

# Cross-Border & Regional Identity Management

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## Leading social value

Provides telecommunications, IT and Enterprise business solutions

- Around **98,726** employees worldwide
- **USD 25.2 billion** net sales
- **217** consolidated subsidiaries
- Headquarters: **Tokyo, Japan**
- **118 years** of brand success

- World's Top 100 **Most Innovative Organizations**
- **Fortune Global 500** company

\* World's Top 100 Most Innovative Organizations for 2013  
(Thomson Reuters)

# Business Segments

## Solutions



### For Public

- Airport Solution
- Disaster Prevention
- Railway Solution
- Security Solution
- Smart City, Stadium Solution
- Space System

### For Telecom carriers

- Mobile Backhaul
- Broadband Wireless Access
- M2M
- Operation & Management System
- Submarine System

### For Enterprises

- Industry Solutions
- Automotive
- Education
- Finance
- Healthcare
- Hospitality
- Manufacturing
- Retail

### For Smart energies

- Energy Management System
- Electric Vehicle (EV) Charging Infrastructure
- Energy Storage System
- Water Management System

## Solution Topics

Big Data

Cloud

SDN

## Common Platform

Server/Storage   Unified Communications   Display



# Global Trends and Growth

World population: 7 billion → **9 billion**  
(1.3 X)

Ratio of urban residents: 50% → **70%**

Energy demand  
⚡

**1.8<sup>X</sup>**

Greenhouse gases  
CO<sub>2</sub>

**1.5<sup>X</sup>**

Demand for food  
🌾

**1.7<sup>X</sup>**

Demand for water  
💧

**1.6<sup>X</sup>**

Scale of world economy  
⚡

**4<sup>X</sup>** \*

(Present to 2050)

(\* Source: UN, FAO, OECD, PWC, IMF)

Migration and Regional Travel Increasing  
as people move towards resources

# Border Management

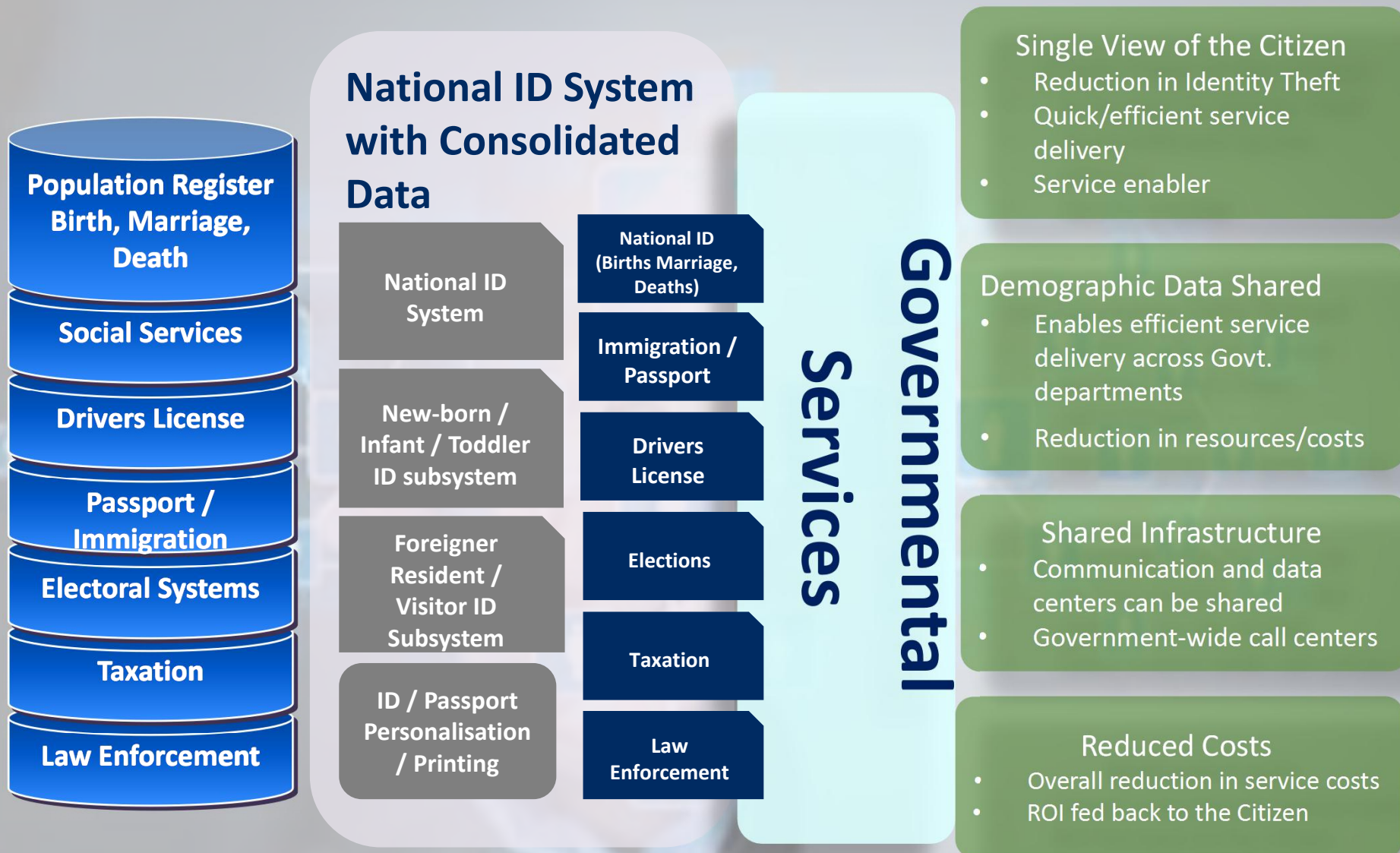
Larger migration, immigration, tourism, professional relocation and general cross-border activities place strain on border management infrastructures, results in the need for:

- Additional immigration and border management officials
- Additional security to manage official ports of entry
- Additional security to protect borders
- Better systems to protect citizenry and services
- New and enhanced infrastructure in general to cope with additional border activities

Ground work for border control and immigration systems commences with ability to identify citizens and foreigners alike

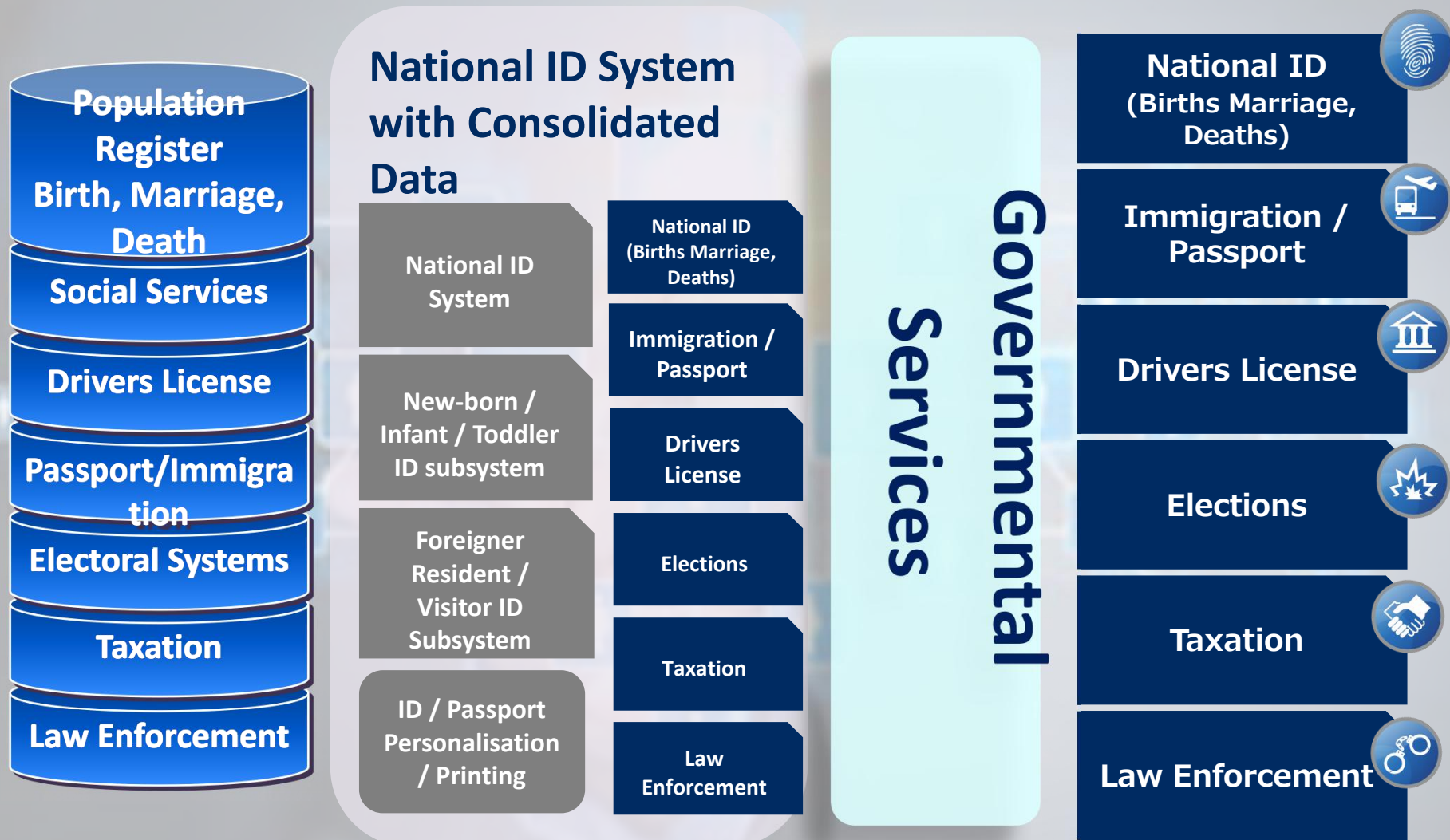
**National Identification Systems provide this ability**

# Consolidated Governmental Systems

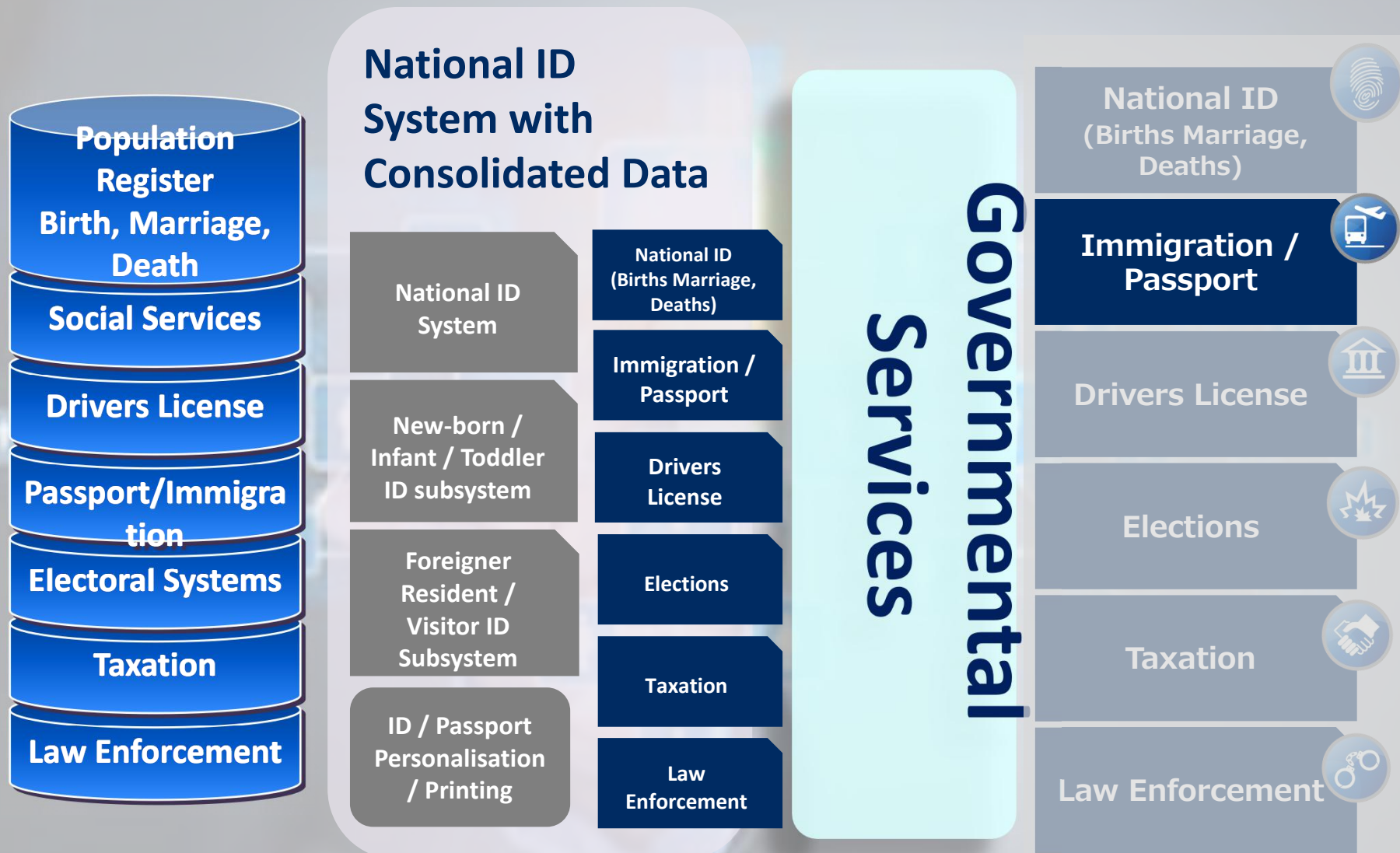




# Consolidated Governmental Systems



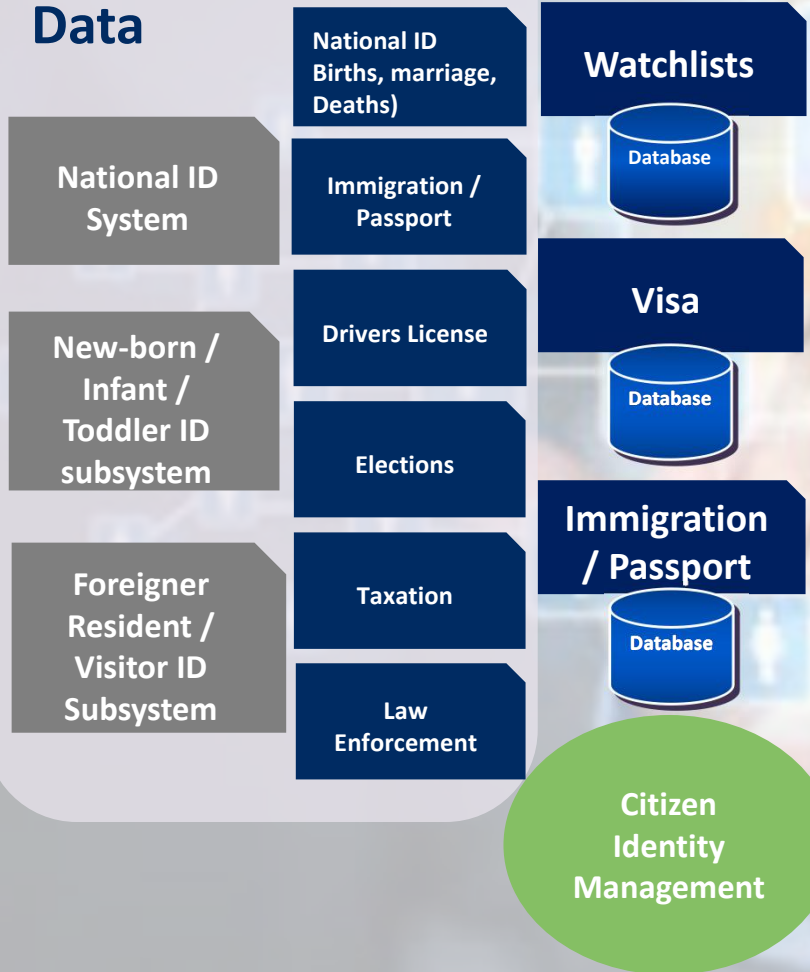
# Consolidated Governmental Systems



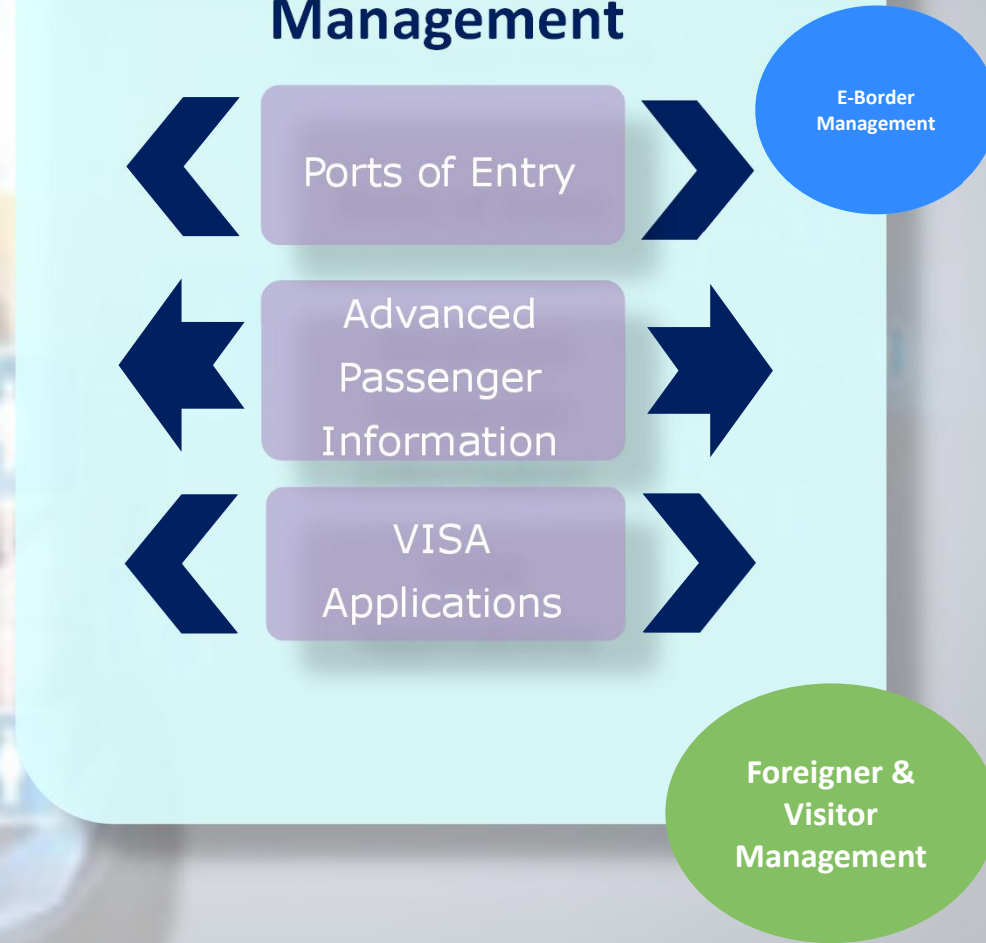


# Movement Control Systems with Biometric Data

## National ID System with Consolidated Data

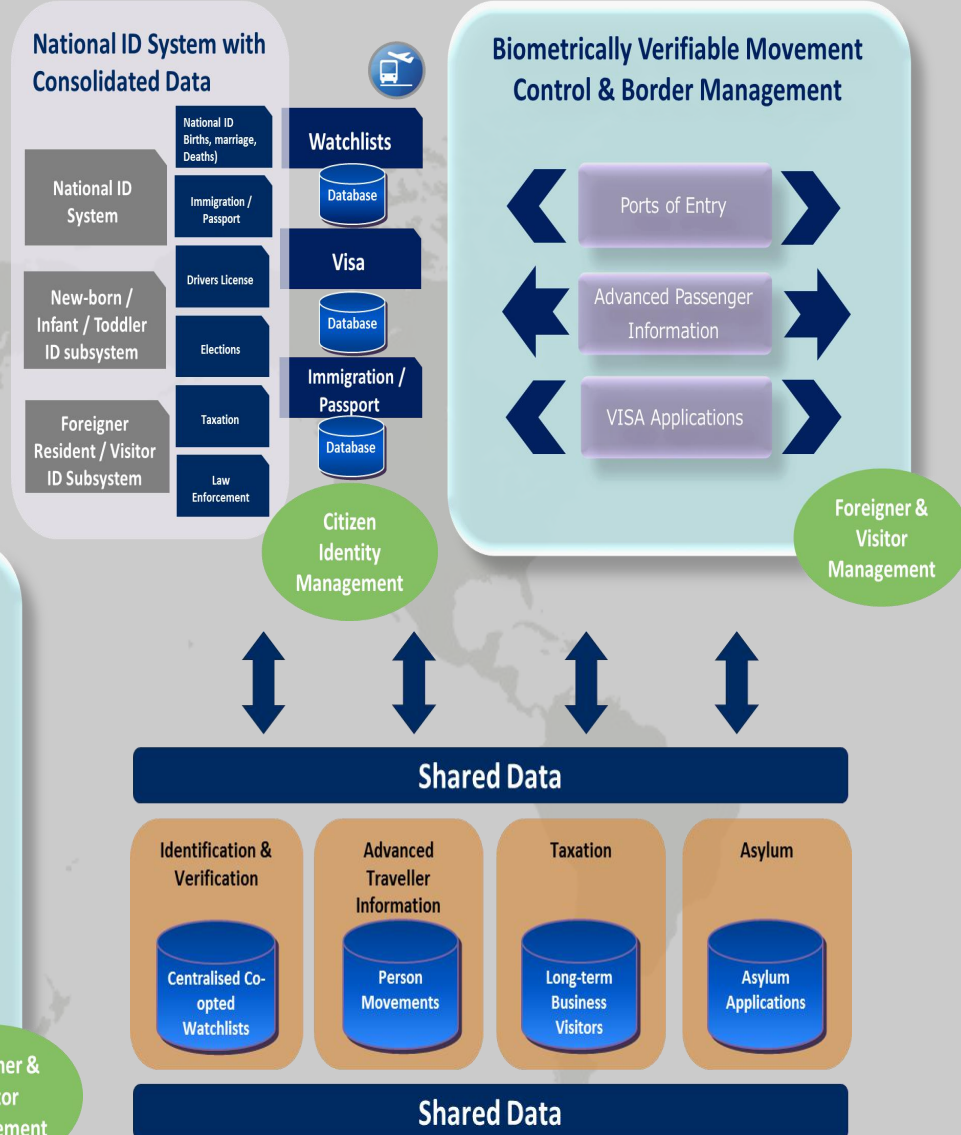
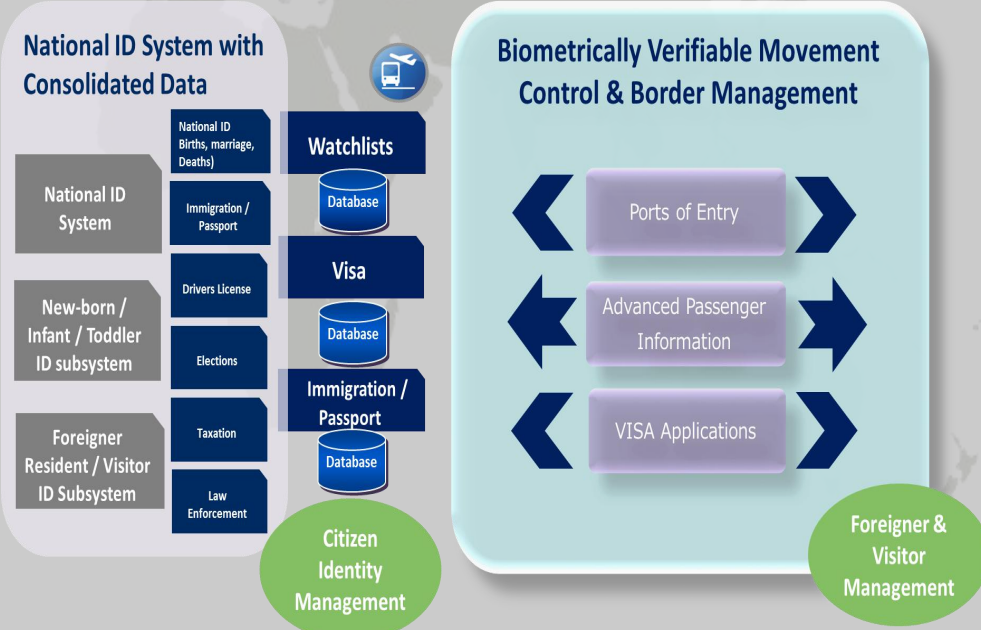


## Biometrically Verifiable Movement Control & Border Management



# Cross Border and Regional Identity Management

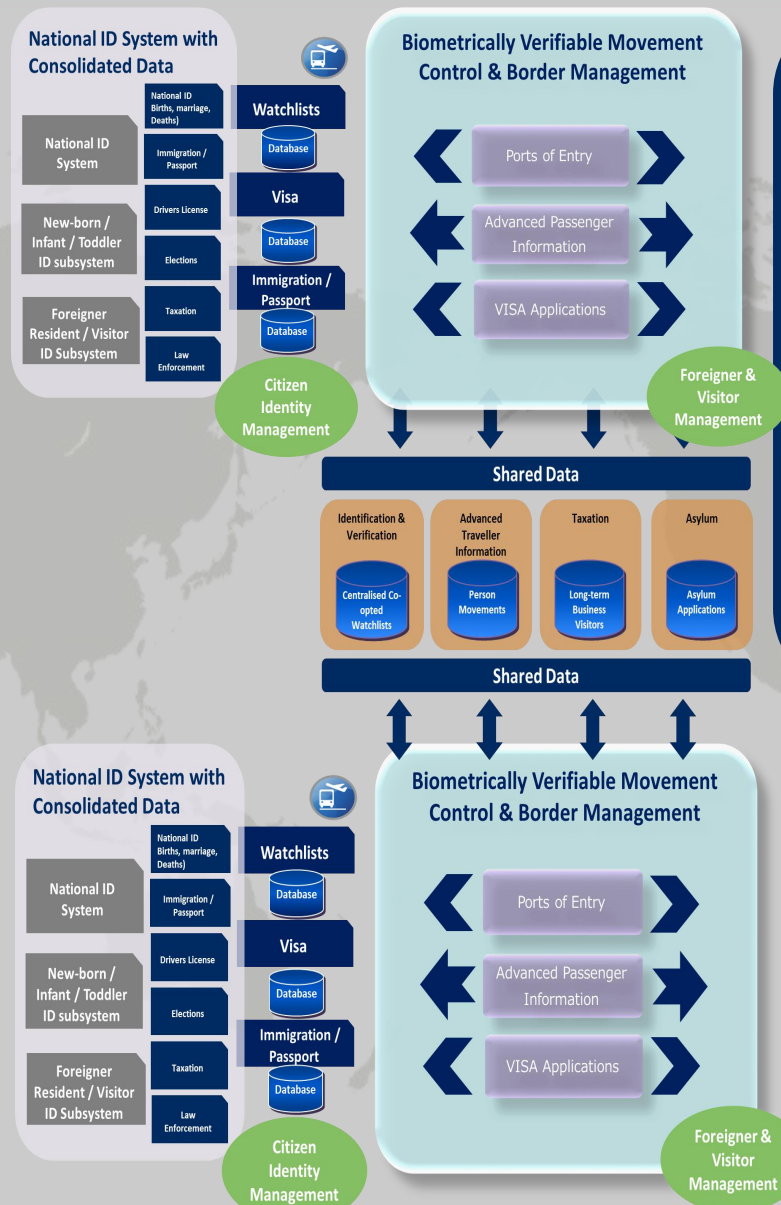
**National databases do not necessarily allow for Cross Border and Regional Identity Management – are a precursor for the re-use of data and regional cooperation**



# Cross Border and Regional Identity Management

## Advantages

- e-Border management reality
- Enhanced regional cooperation & security
- Shared resources
- Advanced traveller notification
- Clear view on long-term business travellers – taxation
- Simpler and quicker movements
- Reduced resources
- Identification mechanisms for asylum seekers



## Challenges

- Legislation / (inter) Departmental responsibility
- Regional / International agreements
- Budgets and international funding



# Technology Focus – Biometric Technologies



Most common form of Biometric for National ID

Automated Fingerprint Identification System

## Automated Biometric Identification Systems

- Traditional Biometrics Systems utilised Fingerprints only
- Advances in technology allow for the inclusion of others:
  - Facial
  - Iris
  - Voice

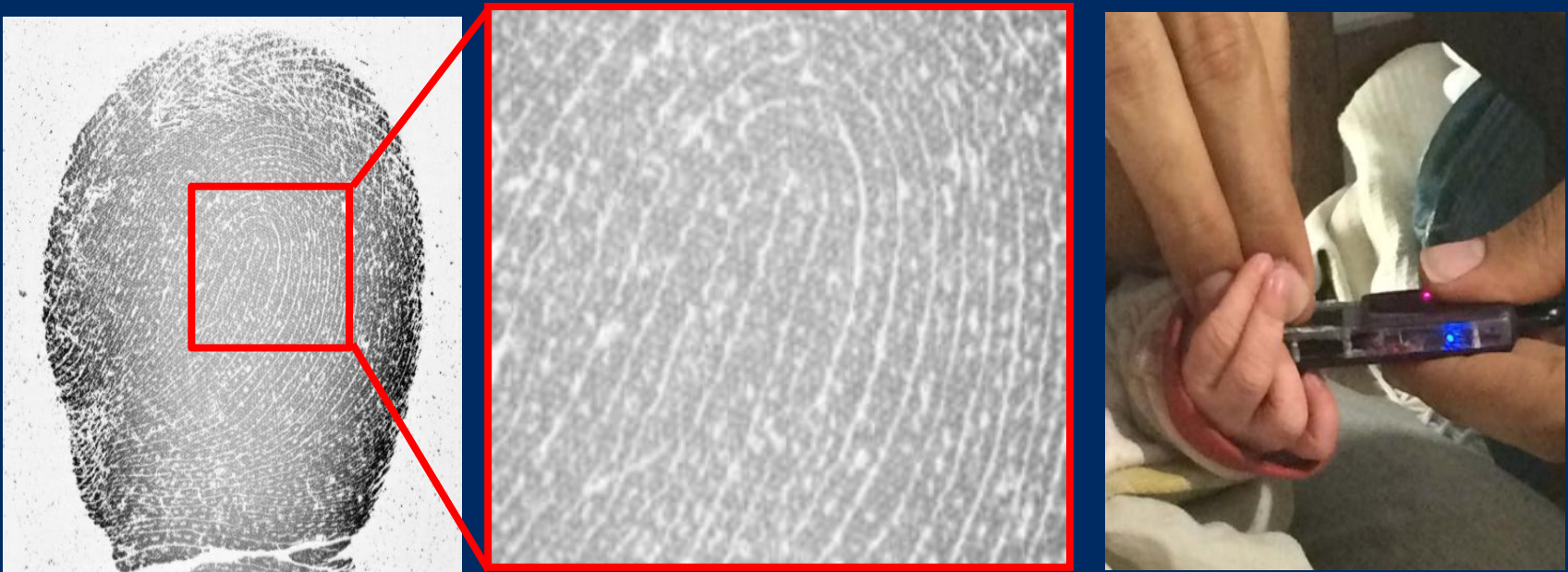


## Challenges

- Interoperability** – ensuring biometric systems from different vendors can exchange data
- Infrastructure** – often border posts have limited infrastructure, i.e. connectivity, electricity, etc.
- Children's Fingerprints** – to date, no feasible, implemented method of identifying children from new-born exists
- Trust across Systems** – Security, Trust and Data Sharing. International agreements for the participation in regional travel schemes required

# Advances in Capturing Child-Fingerprints

The prototype device which is designed for child-fingerprint identification successfully captured the fingerprint images of over 300 children, including more than 100 from infants younger than 6 months, one of whom was just **6-hours old newborn baby**



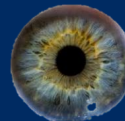
Fingerprint image taken from 6 Hours Newborn

# Technology Focus – Biometric Technologies (NIST)



## NIST's biometric activities include:

- research on the various biometric modalities: fingerprint, face, iris, voice, DNA, and multimodal
- standards development at the national and international level
- technology testing and evaluation, which leads to innovation



## Efficient method to Benchmark different Vendors and Technologies

- Accuracy
- Speed of Processing
- Processing costs
- Interoperability
- Efficacy of Technology to Business Requirement
- Standardisation
- Assist with Vendor Choice



# Smart Border Project in the EU

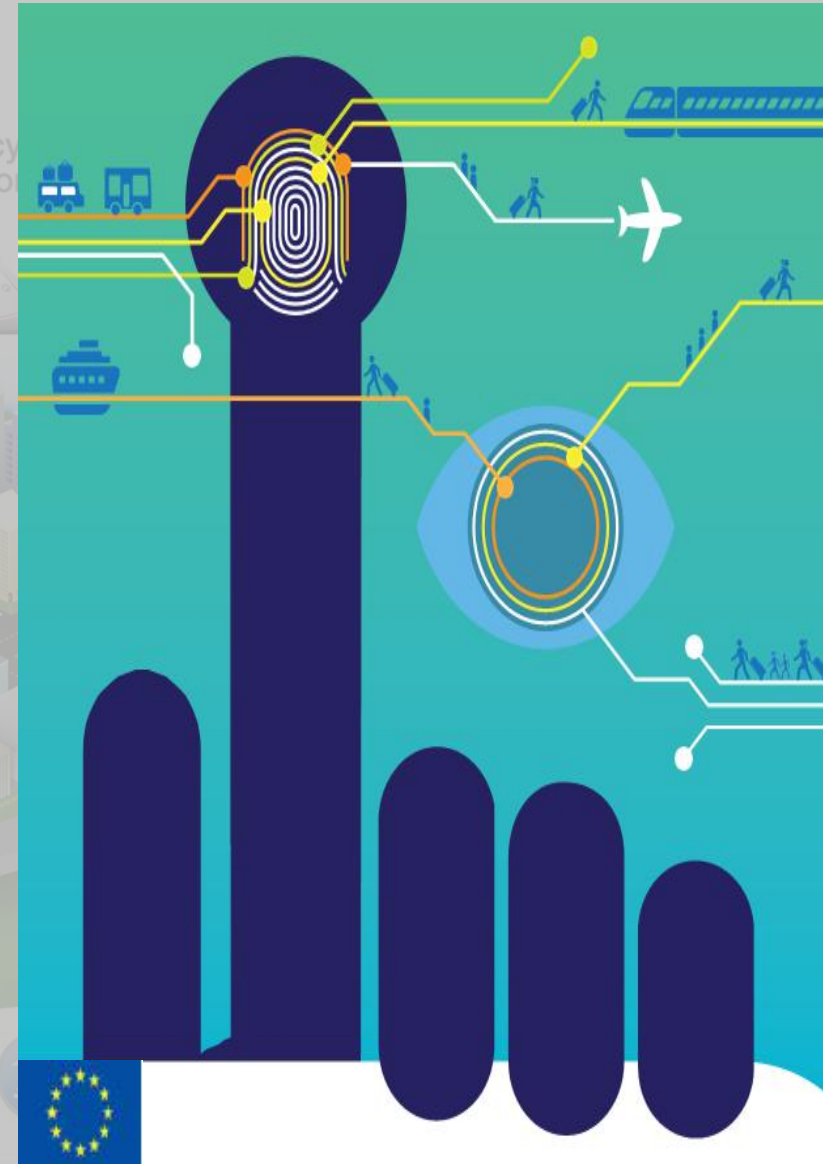
**Number of border crossings in the European Union expected to rise to 887 Million by 2025**  
**More than 295 million expected to be from non-European countries**

**'Smart Borders' Pilot Program was completed in 2015**

- 18 Border crossing points (**Air, sea and land** borders)
- 58,000 travellers participated
- Biometrics used:
  - Fingerprints
  - Facial Recognition
  - Iris
- Process Accelerators:
  - E-Gates
  - Kiosks

## **Result-**

Average durations for the whole border crossing process ranged from 14 to 41 seconds



# Concluding remarks

- Although alternative technical solutions to Cross-border and Regional management exist – implementing National ID solutions as a precursor adds many benefits, including the abilities to:
  - provide more effective services within country
  - protect citizenship and identity theft
  - ensure fast and seamless cross border movements
- Currently a large percentage of countries within Africa do not have National ID solutions
- The sharing of data amongst regional countries and therefore the necessary agreements between them are essential
- Initiatives such as ECOWAS provide a good basis for expansion



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