2023 Korea-Indonesia
DGCC Joint-cooperation Project

Establishment of Digital ID implementation strategy in Indonesia

Indonesia-Korea
Digital Government Cooperation Forum

2023. 09

Agenda

2023 Korea-Indonesia DGCC Project

I. Project overview

II. As-is analysis of national Digital ID of Indonesia

III. Implications and improvement direction

IV. Conceptual To-be model of national Digital ID

V. Future project schedule

Project overview

The 2023 joint cooperation project scope

Project scope

Establish a strategy for implementing

National Digital ID

❶ DIR-001 : Status Analysis

- Analysis of Digital ID status in Indonesia and major countries around the world

❷ DIR-002 : Strategy and Improvement Plan

- Define policy direction and compare Digital ID platforms to present a successful approach

❸ DIR-003 : Basic Structural Design of Goal's Model

- Present basic design and service model

❹ DIR-004 : Roadmap Establishment

- Present cost and operation plan for establishing and implementing Digital ID roadmap

Action plan

- Analysis of Laws, Policies, Regulations and environments related to Digital ID in Indonesia
- Analysis of Digital ID promotion trends in global countries and technology trends for Digital ID

- Comparison of centralization and decentralization
- Open source platform comparison
- Draw out the direction and implications of Digital ID implementation in Indonesia

- Digital ID target model design
- Presenting a service model using Digital ID and suggesting a system operation plan

- Presenting a step-by-step roadmap and implementation tasks for building digital IDs
- Propose the required budget and expected effects

Project overview

The 2023 joint cooperation project scope and progress

Project scope

Establish a strategy for implementing
National Digital ID

❶ DIR-001 : Status Analysis

- Analysis of Digital ID status in Indonesia and major countries around the world

❷ DIR-002 : Stra

- Define policy platforms to

❸ DIR-003 : Basi

- Present basic design and service model

❹ DIR-004 : Roadmap Establishment

- Present cost and operation plan for establishing and implementing Digital ID roadmap

KITC RAON Consortium

Stakeholder analysis

Stakeholders List

Stakeholder	Contents	Related system
World Bank	◆ Consulting on the support and planning of identification project for Indonesia and global countries ◆ Operating Identification program to support the spread of inclusive and reliable identification globally (ID4D)	◆ Strategy establishment and consulting
Kemendagri	◆ Integrated management of population data inputted from family relations registration and resident registration system ◆ KTP-related administration and operation of related systems ◆ Collect and manage personal data and biometric data and provide verification services ◆ Working on the Identity verification, digital identification, and ICT infrastructure projects through World Bank's investment ($250 million)	◆ SIAK, e-KTP, Digital KTP
PERURI	◆ Printing of banknotes and providing materials and services for identification cards ◆ Provide Electronic signature for online service	◆ PSrE licensed provider, X.509 certificate
KOMINFO	◆ Management of the systems in central government institutions ◆ In the process of constructing National data center (PDN) ◆ Electronic Certification Authority (PSrE) management and Root CA operation	◆ Digital signature (BSSN) ◆ KEYLA app ◆ PSrE's Root CA
Ditjen Imigrasi	◆ Operate online reservation system for immigration office visit for passport issuance ◆ Support the pre-uploading of documents required for passport application.	◆ M-PASPOR
Kemenpanrb	◆ Managing the development and the user authentication methods of Public Service Malls and Public Service Portals	◆ MPP
BAPPENAS	◆ Promoting the integration of government institutions data through Satu Data Indonesia (SDI)	◆ One data Indonesia (Satu Data Indonesia)

As-is analysis

Stakeholder analysis

Stakeholders Analysis Results

KEY Finding

① Considering the long-term nature of Identification, project risks must be eliminated through **vendor independence** and **technology neutrality**.

② **Kemendagri is developing** Identity verification, digital identification, and ICT infrastructure projects for **Digital ID through World Bank's $250 million support**.

- Developing a national-scale identity verification and e-KYC platform
- Developing a national digital ID application and framework
- Strengthening cybersecurity
- Modernizing Dukcapil ICT infrastructure

③ **Conversion to Digital KTP** is in progress, currently being implemented partially for **selected groups as a trial**.

④ Through PSrE, it is necessary to **configure a form of user identity verification and electronic signature** that can be used in various environments. (Online and Offline).

⑤ **Connect data** with a variety of government and regions **through Satu Data Indonesia** (SDI).

- 53 organizations, 27 regions, 213 districts/cities

As-is analysis

As-is business process

Procedure for Issuing KTP

Preparation for the issuance of a KTP

- Fill out the population administration document issuance form (F1.02)
- Copy of Birth certificate
- Copy of family card (KK)
- Qualification : 17 years of age or older or married

Preparation for the issuance of a Digital KTP (IKD)

- Mobile phone with internet access
- Resident Identification Number (NIK)
- Active email address
- Active mobile phone number.

1 Visit to Dukcapil
- Visit Dukcapil in your area

2 Queue
- Take queue number and wait

3 Submission
- F-1.02
- Submission of required documents

4 Verification
- Document Verification
- Applicant Interview (if necessary)

5 Issuance
- Recording information and printing of KTP
- Verification of KTP

6 Receipt
- Receive KTP 3 days later

1 Download & install
- Download the IKD App from playstore/App Store

2 Enter information
- Enter NIK, email, phone number

3 Bio authentication
- Face authentication through camera

4 Scan QR code
- Scan the QR code generated at Dukcapil

5 Verification
- Check email
- Enter activation code and security code

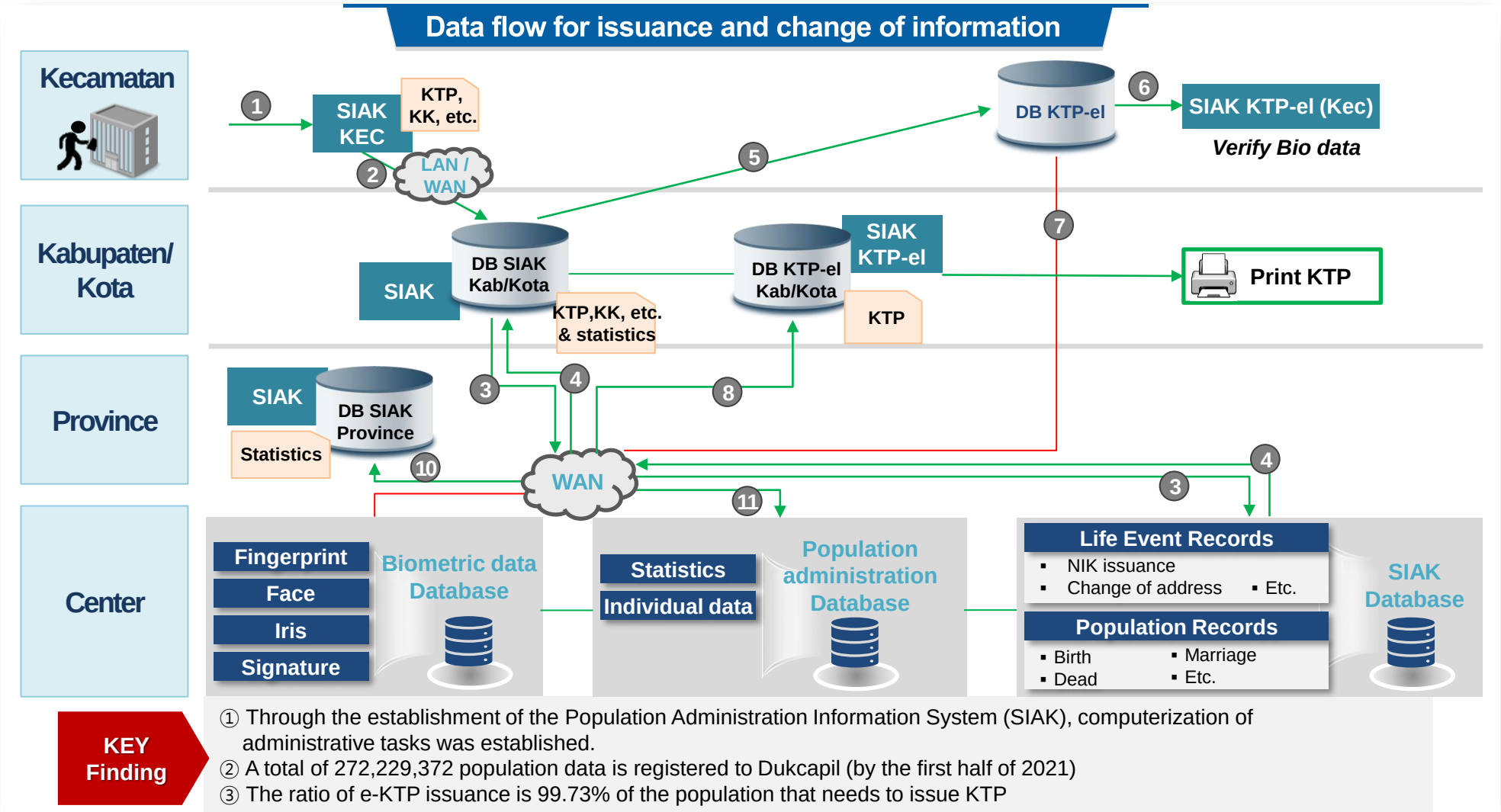
6 Activation
- Digital KTP activation

KEY Finding

① Digital KTP **issuance and re-issuance** are always carried out **by visiting Dukcapil** and under strict management by the official in charge.

As-is analysis

As-is data and IT architecture



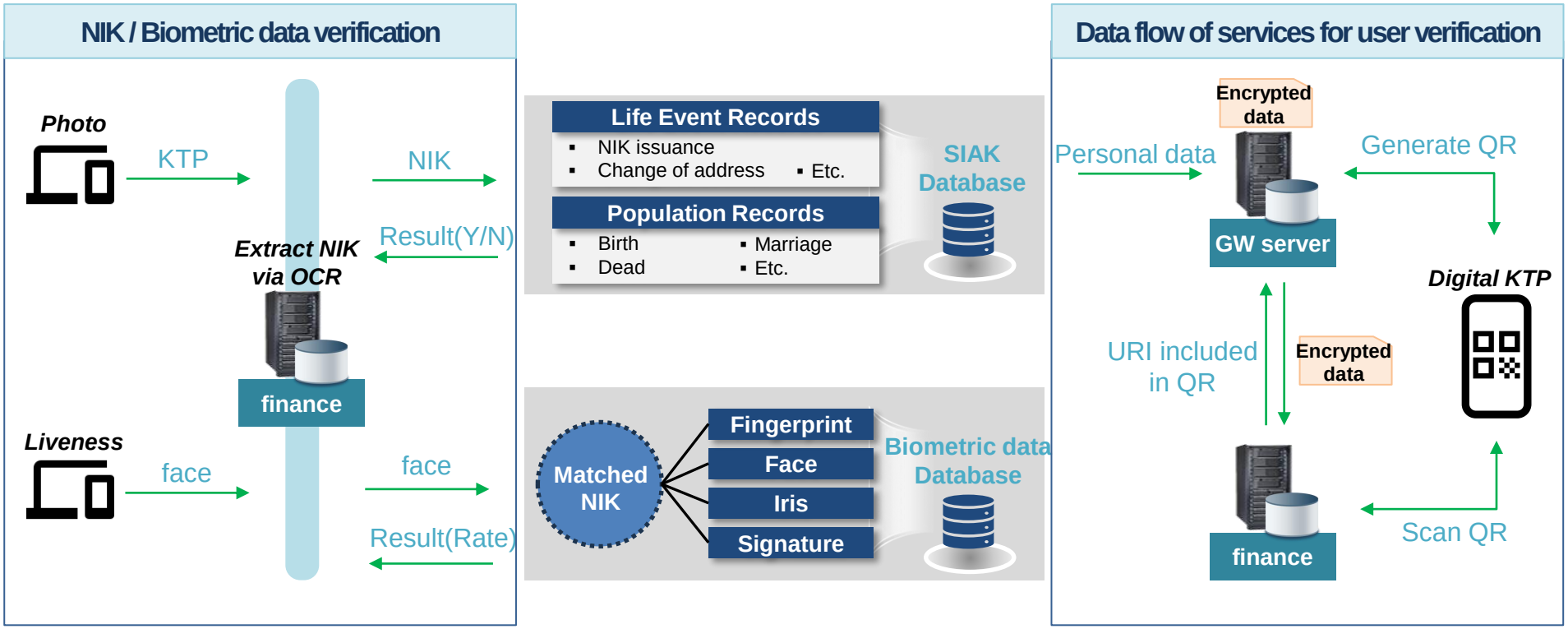
KEY Finding

① Through the establishment of the Population Administration Information System (SIAK), computerization of administrative tasks was established.
② A total of 272,229,372 population data is registered to Dukcapil (by the first half of 2021)
③ The ratio of e-KTP issuance is 99.73% of the population that needs to issue KTP

As-is analysis

As-is data and IT architecture

Data flow of services for user verification



KEY Finding

① If KTP verification is required for e-KYC, it is conducted through parallel verification of user biometric information

② When generating QR through Digital KTP, URI where personal information exists is inserted into QR. This enables the acquisition of personal information.

③ The connection between the SIAK system and verification uses a closed network environment such as VPN.

As-is analysis

Laws & Regulation analysis

Strengthening personal information protection

Personal Data Protection Law, Law No. 2022-27

2016	2022.09.20	2022.10.17
Draft discussion (Chapter 16, Article 76)	Added 4 items and passed in the House of Representatives	Enactment of PDP Law, No 2022-27

Goal

The purpose is to regulate the collection, use, disclosure and other processing of personal information by governments and companies in order to protect people's human rights and promote national interest in accordance with the development of information technology.

Privacy Principles

Collection → Processing and Analysis → Storage → Improvement → Dissemination & disclosure → Delete & destroy

- Personal Data collection is carried out in a limited and specific manner, legal and transparent;
- Personal data processing must align with its purpose and ensures the rights of the data subject
- Personal data processing must be carried out accurately, completely, not misleading, up-to-date, and accountable
- Personal data processing should be protected from unauthorized access, unauthorized disclosure, unauthorized alteration and misuse
- Personal data processing notifies data subjects of processing purpose, process, and failure in protecting personal data privacy
- Personal data is destroyed and deleted at the end of the retention period or at the request of the data subject

Existing personal data protection regulations, including the laws below, remain effective as long as they do not violate the Personal Data Protection Law.

- Electronic Information and Transaction Law, Law No. 2008-11 jo. Law No. 2016-19
- Government Regulation on the Management of Electronic Transaction Systems, Reg No. 2019-71
- Kominfo Regulation on Protection Of Personal data In an Electronic System, Reg No. 2016-20

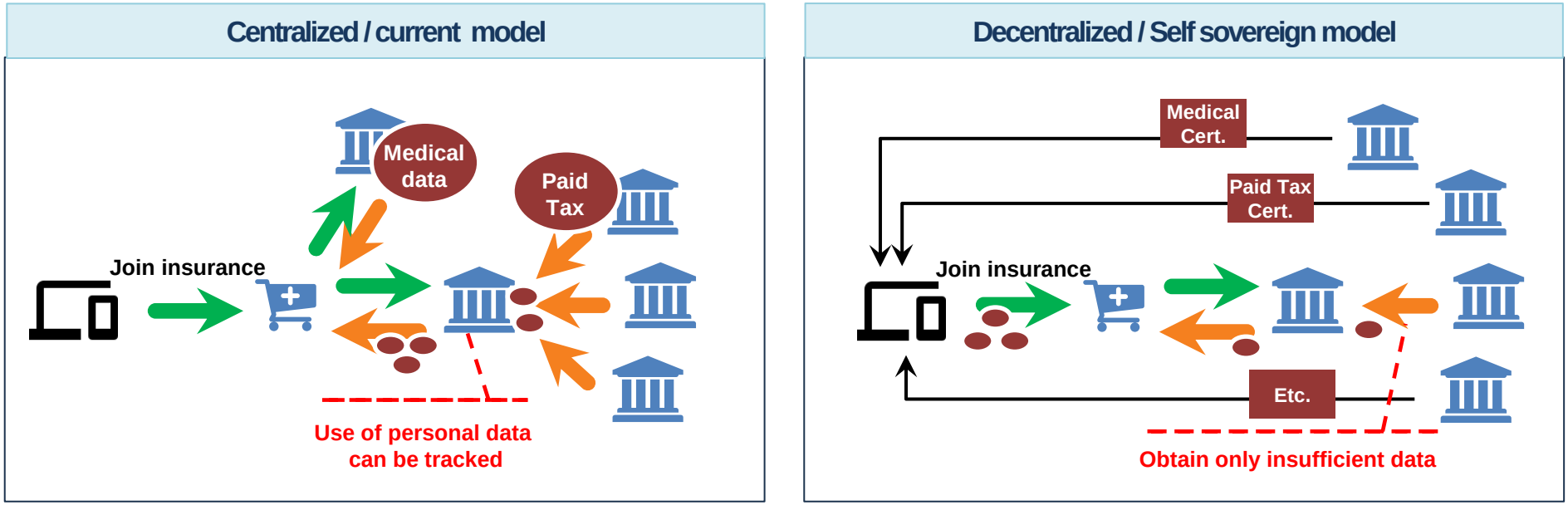
KEY Finding

① When collecting personal information, notify user, obtain consent, and prohibit the use of collected information outside the permitted scope
② Strict responsibilities and obligations are imposed on organizations and companies that collect and use personal information

As-is analysis

Technical analysis

Centralized vs Decentralized



Centralized / Older model	Category	Decentralized / Self sovereign model
• Personal information is stored on a centralized server	Storage of personal data	• Saved to the terminal owned by each user
• When a hacking incident occurs, numerous personal information is leaked.	Information protection	• Hacker must break into various systems to obtain a lot of information about one person.
• Easy to track when, where, and what information users used • Excessive unnecessary information provided during face-to-face verification	Privacy	• Difficult to track when, where, and what information users used • ZKP enables user to prove user's eligibility without providing personal information

As-is analysis

Global trends

Trends in major countries around the world

EU
- GDPR (May 25, 2018)
- eIDAS (July 23, 2014)
- Estonia (eID/e-Residency)

China
- E-Signature law (Aug 28, 2004)
- Guangzhou/Beijing (Digital ID)
- Travel health certificate

USA
- Revision of UETA(July 21, 2011)
- E-Sign Act (2000)
- White paper on Decentralization, Department of state (July 20, 2023)
- Utah/California (mobile Driver license)

South Korea
- Mobile IDentity
  - Driver license (2022)
  - National certificate of merit (2023)
- Open source platform (in preparation)
- Participating in standardization (standardization in progress)

India
- AadHaar Identity system
- MOSIP (Open source platform)
- Support Identification in over-seas countries

West africa
- World Bank, ID4D program
- Guinea, Cote d'Ivoire, Togo

West Africa Unique Identification for Regional Integration and Inclusion, WorldBank

W3C ISO DIF OpenID

Participation in global standardization organizations

Standardization of Identification specifications, issuance, cross-verification and security functions

THE WORLD BANK IBRD • IDA ID4D IDENTIFICATION FOR DEVELOPMENT

Identity verification support program for globally inclusive and trustworthy Digital IDs

Implication

Summary

- Starting with the issuance of digital KTP, identification are already being digitized in a centralized manner.
- Various identifications exist, and legally equal status must be guaranteed for all (including those certified by PsRE)
- Considering the long-term nature of Identification, project risks must be eliminated through vendor independence and technology neutrality
- Digital KTP issuance (reissuance) is subject to time and location restrictions
- The Personal Information Protection Act was enacted to protect personal information and improve individual rights.
- Digital ID is being used or in progress to be used in major countries around the world, and laws and policy for this are being improved.
- Changes are taking place in the technological field through the promotion of standardization and the development of open source platforms.

Direction

Selectable digital wallet

- Manage and use all your legal Identifications in selectable digital wallet
- Opening of wallets to the private sector to expand services and encourage private business participation

Standardization & open source platform

- Ensure objectivity and compatibility through standardization
- Aim for an open platform that anyone can participate in

Decentralization of Identification

- Protect privacy and ensure the rights of the information subject.
- Transparent disclosure of personal information usage history.
- Blocking the monopoly of information by certain groups through the participation of multiple organizations.

Forming a council for Digital ID

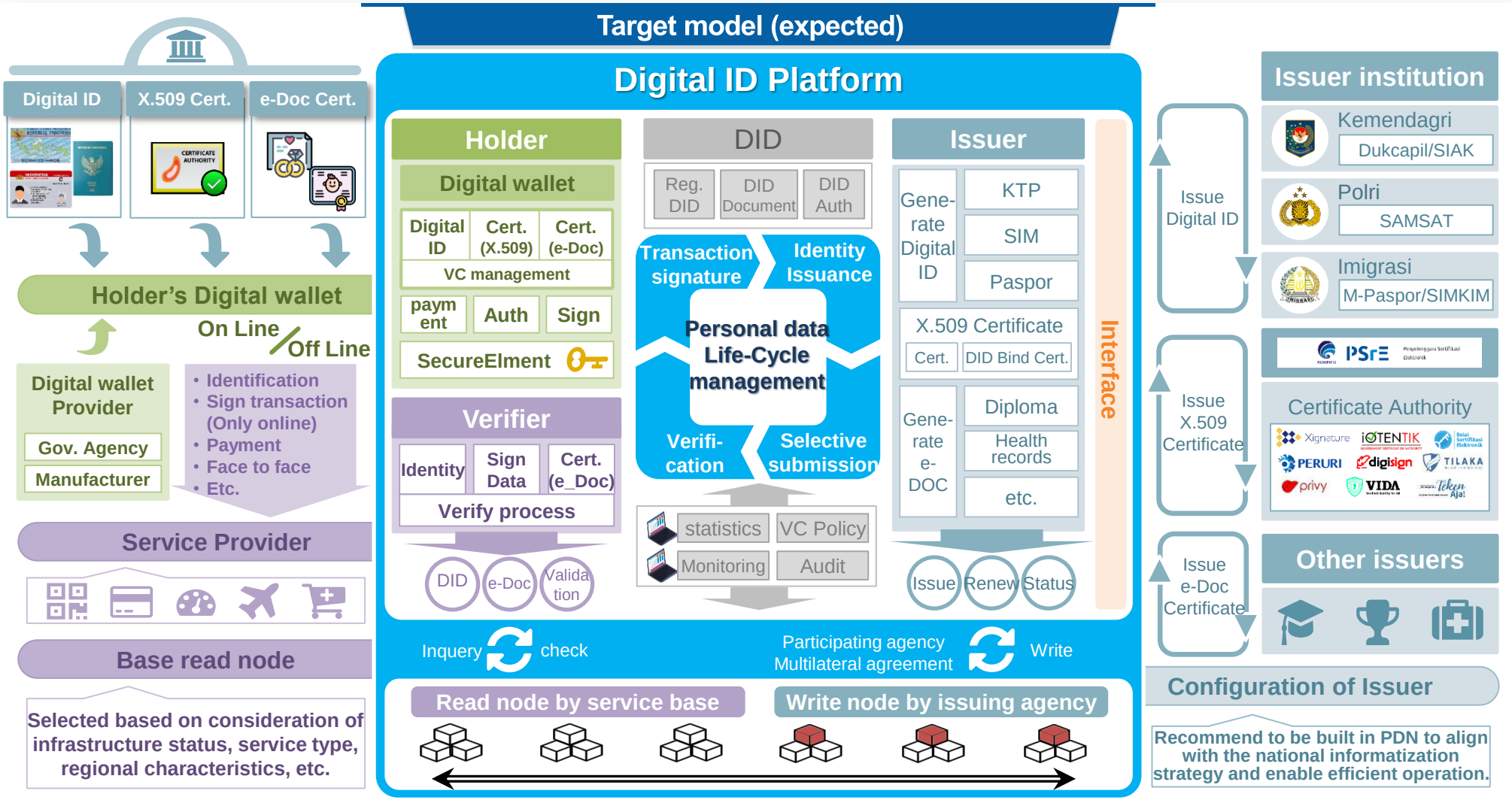
- Faster expansion through the council
- Promote a sustainable digital ecosystem by inducing active participation of stakeholders in various fields.

Gradual change

- Referring to Korea's case, transition to decentralization gradually
- (In the mid-to long-term) Guarantee self-reissuance of Identification using IC chip. This leads to increased use

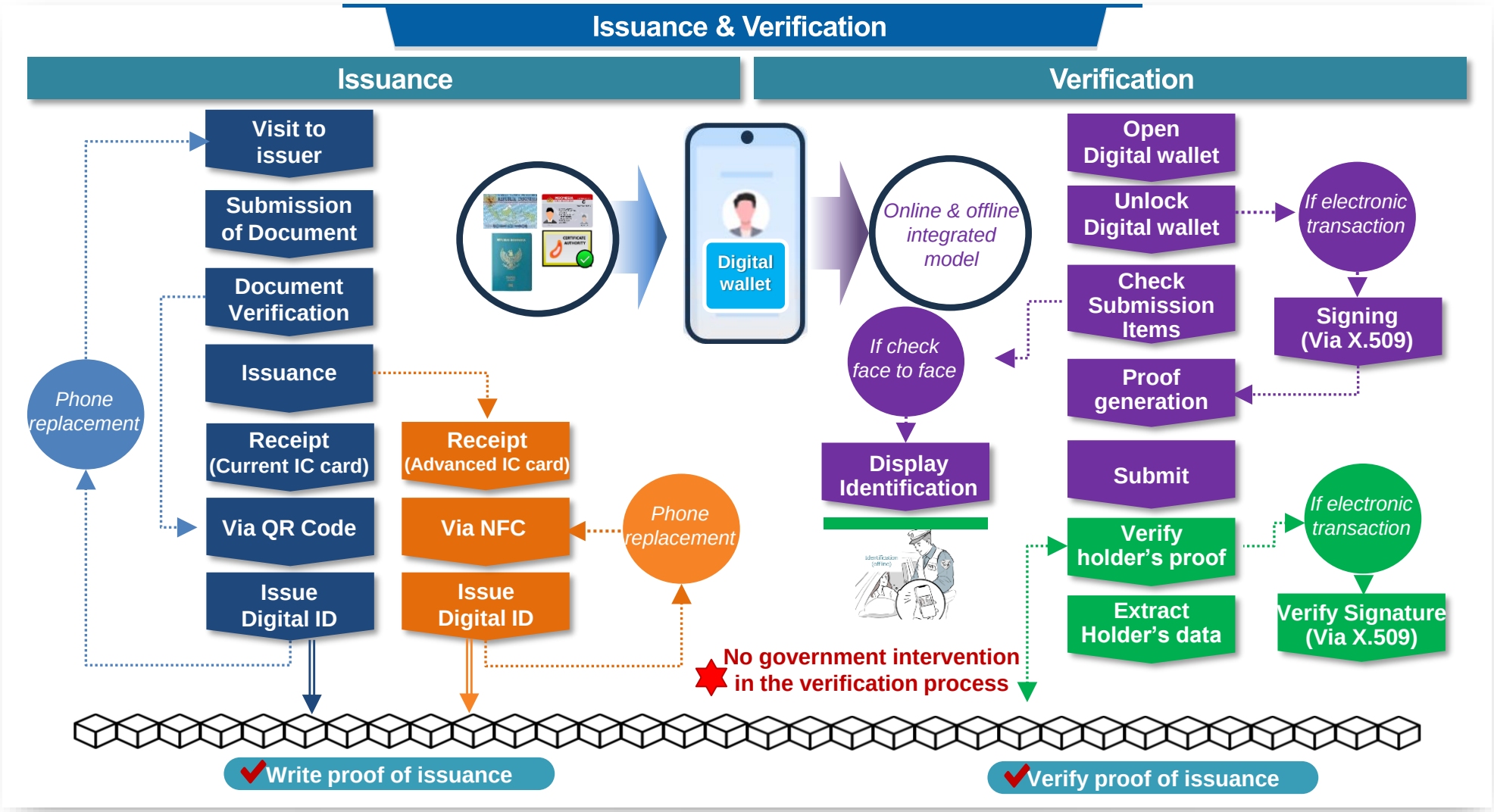
Conceptual To-be model

To-be model



Conceptual To-be model

To-be model



Conceptual To-be model

To-be model

Nodes Expansion Strategy

Considerations

- Vast land area
- Communication infrastructure for connection between services

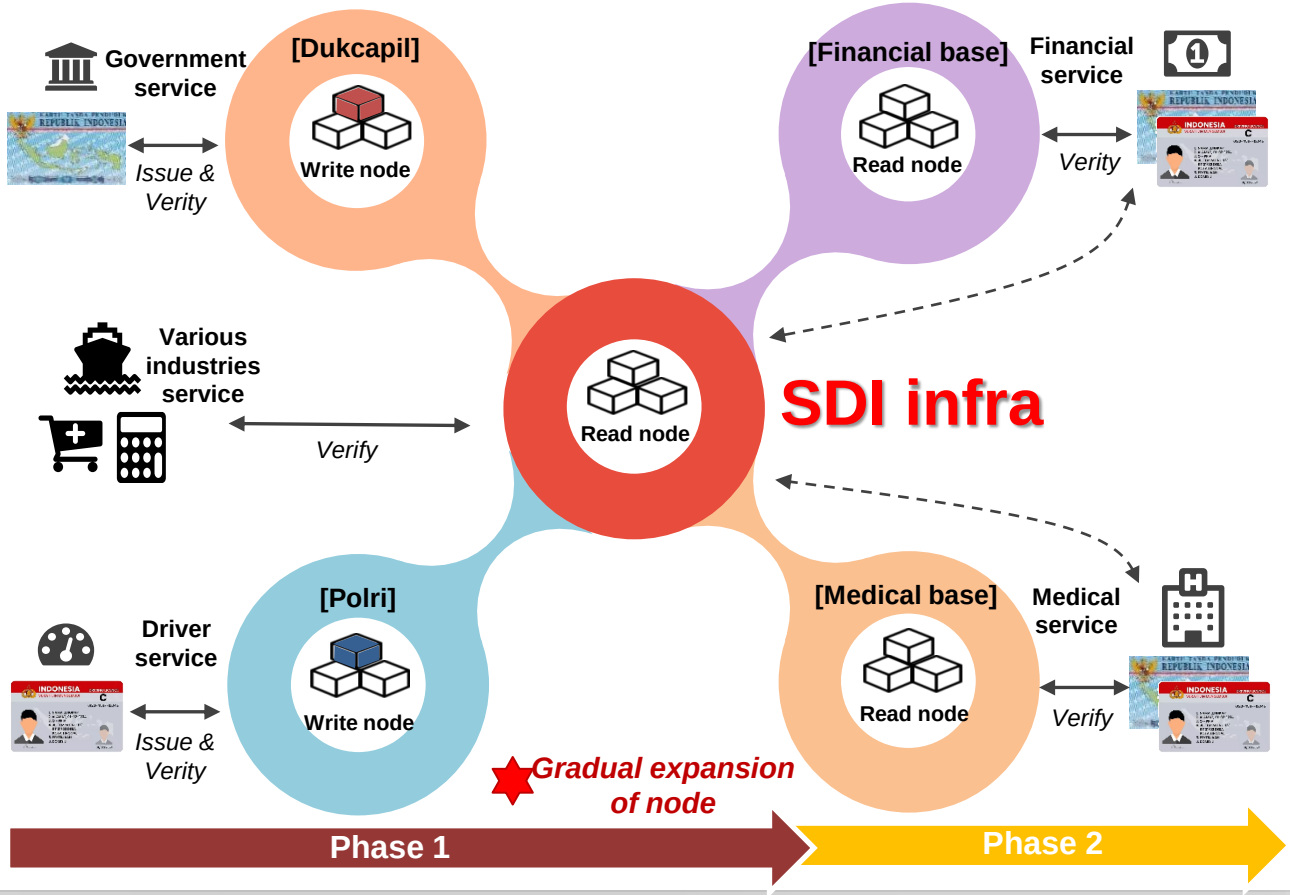
Utilize SDI as a base

Data connection status

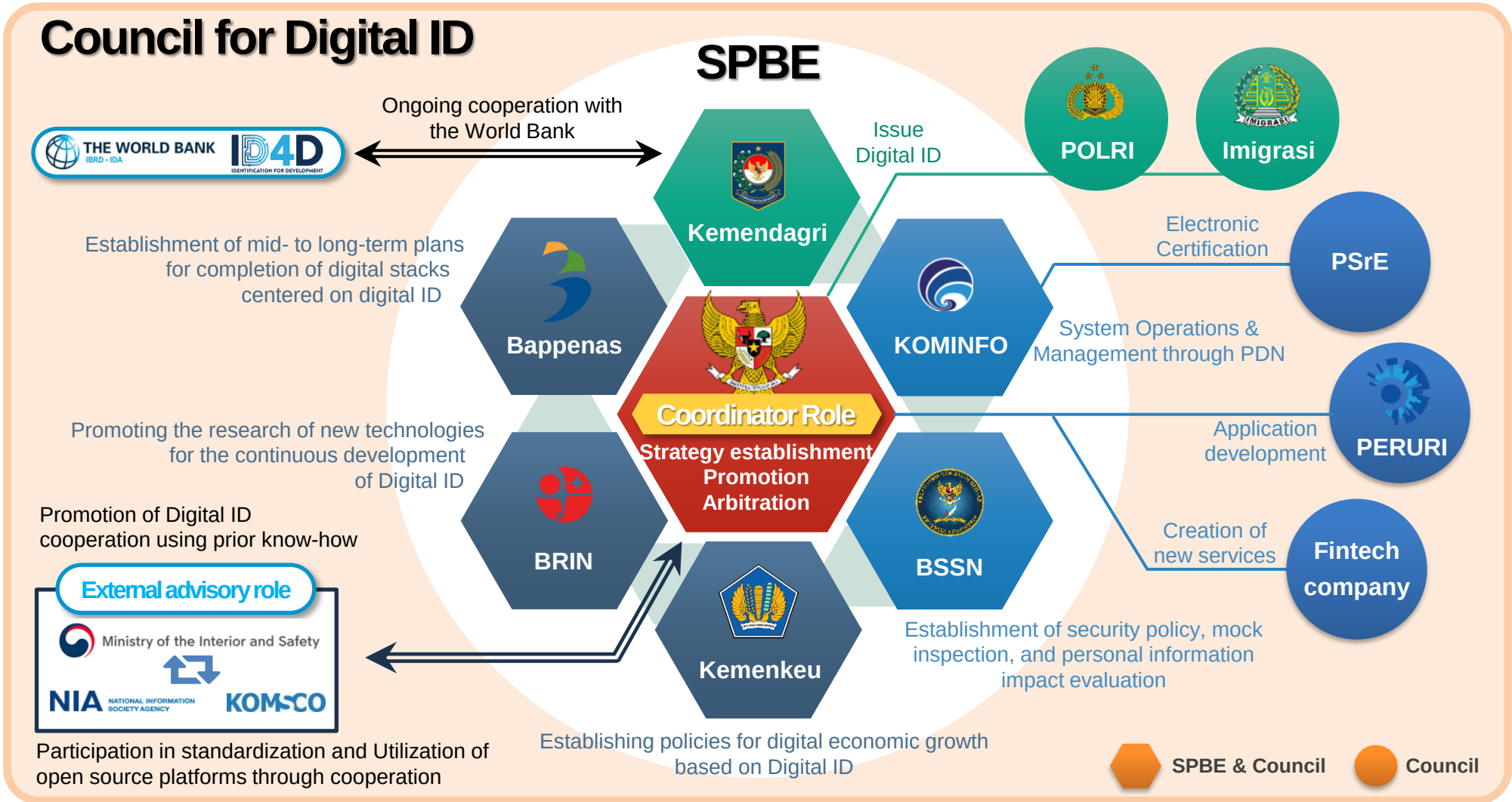
53 Ministries/Agencies are linked
27 Provinces are linked
213 Regencies/Municipalities are linked

A total of **214,000** datasets
A total of **201,000** statistical data

- Establish a base by considering the gap between industries and regions.
- SDI has the advantage of having attained a wide range of connections.



Conceptual To-be model



- Establish a strategy
- Establishment of detailed action plan

- Research on laws, regulations and Governance for continuous development of Digital ID
- Promoting revisions for innovation

- Promoting competition in the development of new technologies
- Induce the creation of new services

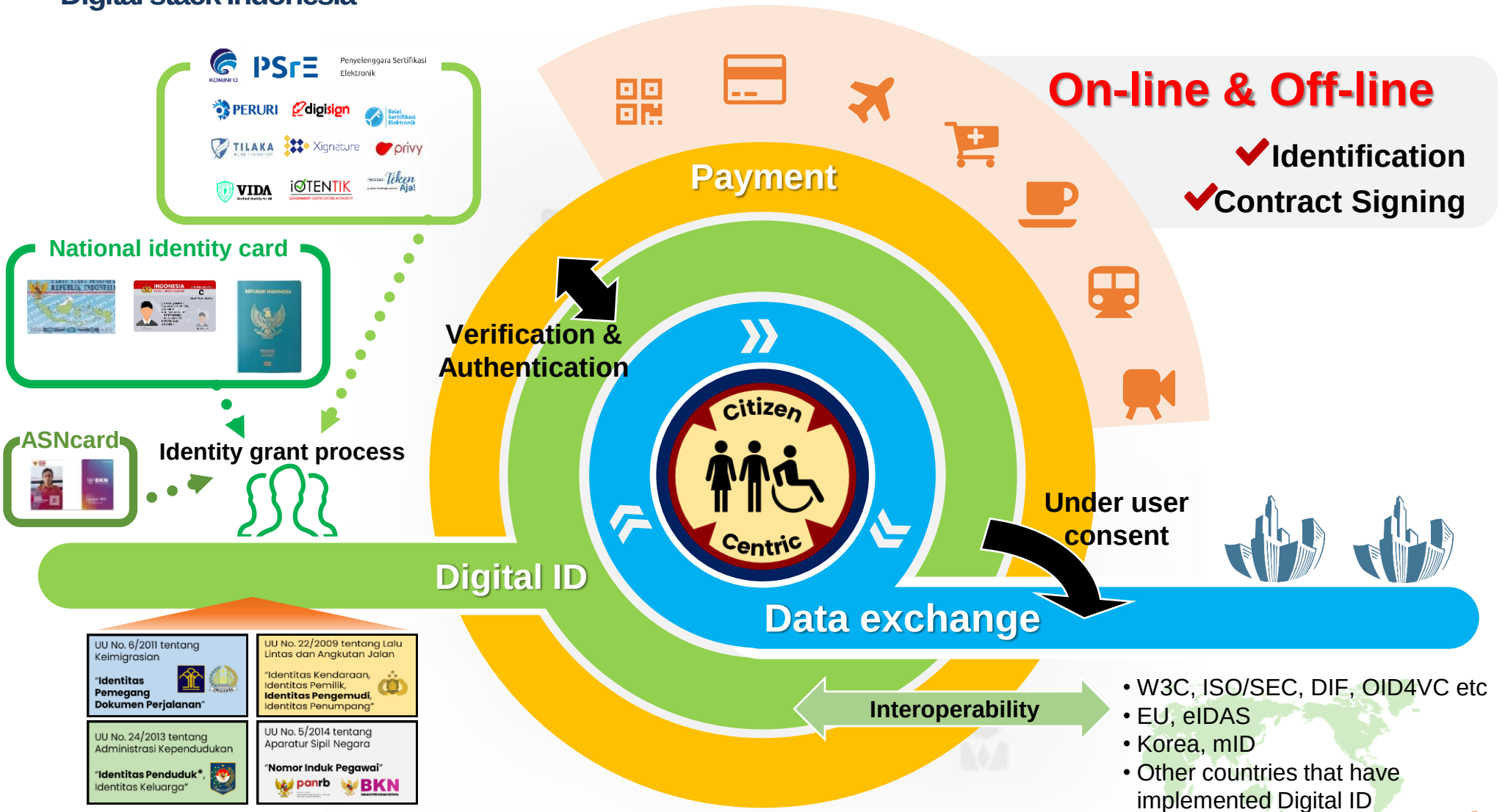
- Check progress and derive improvements

Role matrix

Category	Council for Digital ID				
	Committee	Policy division	Technology division	Security division	External advisory
Coordination among stakeholders	• Adjustment based on conformity of promotion strategy for conflict agenda	• Analysis of impact by field due to conflict agenda			• -
Law, regulation, governance	• Final review and decision-making on statutory and regulatory amendments	• To the extent of compliance with the PDP, consider revising regulations for innovation	• Based on the opinion of the security division, a review of technical solutions to infringement concerns	• Reviewing compliance with relevant laws such as PDP for amendments to laws and regulations under discussion	• -
Gradual change	• Confirmation of step-by-step implementation strategy	• Step-by-step demand forecast that allows for gradual change • Establishment of step-by-step implementation strategy	• Establishing a step-by-step plan for incremental change	-	
Standardiza-tion	• Acceptance of standardization and confirmation of participation of standardization organizations	• Standardization acceptance strategy and participation strategy	• Review of global standardization trends and specifications	• Review whether there is a conflict within the security scope between domestic laws and standardization standards	• Sharing international standardization trends • Submit the optimal model to the standardization organization through collaboration
Open source platform	• Confirmation	• Final decision considering suitability of long-term project implementation	• Analysis and suitability review • Cooperate with open-source fixes for functionality and security vulnerabilities and prepare countermeasures for operational services	• Security vulnerability analysis	• Sharing open source platform know-how • Sharing technology for revision changes and error correction
Single Digital wallet	-	• To issue digital IDs through digital wallets, discuss cooperation and action plans with issue words	• Analysis and suitability review	• Security vulnerability analysis	• Case discovery and service model planning support
Centralized and Decentralized	• Confirmation	• Law, Regulation, Policy review • Review and make decisions from Technology division and Security division	• Technical comparison	• Comparison considering security aspects	• Technical review and comparative review support
Decentralized Identification	• Confirmation and Declaration	• Business feasibility review • Establishment of plan to establish and spread digital ID	• Technical review for introduction • Review of new technologies for the development of digital ID	• Security vulnerability analysis	• Introduction of new services based on digital ID

Final Goal

Digital stack Indonesia



- W3C, ISO/SEC, DIF, OID4VC etc
- EU, eIDAS
- Korea, mID
- Other countries that have implemented Digital ID

Future project schedule

To-be model and roadmap

Structural Design of Digital ID Target Model

Define target model functional elements

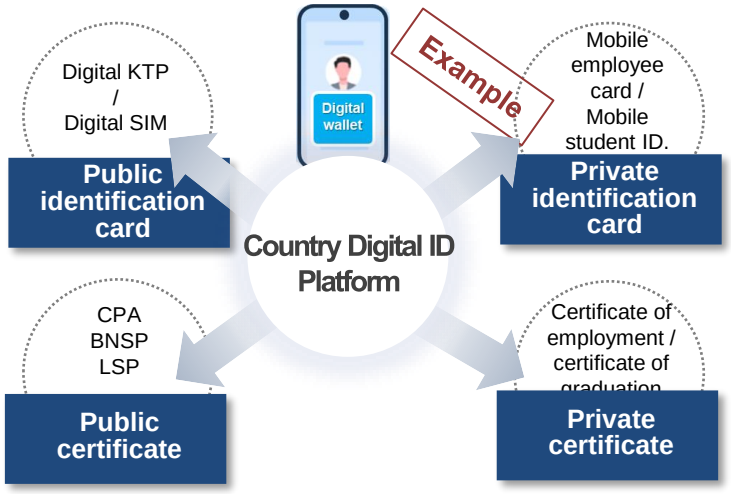
- Define the functional elements of the Digital ID's technical objective model
- Detail functional elements that meet defined deployment requirements

Identity authentication function	Identity verification function	Authority management
Authentication the User's identity	Verify identity information	Authorize users to the services and information

Security function	Scalability & operability	UI/UX improvement
Safe storage and transmission of user information	Scalability and operability for linking with various authentication methods, various services, and other systems	A function that improves user convenience and efficiency, considering UI/UX

Presenting a Service Model

- Suggestions on where to apply Digital ID and where to use them
- Discover the use cases of Digital IDs by life cycle
- Presents key service processes



- Extends a mutual trust-based Digital ID framework to a national Digital ID platform
- Public identification cards and certificates, as well as private identification cards and certificates, can be responded.

Future project schedule

To-be model and roadmap

Establishment of roadmap for introducing Digital ID

Defining the Implementation Task

Definition of implementation task

- Derivation
- Definition
- Priority evaluation

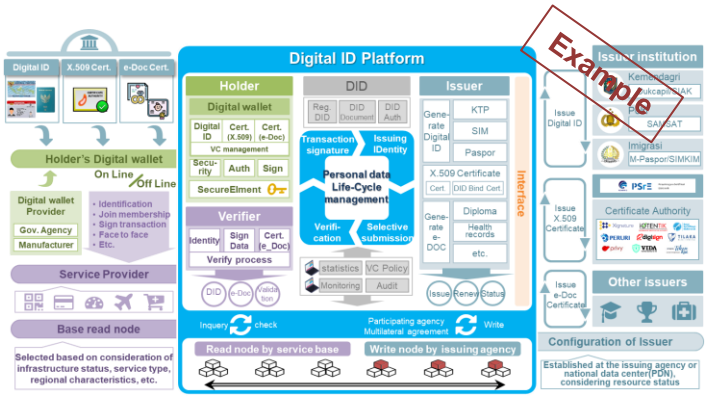
- Defining follow-up projects through task integration and reclassification
- Create ranking of evaluation items and determine priorities for the execution of implementation tasks

Definition of mid- to long-term promotion roadmap

- System integration
- Effective powder
- Law&regulations Improvements

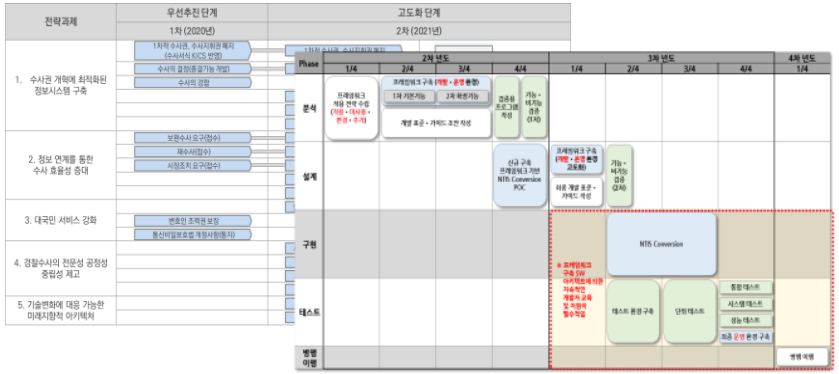
- Consideration of an annual plan that reflects the vision, mission, and mid- to long-term plan
- Define a promotion roadmap according to priorities among tasks.
- Applying roadmap for Digital ID and suggesting improvements in laws and regulations

Presentation of Enforcement System



Establishment of Roadmap

[Step-by-step approach]



Performance activities and priorities for each area are presented by applying the step-by-step approach plan.

Estimate Implementation budget

Establishment of Budget Estimation Criteria	Estimation of implementation cost	Operating cost calculation	Calculation of risk management cost
• Consideration of key factors such as expected number of users, authentication level, security level, and	• Estimate the resources and costs required for application implementation • Calculate the cost of servers, storage, networks, etc.	• Cost estimation for operation and maintenance • System maintenance bots, security updates, manpower	• Consider risk factors such as security threats and system failures • Estimating the cost of managing and preparing for

Deriving the development cost of the target system (calculation of input airflow based on FP)
Estimate post-implementation operational costs

Terima Kasih.