



Digital
Convergence
USP 2030

Talking interoperability

A dialogue series for advancing interoperability in
the social protection sector

Data exchange platforms for interoperability: country approaches

June 24, 2025 | 12:00-14:00 GMT

Co-funded by



European Union



Coordinated by



Welcome



Housekeeping rules

- Ask your questions in the Q&A box
- Share any comments or resources in the chat
- Simultaneous interpretation is available
Select the language in the interpretation icon on control bar
(English, French, Spanish, Portuguese available)
- Session will be recorded



To: Everyone ▼



Your text can be seen by panelists and other attendees



Agenda

12:00–12:15

Introduction

12:15–13:15

Country Presentations

13:15–13:40

Discussion

13:40–14:00

Q&A and Closing

Introductions



Talking Interoperability #20

A dialogue series for advancing interoperability in the social protection sector

Data exchange platforms for interoperability: country approaches | June 24, 2025 | 12:00-14:00 GMT



Presenter

Juan Carlos Daille

Chile



Presenter

Emmanuel Yeka

Uganda



Presenter

Santosh Kadam

India



Moderator

Maksim Ovtsinnikov

GovStack



Opening

Anita Mittal

GIZ



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About the Digital Convergence Initiative

The **Digital Convergence Initiative (DCI)** is a joint effort by USP2030 to support the **digital transformation of social protection systems**.

Co-funded by



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Our approach

Knowledge sharing

Open and collaborative **digital knowledge base** on digital social protection

Knowledge products:

- ✓ Case studies and reports
- ✓ Guides and toolkits
- ✓ Learning briefs

Events:

- ✓ Webinars e.g. Talking interoperability
- ✓ In-person workshops and conferences



Global technical standards

Global effort to harmonize **technical standards for interoperability**

- ✓ Transparent, multi-stakeholder, consensus-building processes to **develop standards**
- ✓ Open **digital repository** of technical standards
- ✓ Engagement with solutions providers and practitioners to **promote adoption**



Country implementation support

Digital transformation and interoperability **country support**

- ✓ Direct **implementation** in seventeen selected countries
- ✓ The **Helpdesk** as a technical support facility for expanded outreach to countries to guide on Digital Transformation



Capacity development & training

Strengthening institutional and human **capacity**

- ✓ Structured **peer learning** opportunities through cross-country exchanges
- ✓ Modular, adaptable and practice-oriented **training programs**, designed for country-specific contexts



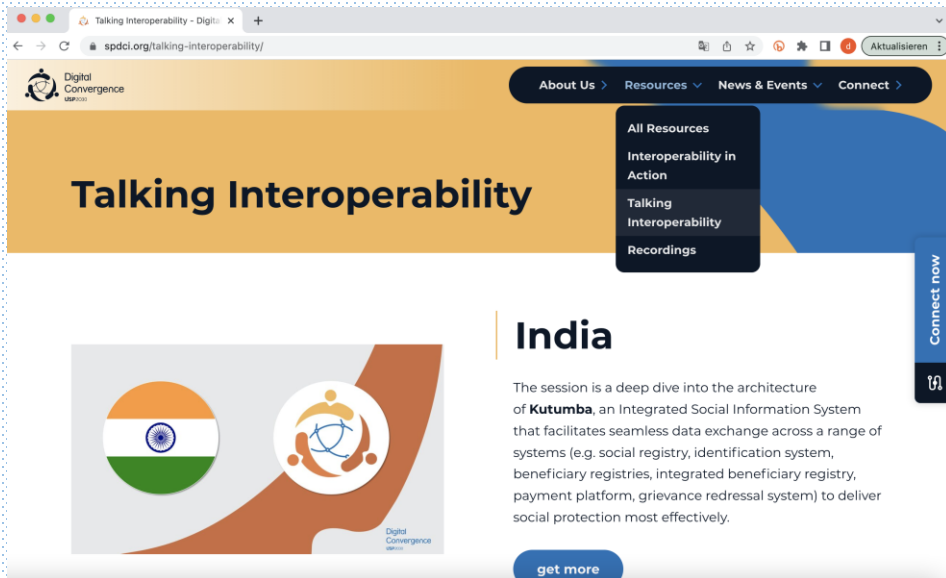
Talking Interoperability

A **dialogue series** by the DCI to facilitate **in-depth technical conversations** around integrated and interoperable social protection information systems across countries

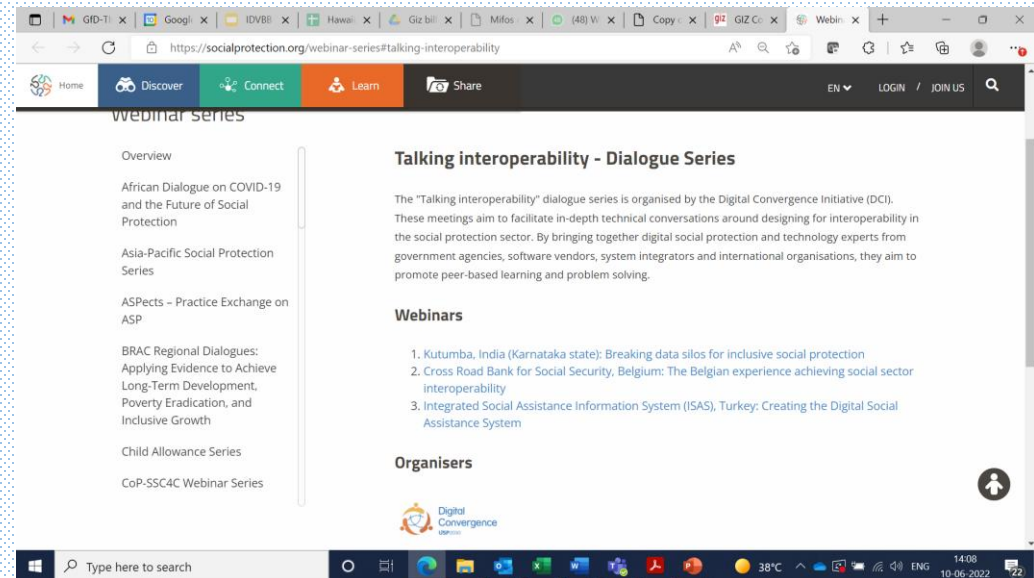
Deep dive into country-level system to:

- Share the technical nuts and bolts of how agencies have designed their social protection information systems for interoperability
- Understand how agencies have tackled the major challenges to interoperability
- Brainstorm potential solutions to remaining bottlenecks

Recordings of past sessions available

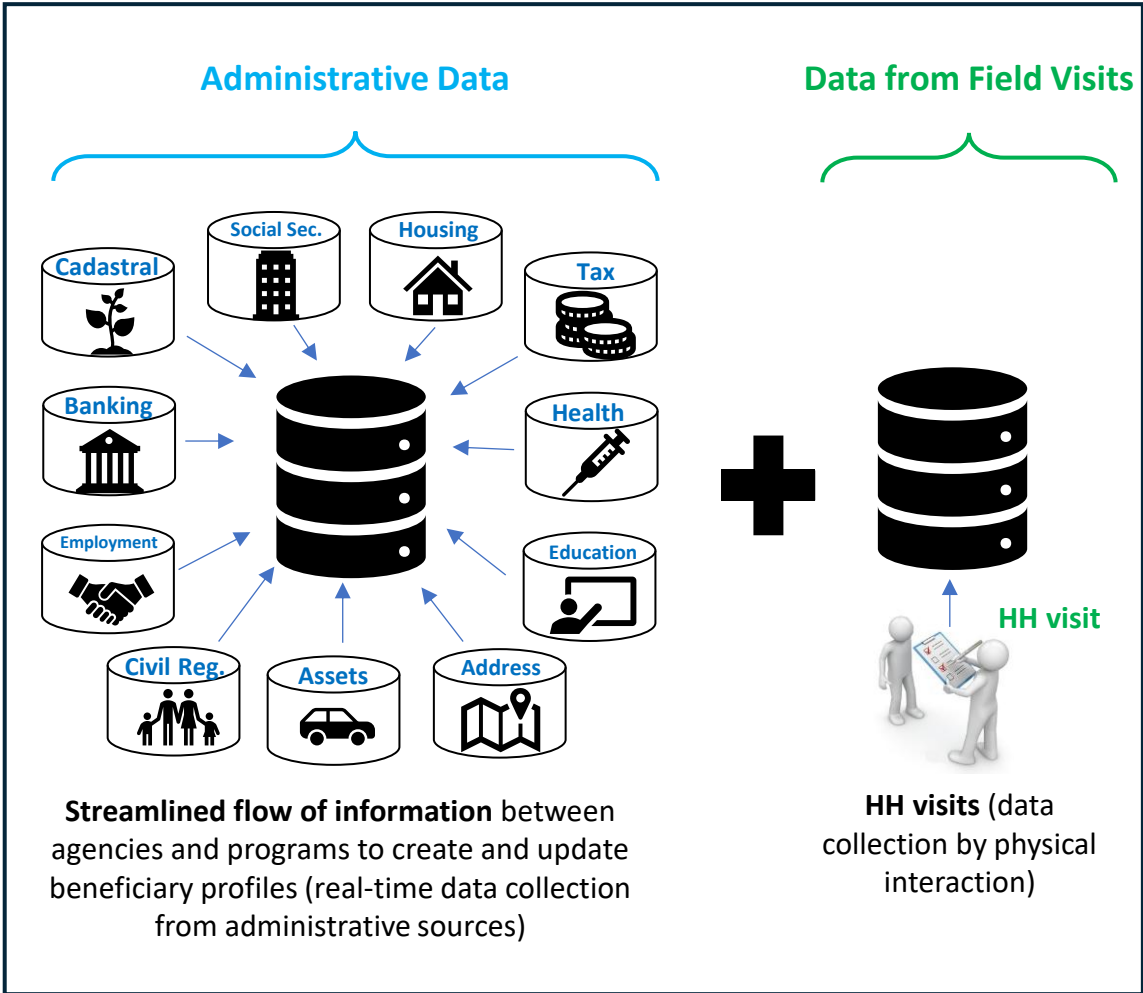
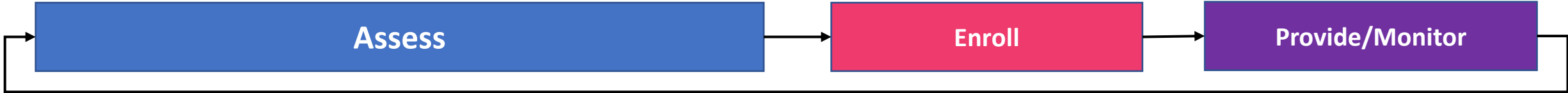


[Past Events – Talking Interoperability](https://spcdi.org/talking-interoperability/)



[Webinar Series - sp.org](https://socialprotection.org/webinar-series#talking-interoperability)

Data Exchange : Turkey

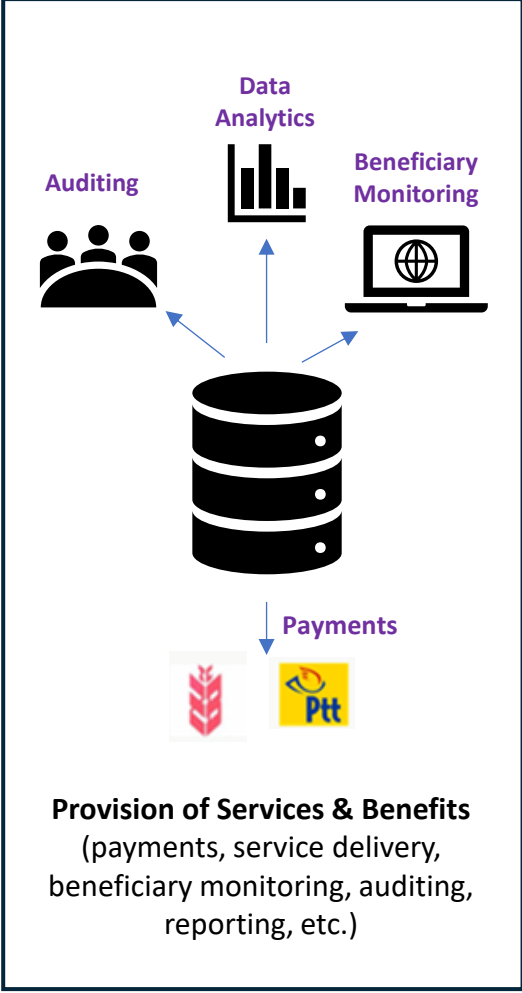


Linked with 28 Public Entities with over 120+ webservices

HH visits by ~5,000 social asst. workers in 1,003 SASFs

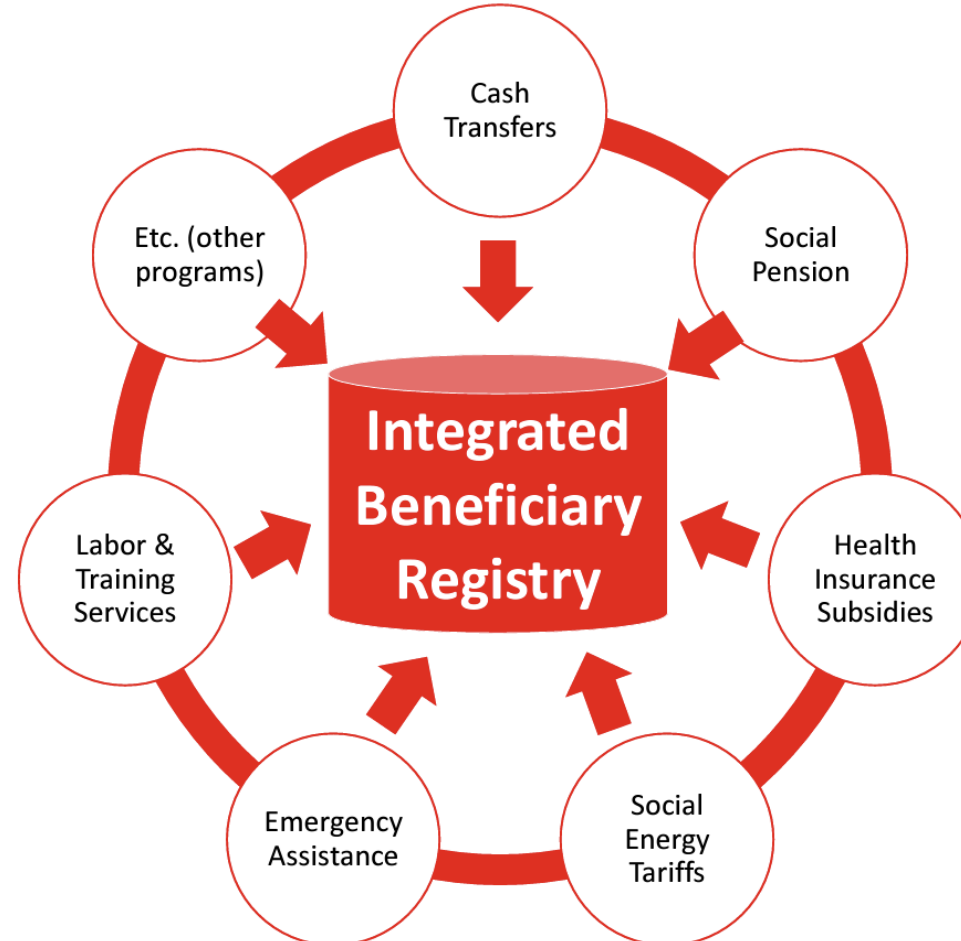


“Dynamic & Integrated” gateway for multiple (50+) SP programs

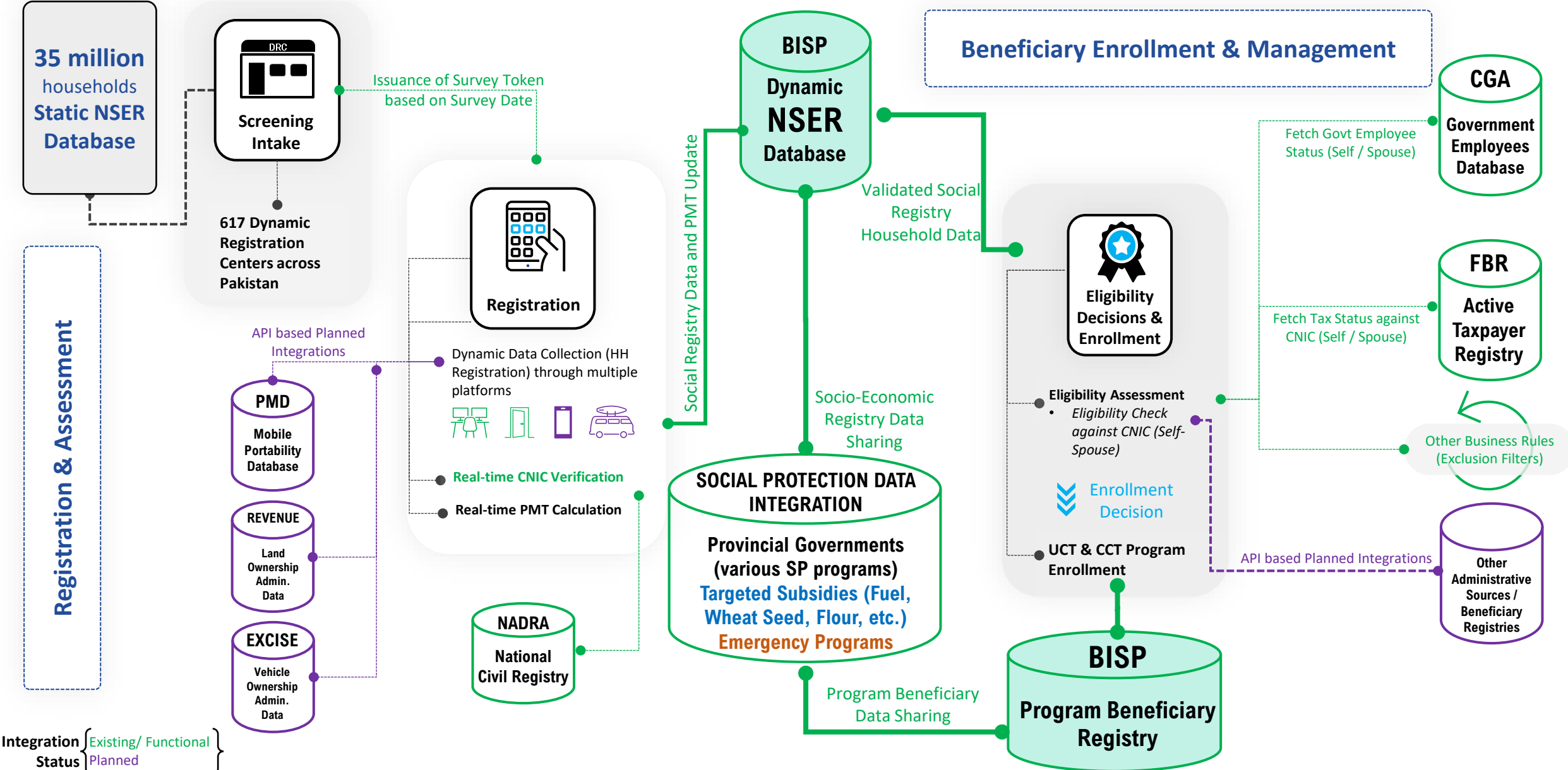


Data Exchange : Integrated Beneficiary Registry

Integrated Beneficiary Registries are warehouses of information on beneficiaries from multiple programs, across the lifecycle



Pakistan : SP systems data exchange

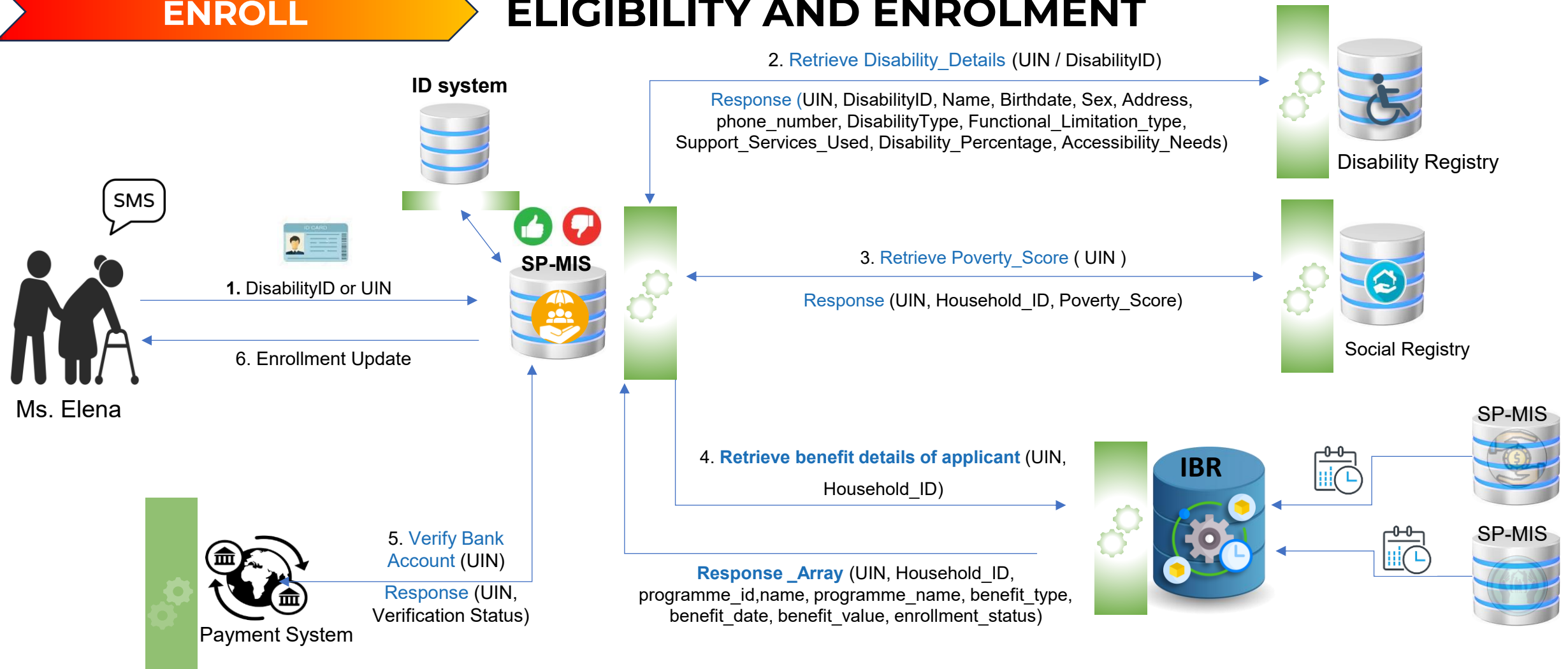


What is Interoperability

1

ENROLL

ELIGIBILITY AND ENROLMENT



IBR: Integrated Beneficiary Registry

ID: Identification

SP- MIS :Social Protection - Management Information System

UIN : Unique Identification Number

Country Reference : Kenya and Chile

Standards are needed for interoperability



Three Main Parts

Process

Data Standards

API Standards

Description

workflows for interoperability between systems

Specifications for the data elements exchanged: Data objects, attributes, and code directories

Specifications outlining the methods and protocols that the systems can use to exchange data



Standard documentation

Broader audience



GitBook

<https://standards.spdci.org>

Technical experts



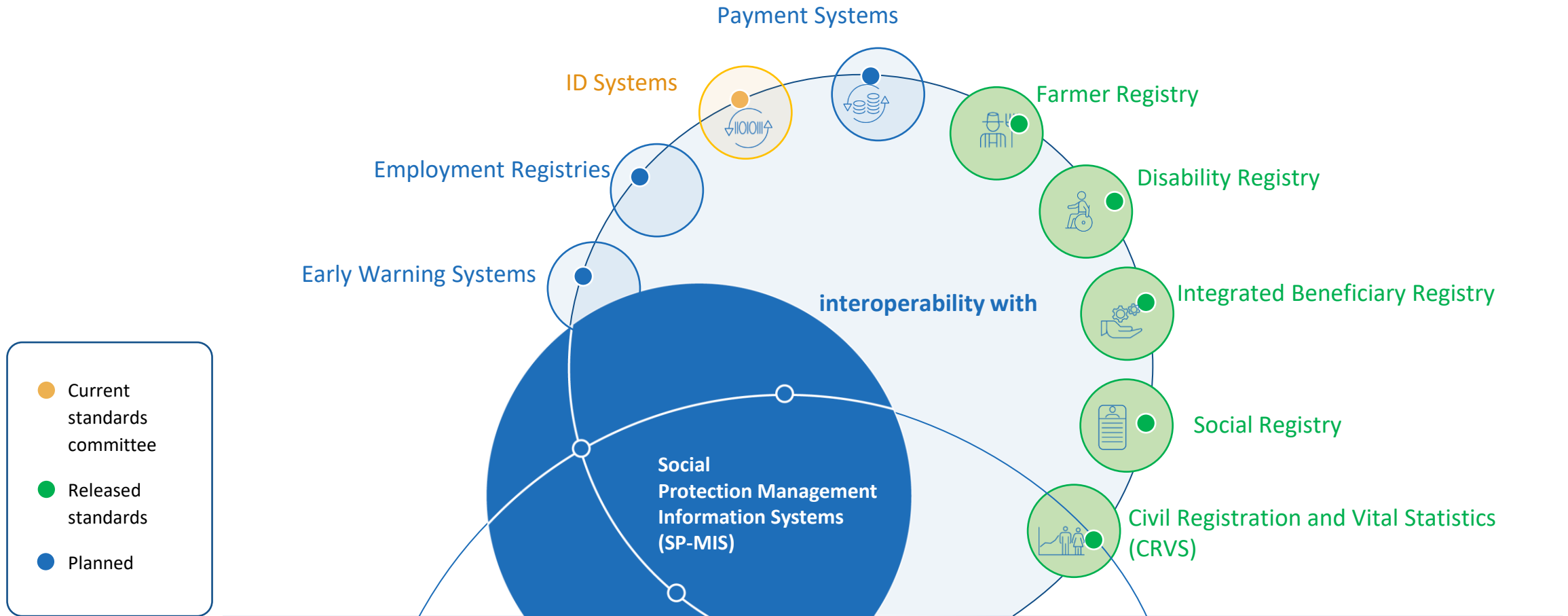
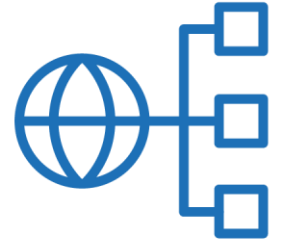
GitHub

<https://github.com/spdci>



Technical standards

Standards for Interoperability

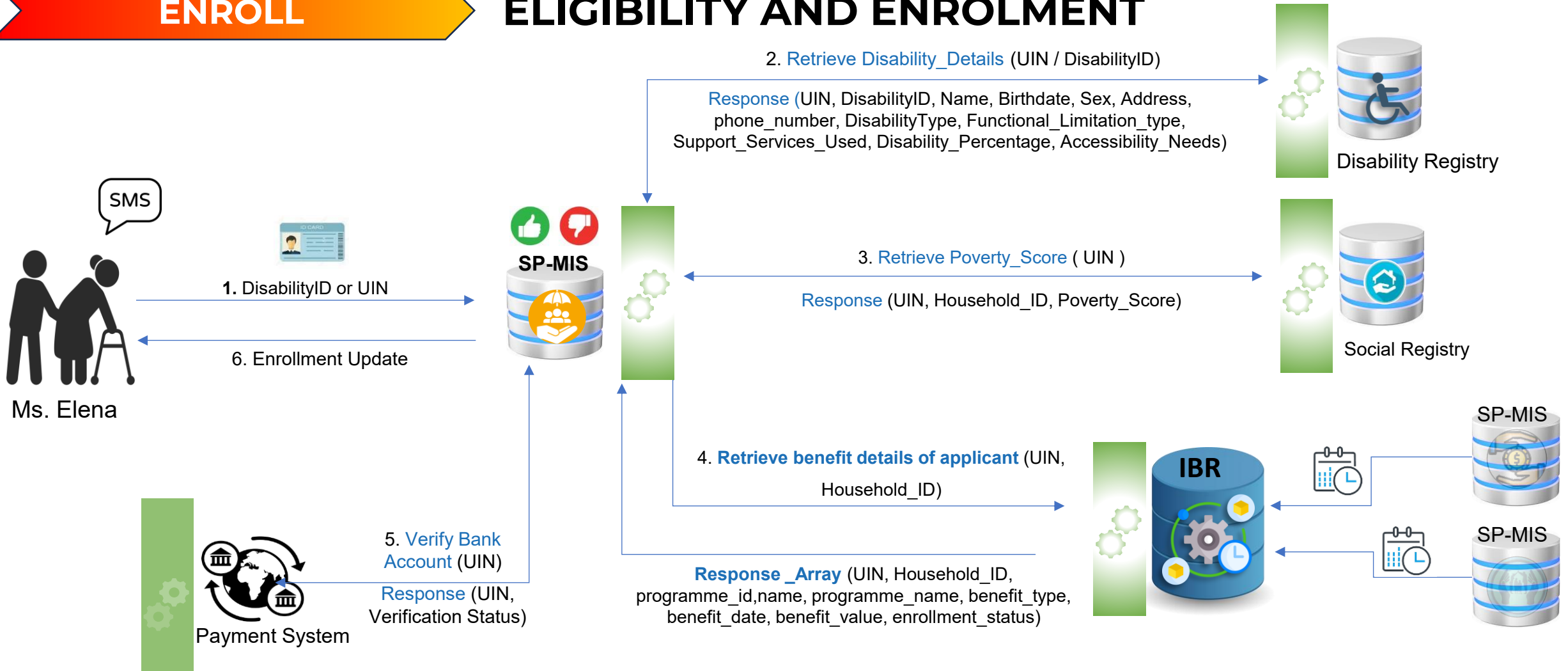


Data exchange with security, privacy and more

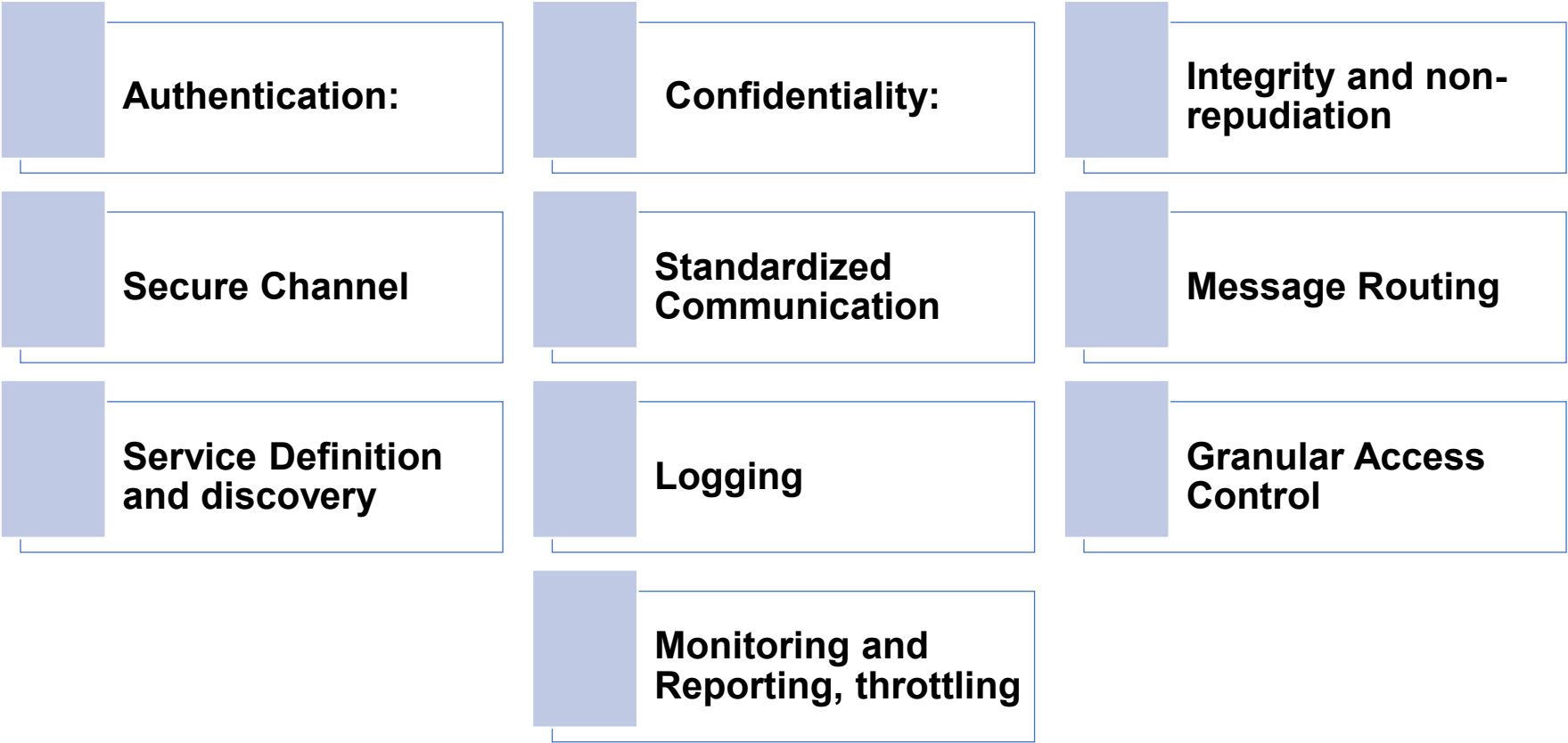
1

ENROLL

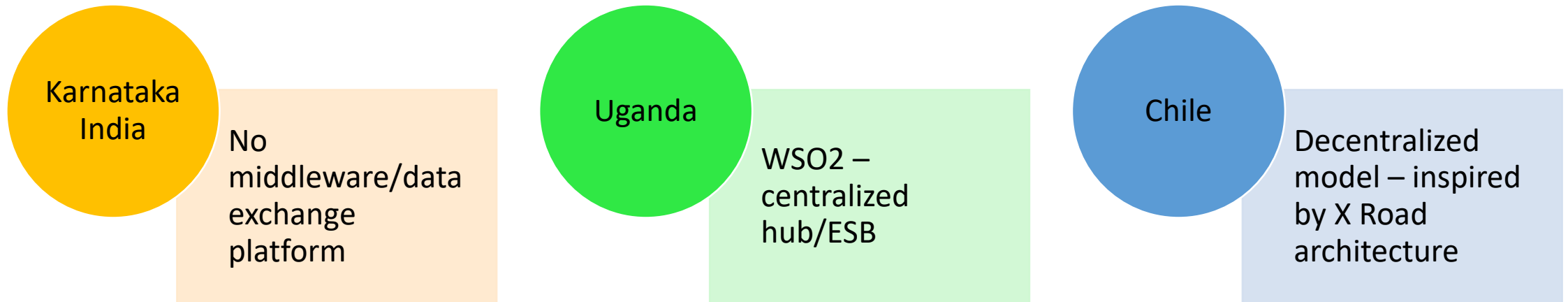
ELIGIBILITY AND ENROLMENT



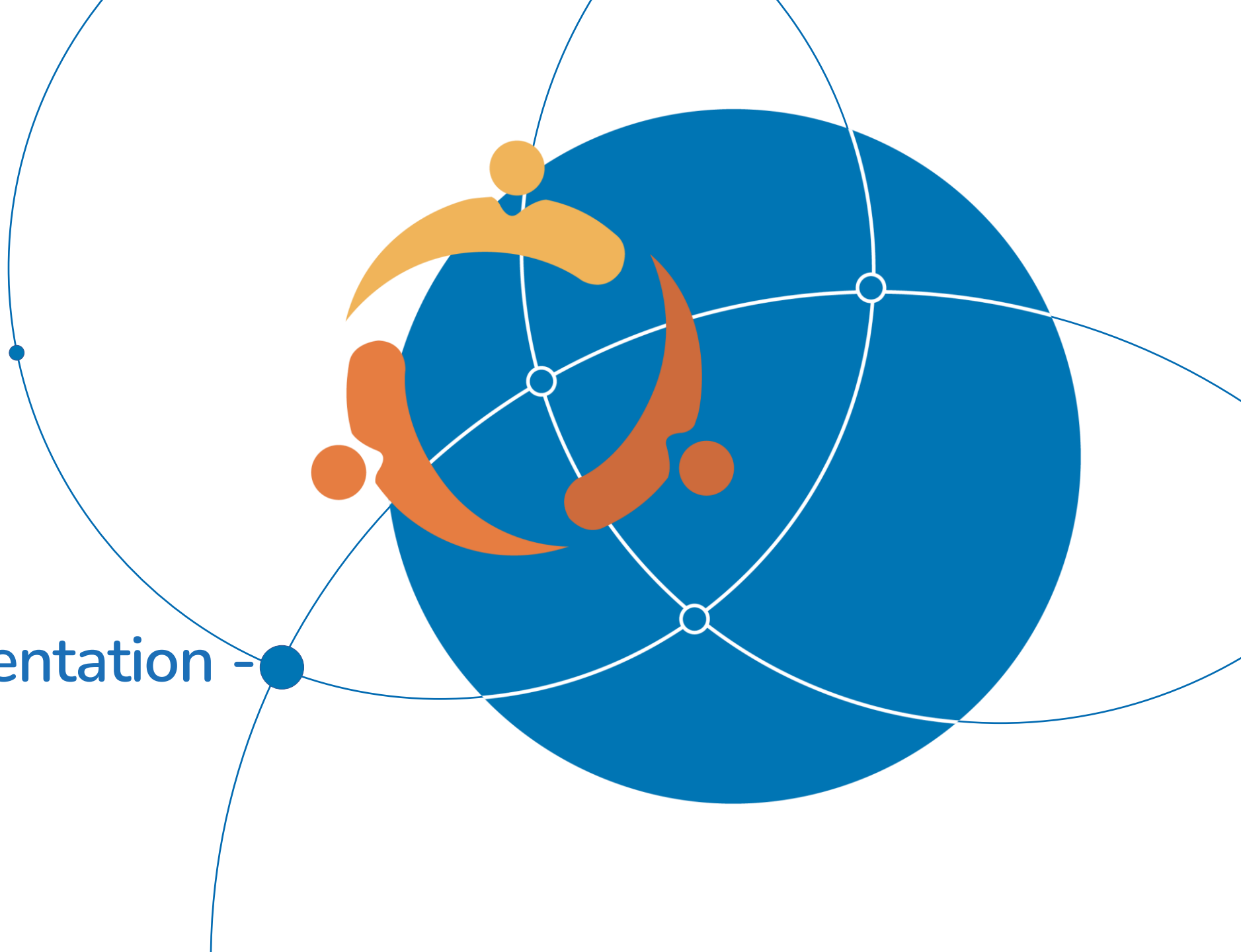
Security and privacy preserving



Three models of interoperability/data exchange



Country Presentation - India





KUTUMBA – A SOCIAL REGISTRY PLATFORM












GOVERNMENT OF KARNATAKA, INDIA

KARNATAKA - INDIA

- A southern state, 6th largest state of India by geography.
- 67 million population / ~16 million households (Census population projections for 2022-23)
- Pioneer State in e-Governance
- Major social protection programs from Karnataka
 - Public Distribution System (PDS, subsidized food transfer) distributes food grains monthly to nearly 55M individuals
 - Free Electricity Supply up to 200 Units of consumption covering nearly 15M individuals.
 - Social Protection Guarantee Schemes – a 2000₹ monthly payments to the eldest woman in the household covering nearly 12M women in the state.
 - Ayushman Bharat Arogya Karnataka – health insurance system covering nearly 10M individuals.

INFORMATION SYSTEMS LANDSCAPE IN KARNATAKA

Karnataka's Digital Public Infrastructure

Karnataka Geographic Information System	SECC  (Survey-based deprivation data)	State Scholarship Platform	B1/K1/ GramaOne /Janasevaka (Citizen service centers) 	e Sahamati (Credential verification service)
Integrated Public Grievance Redressal Portal 	Bhoomi (Land records)	Khajane (State IFMS)	eProcurement Platform	Nadakacheri  (Income and caste data)
eJanma  (Births and deaths)	FRUITS (Farmers registry)	SATS (Students registry)	MGNREGA 	UDID  (Disability registry)
Social Registry Platform (Kutumba) 	Aadhaar  (National Foundational ID)	Seva Sindhu (Single window) 	State DBT Portal (G2C Payments) 	Suvidha (Eligibility discovery)

KUTUMBA ECOSYSTEM



KUTUMBA - A SOCIAL PROTECTION SYSTEM

Created with following objectives

- Easy access to government benefits by poor and needy - *Bringing inclusive growth*
- Prioritise poor and needy for getting government benefits – *based on Need score*
- Minimise or remove state machinery in assessing needs and condition of poor AND to administer benefits – *automation to eliminate leakages*
- Enable poor to seek and get state help when faced with sudden shocks
- Evidence based planning – *Data Analytics*
- Ask data only once – *Once Only principle*
- Government benefits to automatically reach poor as per their entitlement – *proactive*

Governance

KUTUMBA FUNCTIONAL STRUCTURE

Owner Departments
Contributing Personal and
Family Attributes to
Kutumba

Housing Details

Caste and Income Details

Farmers and Land Holding
Details

Health Beneficiary Details

Labour and Occupation
Details

Social Security Pension

PDS - Ration Card

Social Registry

Suvidha

Beneficiary
Registry

Kutumba Client Apps

APIs and
Data Entry
Point

Kutumba Database
and Services

Family Enrolment
Personal and Individual Attribute
Enrichment
Data sharing and Feedback Loop

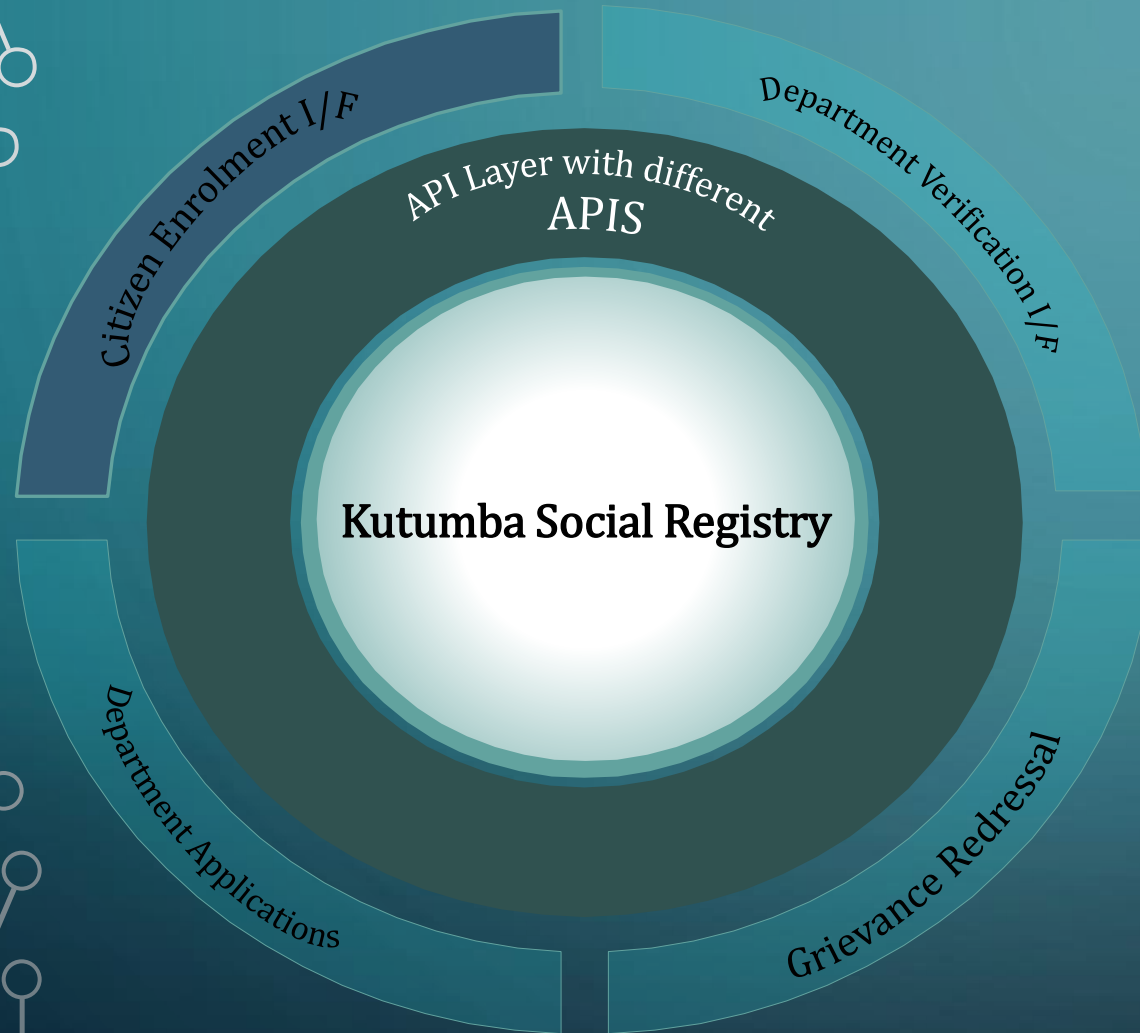
Data
Request
End Points

Survey Applications
Government Beneficiary
Schemes
Pre-scheme formulation
and budgeting

DBT Payments

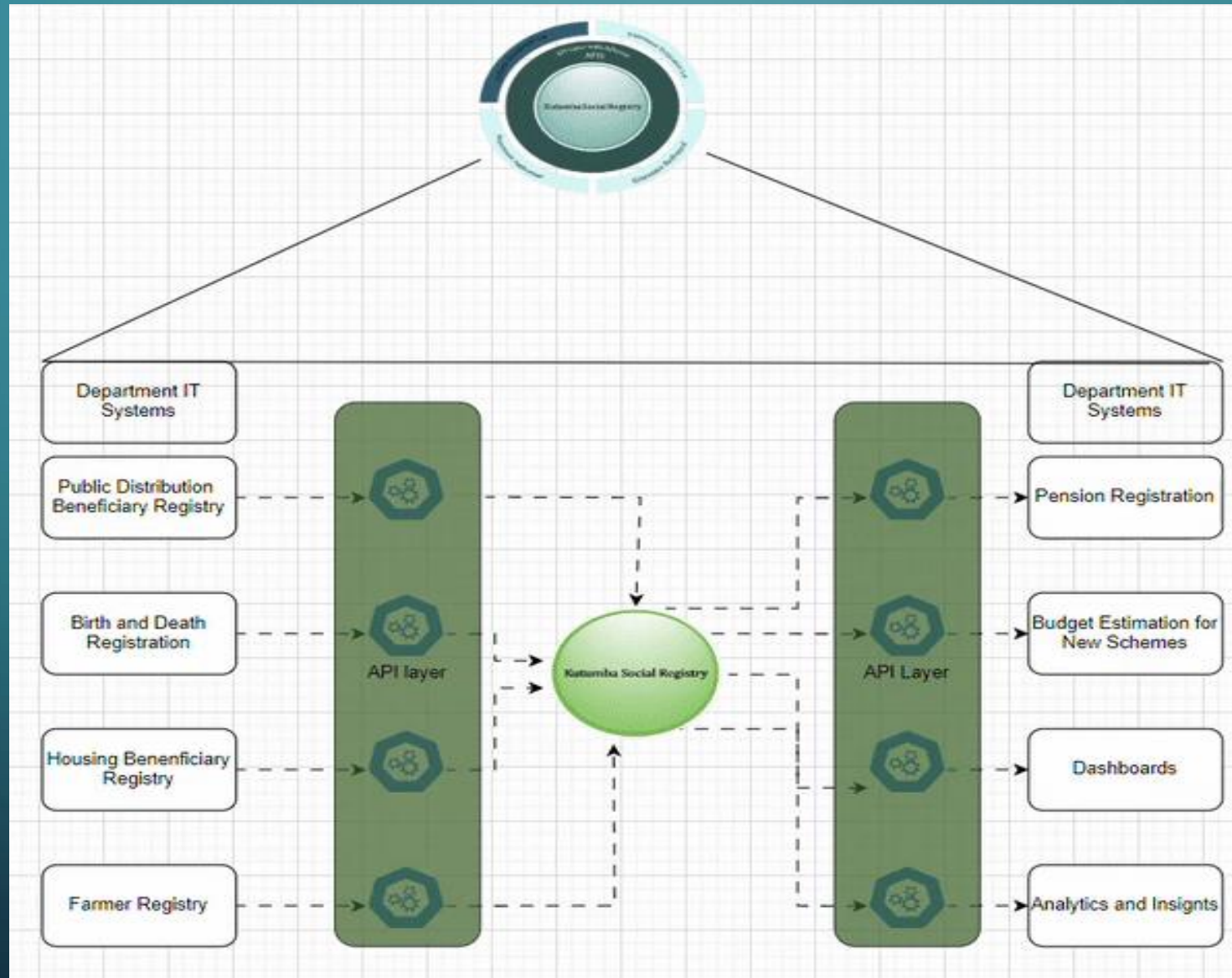
Grievance
Redressal

KUTUMBA – HOW IT DOES?



- Kutumba Social Registry – is at the centre of the eco system
- The access to registry through APIs.
- Different types of APIs are within the API Layer
 - Forward APIs
 - Reverse APIs
 - Department APIs
 - Adhoc APIs
- Forward & Backward Integration with Dept databases
- Depts can verify & validate citizen data owned by other depts
- Citizen Enrolment Interface allows - enrol / verify and / or modify data of Self & Family
- Department applications access Kutumba data for their service delivery

KUTUMBA DATA EXCHANGE ACROSS DEPARTMENTS



KUTUMBA - DATA PARADIGM



Secured Communication

Need for a secured communication between IT Systems



Performance

Need for a performance and access control of data and resources



Standardization

Standardization of information exchanged

AAA

Authentication

Authorization

Accounting

Data Access

Synchronous

Asynchronous access

Role Based Access

KUTUMBA – API AND DATA ACCESS

Kutumba APIs perform

- As necessary – handle the protocol / payload translation between endpoints.
- Business logic and any functional orchestration.
- Rate limiting, throughput throttling as required.
- Strong Authentication using Key based authentication
- Authorization and role based access control
- API Versioning: Facilitate backward and forward compatibility through API versioning.

PRACTICES FOLLOWED @ KUTUMBA

Security

- All the communication happens over secured HTTPS channel with TLS 1.2 and above.
- All the payload data is encrypted using AES 256 encryption algorithm.
- Request and Response parameters are exchanged with digital signing mechanism to ensure non-repudiation
- Data at rest is encrypted using database / table column level encryption.
- Periodic Key rotation to mitigate any key management risks.
- Implement API level access whitelisting through WAF support.

Data Exchange

- Different department APIs have variety of data formats such as XML, JSON etc. Kutumba API layer handles transformation seamlessly.
- Implements business functions such as citizen name comparison to enrich business logic within API control layer.
- Implement timebound access control individually for each clients.
- Share only authorized data for each application request purpose.
- Load balancing to manage request loads.

Analytics

- Log each API request and response to an audit table for all practical as well as legal requirements.
- Monitor API performances through the logged stats.
- Identify anomalies through access pattern analysis.
- Create dashboards based on the logged data.

KUTUMBA DATA EXCHANGE NUMBERS

- Over 250 Million hits (recorded at last 15 months)
- Over 50+ active department applications accessing Kutumba data
- Top 10 Application Access Counts

Application Name	Hits Count
Students Scholarship Platform	62M
Caste and Income Application Platform	40M
National Health Card Application Platform	26M
State Health Benefits Delivery Platform	18M
Benefits Survey Application	18M
Farmer Registration Platform	14M
Citizen Services	9M
Caste Survey Application	9M
Out of School Students Survey	8M
Labour Registration Platform	7M

The background is a teal-to-blue gradient. In the corners, there are white line-art illustrations of circuit boards or neural networks, with lines and small circles representing nodes.

Thank You

Country Presentation

- Uganda





Ministry of Gender, Labour and Social Development

OVERVIEW OF UGANDA'S NATIONAL SINGLE REGISTRY FOR SOCIAL PROTECTION: Lessons in Integration

Presentation at Talking Interoperability Webinar
24th June 2025



UGANDA

COUNTRY IN EAST AFRICA



241,037
KM²



Population



45.95 Million



50%

Children



53%

% - Female



23.5%

Youth



5%

Older Persons

Literacy



79%

GDP-Per Capita



USD (\$) 873

20.3%

Poverty
Count

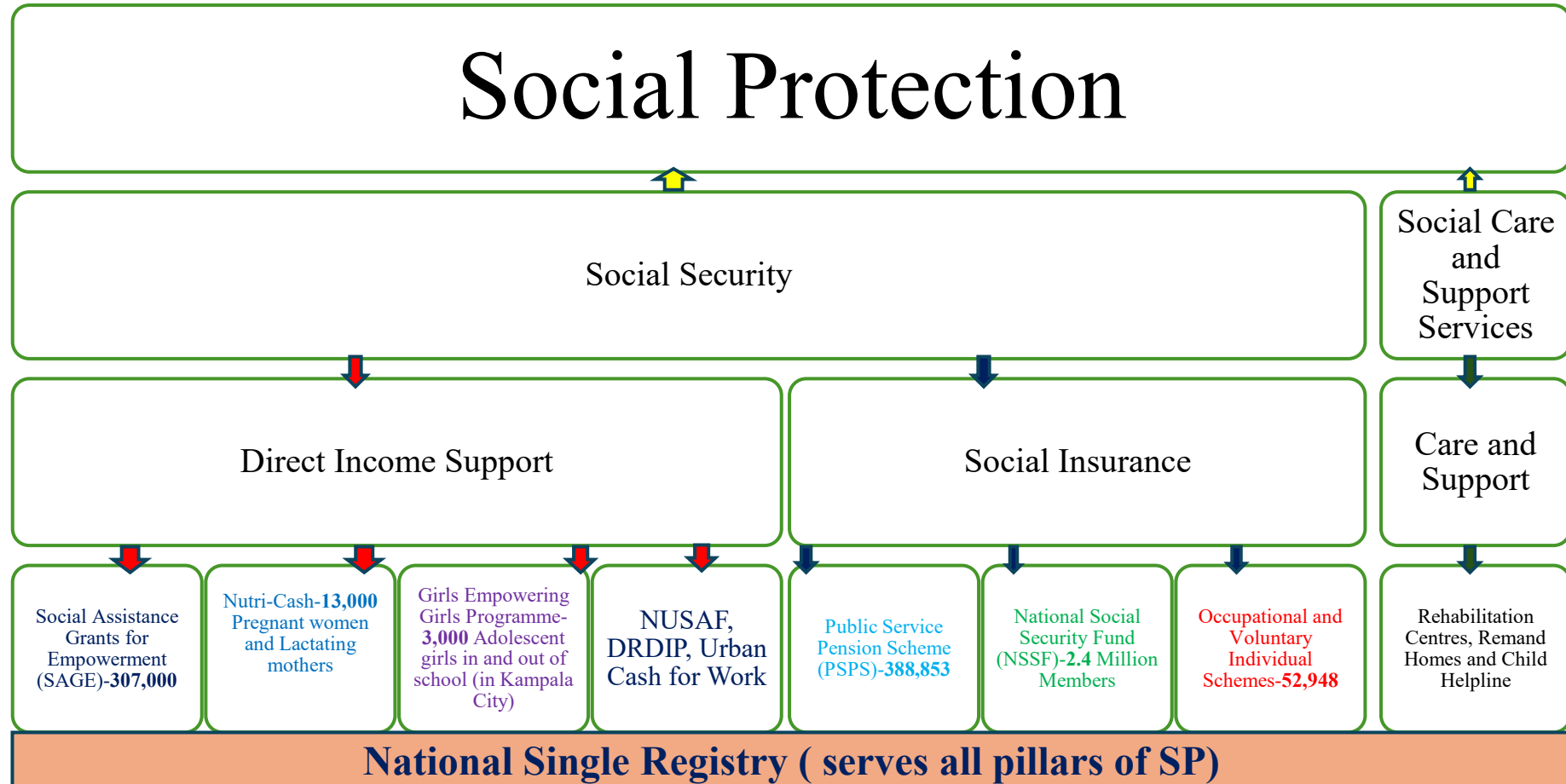
42%

Multi-Dimension
Poverty

39%

Households in
subsistence
Economy

Social Protection in Uganda-Programmes and Interventions



Introduction to Single Registry for Social Protection

- ❑ The National Single Registry for Social Protection (NSR) is a unified portal consolidates essential information on beneficiaries/potential beneficiaries of social protection programmes through establishment of linkages with program Management Information Systems (MISs) and the National ID Database.
- ❑ Public portal accessible on <https://nrs.mglsd.go.ug>

UGANDA'S SP ARCHITECTURE LAYERS

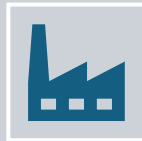


Social Registry, a baseline database meant to enhance and coordinate implementation of humanitarian and social protection interventions;



Programme MISs within the definition of NSPP;

MISs are the backbone of social protection schemes' operational processes helping to automate key functions such as registration, targeting, enrolment, payments, compliance with conditions, complaints & grievances, exit and programme monitoring.



Single Registry interlinking and holding all SP sector programmes; and

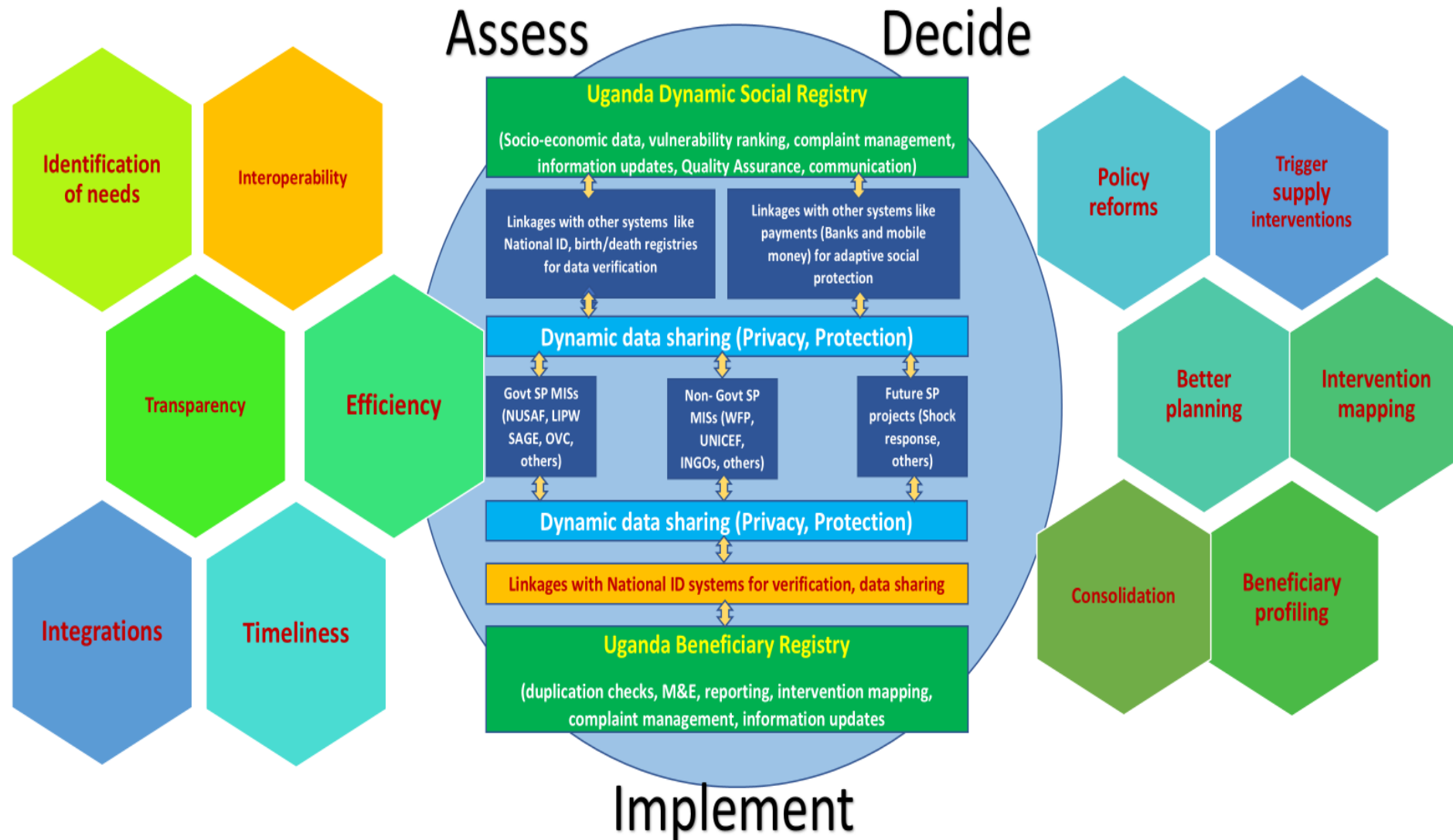


Linkages to external databases

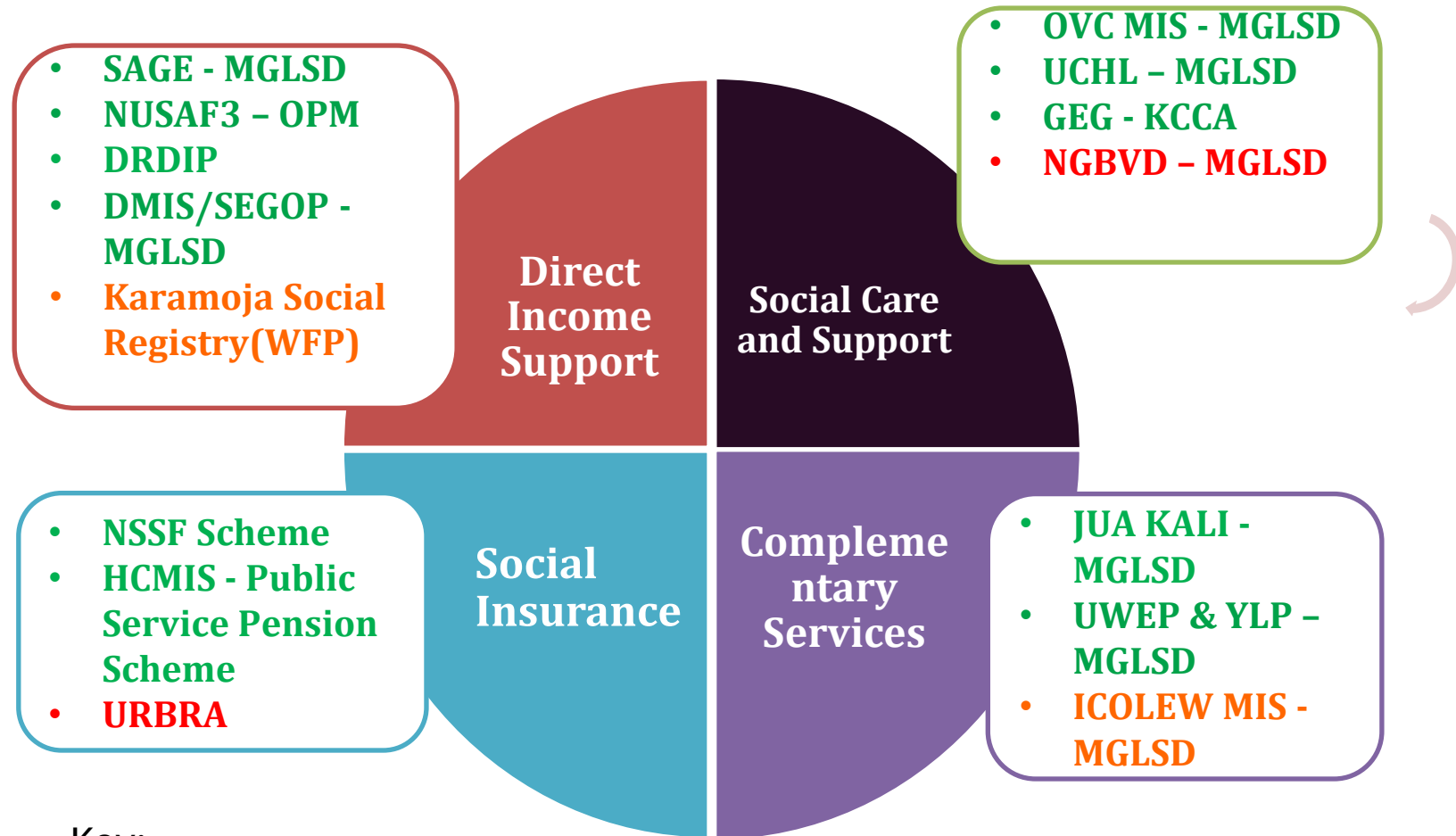
NITA-U, a host to the electronic service bus and Payments Gateway. (UGHUB)

NIRA, the national identification & registration database;

CONCEPTUAL MODEL OF THE INTEGRATED SOCIAL PROTECTION SYSTEM



SINGLE REGISTRY INTEGRATION STATUS



Key:

- Integrated
- Near ready
- Not ready

KEY ACHIEVEMENTS

1. Linkage with the National Identification Registration Authority (NIRA) ID Database for sector-wide verification of SP beneficiaries and applicants, plus facilitating complementarity reports.
2. Integration with Government Integration Platform Ug Hub to ease mechanisms of current and future MIS integrations.
3. Development of NSR documentation including guidelines and standards for MISS linking with the NSR, User Manuals, Data Sharing Protocols, etc.
4. Development of Application Programming Interfaces (APIs) with the various Programme MISs.
5. Signing of MoUs and Integration and Transfer of data from key SP Programmes e.g. SAGE, NUSAF3, Child Helpline, OVC MIS, DRDIP, NSSF, and the Human Capital MIS.
6. Adoption of a standardized geo-master list from Ministry of Local Government through the UgHub to harmonize MIS administrative units mapping.

Challenges with point-to-point API integrations

Governance and Compliance –
Complex process of signing Memoranda of Understanding/Data Sharing agreements with the various Government agencies

Interoperability Challenges –
Due to varying maturity levels of systems and different platforms/technologies, integration was made more complex.

Legacy Systems Compatibility –
Some Government legacy systems were not able support modern API integrations

Data Standardization Issues –
Different ministries use varied data formats and structures, making seamless integration difficult e.g. Geo-location master lists

Security and Privacy Concerns –
Government data is highly sensitive, requiring strict access controls and encryption to prevent breaches. This duplicated the need for separate secure VPN tunnels with different Ministries

Vendor Lock-in challenges –
Inability to integrate with some Ministries that had restrictive vendor agreements for minor change requests like development of APIs which increased the cost of integration.

Project Management Control –
Integration with Ministries/Agencies that were not ready delayed overall project completion timelines

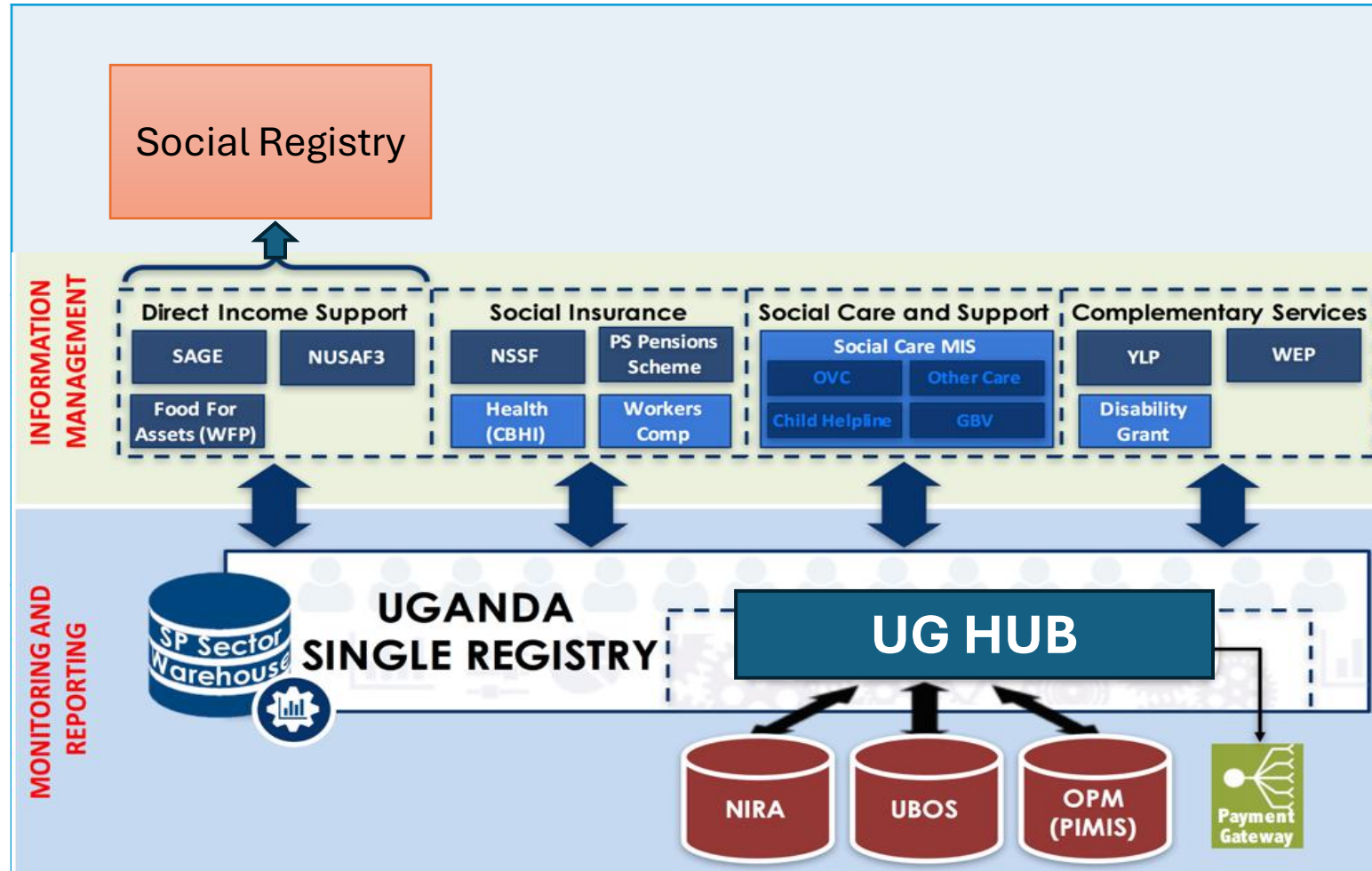
Scalability and Performance –
Our Infrastructure had challenges handling large volume of requests efficiently e.g. bulk National ID Number verification for Social Protection Programme applicants.

Solution? : Government Integration Platform -UGHub

- Single Point of Integration of Government Services established in 2022 under the National IT Authority
- Capability to integrate any system regardless of the technology it runs on
- Built over the “WSO2” technology stack
- 62 public and 73 private entities on-boarded
- Mitigated challenges of peer-2-peer integrations (costs, time, security)
- Single Registry links with the UGHub for cross-boundary integrations
- Enhanced interoperability and data sharing of systems
- Enterprise and Maintenance Support Contract in Place



Ughub in Uganda's SP Ecosystem



UgHub for Dynamic Social Registry



**Aligned to
Uganda's
transition to a
dynamic social
Registry**



**Planned linkage
with addition
cross-boundary
systems e.g.**

Land registry, tax
registry

Payment Service
Providers/Banks

Early Warning
Systems

Civil and Vital
Statistics Database



**Regular data
sharing/updates
ensure data
remains
relevant.**



**Future updates
can be demand-
driven rather
than requiring
large-scale
surveys.**



**Will enable
Rapid Scale-Up
During Crises -
Shock
Responsive SP
surveys.**



UgHub Key Features

- **Vendor-Neutral Integration :** The platform supports seamless integration with any system, regardless of the underlying technology. Built on the robust **WSO2** technology stack, UGHub offers unmatched flexibility and compatibility.
- **Secure Hosting in the Government Data Centre:** Entirely hosted within the Government of Uganda's data centre, the platform ensures top-notch data security and operational sustainability.
- **API Management:** UGhub provides comprehensive API management tools that allow entities to easily create, share, and consume APIs, enabling real-time data interactions.
- **Identity and Access Management:** Advanced identity and access management systems ensure secure authentication and authorization, giving entities full control over their data accessibility.
- **Semantic and Systems Catalogue:** A centralized catalogue enables efficient discovery, classification, and management of systems and their associated services for streamlined operations.
- **Reporting, Analytics, and IoT:** With robust reporting and analytics capabilities, the platform offers actionable insights. Additionally, support for the Internet of Things (IoT) opens avenues for future innovation and integration.

OPPORTUNITIES

48

Foundation for a dynamic social registry

Enhanced data sharing between the NSR and other Government Systems

Increased accountability and transparency through public reporting portal displays dashboards that provide summary statistics on key performance indicators.

Improved targeting through PMTs based on data from additional data sources

Better planning and coordination across agencies and programmes to facilitate evidence-based decision-making and management of beneficiaries and their benefits.

Better identification and prevention of benefit fraud.

Enhanced resilience to shocks and crises.

THANK YOU FOR LISTENING!



Country Presentation

- Chile





Chilean Interoperability Network PISEE



June 2025

Index

- 01** Why is important
.....
- 02** Chilean journey
.....
- 03** Chilean interoperability network PISEE
.....
- 04** Achievements and experiences
.....



01

Interoperability Why is important

Interoperability: Purpose

People with social protection needs are more likely to benefit from interoperability.

People with social protection needs has less capability to reach the state



02

Chilean journey

History

Chile created a network based on a **central ESB** that distribute message between the organism of the state.

Has strict format / not peer to peer / lack of security

2009 PISEE 1

Centralized Service Bus

100 organism in 10 years



History

Due to the **lack of success** Chilean state decided to start a discussion about what's the right approach to the interoperability.

The product of this conversation was an **agreement** about a new model for all.

2009 PISEE 1

Centralized Service Bus

100 organism in 10 years

2019 Interoperability Meetings

Open discussion between public agencies



History

PISEE 2 was build for solve the problem.

Distributed secure network

2009 PISEE 1

Centralized Service Bus

100 organism in 10 years

2019 Interoperability Meetings

Open discussion between public agencies

2020 PISEE 2

Distributed network peer to peer communication

+400 new organism in 5 years

03

Chilean Interoperability Network PISEE

Aspect of interoperability

Legal

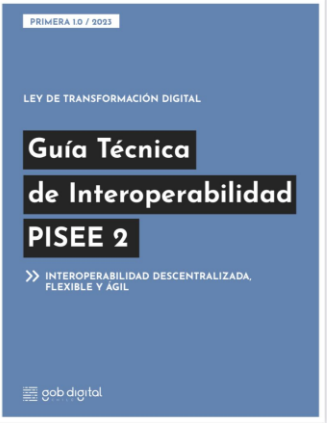
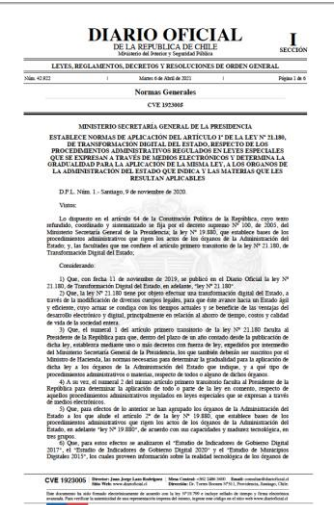
Since 2019 Chile has had a new Digital Transformation Law that establishes interoperability as a fundamental principle.

Technical

PISEE 2 is the new Interoperability Network.

Legal architecture

21.180 Law of Digital Transformation.

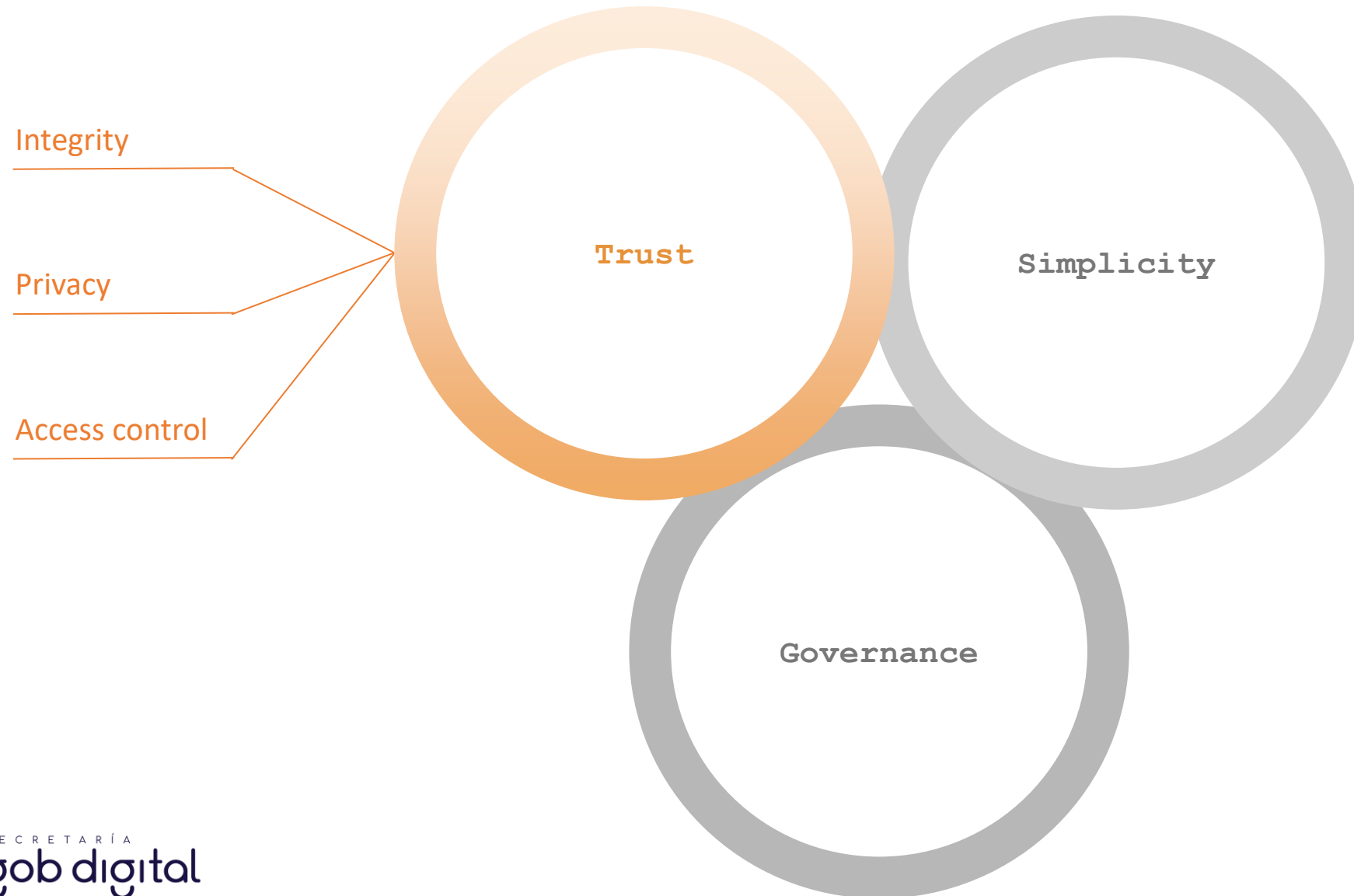


Decree of gradual implementation

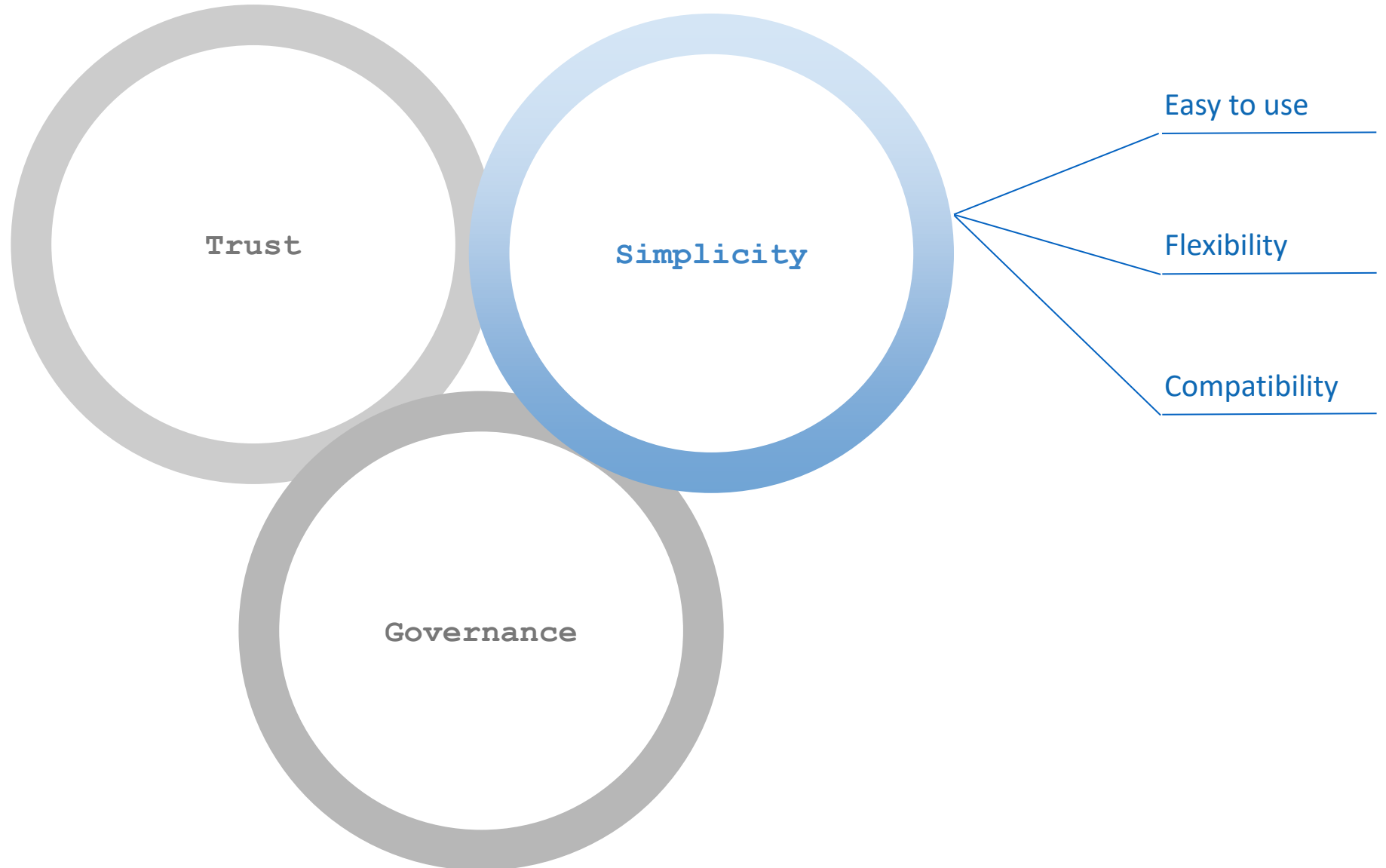
Technical interoperability regulations

Technical guidelines

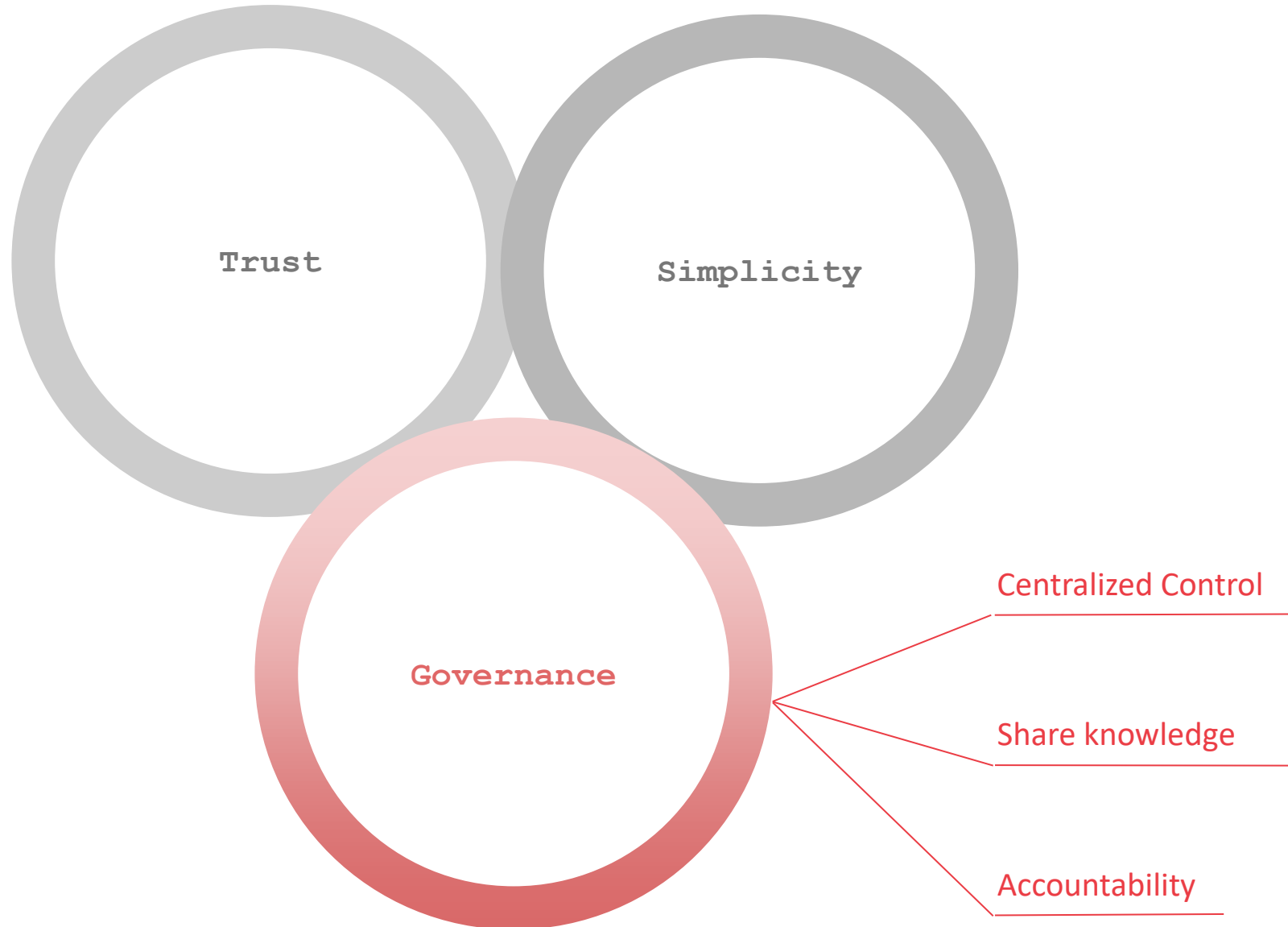
Technical solution: key aspects



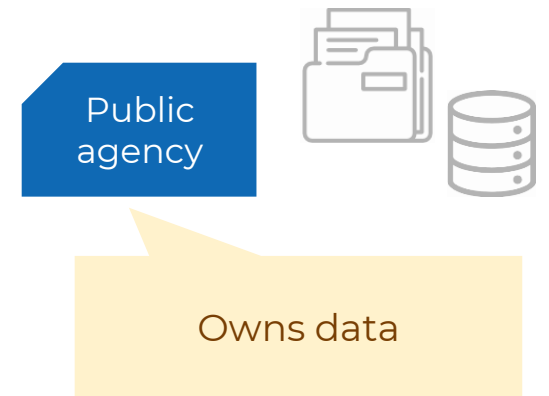
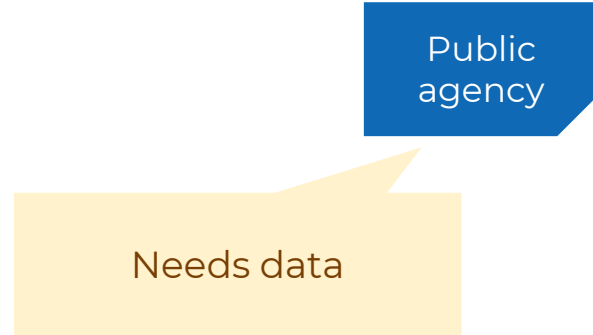
Technical solution: key aspects



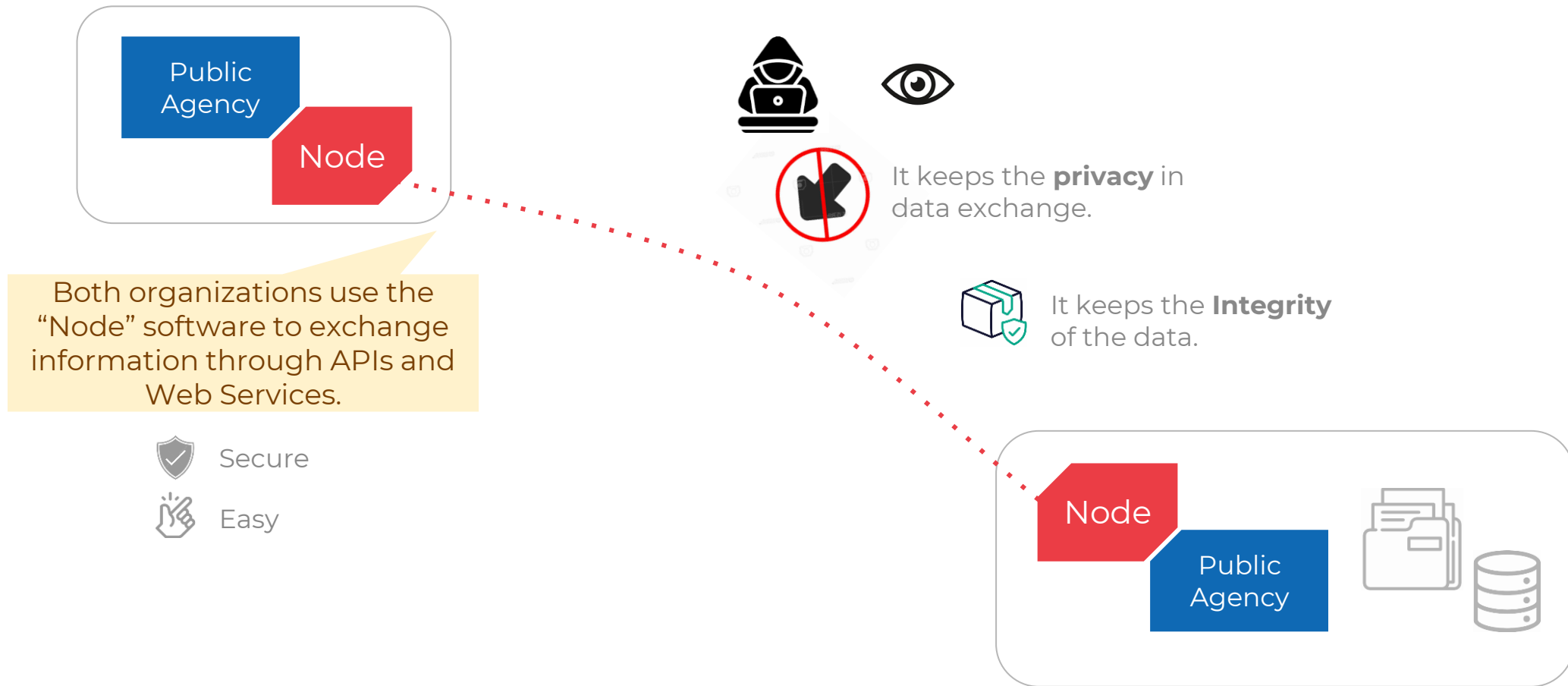
Technical solution: key aspects



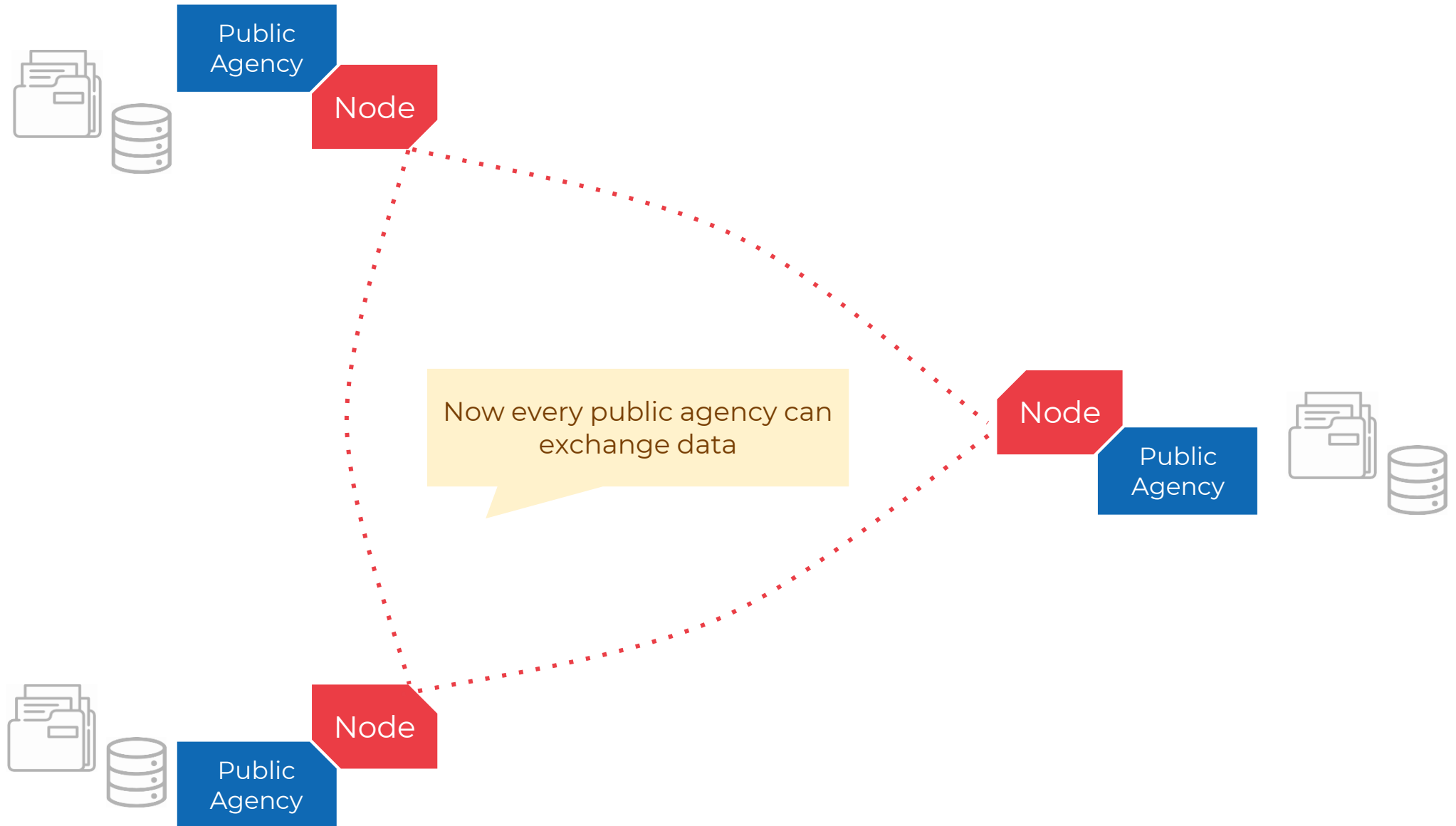
PISEE : How it works



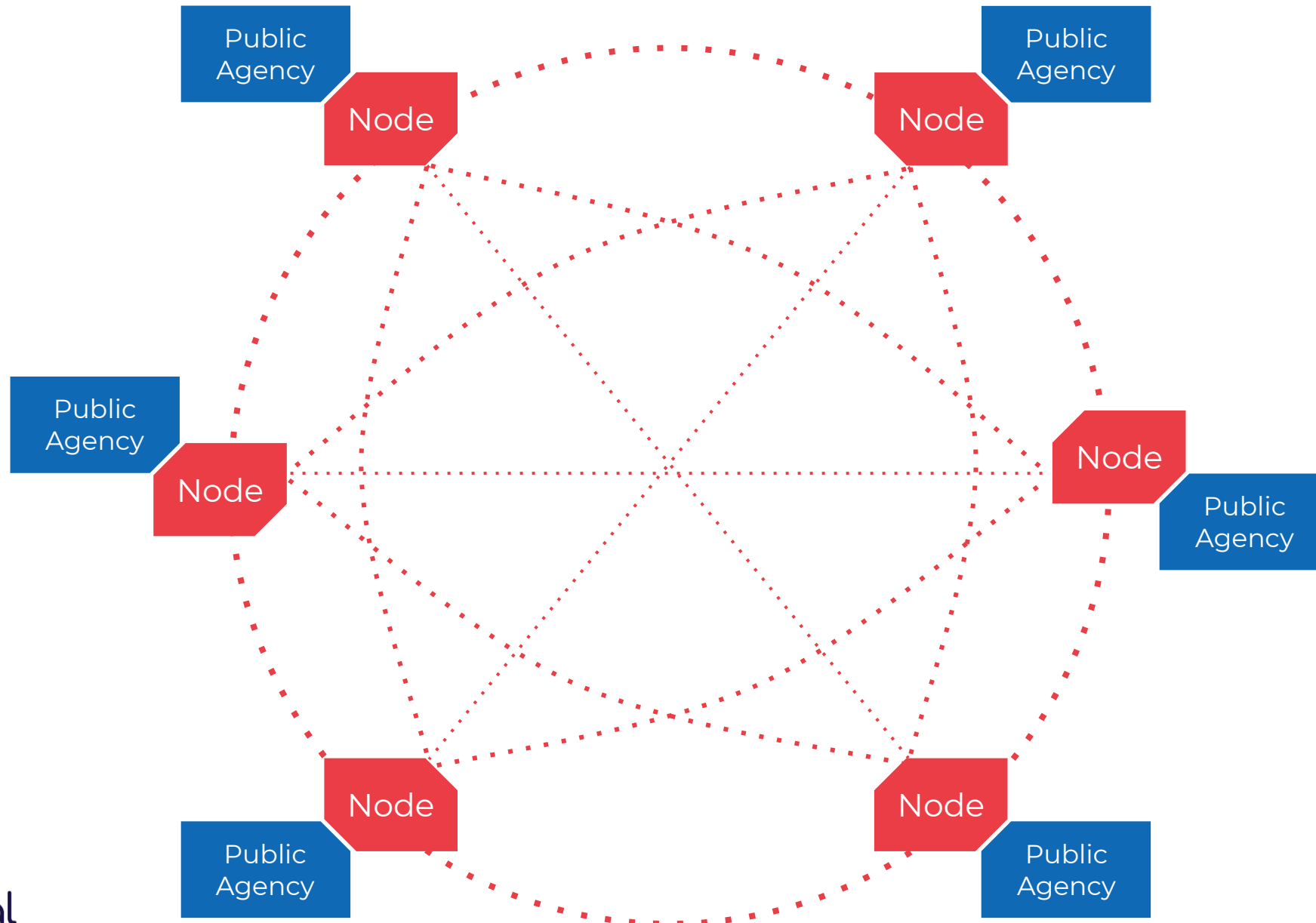
PISEE : How it works



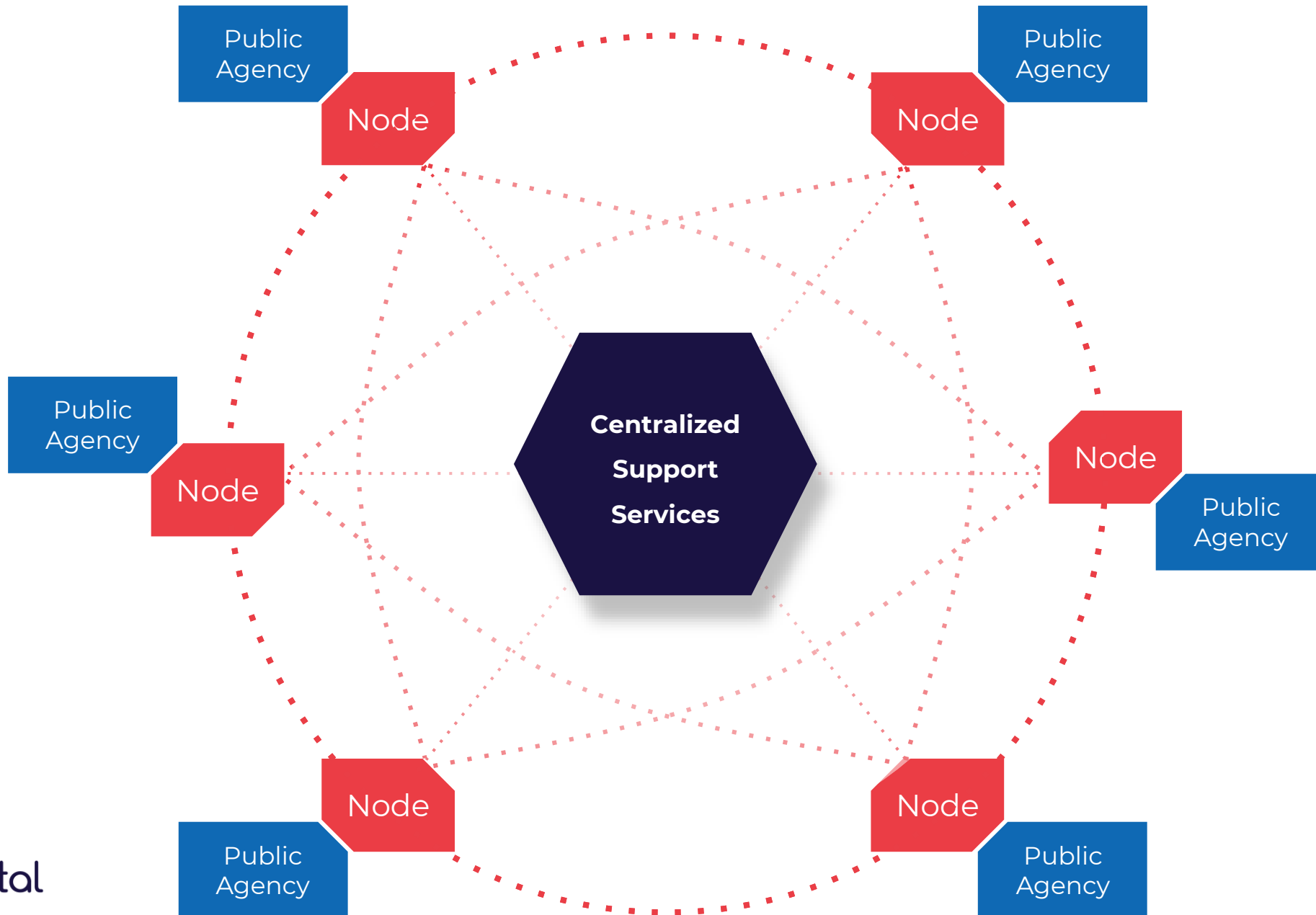
PISEE : How it works

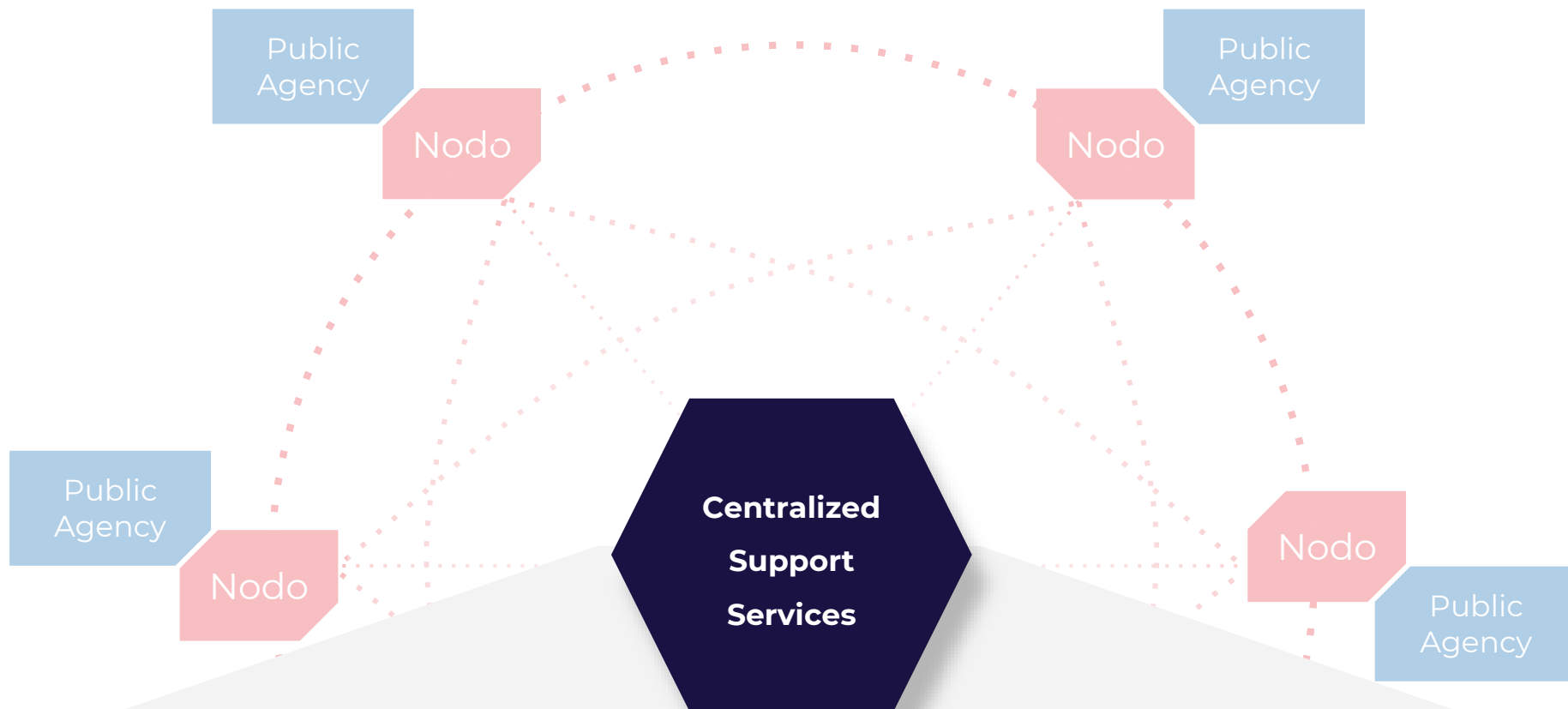


PISEE : How it works



PISEE : How it works





Service Catalog



Semantic code manager



Traceability Repository



Citizen Authorization



Interoperability is a human problem

Change resistance

Trust

Inclusivity

Law issues

TECHNICAL SOLUTION

LEGAL

04

Achievements and experiences

Achievements: Numbers

More than **500** public agencies are integrated
Big ministries and small municipalities

2000 public employees trained

+300 Millions Messages exchanged in **2024**
between public agencies



+360 Millions Messages exchanged so far in **2025**



Achievements: Housing

People apply for state housing subsidies without providing any information beyond their intention.



Analyze data and decide who can get subsidies



Treasure



Debts



Indigenous information



Certificate of indigenous quality



Civil Registry



Personal information
Information from relatives



Tax Office



Income information



Social Development



Poverty Level
Family group information



Social Security Service



Health contributions

Achievements: Woman protection

Women who suffer abuse have **protection** from the state, but they must navigate difficult bureaucratic processes.

Now all necessary information is automatically collected without the need for victims to go through additional paperwork.

Protection



Civil
registry



Personal information
Marriage certificates



Prosecutor's
office



Investigation
Precautionary measures



Police



Protection action



Social
Development



Poverty level
Family group



Municipalities



Social protection
benefits

Achievements: Benefits

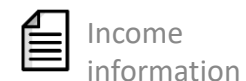
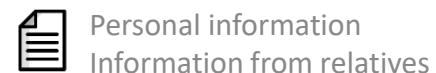
The Ministry of Social Development collects a vast amount of data about the people. This data is processed and stored in the Social Household Registry, generating relevant information about each citizen's **poverty level**.

We are providing this information through PISEE and now the entire state can request it.

Social household registry

**REGISTRO
SOCIAL
DE HOGARES**

TU INFORMACIÓN, TUS BENEFICIOS.



Achievements: Benefits

Through PISEE public agencies can access "Poverty Level" and grant social benefits

Social household registry

**REGISTRO
SOCIAL
DE HOGARES**

TU INFORMACIÓN, TUS BENEFICIOS.



Poverty level



Municipalities

- Basic services subsidies



Service for elderly person

- Apply for nursing home



Ministry of labor

- Women's Employment Bonus
- Subsidies for young people work



Ministry of housing

- Rental subsidy



Ministry of education

- Apply to kindergarten
- Educational scholarships

Conclusions

PISEE is accelerating digital transformation in Chile, making
bureaucracy more efficient and
bringing the state closer to its citizens.





www.digital.gob.cl



An abstract graphic featuring a large blue circle on the right side of the frame. A thin blue line curves from the top left, passing through a small blue dot, then through a larger blue dot, and finally ending at the bottom left. A white line forms a circle that intersects the large blue circle at three points, marked with small white dots. Inside the large blue circle, there are several orange shapes: a large orange arc at the top, a large orange arc on the left, and a large orange arc on the right. There are also four small orange circles: one at the top, one on the left, one on the right, and one at the bottom. The text "Discussion & Q&A" is written in a blue, sans-serif font on the left side of the frame.

Discussion &
Q&A

Next Talking Interoperability event

October 2, 2025
12:00 – 14:00 GMT

Registration via
socialprotection.org



Support the Initiative

Your input matters

- **Contribute your expertise** to our workstreams
- **Support** the process of **consensus building and harmonization of standards**
- **Spread awareness** about the initiative
- **Adopt the standards and other outputs** in your projects and share **feedback**

Forms of participation

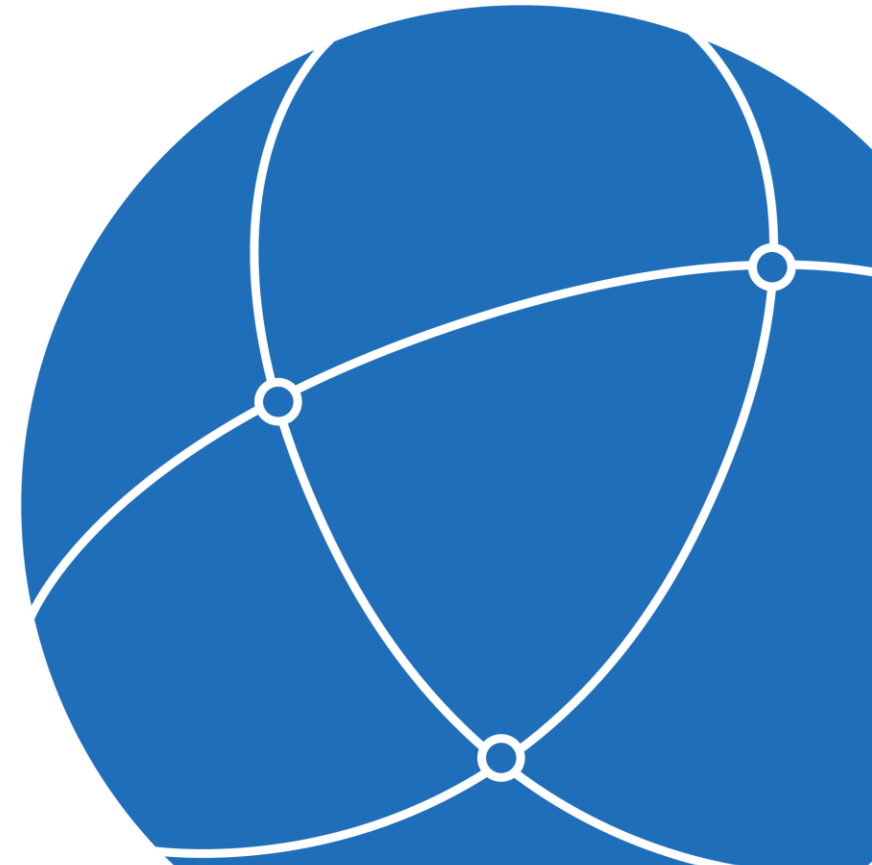
- **Share existing materials**
- **Review** outputs
- **Join group discussions** and workshops
- **Submit your draft standards** to DCI for consensus building through DCI standards committees
- **Join the standards committees**

Learn more and connect

The DCI is an **open, transparent and virtual community** which welcomes contributions from diverse stakeholders.

For more information, or to get involved:

- ✓ visit our [website](#)
- ✓ email us at contact@spdci.org
- ✓ or check us out on [LinkedIn](#), [Gitbook](#), and [Github](#)



Thank you

