



## NIGERIA'S NEW ID CARD - BASED ON ICAO STANDARDS

To prove one's identity is a precondition for participating in the services, today's digital world offers. Many Nigerians cannot prove their identity, which results in massive identity fraud. With a new identification scheme that provides a robust process for issuing a unique identifier before subsequently issuing an eID card, the Nigerian government is making great strides in combatting identity fraud; in enabling citizens to affirm their identity; and in allowing for citizens to genuinely earn access to the additional services the card will provide them.

The authors: Markus Hartmann and Barr. Chris 'E. Onyemenam

Markus Hartmann is a consultant, advising on eID projects and Managing Director of HJP Consulting. He is a member of the ICAO Implementation and Capacity Building Working Group since 2008.

Barr. Chris 'E. Onyemenam is CEO of the Nigerian National Identity Management Commission (NIMC).

### MANY NIGERIANS LACK PROVEN IDENTITY

Nigeria has a poor reputation when it comes to fraud. Nigeria's banks have lost millions of dollars to fraud, and it is not just foreigners who have been targeted. Nigeria's Inter-Bank Settlements Systems estimate that banks in the country lost 159 billion naira (USD 800 million) to electronic fraud between 2000 and 2013. 70% of adult Nigerians do not have a formal bank account, largely because about 130 million adult Nigerian citizens do not hold a genuine identity document.

Faced with its negative international reputation, local banking losses, proliferation of data capture, and the absence of a foundation identity programme, the Nigerian government tries to address the issue centrally. The National Identity Management Commission (NIMC) was established by the NIMC Act No. 23 of 2007. Last year, the National Electronic Identity (eID) Card was launched in collaboration with MasterCard.

### THE NATIONAL IDENTITY MANAGEMENT SYSTEM (NIMS)

NIMC has the mandate to establish, own, operate, maintain and manage the National Identity Database in Nigeria; to register persons covered by the act; to assign a Unique National Identification Number (NIN); to issue General Multi-Purpose Cards (GMPC) to those registered and to harmonize and integrate existing identification databases in Nigeria. It is also to provide identity verification services. This will tackle the problem from the root cause by enrolling all citizens with their biographic and biometric data. A full portrait, 10-fingerprints and a digital signature are taken during enrolment. Only after passing a verification process, including breeder document and background checks of other databases, with a de-duplication search of the biometric features, will a unique NIN be granted.

With the NIN, the citizen (aged 16 and older) is then eligible to receive the new Nigerian eID Card which is made of polycarbonate with several security features. Personalization is done by laser engraving. The card contains a contact-based chip which contains some parts of the personal data taken during enrolment. The multi-purpose card currently incorporates five different applications such as:

- Match-on-Card - compares presented

- fingerprints against those stored in the chip
- ICAO Travel - machine readable data according to ICAO Doc 9303 standard protected by Basis Access Control (BAC) for travelling in the ECOWAS region, as planned in the future.
- eID - stores sensitive information e.g. address and fingerprints protected by Extended Access Control (EAC 2.0) .
- ePKI - generic IAS (Identification, Authentication, Signature) functionalities
- Payment - payment functionality provided in co-operation with MasterCard.

The card is being developed to carry up to 13 different applications, including taxation and eHealth. From 2019 on the card will also be mandatory for voting in national elections.

The government of Nigeria expects the new eID card not only to be a tool for combating identity fraud, but to enable citizens to participate in the digital world of ePayments, eHealth and eGovernment. To cope with the complexity of such a massive project, the NIMC used the paradigm: build on international standards wherever possible!

### USE INTERNATIONAL STANDARDS

Everyone who has ever been responsible for managing the introduction of a new civil registry system, a new electronic passport issuance system, or for issuing a new EMV (a global standard for chip card technology based credit/debit payment cards) payment card can imagine the magnitude of the NIMS project, which incorporates all of these applications within one mega-project and needs to meet international requirements as well.

### BENEFIT: INTEROPERABILITY

Basing the eID Card on international standards is key to NIMC. The travel application follows ICAO Doc 9303 part 3 standards. The 3-line Machine-Readable-Zone (MRZ) encodes the defined data to be readable by standard passport inspection systems. The chip stores the card holder's full portrait in JPG2000 format, enabling automatic face recognition features in any ICAO compliant border control system. The data is protected by Passive Authentication and BAC. Nigeria, the most populous country in Africa, accepts ICAO standards as

the de-facto standard for national identity applications. It also adapts the European EAC standard to protect more sensitive data, such as fingerprints or the home addresses of the citizen.

High security is important, as the multi-application card will not only be used in government-controlled environments, but also by commercial stakeholders such as banks. The payment application uses the EMV standards issued by MasterCard and Visa. The Nigerian government recently approved the additional use of two other payment platforms, Verve and Genesys to give citizens more payment options. NIMS's use of open standards will ensure that the new eID card will have the highest degree of interoperability possible. The card has a magnetic strip which makes it usable in the United States of America.

The new concept faces some drawbacks. While ICAO mandates contactless RFID technology for accessing the chip, the banks associated with MasterCard and Visa preferred a contact-based chip. To use of the existing banking infrastructure of ATMs and Point-of-Sale terminals, NIMC decided on a contact interface for the first 13 million cards. In the near future they plan to use a more expensive dual-interface chip. This shows that international standards might contradict each other, which is a challenge of its own. How ICAO deals with such situations in the future will be an interesting but valid experience.

#### **BENEFIT: ENABLE COOPERATION OF LOCAL AND INTERNATIONAL SUPPLIERS**

Following international standards enables Nigeria to procure the various components of the eID card and related IT system from a mix of national and international vendors. The eID cards are currently produced from components provided by five different vendors in Europe, who work closely with national card manufacturers in Nigeria. Card personalization is done by NIMC on site in Nigeria only. It is planned that in the future the body of eID cards will be produced locally.

NIMC acts as the system integrator of this mega-project and faces many obstacles, both from vendors and the public, which worries about data privacy. The lack of understanding of how EMV data works and the limited information on how the NIMS infrastructure is set out, is largely to blame for this misunderstanding. However, the entire experience affords valuable lessons – Nigeria is solving a national problem with an indigenous approach.

#### **BENEFIT: QUALITY ASSURANCE BY FACILITATING TEST STANDARDS**

The efforts spent on quality assurance are key to

the success of the project. NIMC engaged HJP Consulting to provide assurance that the eID card is fully compliant with all of the applicable standards provided by ICAO, the EU, German Federal Office for Information Security (BSI), ISO, EMV and many more.

Test specifications have been developed and applied based on test standards, such as the ICAO RF Protocol and Application Test Standards for e-Passports Part 3. Accredited laboratories were engaged for testing the card on its compliance in the field of security, conformity and durability.

Because of the multi-application card scheme, some test standards were partly not applicable and that was a challenge. The ICAO test cases that tested the contactless interface had to be substituted with relevant ISO test cases for contact-based chips. Interestingly, in 2014, the data centres and relevant NIMS infrastructure were certified by the British Standard Institute under the ISO: 27001:2005 and recently in 2015, ISO: 27001: 2013. For the EMV, MasterCard certified their facility in 2014 and recently in 2015 under the General Vendors Certificate Programme (GVCP).

#### **THE CHALLENGE IS CONTINUING, BUT IT IS WORTH IT.**

Some Nigerian citizens have already received their eID cards, and as such, the mission of combating identity fraud in Nigeria, though not yet accomplished, is on the path to success. It is an ambitious and well-designed Service Oriented Architected (SOA) infrastructure, which means enabling the eID Card for identity fraud verification has already become a reality in Nigeria.

Nigeria must now scale up the process by increasing the capacities of enrolment centres. This will enable speed and coverage over a shorter time. More cards need to be issued, to ensure that the benefits on other fronts are realized early. Remaining applications on the eID Card, such as the voting, pension, insurance and tax applications, need to be specified in detail to enable the post-issuance activation to take place early enough (particularly the voter applications need to be operational before the 2019 elections).

Because of the economic crisis in Nigeria, the speed of issuing eID cards slowed down recently. But the fact that Nigerian citizens will, for the first time ever, have a tool to prove their genuine identity when travelling or using banking services, is a great achievement already. The tool for plugging leaks and achieving financial inclusion is now in place. The new administration in Nigeria will benefit deeply from this important development. ■