

Mapping Digital Identity Systems

Nigeria

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CONCEPTUALIZATION

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Digital Identities: Design and Uses

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Overview / Digital Identity System in Nigeria

In this series of exploratory research maps, we examine the digital identity system in Nigeria. This is part of our global survey of digital identity systems. These maps can be read together with our glossary of core concepts and processes. They illustrate the pervasiveness of digital identity, as well as dissect digital identity systems in a way that brings attention to the actions of key stakeholders, and to kinds of data and how they are shared. Designed as stepping stones to further research, the maps facilitate the identification of points of accountability and intervention.

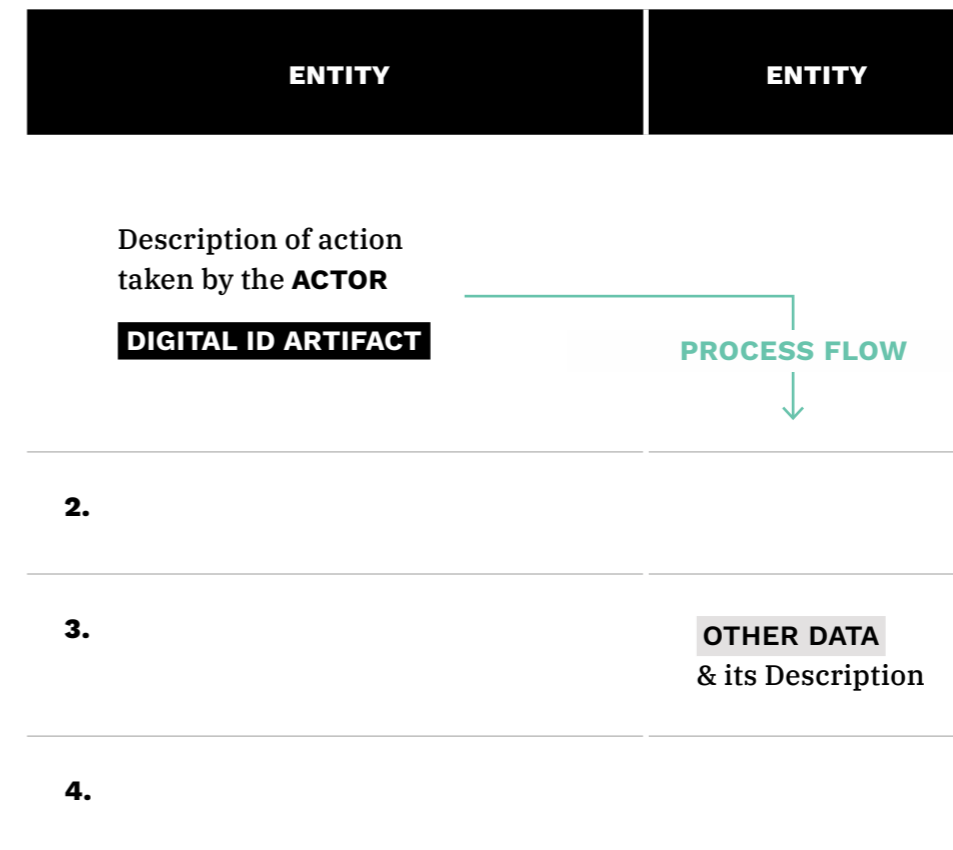
The digital ID system in Nigeria includes the National Identity Number (NIN) and the National Electronic Identity Card (e-ID card). The NIN is a unique eleven digit number, randomly chosen and assigned to an individual at the completion of enrolment into the National Identity Database (NIDB). The NIN can be used to establish or verify the identity of an individual for availing services such as travel, opening bank accounts, and accessing welfare and other relevant services from the Nigerian Government. It is mandatory for every citizen and legal resident to enrol for the NIN. It can be issued to citizens and legal residents of all ages. The e-ID Card however, is issued to citizens and residents who have attained the age of sixteen years and above.

The National e-ID Card is a chip based card with multiple functions, that acts as an additional physical token to the NIN. The NIN can be used on its own for digital identity verification without the e-ID card. But, the e-ID card cannot be used on its own for digital identity verification without the NIN first being stored within its chip. The NIN and the eID Card are both issued by the National Identity Management Commission (NIMC). The NIMC aims to harmonize the data with various agencies across Nigeria in order to make the process of accessing services through the NIN more efficient.

Process Maps / Identification and Authentication

The core processes within each digital identity system are being mapped in order to evaluate the existing technological and policy decisions. These process maps bring forward the advantages and barriers in the mechanisms of identification, authentication, and authorisation. These maps follow the Swim Lane Model to capture these processes. The use of this technique helps to read the processes with clarity, and also points out the multiple possibilities at different steps.

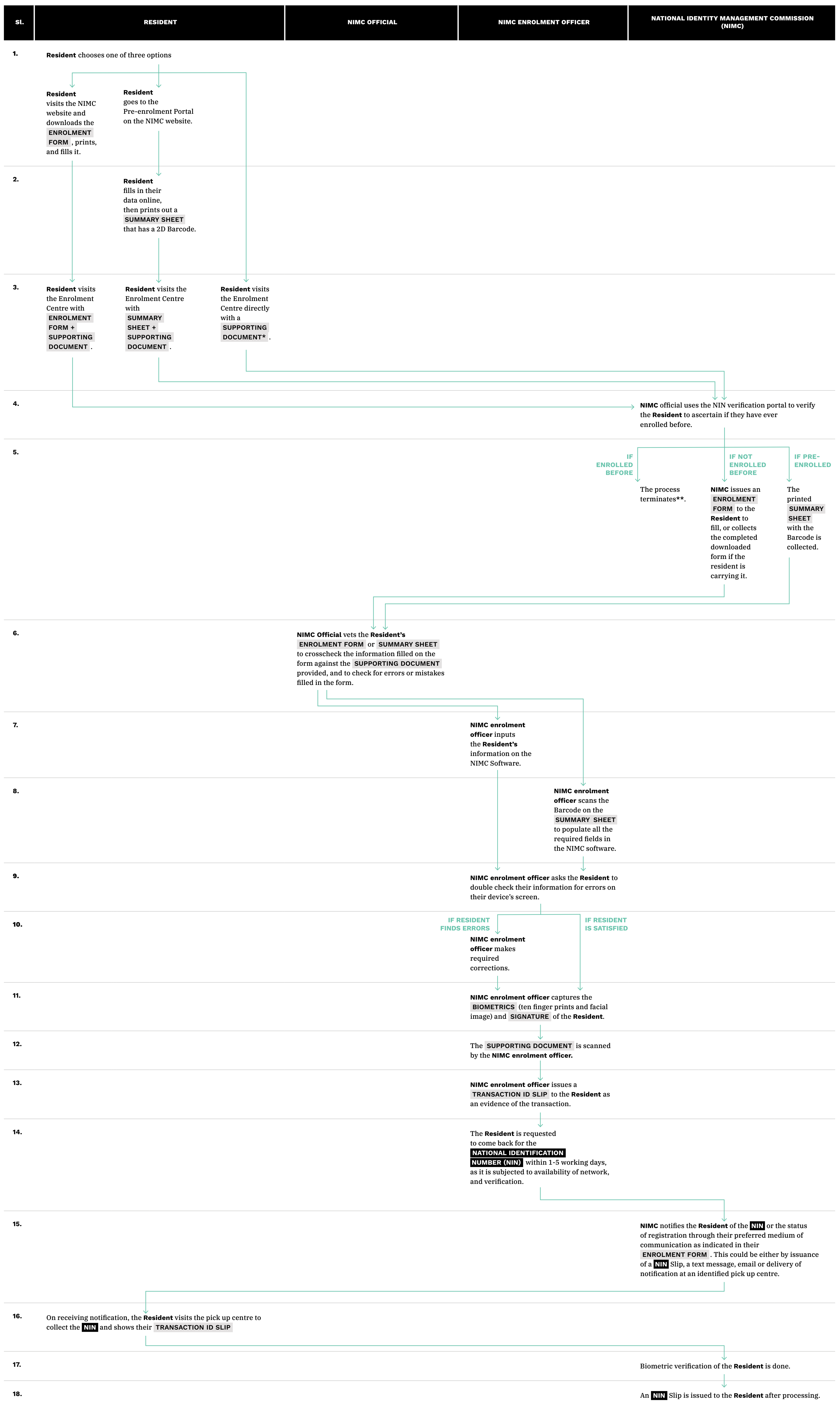
The Swim Lane Model represents a process as a sequence of steps, and places the entities in different lanes (or columns) to show who is responsible for taking those steps. Each column shows the action taken by the respective entity. The numbered rows establish the sequence of steps. The arrows connect the end of each step to the beginning of the next one. *Refer to the key on the right to navigate the process maps.* They also indicate multiple routes that can be taken within a step. Additionally, these process maps highlight the data being collected and digital identity artifacts being used in various steps.



Identification

NATIONAL IDENTITY NUMBER (NIN)

The National Identity Number (NIN) is a unique number issued by the NIMC to individuals after an enrolment process that includes the recording of demographic and biometric information, and digital signature. This data is stored in the National Identity Database, and is linked by the unique NIN. For minors, the process of enrolment is the same, except they must be accompanied by a parent or guardian. The parent or guardian's NIN Slip must be provided for the process, along with supporting documents. There is no enrollment fee for acquiring the NIN.

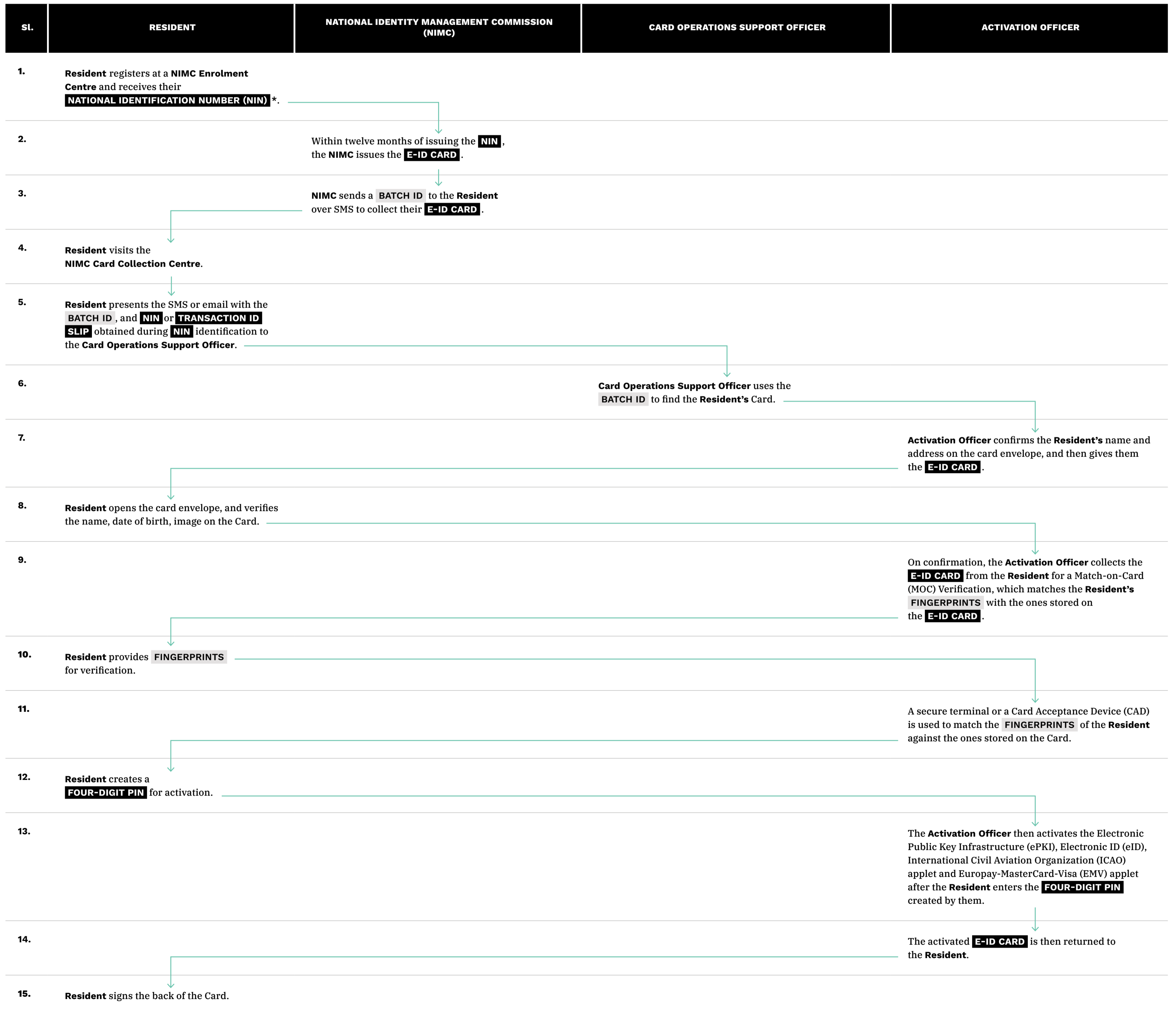


* Any of the following original and valid documents can be used as a supporting document: Old National ID Card, Driver's License, Voter's Card (Temporary or Permanent), Nigerian International Passport, Certificate of Origin, Attestation letter from a prominent ruler in your community, Birth Certificate, Declaration of Age, Attestation letter from religious or traditional leader, NHIS ID Card, Government Staff ID Card, Registered or Recognized Private Organization Staff ID Card, School ID Card (private or public), Tax Clearance Certificate, Valid Immigration Documents.

** Attempting to re-register for NIN is a criminal offence.

NATIONAL ELECTRONIC IDENTITY CARD (E-ID CARD)

The e-ID Card is issued to the individual within twelve months of receiving the NIN. The NIMC sends a Batch ID to the individual which is used to collect the Card from a NIMC Card Collection Centre. The individual is issued the Card upon successful biometric verification. The applications linked to the Card are also activated after this process. Minors receive an intimation through SMS when they turn sixteen to update their data and obtain their e-ID Card.

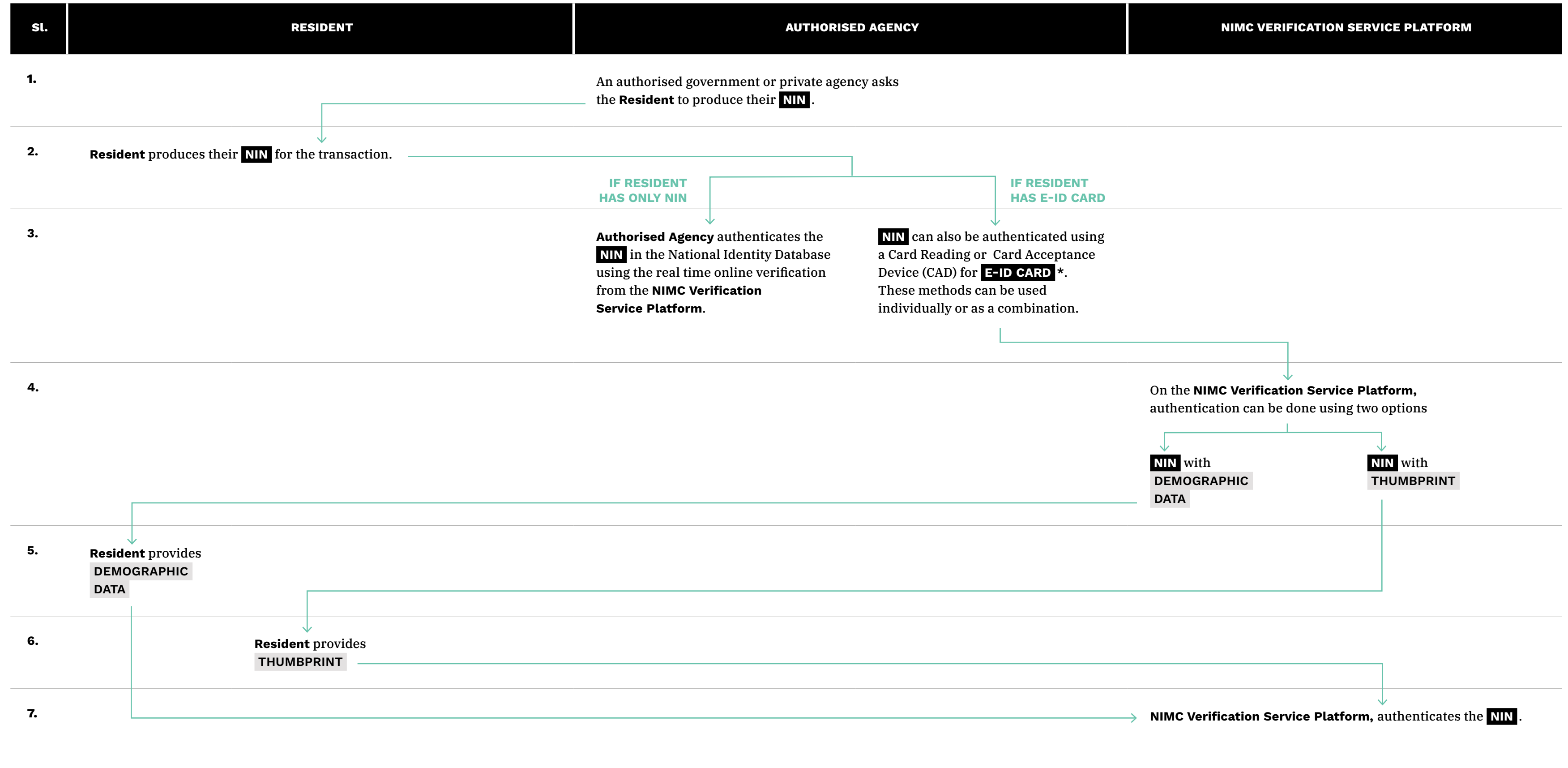


* Refer to the NIN Identification process map for the complete process.

Authentication

NATIONAL IDENTITY NUMBER (NIN)

The NIN serves as the key unique identity artifact for an ID holder, and can be authenticated either through the use of biometric or demographic information on the NIMC verification service platform, or through the e-ID card. The verification service works as a platform, and allows entities that require verification through NIN to have access to the NIMC database.

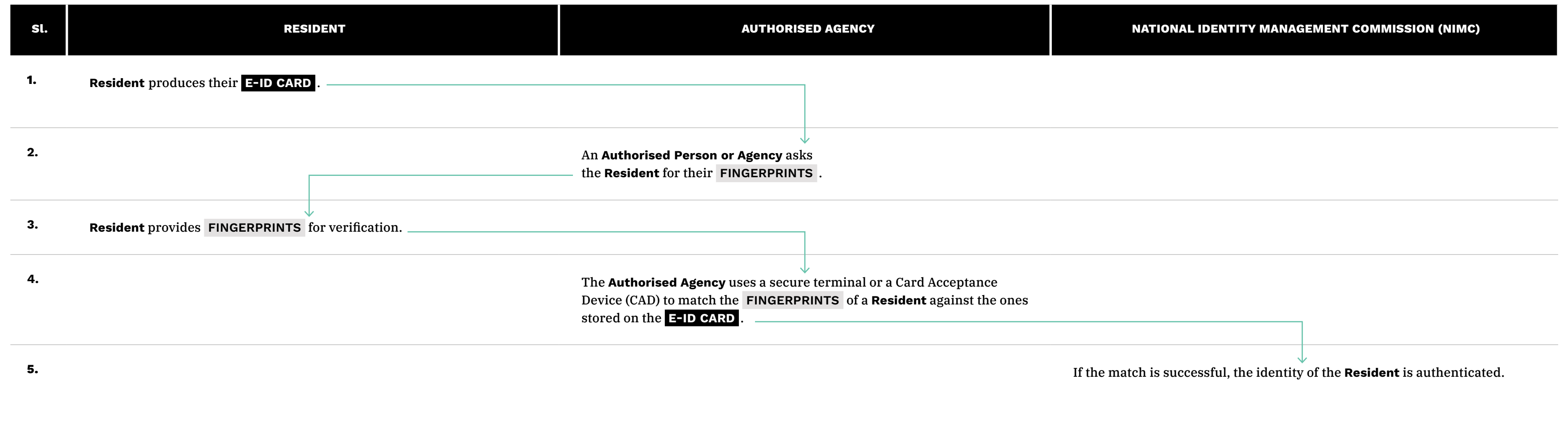


* Refer to the e-ID Card Authentication process map for the complete process.

Authentication

NATIONAL ELECTRONIC IDENTITY CARD (E-ID CARD)

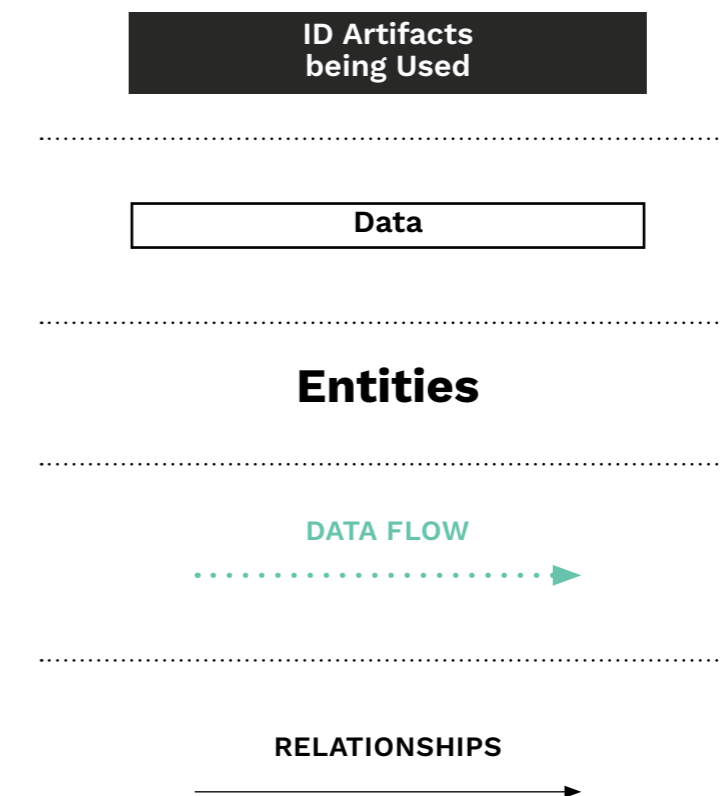
The e-ID Card, through its applications, facilitates access to services offered by the Nigerian government and private institutions. The Card comprises a chip that stores the individual's NIN and biometric information, the Primary Account Number (PAN) and Card Verification Value (CVV) for MasterCard Payment, and the Machine Readable Zone (MRZ) lines for travel purposes. During authentication, the individual's biometrics are matched with those stored on the Card. Upon successful verification, the individual can access the desired service.



Systems Maps / Sectoral Uses

As part of the systems thinking approach, sectoral use cases have been mapped to understand how the digital identity system in the UK has been conceptualised and implemented. Studying these sectors allows a closer look at the various purposes of the digital identity, and how the residents, and state and private actors interact with it. The ERAF technique of systems mapping has been used for these maps to give a holistic view of the system and connections within it. It is an analytical tool rather than a representational tool. The ERAF model helps to place the various constituents involved in the system and divides them into entities, relationships, attributes, and flows. This technique of mapping reveals missing connections and flows in a system, and leads to the identification of specific leverage points where a small shift can produce a big impact on the system¹.

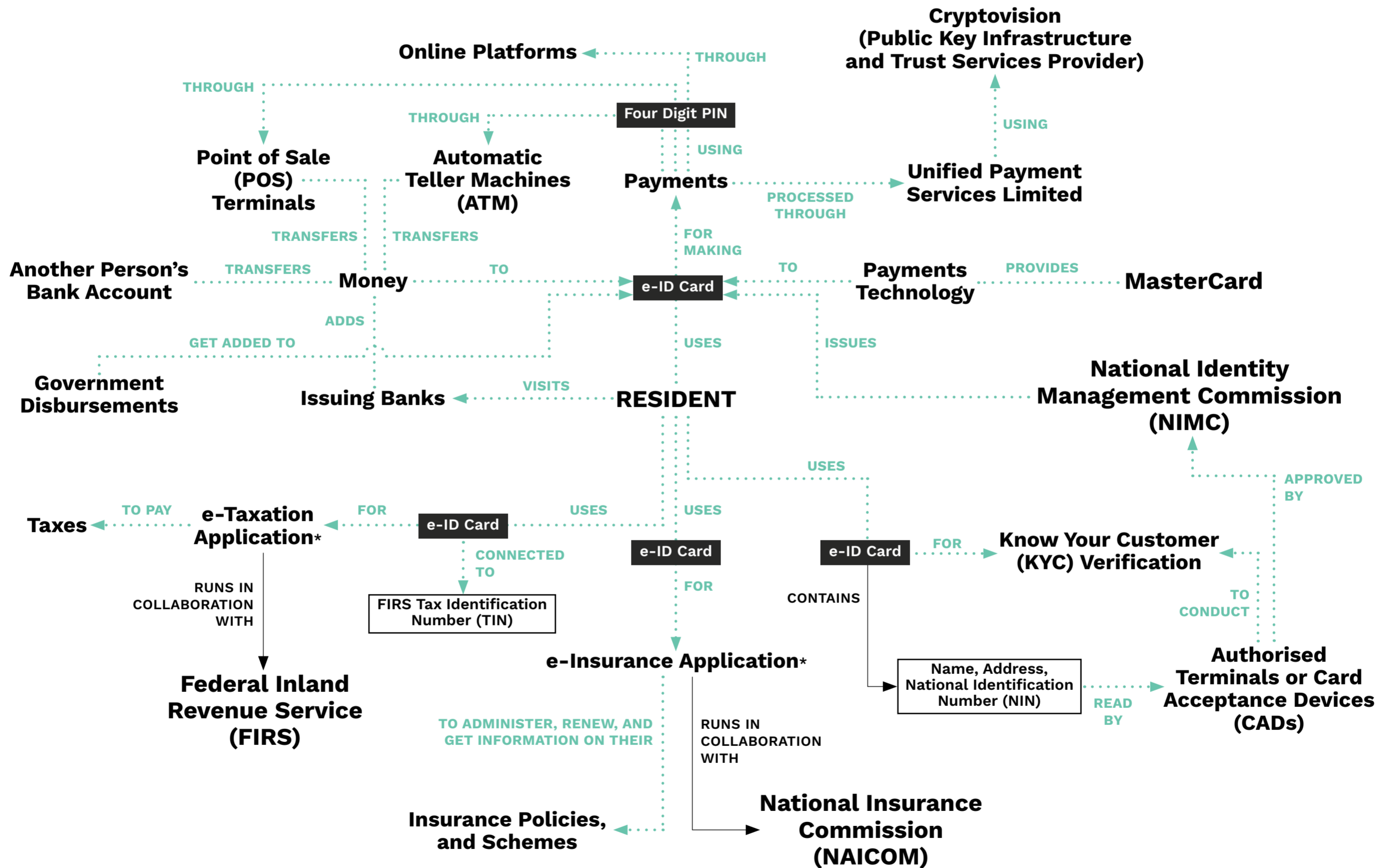
In the ERAF model, entities are the key components. These could be individuals, institutions, laws, places, etc. Relationships describe the way in which different entities are connected to each other. Attributes are characteristics that describe the entities. These could be duration, dimensions, costs, etc. The Flows show the direction of action between entities. This includes transaction of data and resources. Data and its flow within the system, and digital identity artifacts have been highlighted in these maps.



¹ <http://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/>

Finance

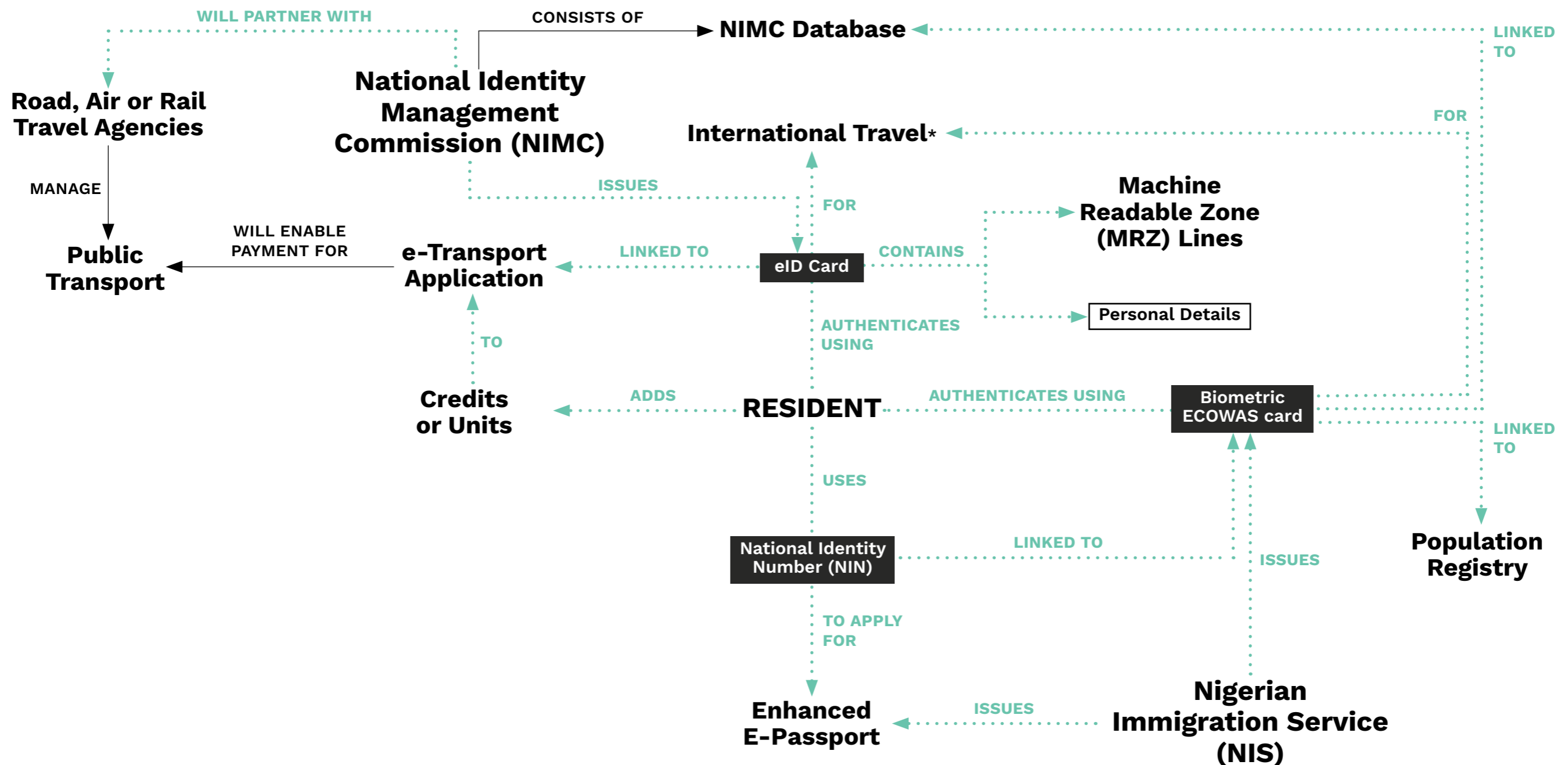
The payment application on the e-ID Card allows for money to be transferred, paid into, or loaded into the Card. Individuals can use the Card through any of the available payment platforms/options. It can also be used to pay for goods and services such as utility bills, flight tickets, and water bills. The Electronic Identity (e-ID) application can be used as a Know Your Customer (KYC) tool for banks and other financial institutions. The e-Taxation and e-Insurance applications, which are yet to be implemented, will enable the e-ID Card to serve as a self-service tax payment channel, and to administer and renew insurance policies respectively.



*The e-Taxation and e-Insurance Applications are yet to be implemented.

Travel

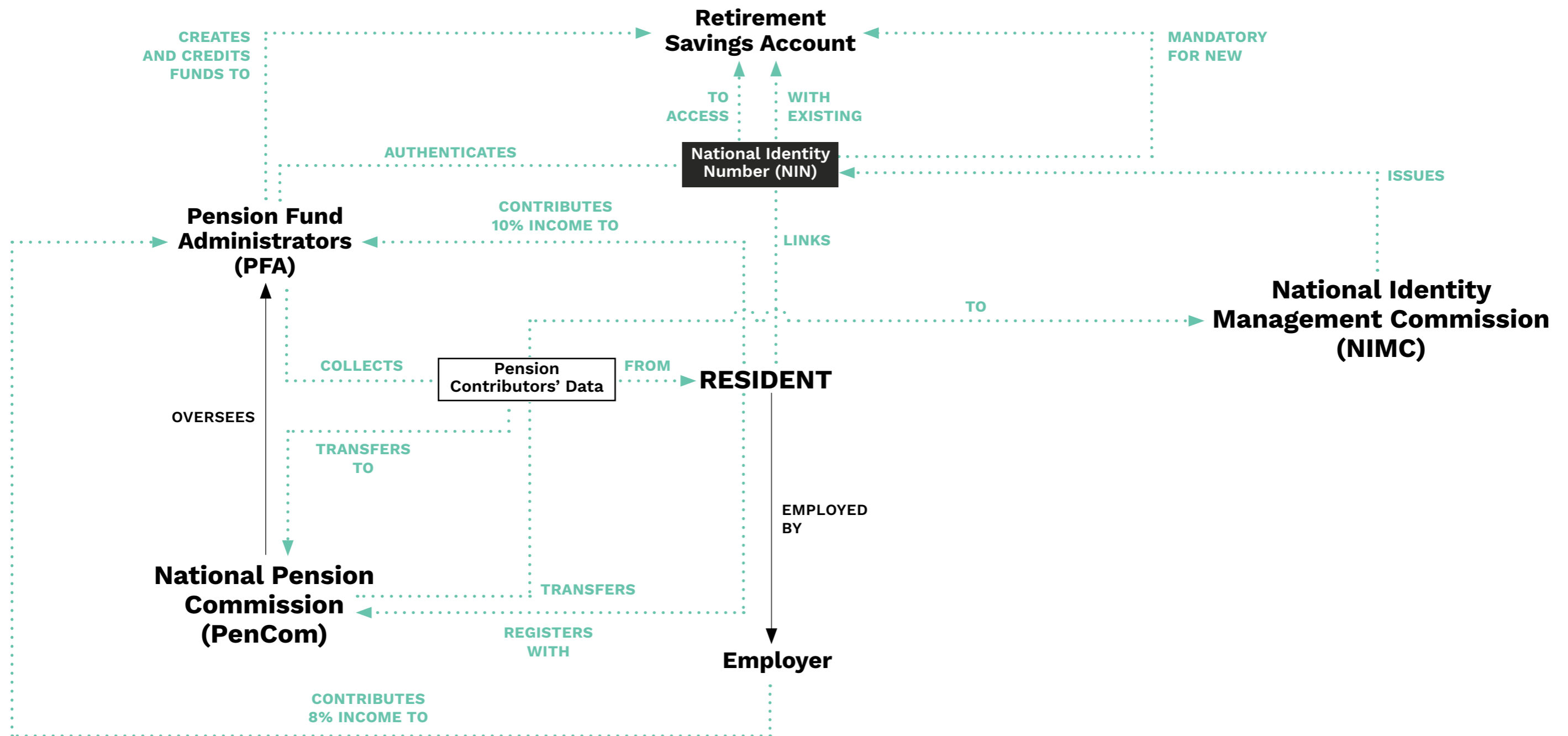
The e-ID card has a built-in applet that conforms to relevant ICAO standards, and functions as an international passport for select countries that allow travel without visa. It also has an ECOWAS certificate, which allows ID holders to travel to the 16 countries in the ECOWAS sub-region. Another functionality that is yet to be implemented is the e-Transport applet, which would allow ID holders to use their ID card as travel cards comprising a credit-based payment system for public transport.



*The e-ID Card can be used for travel to any country with which Nigeria has a bilateral agreement. Currently, these only include the Economic Community of West African States (ECOWAS) countries.

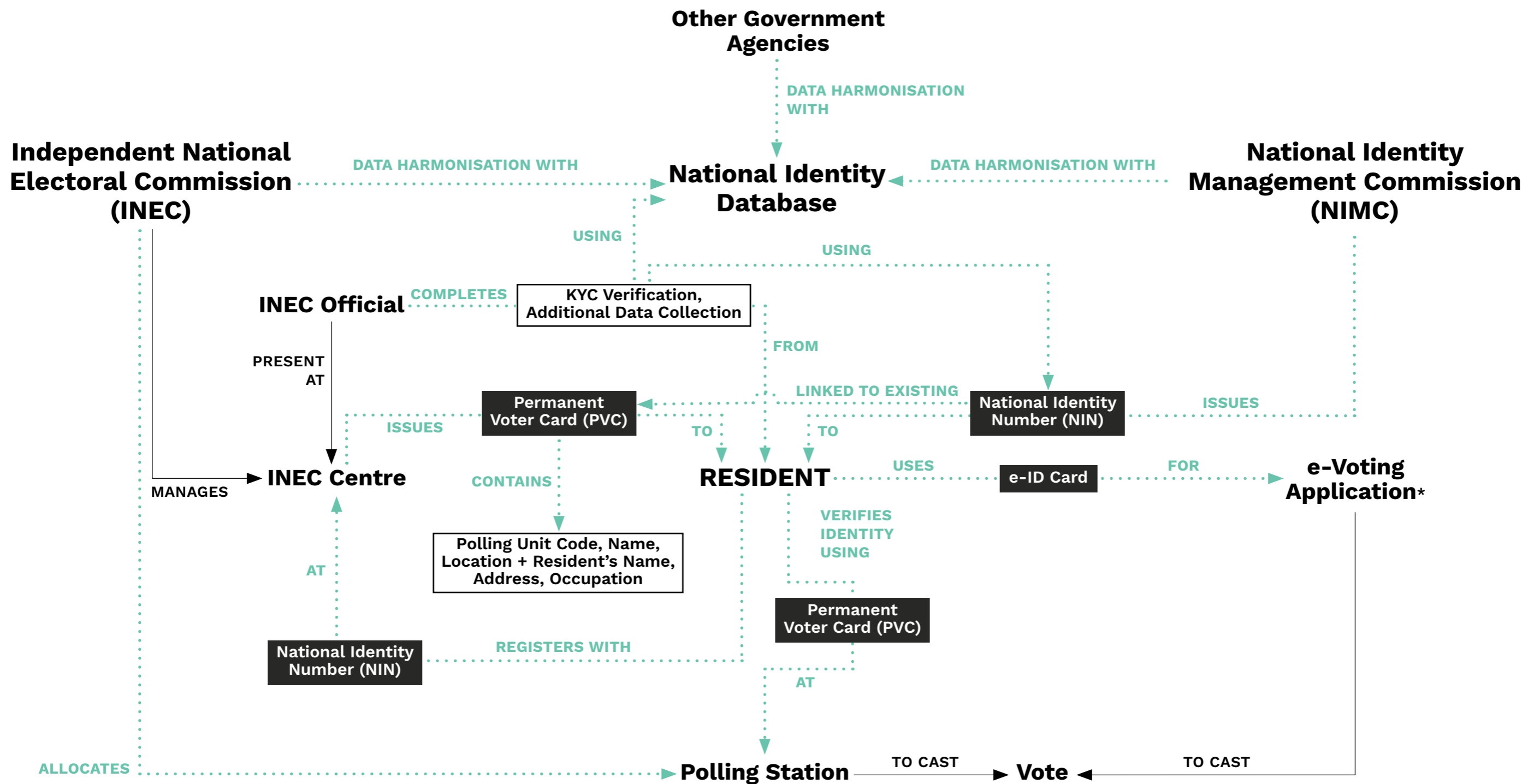
Welfare Schemes

The use of National Identity Number (NIN) in the Nigerian welfare sector is aimed at making the process of accessing the retirement benefits more streamlined. At the time of new registration, all the necessary details of the individual are pulled up by the National Pension Commission (PENCOM) from the National Identity Database (NIDB) electronically so that the individual is not required to re-enter the common details like age, gender, address etc. In case of an existing Resident Savings Account (RSA) the individual can approach PENCOM for updation of their account with e-ID for linking. This, in-turn, maintains a level of cohesion between all the benefits for the individual.



Governance

The NIN is linked to the Nigerian Permanent Voter Card (PVC), which will be authenticated while voting. The existing data that the Nigerian Voting Commission has on the individuals also helped set up the National Identity Database (NIDB). When a new individual is being registered, only the data apart from what was recorded via the NIN is required. The e-ID card will also have an e-Voting application in the future, which will enable it to serve as the individual's voter card. The e-ID card, however, is not going to replace the PVC, but has rather been designed to complement it.



*The e-Voting Application is yet to be implemented.

Stakeholders

National Identity Database (NIDB)

The National Identity Database, an outcome of extensive data harmonization, is a central repository that leverages existing capabilities and enrollment facilities of government agencies, partners, and the private sector in Nigeria to rapidly increase coverage of the National Identification Number (NIN).

National Identity Management Commission (NIMC)

The National Identity Management Commission (NIMC) was established by the NIMC Act No. 23 of 2007. The NIMC has the mandate to establish, own, operate, maintain and manage the National Identity Database in Nigeria. The NIMC does registration, assigns a Unique National Identification Number (NIN) and issues General Multi-Purpose Cards to those who are citizens of Nigeria as well as others legally residing within the country.

MasterCard

Mastercard is a technology company in the global payments industry operating in more than 210 countries and territories. After trying various payment partners the Nigerian government allowed MasterCard to consult on the NIMC program, eventually awarding MasterCard the role of payments partner.

Unified Payment Services Limited

Unified Payments was founded in 1997 by a consortium of Nigerian Banks. Their core businesses comprise processing, merchant acquiring, switching, payment terminal services and provision of value added services & solutions. Unified Payments pioneered the issuance and acceptance of EMV Chip and PIN cards in Nigeria. The company enabled Nigerian banks and merchants for the first time ever to accept foreign cards at Automatic Teller Machines (ATMs) and Points of Sale (POS) terminals, and also pioneered the issuance of Naira cards that are globally accepted.

Cryptovision

Cryptovision is a German company that provides cryptography and solutions for secure electronic identities. Cryptovision is responsible for setting up the Public Key Infrastructure (PKI), which is used for the card itself as well as for the card infrastructure. It includes at least eight certification bodies that issue certificates to more than 100 million cardholders.

Federal Inland Revenue Service (FIRS)

The Federal Inland Revenue Service (FIRS) is the agency responsible for assessing, collecting, and accounting for tax and other revenues accruing to the Federal Government of Nigeria.

National Insurance Commission (NAICOM)

The National Insurance Commission was established in 1997 by the National Insurance Commission Act 1997 with the responsibility for ensuring the effective administration, supervision, regulation, and control of insurance business in Nigeria and protection of insurance policyholders, beneficiaries, and third parties to insurance contracts.

Federal Ministry of Health, Nigeria

The Federal Ministry of Health is one of the Federal Ministries of Nigeria. It is concerned with the development and implementation of policies that strengthen the national health system for effective, efficient, accessible and affordable delivery of health services in partnership with other stakeholders.

Port Health Services

The Port Health Services is a subdivision under the Federal Ministry of Health which oversees international movement of people and goods. Tasked with the reduction of morbidity, mortality, and disability due to communicable and non-communicable diseases at Points of Entry or Exit (POEs).

National Health Insurance Scheme (NHIS)

The National Health Insurance Scheme was established in 1999 by the Federal Government of Nigeria to improve the health of all Nigerians at an affordable cost. The goal of NHIS is to provide social health insurance in Nigeria, where the health care services of contributors are paid from the common pool of funds prepaid and contributed by the participants of the scheme.

Nigerian Immigration Service (NIS)

The Nigeria Immigration Service (NIS) is the government agency that has been charged with the responsibility of migration management in Nigeria. The NIS was extracted from the Nigerian Police Force in 1958 and made into a separate department.

National Pension Commission (PenCom)

The Pension Reform Act 2004 established the National Pension Commission (PenCom) as the body to regulate, supervise and ensure the effective administration of pension matters in Nigeria

Pension Fund Administrators (PFA)

The Contributory Pension Scheme in Nigeria requires pension funds to be privately managed exclusively by licensed Pension Fund Administrators (PFA). The main functions of the PFA are to open a Retirement Savings Account (RSA) for employees, invest and manage pension fund assets and payment of retirement benefits and accounting for all transactions relating to the pension funds under their management.

Independent National Electoral Commission (INEC)

The Independent National Electoral Commission (INEC) was established by the 1999 Constitution of the Federal Republic of Nigeria to among other things organize elections into various political offices in the country. It oversees not just the elections but also manages everything from auditing and publishing information on political parties and candidates, to promoting knowledge on election processes.

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