# Interoperability in Action: Workshop #3

Social Protection Information System Interacting with

**Identification System** 





#### Veronika Wodsak

#### Social Protection Policy Specialist, International Labour Organization



## Agenda

12:00–12:15	Welcome, Presentation by Estonia
12:15–12:50	Integration of SP-MIS with ID System (Presentation & Demonstration)
12:50–13:30	Lightning talks from Country, International Organisations & Solution Providers
13:30–13:50	Open Discussion
13:50–14:00	Conclusion
	Digital Convergence USP2030

### The Digital Convergence Initiative (DCI)

A joint effort by USP2030 members and non-members, governments, development partners and private sector towards creating a harmonized and interoperable digital ecosystem for social protection

#### Building consensus-based standards for interoperability to

- **foster an ecosystem for innovation** by ICT solution providers to build products that are interoperable, easy to use, integrate, maintain and scale
- reduce time and costs of developing solutions at the country/program level
- enable programs and countries to mix and match different components from different suppliers
- ensure that systems are future-proof by design, regardless of current levels of policy and information systems maturity





## **Interoperability in Action**

Workshops series by DCI to demonstrate live interoperability of SP-MIS with other systems for effective and efficient delivery of Social Protection (SP) programs.

# Deep dive into one interface showcasing SP system interaction with other systems (like payment, CRVS, ID)

•share the understanding of process workflow, data elements, and technical

- APIs that are required for interoperability.
- •create awareness on the benefits of interoperability through use-cases
- demonstrate live the interoperability using digital public goods for some use cases
- •hear from the stakeholders and subject matter experts on the topic



## Interoperability in Action – Past workshops

I - Interoperability in Action #1: Social Protection Information System - Interacting with ...

## Interoperability in Action: Workshop #1

Social Protection Information System Interacting with CRVS

### Interoperability in Action : Workshop #2

Social Protection system interacting with Payment System



Past Workshop recording: https://sp-convergence.org/archive-past-events/





atch later

Share





### Steering Committee - Digital Convergence Initiative



International Labour Organization







### **Systems at Play for SP Program Delivery**



+ several sectoral information systems (tax, financial management, agriculture, education, health, etc.)





#### **Anita Mittal**

#### Senior Advisor, Digital Convergence Initiative, GIZ



### How ID system contributes to SP Program Delivery?



## **Delivery Chain for SP programs**



Source: https://openknowledge.worldbank.org/bitstream/handle/10986/34044/9781464815775.pdf?seguence=9&isAllowed=y

### Assess – Registration – Offline Authentication, identification and De-duplication







## Assess – Registration : Online Authentication, identification and De-duplication



### **Enroll** – Eligibility Check : Interoperability



### **Provide - Benefits – ID mapper : Interoperability**





### Provide – Benefit access (cash) : Authentication, interoperability



## Provide – Benefit access (kind): Authentication, interoperability



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1. Grain ATM machine in India is equipped with a biometric system with a touch screen where beneficiary needs to enter Aadhaar No, biometric , grain details

## Manage – Update : authentication





#### Interoperability in Action: Workshop #3 Social Protection Information System Interacting with ID System





## **Demonstration set up**



### **Demo set up - Sandbox Environment**



## **Old Age Allowance Scheme Demo**



## Standards for interoperability with ID systems

### Application Programming Interface (API's)

- Authentication
- eKYC

### **Federation Protocols**

OpenID connect SAML



## Path of credentials through the systems

### Application Programming Interface (API's)





### **OpenID Connect - Multiple Identity Providers**



# **Interoperability Across Borders**

# **OpenID connect protocol in action**









Mary







## Let us go to the bank of Benin



## **Standards**

Data Standards, Code Directories and APIs



### How ID system contributes to SP Program Delivery?

			ID Number	Na	ame	C	Date of Birth	Address				
_			Person Identifier	(	)*		Identifier					
			Identifier Type	0	)1		Code					
/		CRVS										
			Contact Number	(	)*	(	ContactPoint					
			Gender	C	)1			Gend	er Code	e (Code	Directo	ry) —
•			Birthdate	(	)*		DateTime					
			Address	(	)*		Address					
			Email ID	(	)*		Email					
			More to the list	I	I			-				
	(Data O ID Numb	bject) per	Name	Date of Birth	Gender		ID Number	Name		Tax Slab	Gender	Date of Death
	12345			01	code	С	12345			01	code	CD09
	FamilyNar	me Family n 'Surnam	ame (often called e')	0*	String		FamilyName	Family name (often called 'Surname')	ł	0*	String	
	GivenNam	ne Given Fi	Given First Name		String		GivenName	Given First Name		0*	String	
	MiddleNar	me Middle N	Middle Name		String		MiddleName	Middle Name		0 *	String	
	Prefix	Parts tha	Parts that come before the name		Code					0		
	Sufffix	Parts the	Parts that come after the name		String	1	Prefix	Parts that come before th	e name	0*	Code	CD14
	Guillix			0		+	Sufffix	Parts that come after the	name	0*	String	
	Period	Time per	riod when name was/is in	01	Period		Period	Time period when name	was/is in	0.1	Period	

е

### Generate OTP For Beneficiary - API





### **OTP** Validation - API





### eKYC with Encrypted Response - API

Request	Response
<pre>{ "id":"mosip.identity.kyc", "individualId":"6905125932", "transactionID":"1234567890", "version":"1.0", "domainUri":"https://api-internal.mosip-accessh.net", "env":"Staging", "specVersion":"1.0", "secondaryLangCode":"ara" }</pre>	<pre>{     "consentObtained":true,     "id":"mosip.identity.kyc",     "individualId":"6905125932",     "keyIndex":"string",     "request":kLPW2XEd_80MJg6kjCw1FETuN8Njn3QRxz7sIEechnEd7Fe7Z8Tk5ac_LLimidRwSbu7HU90j x70Lc2NWFV3ak410RpsNgVJ8cw4t6nYvwOLhtWekcXTE_HQPHYTOXedDwflQPbgKtH34e4NdrxOheoa9q HEE83aFaQ38tX0Q",     "requestHMAC":"b10HyOaeHIbJuERmHk27cl6gIXF2DOtcxvf5shrnh60bKlpQ1hCnYKcQ0iCyKXQDQ5 BzFYHIJVZ7EsBOM2mUgUv3HHeEzbpm9XV868CvOC9x7O-qJwRQJsr-E5sa2",     "requestSessionKey":"XVOx02SAYSYBZdhpTKvt8IVjGJWSv2C0eJuzHxCnaFuwBFaC- m2MKhovBO_vHNwdUExwGdOcIzKahaX3TpB_OnG0059VAv-u- u4f8PrzzlpbfUsSOtgdjEycjVmkcPwt3kr1HLKB_gwm025zJRw2YXYeRsol_pOu5NH6DC8AgCk1zLnLjk8RTL wF-Qq-ISr-MM06iJDa3OIY1hpq0996IJBYTMETvq6YzdFGsYJZoyYEEJYuWdW41U4_ISvUyEqJWh- BLWd6EzRyUr1eE00m4M_IKWm0gIETYVnyPhJcOo08FcB40aqMJMAXqmF8Wf0sqMEmWu6K_yUkkYKA     ",     "requestTime":"2023-02-15T12:24:39.056Z",     "transactionID":"1234567890",     "version":"1.0",     "thumbprint":"14C9F487F34B27A7C08E02ED57477296B2B90FF211C2E11AB95 A8F2B49398BF9",     "secondaryLangCode":"ara" } </pre>

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### eKYC with Decrypted Response – API

<pre>{ request:"kLPW2XEd_80MJg6kjCw1FETuN8Njn3QRxz7slEechnEd7Fe7Z8Tk5a c_LLImidRwSbu7HU90jx70Lc2hWFV3s4r810RpshgVJ8cw4t6nYvw0LhtWekxT E_HQPHYTOXedDwfl0pgkH324AeAlvarxOheo38KXQ7, "requestHMAC":b10HyOaeHIbJuERmHk27ol6gIXF2DOtoxvf5shrrh60bk/jQ1h CnYkcQ0iCyKXQDQ5BzFYHIpJVZ7EsBOM2mUgUv3HHeEzbpm9XV868CvOC yx70-qJwRQJsr-E5sa2", } {     (</pre>	Request	Response
	<pre>{ request":"kLPW2XEd_80MJg6kjCw1FETuN8Njn3QRxz7slEechnEd7Fe7Z8Tk5a c_LLimldRwSbu7HU90jx70Lc2hWFV3s4r81oRpsNgVJ8cw4t6nYvwOLhfWekcXT E_HQPHYTOXedDwflQPbgKtH34e4NdrxOheoa9qHEE83aFaQ38fX0Q", "requestHMAC":"b1OHyOaeHlbJuERrnHk27cl6glXF2DOtcxvf5shrrhf60bKlpQ1h CnYKcQ0iCyKXQDQ5BzFYHlpJVZ7EsBOM2mUgUv3HHeEzbpm9XV868CvOC 9x7O-qJwRQJsr-E5sa2", }</pre>	{     "gender_eng":"Female",     "name_eng":"Maria Gond",     "dob":"1946/05/05" }

## **Standards Formulation Committee**

Data Standards, Code Directories and APIs


# **Country Inputs: India**









#### **Dr. Pramod Varma**

#### CTO, EkStep Foundation & Chief Architect of Aadhaar and India Stack





## **DPIs and Interoperability**

#### India Stack Experience

Dr. Pramod Varma





# India is large and diverse



**1.4 B**<sub>illion people</sub>

22 official languages

**1 B**illion mobile connections

800 Million Internet Users

6% pay income tax

## Back in 2008...





had bank accounts

### **Financial exclusion**





was spent on direct subsidy

#### Diversion and leakage

Source : A Demirgüç-Kunt, L Klapper, D Singer, S Ansar, and J Hess, "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution", World Bank, 2017

# India would have taken 46 years to get to above 80% bank account penetration



Source : BIS Analysis

Source : A Demirgüç-Kunt, L Klapper, D Singer, S Ansar, and J Hess, "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution", World Bank, 2017

### ... but it only took 6 years to achieve the target!!!



Source : BIS Analysis

Source : A Demirgüç-Kunt, L Klapper, D Singer, S Ansar, and J Hess, "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution", World Bank, 2017

### During last decade India built the world's largest direct benefit transfer system

310+ federal schemes 600+ state schemes



~860 Mn

people can now receive money digitally

Savings > \$27 Bn Just across key federal schemes

#### **\$4.5 Bn** disbursed during the COVID pandemic to **160 Million** beneficiaries

#### India is solving these population scale challenges via

## A set of interoperable DPI building blocks

ushering inclusive, exponential transformation

## **Identity Infrastructure**

Digital ID with interoperable open APIs for both public & private innovation



Entity IDs and various functional IDs are also being built in similar manner

## **Real time payment Infrastructure**

Interoperable payment protocol powering a vibrant open payment network



380+ banks/PPIs, 66 apps, 22 languages, 50+ million merchants, 7.8 Billion txns/month

#### Source: https://www.npci.org.in/

### **Data & Credentialing Infrastructure**

Interoperable data sharing protocol enabling consented data sharing network



### Expanding the market via open commerce network



ondc.org

World's first decentralized open commerce network!



#### **Powered by**



becknprotocol.io

Open Source Interoperable Protocol

# **ALIGNING TECHNOLOGY, POLICY, AND MARKET**

# **Bringing it together**

#### All Govt Approach

Single Provider Slow Innovation







#### All Govt Approach

Single Provider Slow Innovation



#### DPI Approach

Addresses diversity & choice Encourages Innovation & competition, Ensures openness and sovereignty

Diverse applications and market Innovation

Interoperable DPI

(open APIs/protocols, shared platforms, open networks, usage policies)

> Government / Regulators



#### All Tech Approach

Lack of interoperability Lack of competition







# **Thank You!**

#### Dr. Pramod Varma





# **Global Perspective: World Bank**



West Africa Unique Identification for Regional Integration & Inclusion







#### Chris Tullis Program Officer, Identification for Development (ID4D), World Bank Group



# WORLD BANK GROUP

#### **Digital Development**

# Digital Public Infrastructure

# What do we mean by DPI?

# Digital

# Public

Using <u>digital</u> technologies Enabling <u>digital</u> transactions

For public benefit



# Infrastructure

Interoperable and foundational

Whole of economy

# **Digital public** infrastructure is not something new...

### Interoperability between existing agendas:







**WORLD BANK** 

IDENTIFICATION FOR DEVELOPMENT







# Putting it all together



Use cases

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# **Country examples**

#### India Stack Provide a modern privacy **Open personal** CONSENT LAYER data sharing framework data store Game changing electronic playment systems IMPS, AEPS, CASHLESS LAYER and transitions to cashless economy APB, UPI Rapidly growing base of paperless Aadhaar e-KYC. PAPERLESS LAYER systems with billions of artifacts e-Sign, Digital Locker Unique digital biometric identity with Aadhaar card PRESENCE-LESS LAYER open access of nearly a Billion usres **Mobile Aadhaar** JAM Jan Dhan, Aadhaar, Mobile

#### Singapore Government Tech Stack 💭



# **Global momentum for DPI**













# Thank you!

#### **Christopher Tullis**

Program Officer Digital Development Global Practice ctullis@worldbank.org





#### Conrad Daly Senior Legal Counsel & Co-lead for WURI ECOWAS, World Bank Group





Conrad C Daly Sr Counsel & Co-lead WURI-ECOWAS







West Africa Unique Identification for Regional Integration & Inclusion

CAPE

🔍 VERDE

#### OBJECTIVE

Increase the number of people who have a **proof of unique identity** recognized by the government and which facilitates access to services.

#### APPROACH

Utilizing the Multiphase Programmatic Approach, to provide foundational identification to 100 million individuals in six countries across West Africa by 2028: Benin, Burkina Faso, Côte d'Ivoire, Guinea, Niger, and Togo, with support to ECOWAS on regional interoperability.

#### FINANCING

Financed by the World Bank with US\$395.1 million in 2 phases.



Through initiatives such as WURI, the World Bank is scaling up efforts to build digital platforms that improve the speed, reach, quality, and efficiency of social protection, human development and financial inclusion at the regional level.

# REGIONAL INTEGRATION & INCLUSION:

#### Building on the ECOWAS community...

- Progress towards freedom of movement and economic integration
- Facilitates cross-country access to services through interoperable fID platforms
- Build a collaborative approach with open, commonly shared standards
- Produce a model for other regions



#### ...and part of the strategy for African integration

- WAEMU ("UEMOA") Leverage ECOWAS-wide interoperable fID systems for eKYC
- AfCFTA ("ZLECAf") Towards creating single continental market for goods and services (Integration beyond the scope of the project)



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### **PROBLEM STATEMENT:**

 Access to basic human development programs in West Africa is particularly low.

Individually, the sub-region's countries rank low on the Human Capital Index (HCI). As a sub-region, it ranks the lowest of any African sub-region on the Human Development Index (HDI), well below the Africa-wide average value, and is the second-lowest African region in rank for social-safety-net coverage. By contrast, the sub-region has the second highest transaction value of the continent.  Accessing services and benefits is often difficult and burdensome due to identification barriers.

Doing so is especially the case for the poorest and most vulnerable, who tend both to be excluded and denied access, and yet who also tend to be most in need of those very services and benefits, be they public or private. Difficulty verifying their identities is a significant obstacle to accessing services. • Technological developments have helped but can cause additional risks and challenges.

Technology may increase ease and efficiency, but it can either create an additional layer between people and the state, or contribute to increasing reach, growing trust and confidence in the overall system.

### HOW CAN WE DELIVER SOCIAL SERVICES IN A WAY THAT EASES ACCESS WITHOUT EXCLUDING PEOPLE?





## **...IN SOCIAL PROTECTION PAYMENTS (TOGO), PRE-COVID**



This Amina. She is enrolled in the FSB safety net program in Togo.

After queuing, she identifies herself with her program *livret*. An agent from the mobile money operator visually checks her beneficiary identity credential, compares it to a paper payroll list, and uses a USSD code to complete payment processing. She then confirms payment receipt with an inked stamp of her fingerprint and receives cash (currency) in-person from the agent. The women take good care of their documentation. In the middle picture, Amina is unravelling the wad of protective layers in which she keeps her *livret* and identity credentials. The entire process presents certain risks—from loss or damage of the necessary papers, to theft of the cash-payment that is given.

Convergen

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### **CROSS-BORDER AUTHENTICATION:**

Use of a unique identifier issued in country X to authenticate and access services in country Y.

Establishing trust between countries' respective foundational ID systems is essential for mutual recognition and enabling the use of those identifiers across borders.

- 1. Identifying services that can/should accept identifier
- 2. Legal regime, Governance Framework, etc.
- 3. Minimum standards agreed at the regional level (interoperability, processes)
- 4. Technical integration for cross-border authentication uses federation
- 5. Peer review and/or monitoring mechanisms



### Mock-up of Benn's flD Credential



### TOGO: BUILDING DYNAMIC SOCIAL REGISTRIES + UNIVERSAL eIDs






# **Global Perspective: ID4Africa**







#### **Dr. Joseph J. Atick** Executive Chairman, ID4Africa



# **Solution Providers: MOSIP**







#### Sasikumar Ganesan Head of Engineering, MOSIP



#### **Open Discussion**



#### **SP-MIS and CRVS : Standards Formulation Committee**





# SP-MIS and CRVS : Standards Formulation Committee Structure



Members for the Sub-committees can be from:

- Standards committee members
- International Organizations
- Subject Expert from Academia
- Country Representatives
- Solution Providers
- Private Sector
- Digital Public Good (DPG) Organization



### **Closing remarks and way forward**





#### Yoonyoung Cho Senior Economist at the Social Protection and Jobs Global Practice, World Bank



### Way Forward

Interoperability in Action : Workshops

- Interoperability of SP systems with Disability Registry
- Interoperability of SP systems with Farmer Registry

Standards Formulation Committees

Standards for Process, Data and APIs :

- SP MIS and CRVS
  interoperability
- SP MIS and Payment interoperability
- SP MIS and National ID interoperability

### More Interoperability interfaces

- SP-MIS and Social Registry
- SP MIS with Integrated
  Beneficiary Registry



## Support the Initiative

- Support the process of consensus building and harmonization of standards.
- Spread awareness about the initiative
- **Promote** adoption of **standards and other outputs**
- Adopt the standards and other outputs in your SP projects and share feedback

#### Participate in working groups

Group 1 : Payment layer interoperability Group 2 : CRVS layer interoperability Group 3 : identification layer interoperability

#### Levels of participation

Level 1: Share existing materials

Level 2: Review outputs

Level 3: Join group discussions and validation workshops

Level 4: Drafting standards and guidelines alongside facilitators



#### **Connect with Convergence Initiative**



www.spdci.org

socialprotection-convergence.discourse.group

social-protection-convergence-initiative @sp\_convergence

@sp\_dci



#### New Website! www.spdci.org

### What is the challenge at hand?

Despite widespread recognition of the benefits that digital solutions can unleash, countries are struggling to fully realise them.

Even though social protection programme follow a common set of processes, fragmented social protection information systems are unable to communicate with other systems. This lack of harmonisation and interoperability not only impacts on social protection outcomes, but also leads to wasted public expenditure.



Learn more >

Digital Convergence

#### Why is interoperability for social protection so important?



"DCI is uniquely positioned to build consensus on standards for the social protection sector. The standards enable digital public goods to be interoperable, contributing to efficiency and transparency in social protection delivery. This will help countries to get best-in-class digital solutions." **CV Madhukar** 

### Thank You

