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Advancing Equitable Access to Public Services

Civil Registration as a
Building Block of Digital Public
Infrastructure in Thailand



A physician practices the electronic medical death certificate (eMDC) system during a workshop held to support and monitor eMDC implementation in Trang Province, Thailand, in June 2022.

Executive Summary

Thailand has developed one of Southeast Asia's most comprehensive civil registration and digital identity systems. With nearly universal civil registration and a unique 13-digit personal identification number (PIN), the country has successfully linked civil registration with the digital identity infrastructure—streamlining service delivery, enhancing governance, and promoting financial and social inclusion.

Thailand's integration of civil registration into the digital public infrastructure (DPI) has delivered wide-ranging benefits by enabling direct data links between previously siloed agencies and automatic enrollment in government services.

The following are examples of services that have improved due to the integration of civil registration and vital statistics (CRVS) into Thailand's DPI.

Universal Coverage Scheme

By shifting from manual health coverage enrollment processes, which relied on physical documents, to a process that can be completed online using PINs, the country has

enabled more timely enrollment into the universal health coverage scheme upon birth registration for eligible newborns. This has made >99% health coverage for Thai citizens possible. This integration also eliminated duplicate enrollments in different health insurance schemes and improved continuity of care through unified electronic health records accessible across all facilities and provinces.

Services for Stateless Persons and Non-Residents

Residents who are not Thai citizens can now be registered in Thailand's Civil Registration Database and assigned a PIN. In addition, birth registration is mandatory for all children born in Thailand regardless of parents' legal status or nationality. This digital footprint for all residents of Thailand, including stateless persons, provides accelerated access to eligible government services.

Thailand's experience shows that strong political commitment, clear governance structures and coordinated data sharing are essential for successfully integrating CRVS into DPI, improving efficiency and access to services. Challenges remain; moving forward, investments will be required to strengthen regulations, infrastructure and workforce capacity, and to further promote data governance standards.

Background

The integration between civil registration and identity systems in Thailand was originally intended to ensure the integrity of the electoral system and national security. Over decades of infrastructure development and legislative reform, civil registration and digital identity systems have matured, and are now among the most advanced in the region. Key moments included:

- **1984:** Introduction of the 13-digit personal identification number (PIN) as a centralized, secure and traceable identifier of all individuals. Issued at birth or upon registration of legal residency, this unique identifier became the basis of Thailand's national identity and administrative systems.
- **1985:** Establishment of the Bureau of Registration and Administration (BORA) to oversee the national civil registration and ID systems, with a goal of developing a foundational demographic data and identity verification infrastructure for public administration and government service delivery.
- **1991:** Passage of the Civil Registration Act, which set the foundation for the current civil registration system, expanded the scope to non-Thai citizens, and formalized BORA's legal mandate.
- **1996:** Digitization of the civil registration system, enabling real-time updates and interoperability across government agencies.

The resulting unified identity infrastructure laid the foundation for digital transformation and systems integration. This enabled seamless data exchange among government entities—across ministries and agencies of health, education, labor, social welfare, taxation and national security—ultimately improving the efficiency, accuracy and accountability of public service delivery.

Civil Registration as a Digital Public Infrastructure Building Block

The CRVS system collects and updates vital events such as births, deaths, marriages and divorces. This data feeds into the broader national population database and forms the basis for issuing physical and digital ID cards. This integration is supported by the enabling factors discussed below.

Championing of Efforts and Support at the Highest Levels

One key component that contributed to the success of integrating CRVS into the DPI in Thailand was the Committee of Population Database Integration and Improvement of Government Services, established in 2015. This committee is chaired by the Minister of Interior and comprises ministries' permanent secretaries and the general secretaries of related government agencies, including the Ministry of Public Health and the Social Security Office.

The committee coordinates database integration across agencies using the PIN, the identification number assigned to each person, to link records. The agencies themselves are responsible for developing and maintaining their own population information databases using the PIN as the index or primary reference for storing and organizing data, and also ensuring their systems are compatible with the citizen identification number (CID) smart cards and interoperable with the central database.



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Application of the DPI Approach to the CRVS System

In 2003-2004, Thailand achieved the first major cross-sector integration between the CRVS system and the National Health Security Office (NHSO) to support identity verification and enrollment into the universal coverage scheme. CID smart cards, embedded with the person's 13-digit PIN, were introduced in 2005, enabling interoperability between government agencies through a linkage with the population database.

Several policy frameworks support this effort; they cover data sharing authority and integration guidelines, including encryption, access and electronic transactions, as well as departmental mandates and accountabilities. These include Thailand 4.0, the Thailand Digital Economy and Society Development Plan, and the Digital Government Development Plan.

- **Thailand 4.0**, a national 20-year strategy, was launched in 2016 to transition the country from a middle-income, manufacturing-based economy to an innovation-driven economy through smart, digital and sustainable development. It encouraged investments in digital identity systems, data-sharing infrastructure and e-government

portals, creating demand for real-time, interoperable data systems across ministries. The strategy also encouraged deeper integration of the civil registration system with social protection, health, education and finance systems, and provided justification for using the PIN as a national identity key in public and private sectors.

- The **Thailand Digital Economy and Society Development Plan**, also announced in 2016 and covering a 20-year timeframe, detailed the enabling environment and infrastructure necessary to transition from a manual, fragmented administration of government services to a unified, people-centric DPI.
- The **Digital Government Development Plan** followed in 2017. The first in a series of five-year plans, it formalized the civil registration and population databases as the core reference datasets for public service delivery.

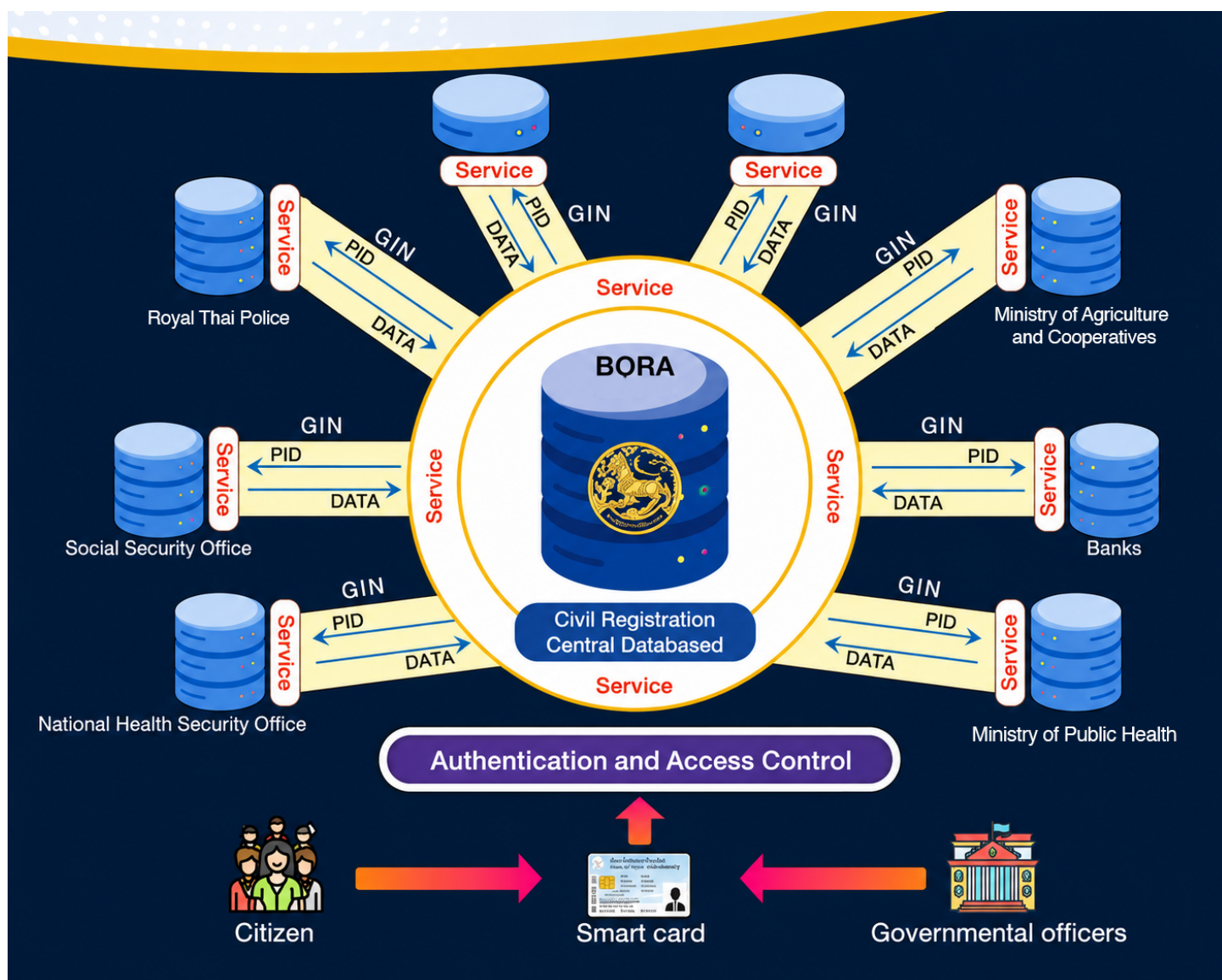
By 2025, 305 government agencies, including the National Health Security Office, Ministry of Education, Election Commission, Revenue Department and Royal Thai Police, were linked to the civil registration database, enhancing service efficiency, reducing fraud, and improving access for rural and marginalized groups.

Simultaneously Digitalizing CRVS Improvement and Interoperability with ID Systems and Access to Services

The CRVS system acts as the backbone for a range of digital platforms, such as smart ID cards, e-government services, mobile identity apps and digital health services. These platforms not only simplify interactions between individuals and the state, but also improve inclusion by ensuring that essential services can be accessed by all registered people, regardless of location or socioeconomic status. Civil registration data from the population database is shared with other government agencies through an intermediary platform, or “linkage center” (Figure 1).

CID smart cards enable interoperability between government agencies through linkage with the population database, as well as verification at service points. The ThaiID platform, launched in 2023, is a mobile app that further enhances this system through online authentication such as facial recognition, QR codes, or secure login—all enabling trusted online transactions. This platform can be used to log into e-government portals, apply for public services, or access private sector services, such as banking.

Figure 1: Civil Registration Central Database Integration with Government Agencies



(Source: Bureau of Registration and Administration)

Use Cases: Demonstrating Key Benefits of the CRVS-DPI Integration

Integrating Thailand's CRVS system into the DPI enabled direct data links between previously siloed agencies, allowing automatic enrollment in government services and increased legal registration for previously excluded communities. The following examples illustrate the specific impact on health coverage and on access to services for stateless populations.

Benefits of the CRVS-DPI integration for the Universal Health Coverage Scheme			
Before			After
Thailand's healthcare system was highly fragmented and inequitable: 25% of the population, largely government employees and formal sector workers, were covered by two insurance schemes. 75% of the population, mostly informal workers, rural residents, and poorer populations, were either uninsured or relied on limited and inconsistent subsidy programs. There was no unique national identifier linking individuals to households or localities, making it challenging to reliably track coverage, service utilization or health outcomes at a national level. Enrollment and eligibility verification relied on physical documents and manual processes, disproportionately disadvantaging people in remote and rural areas. Newborns had to be registered separately with civil registration authorities and the National Health Security Office, often leading to delays or missed enrollment. Health system planning and oversight were constrained by weak administrative infrastructure, gaps in coverage and duplication across schemes.		With the National Health Security Act, Thailand launched universal health coverage through the universal coverage scheme in 2002, guaranteeing all citizens access to comprehensive health services. As a result, >99% of Thai citizens received formal coverage through the administration of three insurance schemes. The National Health Security Office established a direct data link with the Department of Provincial Administration and the PIN became the backbone, supporting health system enrollment, eligibility verification, and portability of care. Newborns can now be enrolled in an online process into the universal coverage scheme following birth registration, reducing administrative burden and travel requirements, especially for rural and marginalized populations. This integration enables real-time eligibility checks at the point of care, automatic assignment of individuals to primary care units based on household registration, and elimination of duplicate records.	
Impact			
Elimination of duplicate records through real-time data linkages and automated enrollment. Streamlined service delivery, enabling healthcare providers to verify identity and confirm insurance eligibility. Improved continuity of care through access to unified electronic health records using a single identifier, enabling seamless care across facilities and provinces.			

Benefits of the CRVS-DPI integration for Services for Stateless Persons and Non-Residents			
Before	Thailand's civil registration and social protection systems excluded large segments of the population who lacked Thai nationality, including stateless persons, undocumented migrant workers, and some ethnic minority groups. As of 2024, Thailand had over 592,000 stateless people, including more than 169,000 children. In addition, it was estimated in 2025 that there were over 1 million undocumented workers in Thailand. Without legal recognition or a mechanism to register the birth of their children, these people were effectively invisible to the state and systematically barred from basic public services such as education, healthcare and legal protections. Stateless children, in particular, faced lifelong disadvantages from birth, with no clear pathways to recognition, protection or eventual nationality.	People without Thai nationality can register in the civil registration system and receive a personal identification number. This allows their information to be officially recorded in the country's population database, along with the storage of personal identity data to support accurate and reliable identity verification and confirmation. Thailand mandates that all children born in the Kingdom must be registered at birth, regardless of the nationality or legal status of their parents. This means that children born to stateless or undocumented parents can obtain birth certificates and be registered in the state's registration system, which is a crucial foundation for accessing basic rights and government services in the future.	After
Impact			
• Digital identities for marginalized populations are enabling stateless and non-Thai individuals to access eligible government services. • Increased legal registration and documentation for stateless populations provided over 483,000 people with access to residency and nationality status in Thailand.			

Learnings

- Thailand's experience of elevating CRVS and integration with DPI as a national priority provides valuable lessons about the importance of governance and strategy.
- **Political mandates and strategic policies** provided the direction and an operational road map for implementing a unified digital government system.
 - The authority and backing of **senior level management** was needed to enforce data sharing mandates and collaboration across all government agencies.
 - **An enabling legal framework and data sharing agreements** with a comprehensive scope, objectives and security measures were key to linking data across agencies.

Challenges

While Thailand's achievements of integrating civil registration into its DPI have yielded remarkable impact, several ongoing challenges need to be addressed to ensure equity, security and sustainability.

- **Gaps in the legal framework** prevent the integration of emerging digital services and the maximizing of the potential of e-services.
- **Data privacy concerns are increasingly prevalent** as more personal information is shared across linked systems, requiring robust data-sharing agreements, safeguards that ensure personal data protection, audit trails and accountability mechanisms.
- **Cybersecurity risks have increased along with the complexity of digital systems** requiring periodic security audits to assess vulnerabilities and the implementation of role-based access controls to restrict data access and minimize breaches.
- **Data quality and consistency challenges remain** and require automated audit mechanisms and traceable workflows for manual corrections so that all changes are documented and audited.
- **Data processes are not yet fully embedded** into regular operational workflows of all government departments due to integration gaps.
- **Staff lack digital literacy skills** and require regular training to stay updated on technical changes and legal obligations.
- **Sustainability concerns exist** around long-term budgeting and system maintenance to prevent service degradation and ensure continuity.

Next Steps

A coordinated approach across policy and operational levels is necessary to further strengthen Thailand's DPI and inclusive identification systems. Together, these measures can help safeguard Thailand's DPI and ensure that its benefits are equitably distributed to all residents, regardless of legal status or digital literacy. Recommendations:

- **Continue to enact regulations that facilitate secure data linkages** and establish centralized platforms for data exchange. Create feedback loops to gather insights from frontline staff and system users to ensure that the platforms remain user-friendly and responsive to evolving needs.
- **Sustain investment in infrastructure maintenance and systems upgrades**, as well as regular training sessions to build institutional capacity for data protection and system use.
- **Establish clear data standards** to enable uniformity in how government agencies collect, store and share information. Appoint dedicated data stewards to ensure compliance with data governance frameworks, data protection legislation and cybersecurity protocols.
- **Design all digital identification systems with inclusivity in mind**, particularly to accommodate older adults. The ThaiID application can be further promoted as the national standard for digital ID verification across both public and private sectors to further streamline access to services.

Thailand's experience illustrates how a well-designed civil registration system, linked to the ID system that issues unique PIN to everyone, can serve as the backbone of a robust DPI. Through deliberate policy and legal reforms, high-level commitment and oversight, and inter-agency coordination, Thailand has achieved real-time interoperability between civil registration and key government services, enhancing efficiency, accountability and inclusivity. Thailand's model underscores the centrality of civil registration in advancing equitable access to public services for all.

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CRVS stakeholders participate in a World Café session to define the scope and strategic road map for the production of Thailand's Vital Statistics Report during the National Inception Workshop on the Production of High-Quality Vital Statistics Report for Thailand, in February 2026 at the United Nations Conference Centre, Bangkok, Thailand. Photo credit: National Statistical Office of Thailand

