components and frameworks into a **common layer**



OPEN SOURCE

Available on Github under the Mozilla Public License 2.0

- Does not use proprietary or commercial-license frameworks.
- Standards to store and transfer biometrics data
- Published, documented and accessible APIs

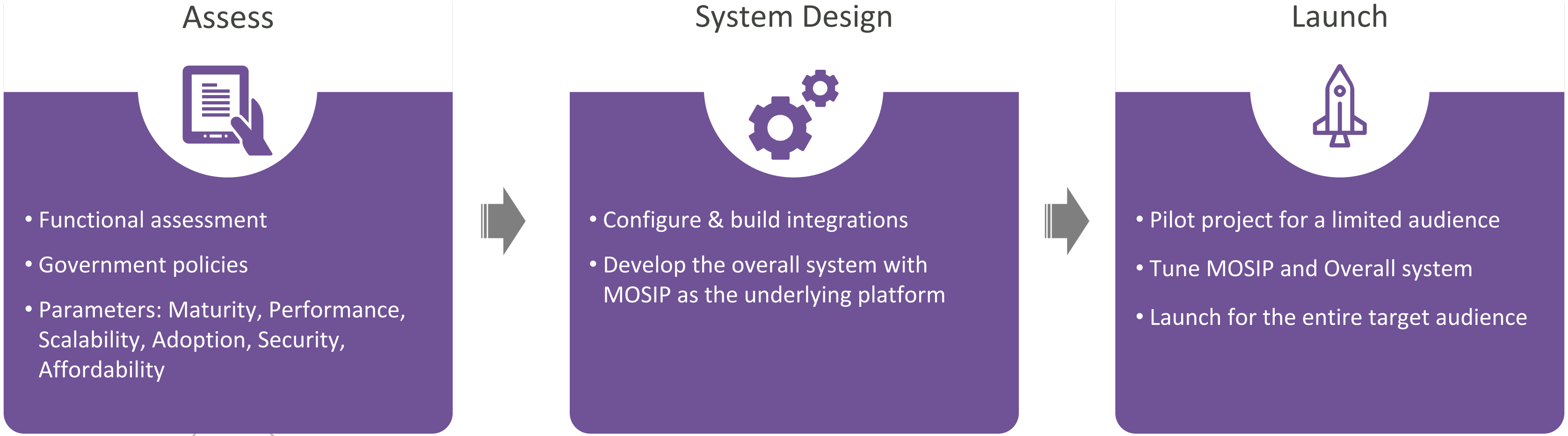
OPEN STANDARDS

MODULAR

Pre Registration	Registration	Registration Processor	ID Authentication	Reports & Portal
User enabled data entry	Online or offline mode	UIN generation	Yes/ No answer, demographic, biometric	Resident services portal
Appointment booking	Fingerprint, iris & Photo	Data enrichment	eKYC services	Reports and Analytics
	Field Configurability	Modular de-duplication engine	Tokenization & virtualization, Online & Offline mode	Resident controlled privacy

- Local / Multi Language Support
- Notification to residents at various stages
- Artificial Intelligence Support
- Machine Language Support

CUSTOMISABLE



Assess

- Functional assessment
- Government policies
- Parameters: Maturity, Performance, Scalability, Adoption, Security, Affordability

System Design

- Configure & build integrations
- Develop the overall system with MOSIP as the underlying platform

Launch

- Pilot project for a limited audience
- Tune MOSIP and Overall system
- Launch for the entire target audience

PRIVACY BY DESIGN

Virtual ID and Token ID

- Enables a revocable identity and prevents stealing of identity
- Deters 360 degree profiling

Limited Profile Sharing

- Provides limited sharing of data, user centric policy

History and Alerts

- Provides transparency, notification and real time awareness of usage with non tamperable data

Lock Authentication

- Provides ability to lock or unlock specific functions of authentication and eKYC.

Secure offline authentication

- Provides for data privacy even in offline authentication mode

SECURE

Data that moves out of MOSIP environment should be digitally signed with timestamp.

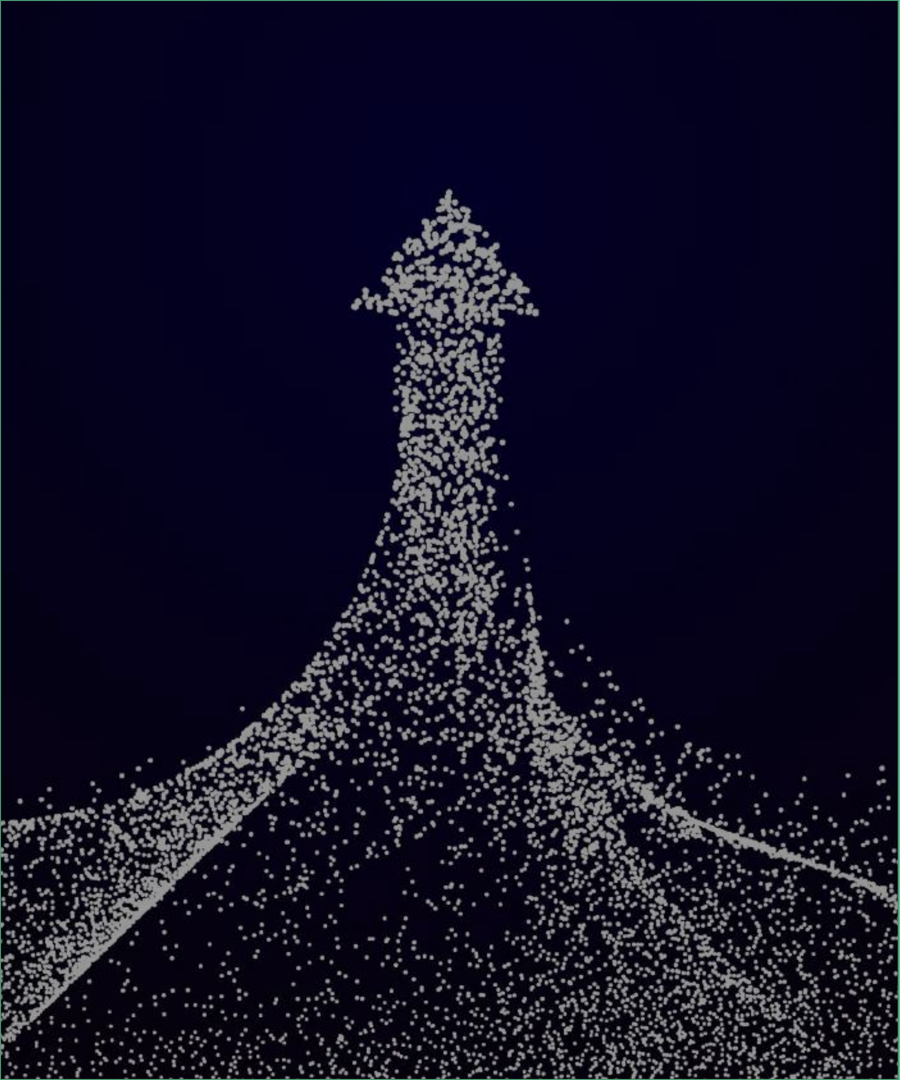
All PII data (to be defined as part of the integration) & all configuration data (defined as part of the development of system) will be encrypted at rest and in motion.

Every third-party interaction will be built over the mutually trusted channel with the respective PKI validation. All events are auditable and non repudiable.

All data and trust should be cryptographically validatable by all parties involved in the transaction at any point in time.

EXTENSIBLE

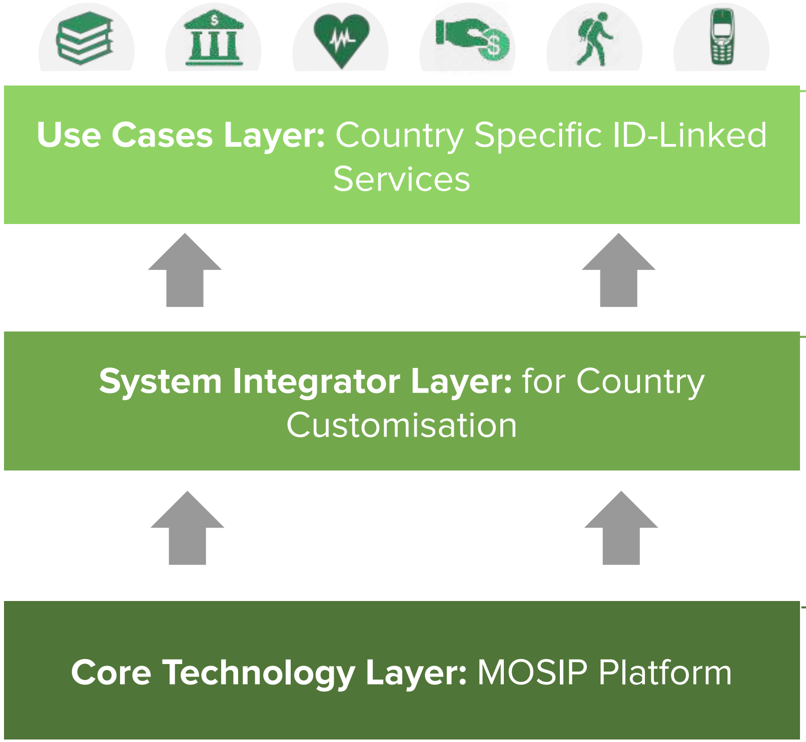
- API-first approach and expose the business functions as RESTful services
- MOSIP components must be **loosely coupled** so that they can be composed to build the identity solution as per the requirements of a country
- MOSIP must support **i18n** capability
- The key sub-systems of MOSIP should be designed for extensibility. For example, if an external system has to be integrated for fingerprint data, it should be easy to do so



SCALABLE

- Tested at ~100 million population scale
- Each component independently scalable (scale out) to meet varying load requirements
- Cloud-ready, uses commodity computing hardware & software to build the platform

THE CORE OF ID SYSTEMS



Use Cases Layer: Country Specific ID-Linked Services

System Integrator Layer: for Country Customisation

Core Technology Layer: MOSIP Platform

LINKAGES OF SERVICES WITH FOUNDATIONAL ID

- Work with services like finance, health, welfare etc. to incorporate unique foundational identifier

CUSTOMISATION TO SUIT COUNTRY NEEDS:

- System Integrator (a vendor) to develop additional modules, configurations, and security if desired
- Commercial Service Providers created and nurtured by MOSIP will provide the Platform maintenance support to System Integrators

BASIC ARCHITECTURE OF THE ID SYSTEM

- Modular
- Country Agnostic
- Vendor Agnostic
- Ensures robustness & security

PARTNERSHIP APPROACH

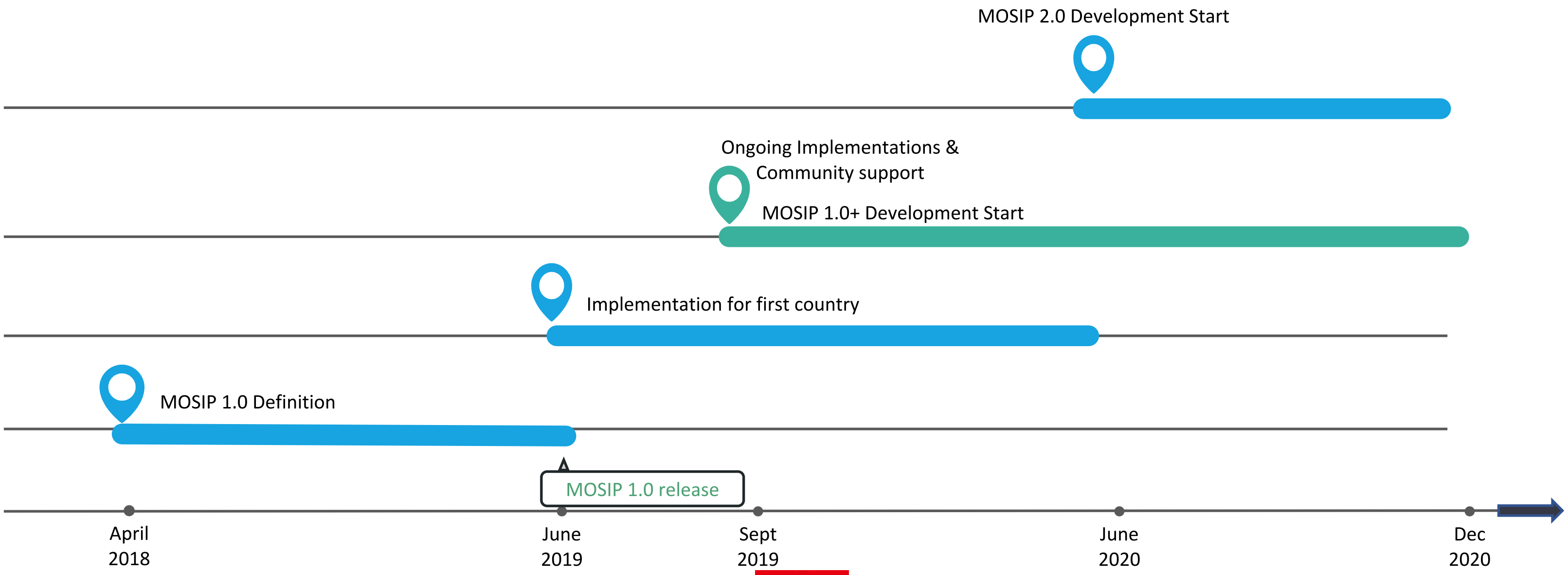
MOSIP Provides...

- The MOSIP kernel under an open-source license
- Comprehensive documentation
- Five years of enhancements, support, & maintenance of the kernel
- Training and education on MOSIP technology
- A Certified Service Provider program as a group of vetted service providers with experience of implementing MOSIP at a country level.

MOSIP Partners

- Customization and System Integration services
- Country level technology consulting
- Solutioning for public and private service delivery with MOSIP as foundation
- Support, maintenance and enhancement services to countries and other user organisations

PRODUCT ROADMAP



MOSIP 2.0 Development Start

Ongoing Implementations & Community support

MOSIP 1.0+ Development Start

Implementation for first country

MOSIP 1.0 Definition

MOSIP 1.0 release

April 2018

June 2019

Sept 2019

June 2020

Dec 2020

MOSIP is set to roll-out in
Morocco in 2019

COLLABORATION

SECRETARIAT

International Institute of Information Technology Bangalore

FUNDERS

BILL & MELINDA GATES foundation

TATA TRUSTS

OMIDYAR NETWORK

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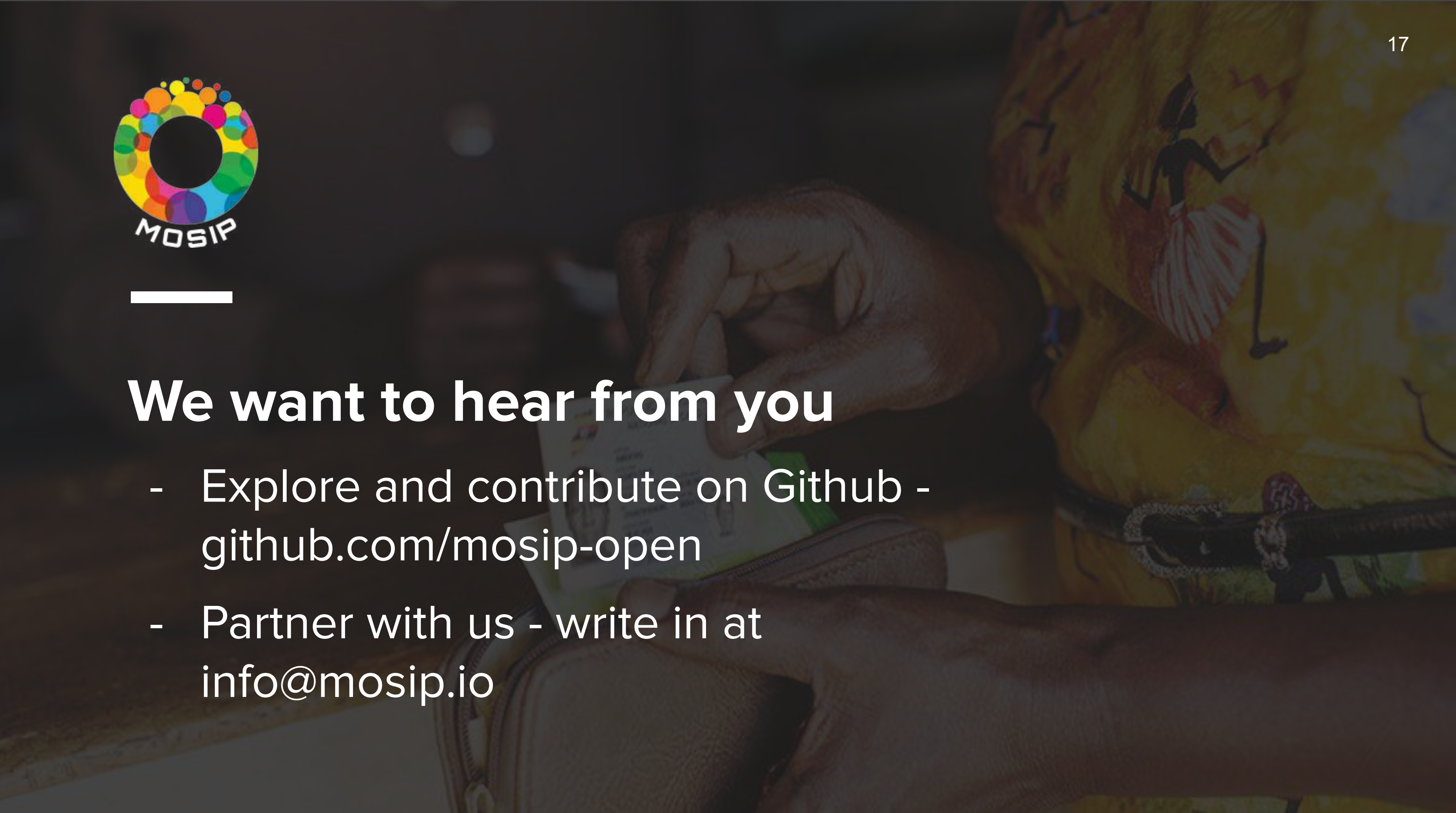

We want to hear from you

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- Partner with us - write in at info@mosip.io