Open Solution for a Unified Population Register

Many countries are confronted at some time or another with the need to provide a reliable and verifiable means of identification and authentication for their citizens. The reasons are diverse and vary from country to country : fighting identity fraud, border control and immigration flows, verification of entitlement to government services or benefits, crime prevention, anti-terrorism, organisation of elections,… Proper identification of citizens becomes a central issue when faced with the need to issue secure identity documents such as passports, ID cards, entitlement cards, social benefit cards, voters' cards, driver's licenses, turning an e-government strategy into reality, organizing fair and transparent elections or improving the customer satisfaction of any government service. Unique and unambiguous identification of citizens and residents is a corner stone of an efficient public administration.

Key elements for a robust national identity scheme

A national identity scheme is built on three pillars : a unified population register, a concept of unique identifiers and secure identity documents. They are like an ecosystem in which each element depends on and reinforces the other elements.

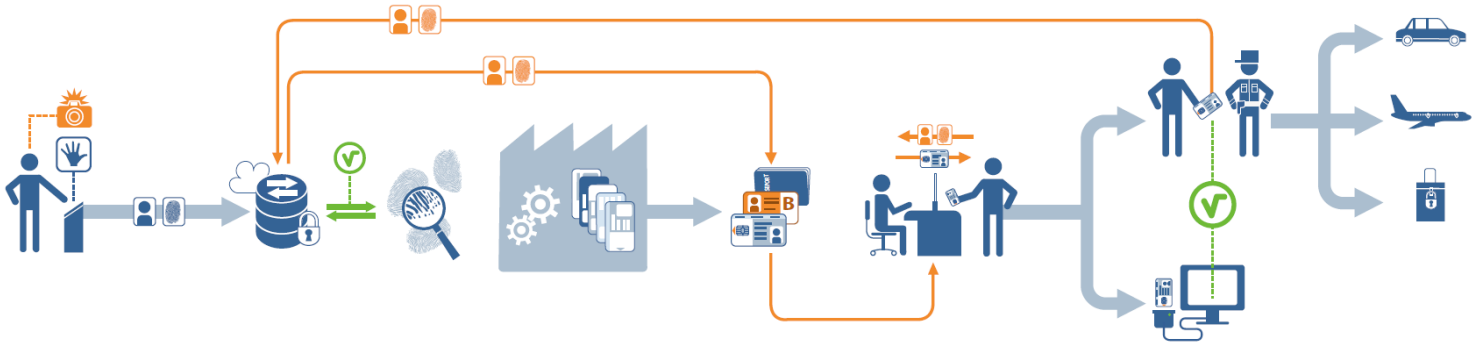
- Unique Identifiers : if legally allowed, enable government agencies to exchange information without bothering or involving the citizen.
- Secure identity documents : cannot be issued without a reliable means of credential validation and are useless without unique identifiers attributed to the document holder. Conversely, unique identifiers are meaningless if the citizen is unable to easily convey his/her identity to a public service.
- Population register : the content of a population register is unreliable if citizens cannot be properly identified.

Population register

Components

A modern population register is built on and surrounded by a whole plethora of cutting edge technology, integrated to form a coherent system for enrolling, registering and storing citizen data. The principal components are :

- relational database containing biographic and biometric data
- system and network infrastructure, high available servers and storage systems on a large bandwidth network
- applied cryptography to apply integrity, confidentiality and authenticity of the data set
- Public Key Infrastructure (PKI) for issuing and managing digital certificates



- biometric enrolment equipment, ICAO photo qualification tools, ...
- smartcard technology for electronic ID cards, passports, ...

Principal functionalities

The primary function of a population register is to consolidate the relevant identity information in a central, unified database. This database only needs to contain the strict minimum of information required for the identification of citizens but can also – optionally – contain additional information on marital status, parent-child relationships, etc.

Taking into consideration the subtleties and complexity of interaction between citizens and public institutions as well as between citizens and private companies it is often considered useful to manage additional information such as mandates, attributes and privileges associated with certain persons.

Once the population register is established it becomes the unique reference source for identity information. In turn, the population register can be used to create other – temporary – registers, e.g. for elections, demographic analysis, issuance of ID-cards, passports, driving licenses, entitlement cards, etc.

Quality, reliability and accuracy

The quality, reliability and accuracy of the population register depend on two critical factors :

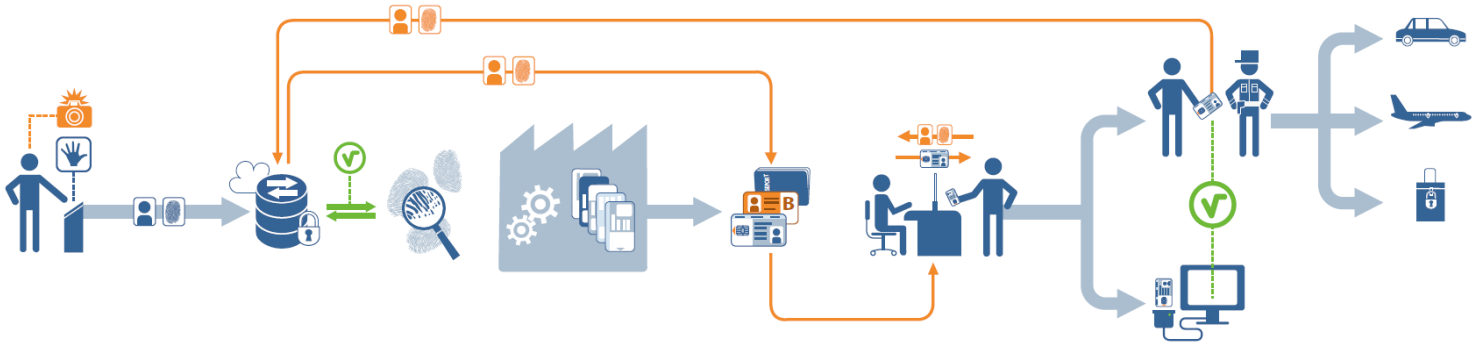
- Quality of the procedures applied to feed the register with the data : initial registration, verification of existing credentials, biometric enrolment, declaration of birth, death, marriage, divorce, changes in the civil status or other attributes related to a person, etc.
- Level of the security measures to protect the integrity and confidentiality of the data as well as the supervision and traceability of all actions and queries on the data set.

Adding biometric data to the equation

Until recently most population registers contained strictly biographical data. In recent times two driving forces emerged that add biometric data to equation:

1. The advent of biometrically enabled travel documents. This is true for all countries.
2. For some countries biometric enrolment of (part of) the population is the only solution to build a reliable population register from scratch. This applies not only to developing nations who want to jump start a national administration or organize elections but also to developed nations who until now did not maintain a unified population register.

Whether the biometric data should be stored in the population register, in a separate biometric register or used in an operational AFIS depends on the local legislation and the local policy regarding collecting and storing biometric data.



The benefits

The benefits of unified population register are manifold :

- higher accuracy and coherence in the information managed by various government agencies, reducing the effort and time to retrieve, correlate and correct information
- significant reduction of fraud, especially relevant in social benefit schemes
- more efficient and easier exchange of information between government agencies
- better identity management
- reliable register of the civil status of all citizens and residents
- shorter implementation time and lower cost for establishing attribute registers :
    - entitlement registers for social benefits, medical care, etc.
    - driver's licenses
    - elections
    - national and regional tax collection - land and realty registers
    - military draft lists
    - etc.
- fast and reliable statistical analysis
- immigration and emigration
- demographic trends
- evolution of civil society (marriages, divorces, children per family, etc.)

ZETES CITIZ-ID

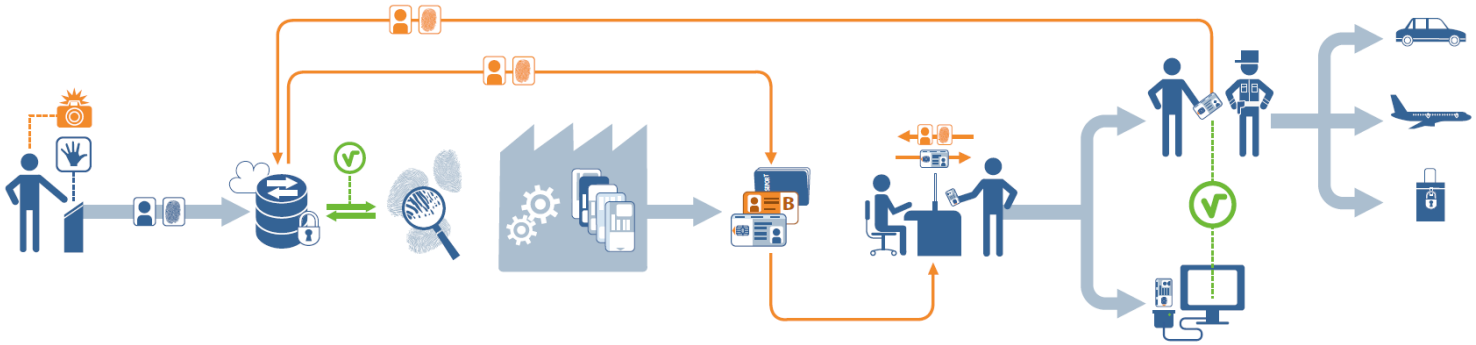
At Zetes we understand that each country has its own unique requirements, legislation and policies for managing a population register.

Zetes CITIZ-ID provides a simple but solid design to :

- reduce the cost, time and effort to deploy a rudimentary population register
- allow local IT staff to deploy and manage the solution without specialist skill sets
- give the government the option to adapt and extend the core system to accommodate new needs

The solution builds on tried and tested concepts and uses commodity software and hardware.

To deploy, extend and maintain the product, system integrators need not invest in additional training or special skill sets for their project and development teams. This also means that government IT-departments can outsource system management and development tasks to their



preferred local suppliers.
Zetes CITIZ-ID specifically targets government departments that face the challenge of establishing and populating a population register from scratch within a very short time frame.

Features

The central population register is in constant interaction with the enrolment front office, a central AFIS infrastructure and the identity document production unit. The register also accommodates information queries from external parties.

The key functions of the register, apart from storing the citizen data sets are :

- batch import of registration data
- extraction of lists, e.g. for electoral lists per region or municipality
- automated input and output via standardized web services
- a web front end for intranet and extranet users to query, view, add or modify information in the register
- automated communication with an external AFIS to detect multiple registration attempts by the same person
- an interactive application to resolve potential double registrations

Technology

A key design feature of this solution was to enable local IT service providers and in-house IT staff to manage and extend the basic solution.
The product's architecture is a tried and tested 3-tier model with separate tiers for the Oracle 10g database, J2EE application servers and the web front-end.
The data model is flexible and accommodates various schemes for name formats, name changes, address formats, parent-child relationships, etc. If necessary the data model can be adapted to meet local requirements.

One of the advantages of holding a population register is to be able to keep track of the evolution of **civil society**.