



# ID4Africa 2017 Conference Publication

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*The ID4Africa Movement:  
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By Dr. Joseph J. Atick

### **A Clear and Present Need**

In developed nations, people routinely assert their identities dozens of times a day. They do it effortlessly through many different means and for many different purposes; they do it so much so, that asserting one's identity has blended into the fabric of habitual actions that people do in a modern society.

Unfortunately, this is still far from being the case for sub-Saharan Africa with its billion identities, where identification continues to be a real chore and a daily challenge for ordinary people and for the institutions that are supposed to deliver services to them. In many ways, lack of robust identification on the Continent has contributed to marginalization and exclusion; people often opt not to participate in the institutions of their state, because of the effort of proving who they are. This is the nightmare scenario for the development agenda whose fundamental tenants are built on inclusiveness for all, and which looks to spread the fruits of development across all sectors of society.

But how did Africa find itself in this situation where many identification systems lack coverage and are not fit to serve current needs? There are many factors that have contributed to this over time; some are the result of missteps along the path of state building post-independence, some are the direct consequence of the absence of civil registration institutions because

they were destroyed during conflicts or because they never existed in a decentralized fashion, and some are due to the geographical challenges that have been exasperated by artificially drawn colonial borders. A single factor is enough to render efforts to build identification systems a major challenge, let alone so many that have come together into the perfect storm that has prevented the emergence of robust and inclusive identification systems in the continent.



It is interesting to note that identification has for the most part been tied to citizenship and nationality in Africa, which made these systems political and divisive. There was no view of identity as an enabler of service delivery in the past. So significant investments over the years went into building voter registers which were constructed through ad-hoc campaigns. These systems were not sustainable. After the elections, the registers were neglected for lack of funding or because of post electoral conflict, and they were revisited again at the time of the next elections. Biometrics was introduced and was sold as the panacea for ensuring one vote per one person. But they were often not introduced as part of institutionalized national identity schemes that are permanent, continuous and independent of political control.



Long story short, current African identification systems leave a lot to be desired for, despite national and donor investments that tried to build them over the years. It is safe to say that for the most part out of the billion or so people in sub-Saharan Africa, only one in 5 is in possession of means of identification that is performant and convenient. Among the segments of the population that continue to be disproportionately outside the identity systems are the children, the women, the poor and vulnerable and those living in rural or hard to reach areas.

### **Time for change**

The current situation is unacceptable in our time. We live in an era where the global community now appreciates the important role identity plays in the support of human development. This is the era of the Sustainable Development Goals (SDGs), which explicitly in goal 16.9 call for establishing legal identity for all including birth registration by 2030. This short sentence was not added to the roster of the SDGs overnight or taken lightly, it was the outcome of years of work on the part of many people passionate about identity that have evangelized the international community by arguing for the positive effects of identification

on development. Luckily, we are also now in the post Aadhaar era, which in India has been shown to change the foundations by which a government can empower its people through digital transformation across all segments of the population. Aadhaar has demonstrated that through judicious identity management the impact of social protection and economic development could be magnified and made more inclusive.

*This is the world we live in now. In this world, the time has come, the time is now for every African to possess an ID that can act as a gateway to exercising their due rights and responsibilities.*

Accomplishing this objective, is what led to the foundation of ID4Africa as a movement of advocacy and empowerment, and there are many reasons for optimism and for belief that this time we have the chance, working together and by leveraging some of the pioneering work of some of the African countries that have made strides in building modern identification systems, to finally get it right for all of Africa.

### **ID4Africa: A tripartite inclusive pan-African movement**

ID4Africa, may be a young movement, but it has already founded a community by capturing the minds and hearts of a large group of people passionate about facing the identification challenges to build a more equitable Africa. These are people that believe legal identity for all must be assured within the frameworks of human rights and dignity as delineated

by the various pronunciations of the United Nations, including SDG 16.9.

What is different about this movement is its inclusiveness. In addition to being pan-African, open to all African countries, it recognizes that identification is not the exclusive occupation of a single institution within a country, instead it operates under the principle that identity concerns all and hence it recruits all civil servants that work in any institution that deals with identity and not just those that work for the national identity authorities. The movement is freely open to all of those that can benefit from exchange of knowledge related to identity matters.



In addition, since its inception, ID4Africa recognized that for success two other stakeholders must be integral partners in its mission. The first are the international development agencies—such as the World Bank, The African Development Bank, USAID, The French Development Agency, UNDP, etc.

Those have historically been providers of funding and general programmatic assistance. In recent times (over the last five years) the development agencies have been developing their identity practices through initiatives such as the World Bank's ID4D which was founded about the same time as ID4Africa with clear cross-fertilization between both. Teaming with the development agencies is essential to ensure that funding is available to finance projects but also to build technical capacity and conduct assessment of progress across the continent using tools and capabilities only available to such agencies. As such we see them as institutions with a very important role to play in the development of the identification ecosystems in Africa. Having them be integral to the ID4Africa movement as partners (some of whom are even represented on our Board of Advisors and are actively guiding the movement) adds tremendous value and ensures that the efforts are coordinated between the various parties seeking to develop and launch identification systems.

The second additional stakeholder is the private sector or industry, in the form of the technology and solutions providers. These are ultimately the ones that will, through their innovations, implement solutions to overcome the African identification challenges. They must be aware of where the needs are, what the opportunities could be, and they need to add a dimension of realism to expectations of what is possible. They also have the means to support the activities of the movement by sponsoring our annual meetings where the exchange of knowledge takes place. For all these reasons,



industry was brought in from day one as an integral partner in the **ID4Africa tripartite: Government, Development Agencies and Industry.**

### **Birth of a movement**

The movement, launched in 2014, held its inaugural meeting in Dar es Salaam, Tanzania in June 2015; the event was a make or break moment for the movement. It was held in the shadow of skepticism about the ability of anyone to unite, on a large scale, the African community around a subject as controversial as identity. Nevertheless, over 300 people, including representatives of 27 African nations, attended the kickoff event and made the ongoing need for ID4Africa very clear.

The inaugural meeting was followed by a milestone event in Kigali, Rwanda in 2016 that solidified the status of the movement and established the agenda

for the next few years. The Kigali meeting reunited about 600 individuals representing the three main groups of the tripartite. It was remarkable, not just because attendance doubled in the one year since inauguration, but because of the passion and intensity that were palpable throughout the sessions. The strength and sustainability of the movement were clear to anyone that attended that meeting; it was apparent that this was a force to be reckoned with. Kigali pushed away any lingering doubts.

In the aftermath of the Kigali meeting many more African government institutions became active within the movement through the various channels of engagement created for them. For example, they nominated representatives to become ID4Africa Ambassadors; shortly after Kigali, the movement appointed Ambassadors in 22 African countries, representing over 75% of sub-Saharan Africa in population. The Ambassadors, one per



country, are civil servants that act as liaisons between ID4Africa and their country's identity institutions and governments. They ensure that their country's issues are represented in the movement's agenda and at the Annual Meeting.

The African institutions and their Ambassadors also participated

heavily in shaping the agenda for this 3rd edition of the Annual Meeting in Windhoek, Namibia. They diligently worked to constitute official national delegations to that meeting. Forty-three (43) African Nations have sent sizeable delegations, representing the diverse stakeholders in their countries.

Today over 800 participants are

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 <p><b>Name:</b> Daniel Lishnew <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Ethiopia</p>	 <p><b>Name:</b> Emmanuel Brown <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Ghana</p>	 <p><b>Name:</b> Reuben M. Kimotho <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Kenya</p>
 <p><b>Name:</b> Abdoul Sy <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Mali</p>	 <p><b>Name:</b> Mohamed Nititt <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Mauritania</p>	 <p><b>Name:</b> Tinni Hamadou <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Niger</p>
 <p><b>Name:</b> Elijah Koroma <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Sierra Leone</p>	 <p><b>Name:</b> Thomas Sigama <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> South Africa</p>	 <p><b>Name:</b> David Jobojobo <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> South Sudan</p>

registered to the Namibia event with over 350 of them being African government delegates, nominated by their country-double the African government figure for Kigali. They will benefit from a full and groundbreaking three-day program designed to respond to what the 2nd edition identified as priorities. It will be accompanied by one of the largest identity and biometrics

expositions in the world where over 90 international leading companies will exhibit and demonstrate their latest capabilities in identity technologies and solutions, all adapted for Africa.

The priorities for dialogue in the 3rd edition include applications of identification systems to reinforce democracy, support healthcare, build

## ASSADORS FOR 2017

 <p><b>Name:</b> Elisabeth Core <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Côte d'Ivoire</p>	 <p><b>Name:</b> Moustapha M. Ismail <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Djibouti</p>	 <p><b>Name:</b> Moussa M. Mhoutho <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> DR Congo</p>
 <p><b>Name:</b> Tumelo Rabolesti <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Lesotho</p>	 <p><b>Name:</b> Zeze R. Reed <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Liberia</p>	 <p><b>Name:</b> Sophie Kang'oma <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Malawi</p>
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 <p><b>Name:</b> Charles Nsimbi <b>Title:</b> ID4Africa Ambassador <b>Term:</b> 2017 <b>Country:</b> Uganda</p>		

inclusive financial platforms and institutions, reinforce Civil registration and e-government initiatives and combat identity fraud and enhance security. In addition, focus, will be on cross border and regional identity, where the World Bank, ECOWAS, African Union Commission, IOM, among others including leading representatives of the industry, will address the importance of developing identity schemes that interoperate among African nations to facilitate free movement and economic exchange.

The overall objective of the third meeting remains consistent with the tactical objectives of the movement: to help governments and development organizations understand the social and economic impact of identity systems, assess the current state of affairs of the identity ecosystems in Africa, identify opportunities for engagement and collaboration and transfer the experiences of others and build capacity, all while getting exposure to the latest industrial

capabilities presented by the world technology and solution leaders.

### **A movement on the move: Looking beyond Namibia**

The Namibia event has yet to take place, nevertheless, the ID4Africa Secretariat, with approval from the board of advisors, has signed a memorandum of understanding (MOU) with another African nation that has stepped up to the plate to be the host for 2018. This country will be announced during the Namibia meeting in a special session. The Secretariat is currently exploring options and examining expressions of interest for the host country for 2019.

From day one, the vision was to keep the Movement on the move from one African country to another, giving access based on merit and commitment without being influenced by any other factors and without giving privilege to any group or region.



*The ID4Africa Annual Meeting moves from one country to another each year.*

## Understanding Africa's needs: The Annual Surveys

In its attempts to promote the flow of information and to quantify it, ID4Africa has instated the tradition of Annual African Government ID Survey. The surveys give the African Delegates the opportunity to provide input as to their priorities and needs. The results are analyzed and communicated in a special intelligence report to all three stakeholders but in particular to the industry and the development agencies, with the goal of helping them better understand Africa's identification needs so that they can ensure their presentations and their offerings are more pertinent and impactful.



The surveys are also used by ID4Africa to inform the agenda for its next annual meeting in 2018, by trying to create content that is responsive to clear and present African government needs.

The 2017 survey was very revealing. It shows, Africa's priorities are focused on pragmatically putting in place and operationalizing as soon as possible, flexible, robust, high coverage ID systems that can leverage their ID data in support of sectorial identification needs. Throughout, the priorities seem to be driven by national concerns and

not by regional or global considerations at this stage of early development.

Some highlights of the findings of the 2017 survey include (see full report for details):

- Healthcare, where 85% believe their country's Healthcare System is in a dire need for a functional, modern and responsive ID scheme to deal with a myriad of applications within the health sector.
- Harmonization of ID systems: Integration, linking, etc, of ID databases, systems & institutions including NID with CRVS, voter with NID, as well as functional ID. Many are calling for an end to fragmentation.
- Capacity building and training.
- Across the board interest in adopting biometrics.
- Low levels of satisfaction with current implementations.
- Across the board needs for ID solutions.
- Francophone needs seem to be greater than Anglophones, even though both have significant needs.

The survey demonstrates that all three stakeholders in ID4Africa have a lot to do on the road to construct ID systems for Africa.

## Data from the ID4Africa 2017 African Government ID Survey

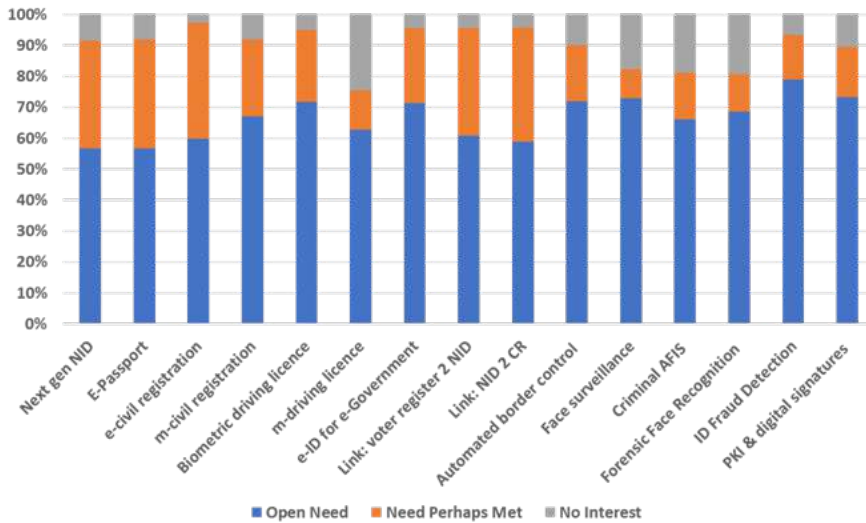


Figure 1 Need for ID Solutions is clear and present across the board.

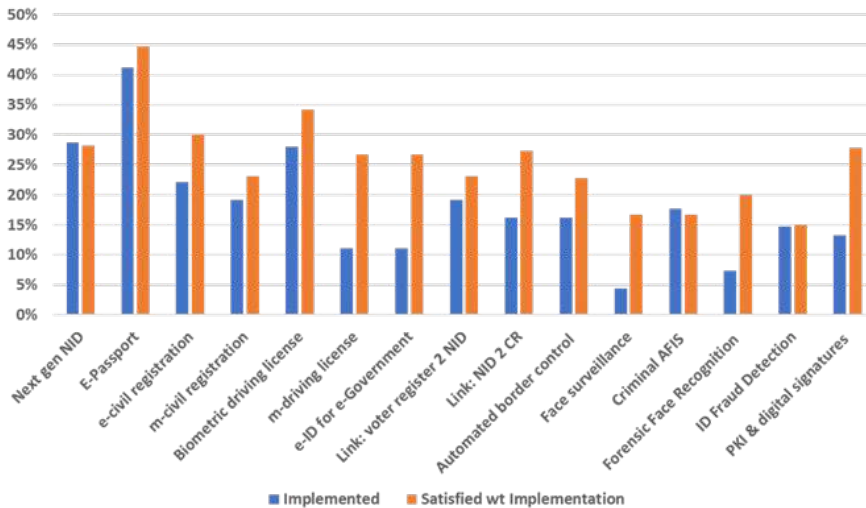


Figure 2 Level of implementation is low with level of satisfaction alarmingly low as well.

## *Our Mission adheres to the Principles of Open Knowledge*

In order to promote the responsible adoption of digital identity to enhance people's lives, and empower them to claim and exercise their rights from birth-to-death, we believe we need to promote access to knowledge and information by the identity stakeholders so that policies and investments about identity systems are informed and based on sound evidence and experience.

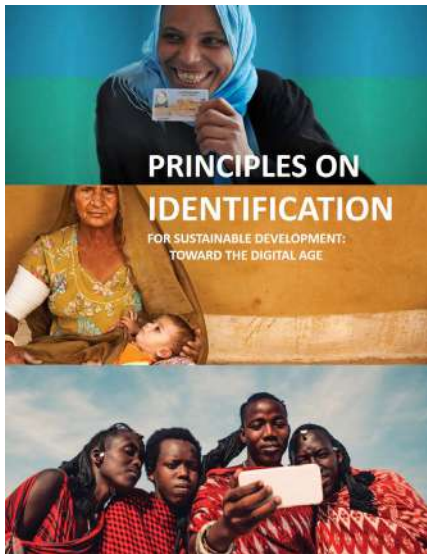
Our objective all along has been to democratize information. To make it available to everyone on an equal basis, so that decisions are made using the same data. We continually call upon all governments, development agencies and the industry to adhere to such level of transparency. The responses have been phenomenal. The development agencies have been stepping up their output, with reports and information and technical and economic studies that are all freely available for the African consumption. The industry is accepting standardization and benchmarking, and governments are coming forward willing to share their experiences in the form of dos and don'ts for the benefit of others in Africa.

One recent guiding document that we believe will leave a deep mark is the **Principles on Identification**. These 10 principles, which were developed by a consortium of international identity stakeholders (including ID4Africa) facilitated by the World Bank and the Center For Global Development, can enhance the benefits of identity systems and protect against their risks. ID4Africa officially endorsed these

principles and urged all African identity authorities to practice them in their implementations of identity schemes. This open knowledge ecosystem is constantly being reinforced by a code of ethics that is pertinent and that is natural to embrace.

### *ID4Africa Code of Ethics*

1. We recognize that all people are born free and equal in dignity.
2. We respect and recognize the fundamental human rights with which each person is endowed.
3. We respect and recognize the moral values, religions, customs, traditions and the cultures of the communities we work with, and the religious freedom of all individuals.
4. We conduct our activities with the highest ethical standards, to ensure integrity, honesty, and moral values in all our dealings.
5. We recognize that all people are entitled to recognition of their identity through the protection and rule of law and through a reliable, trusted identification system that does not discriminate and that safeguards their liberty and rights, including their privacy and the protection of their personal data.
6. We are committed to communicating accurate and pertinent information regarding identity systems.
7. We use merit to select among competing propositions and options related to our events and actions. We will never be a willing partner to corruption, bribery or any other financial improprieties, illegalities or misconduct.
8. We strive to act always in accordance with the humanitarian principle of Do-No-Harm. Consequently, we do not support any identity system that negatively impacts the well-being of the people we are trying to help.
9. We strive to ensure that our activities maintain our respect for and avoid a negative impact on the environment.
10. We are not part of or controlled or influenced by any government or intergovernmental agency nor are we affiliated with any political party (Although we may agree and support policies and legislation in support of the adoption of identity systems).



has grown significantly and it is now a voice that helps Africa articulate how it intends to solve its own identification problems. The movement has given access to knowledge and facilitated the exchange but ultimately it is the African nations that are consuming this knowledge and turning it into actions. It is a movement that is empowering talent on the Continent to do what is required. Africa will get it done, whether it is adopting new technologies, reforming existing laws and institutions, building capacity and expertise, sensitizing the public, and reforming government services to rely on transparent and accountable methods of service delivery, it will be done.

### *There are many reasons to be optimistic about the future*

In just under three years, a lot has been accomplished. The ID4Africa family

ID4Africa will accompany the African nations in this journey for as long as required and for as long as they express the need for this movement and for as long as we together can continue to make a difference in Africa. Join us.





# *The Evolution of Identity Management in Africa*

## *– What Now for Voter Registration?*

By Niall McCann  
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Processes Team, Governance and Peacebuilding  
Cluster, Bureau of Policy and Programme  
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The content of this paper was discussed with numerous UN officials implementing electoral assistance at Member State level following a national request, as approved by the Under-Secretary-General for Political Affairs, in his capacity as UN electoral Focal Point.

The Evolution of Identity  
Management in Africa

–What Now for Voter Registration?

By Niall McCann

## I- Introduction

World Bank statistics show a staggering 1.5 billion people in the world living without legal identity, i.e., without any form of state-recognized identification, either paper-based or digital.<sup>1</sup> This includes an estimated 230 million children under five whose births were never registered, and who therefore do not exist in any legal capacity.<sup>2</sup> ID4Africa was created to both help tackle Africa's identity gap, a gap that creates enormous problems for governments, businesses and individuals, and also showcase some of Africa's innovations in the identity sphere that are role models for other parts of the world. For governments throughout the world, lack of a robust system of documenting their citizens misdirects resources and allows for high levels of theft and waste. One such example is via 'ghost workers,'

where state salaries are paid to 'civil servants' that can be either deceased or who exist in name only. Another example is where beneficiaries are able to claim multiple benefits due to an inability to accurately track recipients, or where ineligible people are able to access services. A third example is where criminals take advantage of weak population registration systems to seek out fake or multiple identities, acquiring identity documents from the state corresponding to those different identities. In the private financial sector, high interest rates charged to individuals and micro businesses often reflect (among other factors) the high cost to financial institutions of administering loans in contexts where an individual's identity, and therefore their creditworthiness, is hard to verify,<sup>3</sup> thus narrowing the opportunity for financial inclusion. Workers around the world reliant on cash compensation (due to lack of access to a bank account) often slip into the informal economy, estimated to generate \$10 trillion per annum in GDP, which, were it a formal economy, would make it the world's second-largest, behind the US.<sup>4</sup>

For individuals, inability to prove legal

1 Estimates by the World Bank ID4D Dataset, Feb 2016. The term "legal identity" has not been formally defined by any intergovernmental body. It is widely accepted to mean, however, either possession of a state-issued identity document (e.g. a birth certificate, passport, national ID card), or registration in a document-less population register (such as the Aadhaar programme run by the Unique Identity Authority of India). The 2017 Principles on Identification for Sustainable Development: Towards the Digital Age define legal identity systems as those "that register and identify individuals to provide government-recognized credentials (e.g., identifying numbers, cards, digital certificates, etc.) that can be used as proof of identity."

2 UNICEF, Every Child's Birth Right: Inequities and trends in birth registration, New York, 2013. A World Bank presentation to the ID4Africa conference in Tanzania in 2015 estimated the figure at a much higher 625m.

<sup>3</sup> Bank lending rates in many developing countries reach 40% and higher, driven in large part by the risk premium of bad credit that is generated by the inability to identify and hold individuals to account for repayment.

<sup>4</sup> Hernando de Soto's 'The Mystery of Capital' (2000), estimates that the world's poor hold roughly \$9 trillion in frozen savings ("dead capital"), locked up in unregistered assets such as homes and businesses. <http://foreignpolicy.com/2009/08/21/a-9-trillion-question-did-the-world-get-muhammad-yunus-wrong/>

identity can lead to a downward spiral of exclusion and vulnerability. People who cannot prove who they are cannot prove eligibility to receive many basic public services, such as health, education, and social security.<sup>5</sup> Lack of legal identity makes it virtually impossible, for example, to get a driver's license, secure a passport, cross international borders, claim inheritance rights, or access a pension. Lack of legal identity can also leave people excluded from many parts of the private economy. People without ID will experience difficulties in opening bank accounts, securing a loan, buying property, or registering for many commercial services, such as acquiring a mobile connection. It may also be impossible to secure legal employment without official identity documents.

Governments have traditionally empowered individuals with legal identity via civil registration. CRVS ('civil registration and vital statistics') is so fundamental to citizenship rights, governance and public administration that the United Nations, since 1953, has supported Member States in their efforts to ensure that their CRVS systems are comprehensive, in order to try to reach universality of coverage.<sup>6</sup> Delegates to all three editions of

ID4Africa<sup>7</sup> are both the witnesses to and the pioneers of the changing nature of government registration of populations. Although many states continue to operate decentralised, paper-based civil registers that are separate from numerous other registers such as the social security register, the driver license register, the voter register, the passports register, etc., others are introducing new technologies in radical – and resource intensive – overhauls of their population registration systems (see section VI below). One of the key features of these new systems is their ability to link separate registers of the population, beyond the base civil register, and in this context, governments are having to address whether and how to maintain independent separate population registers that empower citizens with rights, such as the register that empowers citizens with one of their most fundamental political rights – the voter register. This paper looks at recent trends in voter registration in Africa, noting the growing interaction between voter registration and wider population registration, particularly in the context of the launch of digital systems of 'identity management' such as national identity registers/ population registers, and the often

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<sup>5</sup> This particularly affects women and children from the poorest areas of the world, who constitute the overwhelming majority of people without a legal identity. Civil registration practices can also severely discriminate against women and prevent them from benefitting from legal identity. In many countries, for example, identity is registered, and documents accessed, via a "head of household" responsible for registering all members of the family. In these countries, women's legal identity thus depends on their husband or male relatives, who often see no benefit in registering their female relatives.

<sup>6</sup> CRVS practice within the UN is led by the Statistics Division of the Department of Economic and Social Affairs (UNSD), who have produced an excellent eight volume guide on CRVS best practice that aims to guide Member States on CRVS policy and practice. The subject matter of the volume is largely focused on CRVS, and does not venture into broader identity management issues – and in particular digital identity management issues – such as best practice in the decision to deploy and manage national identity registers or ID card systems.

<sup>7</sup> Dar Es Salaam in 2015, Kigali in 2016 and Windhoek in 2017.

times accompanying issuance of national identity cards. It notes that such interaction is likely to increase and accelerate, which can present significant synergy and sustainability opportunities, but also challenges that will likely focus largely around the independence of the registration authorities, and the accuracy of the base population data.

## **II- Voter registration – international 'best practice'**

Countries all over the world have traditionally been required to make a number of distinct choices when deciding how to enfranchise their eligible populations to vote in national and local elections. These choices are not guided by major international human rights texts. Neither the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, nor other treaty-level documents such as the Convention on the Elimination of All Forms of Discrimination Against Women, refer to voter registration.<sup>8</sup> Among the human rights texts drafted under the auspices of the African Union, neither the African Charter on Human and Peoples' Rights, the African Charter on Democracy, Elections and Governance,

nor the Declaration on Principles Governing Democratic Elections in Africa, provide any guidance on voter registration.<sup>9</sup> It is therefore entirely within national legal competence to determine how to register voters.<sup>10</sup> The type of choices faced by any country include:

a) Should citizens have to **actively register**, in that eligible voters must themselves come forward to electoral management bodies to both prove eligibility and declare intent to vote (e.g. in Benin, DR Congo, Ghana, Lesotho, Liberia, Mozambique, Nigeria). In these cases, the voter register is more likely to be a '**stand alone**' register, compiled for the sole purpose of voting and not linked to other population registers. Or can the process be **passive**, in that electoral management bodies (or other government agencies, depending on the law) compile the voter register from pre-existing citizen data, usually gathered from either the civil register or other national population register (e.g. Angola, Cote d'Ivoire, Mali, Rwanda, South Africa, Uganda)?

b) Should the registration process be **periodic**, in that a registration exercise is conducted in the period prior to an election in order to ensure the most

<sup>8</sup> The UN Human Rights Commission's 1996 General Comment on the ICCPR (Art. 25) states that "states must take effective measures to ensure that all persons entitled to vote are able to exercise that right. Where registration of voters is required, it should be facilitated and obstacles to such registration should not be imposed. If residence requirements apply to registration, they must be reasonable." Again, however, the actual method of registering voters is not addressed.

<sup>9</sup> The Declaration of Principles merely "commit(s) our Governments to...establish where none exist...of voters' registers." (Art 3b).

<sup>10</sup> Ensuring 100% accuracy of a voter register is virtually impossible for any country to attain. Even for a country that believes that every single eligible voter – and no-one else – appears on their voter register the day of an election, there will be eligible voters that attain the voting age on the day of the election that may not appear on the list, and there will be voters that die on the day of an election that will not be removed from the list.

accurate and up to date voter list possible? Or should registration be **continuous**, in that data on eligible voters is continuously compiled and ready in the event that sudden elections (e.g. following the death of an incumbent) take place?

The choices a country makes will either be determined in the relevant electoral law, or decided upon by the electoral management body (EMB) legally mandated to administer elections, supported by law. Some countries, of course, have chosen mixed elements of the strategies presented above. An **'active-continuous'** system, for example, could entail an EMB (or other state body mandated by law to register voters), opening a registration 'window' for a period of one or more months per year (e.g. Lebanon), so that voters attaining the voting age, those not already on the register, or those who have moved address and who require a new polling location, can come forward to register for any elections that might take place the following year. Sometimes, the electoral law (or laws)<sup>11</sup> itself is not fully clear. A law that gives

the EMB responsibility to "oversee a compilation of a register of voters," for example, could be interpreted in two different ways; either the EMB should undergo an active registration process from scratch for every election, or they could request a raw database of citizens aged 18 and above (depending on the age of enfranchisement in that country<sup>12</sup>) from the traditional civil registry body,<sup>13</sup> and then conduct additional steps, such as allocating voters to polling locations depending on the addresses attached to each citizen.

As with any register of population in a country, voter registration can present significant administrative and political challenges, even where the electoral law is clear on how it should be conducted. An 'active' register under the sole responsibility of the EMB to compile may end up with a significantly greater, or lesser, number of voters than the civil registry authorities record as being resident on the territory at that time. It may be beyond the ability of the EMB to motivate voters to come forward to register, for example, if

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<sup>11</sup> Many countries do not have one consolidated law that address all elements of the electoral process, and instead various laws can contain provisions related to elections that make up the national electoral legal framework. There appears no overall consensus as to which approach is preferable. One of the world's leading international election observation organisations, the OSCE's Office for Democratic Institutions and Human Rights, for example, in its needs assessment mission report to Ireland in 2016, noted that "Previously the OSCE/ODIHR recommended to consider consolidating election legislation into one electoral act, which has not been implemented. Despite this, OSCE/ODIHR NAM interlocutors noted the stability of the legislation and expressed full confidence in the legal framework as a sound basis for conducting democratic elections."

<sup>12</sup> The age at which citizens attain the right to vote is also a national sovereignty matter not guided by international human rights texts. Although the majority of democracies around the world enfranchise people once they acquire the legal age of maturity (usually 18 years), other countries (e.g. Lebanon) continue to restrict voting rights until a citizen reaches 21 years, whereas for the Scottish independence referendum of 2014, the Scottish authorities lowered the voting age to 16.

<sup>13</sup> For example in the case of Uganda, "the Electoral Commission is in the process of compiling a National Voters' Register for purposes of the 2015-2016 General Elections, and for this purpose, extracted the data containing the particulars of registered and verified Ugandan citizens from the National Identification Register," <https://www.mediacentre.go.ug/press-release/progress-general-update-national-voters%E2%80%99-register-2015>

there is widespread cynicism with the political process in a country, or where there are such enormous security challenges that the EMB cannot access large swathes of the country.<sup>14</sup> Meanwhile an EMB that relies on raw civil registry data in order to finalise a voter register can be presented with civil registry data that is itself inaccurate or missing, sometimes to a large degree.<sup>15</sup> If significant numbers of otherwise eligible voters find themselves missing from a voter register on voting day, or where there are large numbers of dead or otherwise ineligible voters present on a voter register on voting day, a lack of confidence in the overall electoral administration – and possibly loss of confidence in the credibility of the election itself – can fall disproportionately on the EMB, who may not be to blame for the reasons why the register is inaccurate.

The credibility of any voter register, therefore, whether actively or passively compiled, on a periodic or continuous basis, can largely depend on the extent to which it mirrors the known demographic distribution of that country. And the more accurate the demographic and population registration data of the country, the easier it will be for the EMB (or whatever agency is managing voter registration), to plan for, manage, and assess their voter registration efforts. Furthermore, the more accurate the demographic data, the easier it will be for political

forces, civil society and the general public, to independently determine, or audit, the accuracy of any eventual voter register. Faced with a context where population registration is under-developed, however, where EMBs have little accurate population data to know exactly how many potential eligible voters are resident in different parts of a country, and where citizens may have little or no identity documents with which to identify themselves to EMB officials in the course of an active registration process, the choice of voter registration methodology – particularly if not specified in law – can have major political consequences.

In countries that are politically divided largely along ethnic, religious or geographic lines, for example, and where the likely political choice of voters is expected to follow those same fault lines, the unfortunate reality may be that ‘winning the register’ may be interpreted to mean, or may actually mean, ‘winning the election.’ In such contexts, accuracy of the voter register is not simply an administrative or legal objective, but a political necessity, one on which the continued commitment of major political groups in the country to the democratic process may depend.

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<sup>14</sup> Other reasons why a smaller number of voters than expected register include possible legal requirements to produce specific documentation to prove eligibility, which large numbers of citizens may not possess, or where the registration period is legally mandated to take place at climatically-challenging times of the year, or during harvest or migration seasons, etc.

<sup>15</sup> The causes of an inaccurate civil register may vary, but can cover various issues such as lack of financial resources, negligence (lack of capacity), deliberate exclusion or force majeure (such as in post-conflict cases where civil registry data is lost).

### III- Voter registration in Africa – historical approaches

There is limited recent literature on voter registration practices across the African continent as a whole. EISA's "Voter Registration In Africa" (2011) remains the most recent comprehensive text.<sup>16</sup> For active registration processes, there have commonly been two broad methods of registering voters. Firstly, paper-based processes (e.g. for the Southern Sudan independence referendum in 2011), where voters come to prove eligibility during a registration period. Upon successful registration, those same voters are told to return to the same location to cast their ballots. In this case, no digital or electronic register is created, EMBs simply send a number of ballots to each location for voting day largely proportional to the number of voters that registered in that location, and the register is largely a 'one-off' register with limited or no expectation of further use.<sup>17</sup> The alternative approach that many EMBs have taken in the last 20 years to register voters (e.g. Kenya in 2010,

Liberia in 2005 and 2017, and Sierra Leone in 2007), has been to use Optical Mark Recognition (OMR) technology. Data for each voter are shaded by pencil on OMR forms by EMB staff conducting the registration, and returned to centralized locations for the paper forms to be read by scanners that then create a digital register that is printed out for each location.<sup>18</sup> In both of these methodologies, EMBs can, if they choose and which has commonly been the case, hand voters a voter card with their registration details on the spot at the time of registration, as well as choose to take a photo of the voter at the time of registration that is then attached to the voter card as a safeguard to ensure the person carrying the card is the one who registered.<sup>19</sup> This practice was made easier with the old Polaroid cameras that could print a photo on the spot, but those cameras were discontinued, and alternatives emerged based on digital cameras connected to portable photocopiers, which increases cost for those EMBs that wish to place a photo on the voter card handed to the voter at the time of registration.<sup>20</sup> The advantages of

<sup>16</sup> <https://www.eisa.org.za/pdf/vrafrica.pdf>. There are other publications focused on specific regions or language groups, such as the 2012 "Handbook on Technology and Electoral Registration" produced by the UNDP Project in Support of the 2009-2012 Electoral Cycles of the PALOP Countries, <http://exadigital.com.br/Tecnologia%20Eleitoral%20ENG.pdf>.

<sup>17</sup> Many EMBs ask voters to sign the voter register when being assigned their ballot(s), for example, which renders these paper registers (although available for re-print) unsuitable for use in future elections.

<sup>18</sup> There have been other hybrid voter registration methodologies employed, such as that used for the Central African Republic elections in 2016, where voters, when registering, held an A4 scanning code in the photograph that was identical to their registration application file. This allowed the photo to be linked directly to the written information for each voter.

<sup>19</sup> Voter cards with photos may be unnecessary where voters may have other forms of photo IDs. Some countries, for example (such as Lebanon and Jordan) have quasi-active registration where eligible citizens were still required to pick-up photo voter cards even though official national ID cards with photos were required during registration.

<sup>20</sup> More recent solutions aim at perfecting the solution and correcting weaknesses, and ideally include firmware modified to the customization required, to ensure quality of pictures and standardization/simplification of operation; robust or antishock bodies; direct print; digital storage of pictures and linkages to the database; and rechargeable batteries that may be powered by mobile solar panels, to name a few. There are some mobile printer models currently available on the market that can print digital photos on the spot and within (the manufacturers claim) 60 seconds.

paper-based systems is that they are cheap to compile relative to higher technology methodologies. Costs largely relate to staffing, as equipment costs largely relate only to paper printing (although photos of voters add to the cost, as discussed above). The major disadvantages are that the EMB or registering agency is unable to conduct any form of digital analysis of the registration data, or engage in any other form of data cleaning. The 'cost' advantage must also be tempered by the fact that the register is unlikely to be usable for further elections, with the same costs incurred from scratch, therefore, the next time voters are asked to go to the polls. Furthermore, as the paper-based records usually stay in the decentralized regions or provinces where they were compiled, there can also be political perceptions that the registration materials or data can be tampered with, and a general sense that the EMB, usually headquartered in the capital city, does not have overall control of the process. This registration methodology appears no longer favoured by most AU Member States.

The main perceived advantage of computerized data, such as that created using OMR systems, is that a digital register is created that can be analysed and cleansed of contaminating data, and that this process is comparatively cheaper than higher technology methodologies. One major disadvantage of OMR systems, however, is the possible risk of errors in coding, which can result in voters unable to locate themselves on voters lists on polling day due to spelling errors at the time the forms were shaded, or where large numbers of voters are inadvertently allocated to incorrect

polling centres due to errors in coding the names of polling centres.

Both of these methodologies, however, both paper-based and OMR-based, face a dilemma largely considered to represent a major disadvantage of both approaches – how to deal with the possibility that registrants will seek to register multiple times, usually in different locations. Particularly intense political contexts as described above, political groups may consider it strategic to instruct their supporters to register multiple times, out of a determination to cheat, or in the belief that their political opponents are likely to try to do the same. For less sinister reasons, multiple registrants may also simply be seeking a form of photo ID in a context where no other option is available. Nevertheless, a voter register that contains numerous multiple registrants, or where some political forces believe that the register contains numerous multiple registrants from “the other side,” can contaminate public confidence in not only the register, but the entire electoral process itself. The political challenge that multiple registration presents is both facilitated by, and exacerbated by, countries where citizens (and foreigners) possess few or no official documents to identify themselves. Where the electoral law stipulates a specific identity document that is required to register (such as the National Registration Card required in Zambia in 2010 or the National Identity Card or passport required in Kenya in 2013), at least there is the likelihood that persons that wish to register multiple times will be forced to do so using the same name and the same identifying number that can possibly be later detected in an OMR-facilitated



digital register when the data is cleansed. Where the law accepts the reality that there is a large identity gap in the country and that many eligible voters are unlikely to be able to identify themselves, however, then the EMB may be faced with carrying out an additional task beyond simply determining eligibility on the basis of the documents presented, and that is determining the identity of people with no documents at all. To help them do so, a procedure for the undocumented will thus be required. In this case, the common practice has been to adopt complex “witnessing” procedures that allow traditional leaders or elders to verify the identity (and possibly age) of persons known to them.<sup>21</sup> Although the integrity of the endorsements of traditional leaders can often be beyond question, this process can be open to political manipulation.<sup>22</sup>

In order to combat efforts to multiple register, therefore, EMBs have regularly resorted to crude measures such as the placing of indelible ink on the thumb or fingers of voters that have registered, either visible to the naked eye, or visible under fluorescent light. The effect of the key ingredient of the ink – silver nitrate – is to stain the skin, and in particular the cuticle around the finger nail, to the degree that it is impossible to wash the staining effect

of the ink off. Depending on the level of silver nitrate in the ink, this effect can conceivably last a number of days or even weeks, covering the entire length of the registration window, making it possible for EMB officials conducting the registration to detect efforts to multiple register, thus acting as a deterrent to multiple registration that could otherwise undermine public and political confidence in the process. The use of this type of ink, although generally positive, can be quite controversial, however, as there are almost always inevitable claims that the ink can be ‘washed off,’ or that the entire practice of staining skin through the use of silver nitrate is itself inappropriate, both on possible health grounds or due to perceptions of ‘branding’ of citizens. Use of indelible ink is not restricted to Africa, nor for registration processes alone. In fact, it is more widely associated with polling processes.<sup>23</sup> Its use, however, has also had the unfortunate consequence of making it easy for violent groups opposed to the holding of elections to see who has voted, and thus threaten potential voters with violence for participating in the elections. The suppression effect these threats have had on voter turnout is unknown.

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<sup>21</sup> This procedure has been used in a number of AU Member States, such as CAR, Chad, Liberia, Mozambique and for the South Sudan referendum. In Chad, for example, the electoral law provided for a procedure for identification to be carried out by two well respected members of the community (referred to as 2 notables). In practice the ‘notables’ were interpreted as ‘le chef de canton, le chef de village, le chef de ferrick, le chef de quartier ou le chef de carré.’

<sup>22</sup> Witnessing procedures can prove politically challenging when, for example, generational migrants attempt to gain either nationality through the process, or simply a legal identity. It may be advisable, in some contexts, to establish provisions to, for example, limit the number of persons whose identity can be verified by the same ‘identifiers.’

<sup>23</sup> Indelible ink during polling processes has been used in recent times, for example, in Benin, Burkina Faso, Burundi, CAR, DR Congo, The Gambia, Mali, Niger and Nigeria.

#### **IV- Voter registration in Africa – the move towards biometric systems (BVR)**

In recent years, a number of African Union Member States – particularly those where the electoral law establishes an independent EMB empowered to construct an active and ‘standalone’ registers – have opted to deploy electronic voter registration systems that employ basic biometric technology.<sup>24</sup> Usually via the capture of digital thumbprints or fingerprints,<sup>25</sup> laptop computer kits have been procured and deployed that consist of a custom-made software programme that allows the EMB personnel operating the computer to enter the relevant data fields. As many of these laptop computer kits need to be deployed to isolated rural locations with unreliable electricity sources, EMBs have often also procured generators, or solar panel kits, to power the laptop kits for periods usually lasting up to 8-10 hours a day. Additionally, webcams that take digital photos of the voter, and the digital thumb or fingerprint capture device are also procured,<sup>26</sup> both of which connect to the laptop

via USB ports. Some EMBs have also procured printers that allow voter cards to be printed and handed to the voter on the spot following registration (e.g. in DR Congo in 2006, Togo in 2007). In other cases, the voter cards are distributed at a later date, when the data has been reviewed and cleansed (next paragraph).<sup>27</sup>

Data captured via these laptop kits is usually saved on both internal and external storage, both as a back-up, but also to allow EMB personnel to collect the data via external USB sticks or other means, on a piecemeal basis.<sup>28</sup> Once consolidated at one or more central data centres, the data including biometrics is processed and ‘de-duplication’ is conducted using Automated Fingerprint Identification System software. The usual practice has been for vendors to design their ‘back-end’ data systems to throw up possible matches (double registrations), via a biometric matching algorithm. Ultimately the EMB can decide whether a human being (preferably from the EMB) should determine if the two photos are the same person,<sup>29</sup> or whether the software should simply inform the EMB of actual matches.<sup>30</sup>

<sup>24</sup> Overall, as of 2015, International IDEA estimate that 38 countries are using some form of BVR.

<sup>25</sup> Facial recognition software has been used in some cases for filtering during duplicate analysis, to expedite the process. After filtering, fingerprint de-duplication takes place.

<sup>26</sup> The common practice has been to procure a fingerprint reader that captures just one digit, usually the thumb or right-hand index finger (as elaborated in law or the EMB regulations).

<sup>27</sup> One risk with handing voters a voter card on the spot is that if it is later determined that someone has multiple registered, once the ‘deduplication’ task is completed and the person identified, the person still retains possession of both cards. An EMB must assess whether it considered less of a problem to hand voters a voter card upon registration (and deal with any multiple registrations via, for example, indelible ink on polling day) or risk not having voters cards reach some voters. In 2015, the INEC in Nigeria first registered voters, de-duplicated the registrations centrally and then printed cards that were then issued to voters, precisely to address this issue.

<sup>28</sup> There are no cases known to the author where the primary means to harvest data from laptop kits has been via mobile internet connectivity direct to the data servers.

<sup>29</sup> Rather than the wholly unreliable option of a naked eye attempting to determine whether two fingerprints are the same.

This decision is often informed by whether the election law contains reference to what the sanction for persons caught registering more than once should be.<sup>31</sup> In extreme cases, the sanctions may mean not only losing the right to vote, but also facing possible prison terms.

In almost all cases, the BVR systems deployed have still resulted in a paper register being finalized and printed, sometimes, although not always, with the photo of the voter appearing alongside their name on the voter list. In recent times, some countries (e.g. Ghana in 2012, Kenya in 2013 and Nigeria in 2015) have decided to use electronic devices to verify the voter's identity on polling day.<sup>32</sup> This "biometric voter verification (BVV)" process has seen custom-made devices deployed, often times in larger number than the

number of kits that were originally deployed, to register the voters.<sup>33</sup> In other countries, such as Jordan, in addition to printed copies of voter lists, every polling station is directly connected to the central voter registry, allowing officials to check the data and photo of each voter as they present their ID card.<sup>34</sup>

Numerous AU Member States have deployed these systems for at least one standalone voter registration exercise,<sup>35</sup> with other countries (e.g. Zimbabwe), in the process of launching such a system.<sup>36</sup> Many countries (e.g. Ghana, Nigeria, Kenya) have conducted the procurement of these systems themselves, whereas in other cases, the EMB has requested international electoral assistance providers, most notably the UN, through UNDP, to carry out the procurement on their behalf,

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<sup>30</sup> It is strongly advisable that the EMB has a clear and consistent process for determining whether how a duplicate registration is confirmed. One case of deduplication, in recent years, saw the exercise outsourced to a processing plant in another part of the world. Outsourcing the task of identifying and confirming positive multiple registrations to the vendor supplying the registration system can present major political as well as legal challenges.

<sup>31</sup> If it is found that someone has registered in five different locations, for example, what should be the fate of the five registrations? Should all be discarded, or can one still be considered valid? If so, which one, the first or last, etc?

<sup>32</sup> The OSCE/ODIHR's International Election Observation Mission's Statement of Preliminary Findings and Conclusions following the Armenian Parliamentary Elections on 2nd April, 2017, stated that "Voters were identified on election day through the use of Voter Authentication Devices (VADs), which contained an electronic copy of the voter lists...Voting procedures were generally followed and the Voter Authentication Devices functioned effectively." This system was not based on biometrics, rather the electronic devices read the corresponding ID documents, with the voters' data then appearing on the screen (with photo where available) and after verification, one fingerprint was captured to be added to the record to be used in case of claims.

<sup>33</sup> If a computer kit processes 2,000 voters over the course of a one-month registration process, for example, than those voters have to be split into smaller groups, as one room in a school cannot process 2,000 people in one day. If four classrooms are being used in the school on voting day, therefore, four devices will be required to identify voters, even if only one device was used to conduct the original registration.

<sup>34</sup> Each polling station in Jordan has two computer monitors, one of which can be seen by observers/agents, to verify that the data on the screen matches the voter.

<sup>35</sup> These countries include (not an exhaustive list) Angola, Benin, Comoros, Cote d'Ivoire, DR Congo, Ghana, Guinea, Kenya, Mali, Mozambique, Nigeria, Sao Tome and Principe, Sierra Leone, Tanzania, Togo, Uganda and Zambia.

<sup>36</sup> Some countries that have not moved to BVR include Central African Republic, Libya, Somalia and South Sudan.

usually as part of an overall package of assistance provided to the country by the UN following receipt of a national request for assistance, as approved by the UN Under-Secretary-General for Political Affairs in his capacity as UN electoral Focal Point (and with the support of development partners).

For those countries that have requested the UN to conduct the procurement of BVR systems on their behalf, this task has usually been supported by UNDP's Procurement Support Unit - Electoral Procurement Team (UNDP PSU) based in Copenhagen, Denmark. Since 2008, UNDP PSU has conducted full procurement of field registration biometric kits and software in six cases in Africa (Benin, Comoros, Guinea, Malawi, Sierra Leone and Zambia).<sup>37</sup> Copenhagen colleagues have also conducted procurement of assorted additional IT systems and services, and other non-biometric semi-electronic registration equipment, such as the camera kits procured for Liberia (2016-17), Central African Republic (2015), Malawi (2013) and Tanzania (2009). In all such cases, PSU colleagues have not only managed the procurement, but also assisted the EMB (in collaboration with the respective UNDP Country Offices) in planning, finalization of the technical specifications, and contract management. Altogether, the value of procurement of biometric and non-biometric electronic registration systems and equipment conducted by UNDP PSU Copenhagen in African countries since 2008 has been in excess of USD 71 million.

### **V- UNDP's experience supporting biometric voter registration systems**

It is important to note that the UN is neutral on the choice of voter registration methodology, and does not provide prescriptive advice for countries requesting its assistance. The UN has never recommended standalone BVR to UN Member States, nor has it specifically advised against. The UN's role is to provide comparative advice on different methodologies, reflecting its experiences around the world, enabling the Member State to take an evidence-based decision on what method is most appropriate for the country's needs. If requested by the national government and approved by the UN electoral Focal Point, the UN can then assist technically and operationally, including with procurement. When asked for its advice, the UN always recommends feasibility studies and consultative processes when countries are considering major changes to voter registration methodology, in particular when the options under consideration have significant cost implications and represent something of a technological 'leap,' as the introduction of biometric voter registration usually does.

The UN does not have a view on the effectiveness or otherwise of BVR systems, or whether the decision, by a Member State, to deploy a BVR system was the 'correct' one for that country at the time. These are entirely national sovereign decisions, and as already noted, there are no specific methodologies required by international electoral commitments, beyond the necessity to ensure citizens

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<sup>37</sup> Outside of Africa, PSU has also procured biometric kits for Yemen, in 2013. Due to the conflict in Yemen, however, those kits have not been used so far.

are facilitated to exercise their vote. The UN Secretary-General, however, in two of his recent biennial reports for the UN General Assembly on the UN's work in support of democratic elections,<sup>38</sup> has raised some concerns about the use of high technology systems in elections "...that may be too costly for receiving countries to maintain in the long run... The success of an election and the use of technology is not...straightforward... New technology may be best introduced as a solution to problems that might hinder the credibility of the process or the acceptance of results, not as an end in itself (2013 report, para. 41)." As the main UN provider of procurement and technical assistance services to biometric voter registration systems, some UNDP observations on the rollout of biometric voter registration (BVR) systems, upon national request, in recent years include:

•**Few feasibility studies** – The author knows of no case in Africa where the decision, by a national Government or EMB, to introduce a BVR system was preceded by, and informed by, an independent feasibility study examining the perceived voter registration problem and evaluating the suitability of a BVR system as a solution, including a cost-benefit analysis of the technology, as well as an analysis of the 'counterfactual' (i.e. what would be

the likely consequences of not moving to a BVR system. While there are many documented cases of excellent "lessons learned" reports and/or workshops commissioned following either the completion of an active BVR exercise or at the end of a specific electoral cycle, it seems the decision to introduce a BVR system has largely been, in most countries, a political one, or one that in some cases (e.g. DRC and Kenya) has been mandated by the electoral law itself (itself following a political decision to use such a system).<sup>39</sup>

•**Under-budgeting of diffuse costs**

– The decision of EMBs to deploy BVR systems, either as mandated by law or as an EMB decision supported by Government, obviously has enormous financial implications. In UNDP's experience, the total costs have tended to congregate around the USD \$2-5,000 per kit mark, depending on the specifications chosen,<sup>40</sup> including the back-end servers, software and database installation, as well as technical support services, training and delivery to the destination country. The overall procurement cost and the corresponding cost per kit, therefore, is often largely affected by the number of kits procured, which itself is a function of both the estimated number of eligible voters, where they are located, and the period of time allocated to conduct the registration.<sup>41</sup> The ancillary

<sup>38</sup> "Strengthening the role of the United Nations in enhancing the effectiveness of the principle of periodic and genuine elections and the promotion of democratization," reports A/70/306 (2015) and A/68/301 (2013).

<sup>39</sup> There have been other countries, e.g. DR Congo, where the electoral law mandated electronic registration, without necessarily mandating biometrics.

<sup>40</sup> There are significant price differences between a single finger digital print reader, for example, and a full four or five finger device, as currently used in many international border crossings. Similarly, biometric kit prices can differ largely depending on the overall composition of items and accessories included, the level of software customization required, whether portable solar power kit are also included, and the scope of technical support services requested.

costs of deploying high-technology equipment to cover an entire country, however, can be substantial. Significant transport and logistics resources need to be both incurred and made available in reserve, in particular where kits inevitably break down, are damaged, lost/stolen or damaged by force majeure. An additional budget will be required to cover public awareness campaigns that will ensure citizens are informed of the BVR process, as well as related training programmes for the technical staff conducting the registration. In UNDP's experience, these more operational costs tend to be under-budgeted, with the budgetary parameters tending to be focused on the initial procurement of the kits themselves;

● **Challenges of the environment**

– Deployment of high technology computer kits to multiple rural locations requires both reliable electricity supply, reliable telecommunications coverage and suitable warehousing with air conditioning, etc., to be available in the receiving provinces. Post-conflict regions may also require significant and costly security arrangements for registration staff and locations. Staff operating the kits are likely to need phone access to technical support

from isolated locations, when there are inevitable issues with the equipment, as well as to be able to report on progress of the exercise. Solutions that may be simple to a trained IT technical support professional and beyond the capacity of a non-IT professional field kit operator to fix, may be easily solved where there is mobile phone coverage between the two locations. Without such coverage, a frustrating loss of registration time can develop into serious challenges, which can lead to the perception of political bias in volatile political environments. In UNDP's experience, the extent of the limitations of the environment have presented significantly bigger challenges than what were previously expected;

● **National IT and operational capacity**

– The decision to rollout a biometric voter registration system requires significant IT capacity to implement.<sup>42</sup> Yet there have been examples where BVR kits have been deployed by EMBs that have little, or no, IT graduates working for the EMB. This is usually either due to what are considered to be the non-competitive wages that constrain the ability of public institutions to attract and retain qualified personnel, or simply because

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<sup>41</sup> In sparsely populated countries, for example, a larger number of kits may be required to reach a smaller number of voters, due to the distances voters are expected to travel in order to register. EMBs generally calculate the number of kits to be procured, plus an additional percentage of spare kits, by dividing the total estimated number of eligible voters by the number of days available for registration by the estimated amount of time required to register a voter, taking the geographical distribution of voters into account. To keep costs down, and taking into account other factors such as the availability of a trained cohort of EMB kit operators and sufficient state security personnel to guard the process, EMBs may choose to stagger the registration exercise by procuring a smaller number of kits that can then be deployed to different parts of the country sequentially. Staggered registration can present its own political challenges, however, particularly if political groups tend to be geographically concentrated in certain parts of a country (e.g. which provinces to register first? Will the 'results' of the registration be made known while the registration is still ongoing elsewhere, etc.?)

<sup>42</sup> BVR places a demand on the EMB's operational capacity (not just in terms of costs, but also in terms of requiring operational planning processes that are akin to election day itself).

there is a dearth of IT graduates available on the local labour market. At the field level, correct operation and servicing of the kits will require a level of IT competence that may not necessarily exist, particularly in the large numbers required to conduct a mass field registration exercise.<sup>43</sup> If separate registration exercises are conducted for male and female registrants, this usually requires equal numbers of male and female staff to be recruited in order to carry out the registration. Sourcing adequate numbers of computer literate staff of both sexes may be a significant challenge, particularly in more remote areas. At the same time, limited national IT capacity at the central data centre can leave foreign IT advisors, whether staff members of the vendor supplying the kits, or international assistance providers from organisations such as UNDP, with elevated levels of responsibility for managing, as well as advising on, the computer systems. This produces significant political sensitivities, as well as raising serious sustainability and/or donor dependency concerns. The BVR process will also require the EMB to undertake a substantial operational planning exercise that is similar in scale of organization to an election, placing significant demands on its administrative and human resource capacities.

• **Proprietary software systems** – In the early days of deployment of BVR systems, there were instances where the source code of the tailored software programme loaded onto the laptop

kits was proprietary to the vendor. In effect, this meant that whenever the EMB, on whose behalf these systems were deployed, wished to make subsequent changes to the software, the original vendor had to be retained in order to carry out those changes, at additional cost. In a context where the receiving EMB should always retain ownership and management over these systems, such a “vendor lock” situation is not appropriate. In extreme cases, even the data entered into the system was owned by the vendor and not the EMB. UNDP’s contracting mechanisms seek to always ensure that the relevant source code of the BVR software is delivered by vendors and remains with the EMB. In order to utilize that source code to adapt the software as per expected needs, the EMB requires the national IT capacity to be able to programme the software as it so chooses. Alternatively, with the source code, the EMB should be able to contract any needed modifications with a third party, different from the original vendor, should it so choose. UNDP also usually includes, within its vendor contracts, training provision, not only to kit operators, but also the EMB’s technical staff.

• **Single-use systems**, used once – It has often been argued, in the period leading up to the decision to deploy a BVR system, that such systems are more sustainable, in that the computer kits can be continuously re-deployed in order to update the existing voter register, without the EMB having to compile a new register from scratch each time. The author knows of few

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<sup>43</sup> For example, servicing of kits may include knowledge on how to charge/maintain batteries, conduct data back-ups, etc.

cases, however, where the same laptop kits have been used in more than one registration exercises.<sup>44</sup> In reality, what tends to happen is that computer kits procured to conduct a biometric registration exercise end up being stored in warehouses (sometimes without adequate air conditioning or temperature control), up to years at a time, while rarely turned on and maintained. When the next electoral cycle comes around, old kits are often no longer fit for purpose,<sup>45</sup> requiring new kits instead to be procured.

●**No use of software or app-based systems** – No country that UNDP has assisted, including any African Union Member State, has procured a smart-device-based system – rather than a laptop-based system – to conduct BVR on either the Android, iOS, Windows or other mobile platforms.<sup>46</sup> Furthermore, no AU Member State, as far as the author is aware, has used existing hardware assets such as desktop or laptop computers, and procured solely a software solution to register voters. All systems that have been procured

for the purpose of registering voters in Africa, that the author is aware of, have done so using combined hardware-software solutions using a single main vendor.<sup>47</sup>

●**Under-utilisation, few linkages with civil registration** – Laptop BVR kits deployed by independent EMBs for the sole purpose of registering voters, with no other basic operating system or software package available for use by other state agencies, may represent a lost opportunity for many AU Member States, particularly in contexts where these computer kits sit in warehouses for years at a time. Where kits (often procured in the thousands) are loaded with a basic operating system, it seems reasonable to suggest that they could be put to substantial use by other state agencies or within the education or health sectors. There are some known cases, however, where vendors have even tried to contractually prevent EMBs from repurposing hardware and software for any purpose other than BVR.<sup>48</sup> While there are increasing cases by AU Member States of biometric

<sup>44</sup> One example is where kits used in DR Congo in 2006 were used in Togo in 2007.

<sup>45</sup> Technical service is usually contracted up to one year following contract signing.

<sup>46</sup> In theory, technology now exists where finger or thumbprints could be biometrically enrolled following an image captured on a smart device touch screen. By using the smart device's camera to capture the registrant's photo (and biometrically enrolled using facial recognition software), a registration process, in theory, could be entirely implemented via a tablet device connected to a mobile printer that could allow EMB personnel to "go to the voters" by vehicle/on foot rather than having the voters "come to the kits" as is the case when bulky generators are used to power laptop kits. One consequence of using stationary laptop and generator kits in one location for days or weeks at a time, moved thereafter to other locations, is that they require very thorough voter education efforts to inform voters of the exact time and location of registration.

<sup>47</sup> There are examples (e.g. Yemen in 2013) where one vendor has been contracted to provide the BVR kits for the field exercise, and another separate vendor was contracted to provide the "back-end" database server and AFIS system, with both software systems set up in order to allow both systems to integrate with each other.

<sup>48</sup> Alas it has mostly been the case, in UNDP's experience, that the custom software package is the only software programme loaded on the procured BVR kits. This is something that has suited vendors, in particular, as coupled with the disabling of the external computer ports and wireless connectivity, it has meant that neither the vendors nor the EMB have to address viruses or firewall breaches, etc., infecting the kits. It also means that staff or other individuals cannot use the computer kits for other purposes, particularly at times where the sole purpose of the kits is to register voters.



equipment being used for national registration processes,<sup>49</sup> and vice versa, UNDP knows of no cases where hardware has been donated, or loaned, to other, non-registration-focused state agencies.

• **Foreign tech companies, local agents** – In the majority of cases where BVR systems have been deployed, foreign technology companies have been contracted. Often times the companies do not have an established company office in the country in question, but submit bids from their corporate headquarters, and identify local partners with whom they can partner in the implementation of the contract. Usually, this will entail the local partner providing tech support and other advisory assistance to the EMB.<sup>50</sup>

• **Less than universal success in capturing biometrics** – Anecdotal evidence gathered in the course of observation of BVR processes suggests that there can be significantly less than 100% capture of thumb or fingerprints for biometric enrolment during a BVR exercise.<sup>51</sup> Whether due to training or implementation issues in the process of capturing the thumb or fingerprint, or the inability of the digital reader to capture any print, cases of up to 25% failure in capturing a print have been observed in some areas.<sup>52</sup> This

is unfortunate, as failure to capture fingerprints negates the purpose of rolling out biometric technology.

## ***VI- From population registration to identity management – the growth of biometric 'digital identity' schemes***

Traditional civil registration requires permanent and sustainable management and funding to stay relevant, accurate and up to date, but civil registration has often been an under-prioritised and under-funded area of public administration throughout the world. Faced with competing public administration priorities, many countries have been unwilling or unable to commit sufficient financial and human resources to resource-intensive civil registers and other demographic population registration systems, where data permanently changes, as people are born, die, get married, divorced and otherwise change names on a daily basis. Over decades, and compounded, in many contexts, with the ravaging effects of conflict and natural disasters, this phenomenon has led to the legal identity challenge that the world faces today. Prior to recent

<sup>49</sup> The national registration process in Chad has used such equipment, and Sierra Leone is using equipment procured for the national registration process to register voters for the 2018 general elections.

<sup>50</sup> UNDP procurement processes usually request international bidders to have either a well-established branch in the destination country, or clearly identify and provide details of local partner to support the provision of local services.

<sup>51</sup> The 'failure to enroll' rate is one of the main reasons why modern biometric systems are using multiple characteristics (e.g. face and fingerprint, or iris and fingerprint) to overcome the quality issues that fingerprint biometrics alone experience.

<sup>52</sup> Some digital readers require a number of seconds to capture the print, for example, whereas others require a 'rolling' of the thumb or finger. Diligence is often required to ensure the print is captured.

technological developments, it has also been common, in many countries, for different Government ministries and state agencies to operate population registers relevant to their respective mandates entirely separate from each other, creating islands of redundant data. Efforts to improve registration rates for specific use cases (e.g. birth, vaccination or voter registration drives), often fail to achieve full coverage, as they usually target select groups rather than address the entire population comprehensively.<sup>53</sup> Furthermore, traditional civil registers often do not include residency data, which can seriously undermine government planning of service delivery and spatial zoning. The overall result can mean separate registers of the same population cohorts prone to cycles of intermittent funding, and registration that can contribute to fragmentation between different registers, rather than ongoing and lifelong engagement with individuals that ‘follows’ them from birth, through to document issuance later in life, to death.

In recent years, therefore, many countries – including numerous

African Union Member States – have moved to create comprehensive, computerised population registers that are centralized and networked, often known as a “national population register” or a “national identity register.”<sup>54</sup> These digital systems/ registers often allow civil registration authorities, and other authorities such as place of residence registration authorities and ID/passport issuance authorities, to use a single platform for the collection, processing and retention of personal identity information and which serve as the backbone of a national population registration system. As part of the introduction of these systems, many states (although not all<sup>55</sup>) have distributed identity cards to the population during rollout, the latest versions of which are ‘smart’ cards that contain machine-readable chips, often containing not only the data fields visible on the card (including the person’s photograph), but often other data fields that may be readable only to particular state officials (such as law enforcement officials equipped with handheld card readers).<sup>56</sup> As a means to ensure uniqueness of coverage and accuracy of these data, many

<sup>53</sup> Statistics from one AU Member State, for example, show only 2% birth registration, but 91% immunization coverage. This represents a missed opportunity to register infants, as children receiving vaccinations are interacting with a government system, and receiving an immunization record, entirely distinct from other national registration systems.

<sup>54</sup> Prior to 2000, the number of high-to-middle income countries that had implemented national ID initiatives was 55, with the number of NID initiatives in low-to-middle income countries at 39. Since 2000, however, low-to-middle income country NID initiatives have numbered 52, with high-to-middle income country initiatives at 32 (source, presentation to 2015 ID4Africa conference, Dar Es Salaam, Tanzania, by Alan Gelb).

<sup>55</sup> The Indian ‘Aadhaar’ programme, while conferring legal identity to over 1 billion Indian nationals as of October 2016, does not involve the issuance of a national ID card to Indian nationals. Over 88% of Indian nationals have now been registered. <http://indianexpress.com/article/india/the-aadhaar-card-story-88-2-of-india-now-has-a-12-digit-identity-4595928/>

<sup>56</sup> Malawi’s new National Identity and Registration System (NRIS) will register all Malawians aged 16 and older in a permanent and continuous system that provides proof of their unique identity. All those registered will be issued with an identity card that is evidence of that identity. The project, launched on 27th October 2016 by President Mutharika, is supported by the UNDP Country Office in Lilongwe and is rolling out nationwide in 2017.

states have also collected biometric data of citizens, most commonly via digital thumbprint images that are de-duplicated prior to card issuance, in the same manner as that conducted for BVR systems.<sup>57</sup> The growth in these type of state-sponsored, digital identity systems has been huge and is set to expand further.<sup>58</sup> The growth in these systems has also been fueled by security concerns.

A usual policy implemented as part of these systems is the assignment of an identity number unique to individuals, which enables states to link an individual's identity across numerous other registries (e.g. residence, social security, land title, vehicle registration, driver licence, taxation, passport issuance, etc.) Some models in practice include having one foundational technological framework from which a centralized national identity register is managed and from which the various state agencies are able to access data relevant to their mandates (e.g. in Estonia<sup>59</sup> and the United Arab Emirates<sup>60</sup>), or by having a unified system operating on the principle of interoperability, where a link is created

between the population register and other registers, usually via the unique ID number. Incorporating national ID numbers for each beneficiary of services can alleviate the repetitive costs and uncertainty of identification and permits systems to reliably compare their registrants to determine an accurate profile. A national ID card can also offer a means to ensure "proof of life" and "verification of identity."

### **VII- Nevertheless, enormous challenges remain...**

The number of states that have introduced state-wide digital population registers, however, with or without the issuance of accompanying identity cards, remains low, particularly where the identity challenge is greatest. Furthermore, even for countries that have introduced national identity registers, a number of significant challenges remain. Firstly, digital identity registers and accompanying card schemes ultimately rely on the accuracy of the feeder data coming from the civil register. In almost all

<sup>57</sup> COTS sensors for iris capture are becoming highly competitive, and both iris and facial recognition systems are increasingly being deployed, and industry specialists believe that these two biometrics will be the leading biometric features collected from registrants in the future.

<sup>58</sup> The global biometrics and identity management market is expected to grow from \$12.15 billion in 2015 to \$37.8 billion by 2022, at a compounded annual growth rate of 17.6%. <https://www.wiseguyreports.com/reports/562741-biometrics-and-identity-management-global-market-outlook-2015-2022>

<sup>59</sup> The Estonian 'X-Road' is the foundational backbone of Estonia's digital governance system, widely acknowledged as one of the world's most advanced, and via which Estonian citizens can conduct a large amount of their interactions with government online. Increasingly used by citizens in the private sphere also, Estonian citizens can either log into secure public and private websites offering services via their national ID card connected to their computers via a USB port connector, or via their mobile phone. Both systems use PIN numbers, rather than biometrics, to confirm the remote authenticity of the national ID.

<sup>60</sup> The Emirates Identity Authority, since 2004, has been registering both Emirati and international residents on the territory of UAE and issuing biometric smart cards, now used across a multitude of public and private outlets. <http://www.id.gov.ae/en/home.aspx>. Spain has an electronic ID known as 'DNI 3.0' (Documento Nacional de Identidad) with a dual interface chip technology that provides identification for online interactions.

cases, these schemes are introduced for persons that have reached a particular age (usually 16 or 18) and have not been expanded to a birth-to-death “whole of life” system. This is often because it is considered impractical or unnecessary to separately register children for three primary reasons:<sup>61</sup> children’s lives are often largely managed by parent(s) or guardian(s) and they are not usually required to separately identify or register for state services; the photographs of children are rendered quickly obsolete as they grow older; and the biometric features of children (e.g. thumbprints) have not, up until 2017, sufficiently developed to be reliably processed for uniqueness.<sup>62</sup> Having teenagers register at 16 or 18, however, means there must be a system to ensure that the teenager registering for the national identity register/card today is doing so on the basis of the accuracy of the birth, vaccination or school entry registration process carried out 16-18 years previously. Even where that system is accurate, the system cannot rely on a photograph or signature that ensure authenticity. If there is no way for the identity of the teenager to be definitively linked back to his/her birth, then it is possible that someone can go from having a low-technology (or no technology) fake identity to a high-technology, biometrically-registered, fake identity once they register. More fundamentally, if there has been

less than 100% birth registration coverage, or no additional registration process that confirms identity in the meantime, then either someone may be unable to register at all for the new national ID system, or the state will have to introduce complex and ad hoc “witnessing” systems to verify the identity of undocumented individuals that can be open to political manipulation, particularly in countries prone to “identity politics” and ethnic strife.

Secondly, the administrative, human resource (both in numbers and capacity), logistical, transport and management requirements to manage identity registers are arguably as high for digital systems as for traditional paper-based civil registers. Data must be collected, processed and sent to centralized servers on a continual basis. The enormous financial investment required to rollout such systems can mean a disproportionate reduction in resources allocated to the basic civil registration infrastructure required to reach all births and deaths. Financially, the demands on a permanent IT and telecommunications capacity required to ensure accurate and reliable data transfer, storage and processing of life events, residency and other data fields, as well as card issuance (and possibly card retrieval from dead cardholders), can significantly outweigh those required to ensure a

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<sup>61</sup> Most countries, however, do require babies and children crossing international borders to have their own passport, rather than travel on their parent(s) passport as was previously the case.

<sup>62</sup> Evidence presented at the October 2016 annual conference of the Biometrics Institute ([www.biometricsinstitute.org](http://www.biometricsinstitute.org)) suggests that biometric features from children as young as 6 are now regularly being gathered, as technological advancements make biometric enrollment of child fingerprints possible. Furthermore, a team of researchers from Michigan State University and the Japanese firm NEC will present evidence, to the 2017 ID4Africa conference, that digital thumbprints with sufficient biometric uniqueness can now be captured from babies within hours of birth.

basic CRVS structure is in place. The original decisions taken to develop and rollout such identity registers and card systems can significantly under-calculate these costs, with decisions taken on budgets largely focused on the initial procurement of equipment and the enormous transport, logistics, HR and training costs required for the initial rollout. Closely related to this issue is the problem of “legacy data” and how to handle the incorporation of original paper records into the new digital system. For states that choose not to incorporate old data – and essentially start from “year zero” – there is the continued challenge of parallel systems and questions surrounding the legal primacy of paper versus digital records.

Another large challenge relates to government bureaucracies and overlapping mandates. Even for those countries that have legally mandated and handed over the rollout and permanent management of identity registers to independent identity authorities (e.g. the National Registration Bureau in Malawi or the National Civil Registration Authority in Sierra Leone), a strong, unified government vision – and clear delineation of mandates and authority – is required to ensure that an identity authority’s role in managing an identity register is clarified with regards to the role of other state agencies managing, for example, the driver license register, the social security register as well as

the EMB’s management of the voter register, etc. Politically, this can be difficult to achieve, with various state ministries, agencies or constitutionally-mandated independent institutions requested to give up some degree of their autonomy and mandate.

Another risk that centralized identity registers present is that, through accidental or nefarious means (e.g. through hacking or politically/criminally motivated identity authority officials), a person could suffer a ‘single point of failure’ in the state’s management of their identity. In such cases, laborious investigation of identity fraud may be required to re-establish someone’s identity. Furthermore, by facilitating the linkages between various identity and document registers, it may also be possible that politically-motivated governments, or ministries within them, could link more controversial or privacy-sensitive data, such as criminal record, and cross-reference against various other categories of the population, such as ethnicity (where recorded), in order to pursue discriminatory practices. This issue is of particular concern to some international civil libertarians and privacy advocates, some of whom remain vehemently opposed to identity registers and identity card schemes.<sup>63</sup> The positions of privacy advocates highlight the need for a thorough data protection and privacy legislative framework, as well as a data protection commissioner/ authority to police this complex issue.

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<sup>63</sup> Two such groups include Privacy International, a UK-based registered body whose mission statement includes the “fight for privacy, uncovering surveillance practices around the world, and advocating for strong privacy protections,” [www.privacyinternational.org](http://www.privacyinternational.org), and the Electronic Frontier Foundation, a San Francisco-based advocacy group that believes that “national ID cards and the databases behind them comprise the cornerstone of government surveillance systems that create risks to privacy and anonymity. The requirement to produce identity cards on demand habituates citizens into participating in their own surveillance and social control,” <https://www.eff.org/issues/national-ids>.

As of January, 2015, 109 states have data protection laws on their statute books.<sup>64</sup> In the context of the evolving security environment, where there is a large focus on the extent to which identity data – of individuals or entire religious or ethnic communities – can and should be mined by state security and intelligence services for signs of radicalization, this is a complex debate, often viewed through a “privacy vs security” prism, that is not going to subside anytime soon.

Other political issues include the extent to which national identity register systems invariably require the engagement of predominantly foreign technology companies, as with BVR systems, raising concerns over the extent to which the system is truly nationally owned. Should there be a perception, true or otherwise, that sensitive personal data of citizens, including biometric data, is being processed or analyzed in foreign countries, public confidence in the system can be lost. This can be particularly sensitive where there are concerns about the extent to which data can or is being shared with foreign intelligence services, or where foreign intelligence services can gain access to the system surreptitiously.<sup>65</sup>

In order to maintain control over these most sovereign of national data, therefore, some countries are setting up regulations to keep the data servers physically located on national territory, a measure that appears counterintuitive in the era of cloud

computing, and are also developing their own cloud services. In order to provide rigid security for these systems, there are known cases where back-up copies of the entire system are kept offshore, in numerous locations, should there be a serious cyber attack on the system, or a physical attack on the building(s) housing the system servers.

### **VIII- Opportunities and challenges – Possible future trends in identity management**

The 2030 Agenda for Sustainable Development, the world’s global development agenda for the next 15 years, has recognised the enormous gap in equal provision of identity coverage and has included, as Target 16.9 of the Sustainable Development Goals, a commitment to “providing legal identity for all, including birth registration, by 2030.” While the indicator agreed by the Inter-Agency Expert Group on the SDG indicators for achieving “legal identity for all” has been agreed as the proportion of children under 5 whose birth has been registered, the groundswell of political support and commitment to the SDG agenda provides an unprecedented opportunity to make a coordinated, concerted push towards the goal of universal, legal identity, even if the current pace of progress and the scale of the problem at hand looks enormous. In order to embrace this challenge, however, a number of issues

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<sup>64</sup> A framework to ensure that data are protected and to provide clear rules and accountability becomes especially vital as ID becomes more integrated.

<sup>65</sup> Some analysts predict a ‘privacy war’.

need to be addressed. What some of these issues could mean for voter registration is addressed in Section IX.

- **The proliferation of mobile devices and digital services has and will continue to change the landscape of identity.** The expanded rollout of national identity registers and accompanying identity cards, for example, is reflective of a broader growth in the “digitalization” of individuals’ interactions with government, businesses and each other. This offers enormous opportunities for universal identity coverage. Rapid proliferation of smart devices globally, for example, with ever-increasing computer power and in the context of rapidly expanding broadband coverage, can enable new methods of registration, including mobile and remote registration, as well as access to and retrieval of identity credentials by individuals. This also allows for continued interaction between individuals and their identity data.

In the private sphere, the growth in digital identity is most evident with the spectacular growth of online identities. Individuals are increasingly (depending on internet access) able to assert their own identities in digital fora. Google, Facebook and Microsoft all facilitate over one billion individual “identities,”<sup>66</sup> for example, surpassed, with respect to scale, only by China and India. Facebook penetration rates in some sub-Saharan African countries are higher than birth registration

rates. These technological shifts, and the corresponding changes in how individuals relate to their personal data, pose important questions about identity “ownership” and the extent to which states recognize ‘self-declared identity’ (see next point).

- **Empowering individuals with more control of their identity data can expand coverage.** Traditionally, legal identity has been largely state-granted. As identity management has historically been associated with credentialing, maintenance of this information by a central authority was necessary for functional systems. Current technological shifts are enabling individuals to assert and manage their self-declared digital identity online, but have not, to date, allowed individuals the same level of input into their state-granted identity and corresponding credentials.<sup>67</sup> This can marginalize individuals who do not identify as their credentials would indicate, and can put individuals at personal risk in countries suffering significant identity politics. Even where largely rejected by individuals, political elites can force political identity onto citizens to suit political, religious or moral power structures.<sup>68</sup> Furthermore, it is often outside of the control of an individual to protect privacy and disclose only select and pertinent information about their identity.<sup>69</sup> And critically, without a mechanism for individuals to access and assert their own identity without reliance on another form of credential, there is often no way for an individual to reclaim their identity in the case

<sup>66</sup> Many of which do not correspond to unique individuals, however.

<sup>67</sup> Although a number of states such as Canada and New Zealand have recently changed their rules to allow transgender people, for example, to have identity documents issued that correspond to their gender identity.

of lost or stolen credentials. This can make it easy for someone to lose their identity, or for someone's identity to be stolen.<sup>70</sup>

The concept of self-declared identity is poorly defined, but includes both the ability of individuals to assert their basic details (e.g. name, place of birth, etc.) and any additional elements of their identity that may be important to them (e.g. ethnicity, etc.). Currently, these assertions of identity are often not recognised or prioritised by the state (e.g. countries that do not recognise transgender or intersex people). Equally, elements of one's identity recognised or prioritised by the state but which may not be important to a person – or which a person refuses to recognise – may be impossible to discard (e.g. credentialing someone as a “man”<sup>71</sup> or as a member of a particular religious or ethnic community<sup>72</sup> against their wishes). Facilitating the means by which people may be able to assert their own

identity and gain access to it in order to prove who they are may increase the embracing of state identity systems where offered.

• **The exponential growth in digital transactions and e-commerce globally is set for further expansion, with enormous potential for financial inclusion growth.** Mobile money account ownership<sup>73</sup> is already driving a huge expansion in financial inclusion in Africa, and secure online payment systems, and the signing of legally binding digital contracts between businesses and citizens, have enormous potential to expand further financial inclusion and service delivery between governments, citizens and businesses. Digital data exchange between neighboring governments can enhance accurate data about their population and avoid fraud in tax collection, social security payments and access to healthcare, education and other public services. In the global north, regulations such as the new

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<sup>68</sup> In Lebanon, all seats in parliament are assigned to specified religious groups. The Lebanese civil registry records the religious group to which every citizen is considered to belong (regardless of whether they adhere to the religion's belief) and this is also recorded in the voter registry. In a highly symbolic gesture shortly before the 2009 elections, the Interior Minister issued a decree allowing Lebanese citizens the option of not disclosing their religion in official records; in practice few citizens have chosen to exercise this option, and even those voters who have done so are still assigned to polling stations specific to their previously registered religion. Candidates for elected office must declare which religion's reserved seat they wish to contest.

<sup>69</sup> It is common practice in the USA, for example, to show a driver's license, disclosing one's name, address, height, sex, etc., for the purchase of alcohol, when the only legal requirement is for the customer to prove age to be at least 21 years.

<sup>70</sup> Some technologists believe that the growth in blockchain technology (where copies of all digital transactions are permanently available) will allow individuals to assert their identity throughout life and to identify themselves even if credentials are lost or stolen, although this technology remains largely untested in the state identity management sphere. It also does open up the possibility that errors in the state management of identity, however, could remain permanently recorded. <http://democracyinternational.tumblr.com/post/158937318392/blockchain-government-dont-trust-verify>

<sup>71</sup> Nepal is one of the few countries in the world that has recently introduced a “third gender” that people can choose when registering for identity documents.

<sup>72</sup> A multi-year political debate in Afghanistan on whether the word “Afghan” should appear on the proposed e-tazkira national ID card as ‘nationality’ has contributed to stalling the rollout of the system.

<sup>73</sup> Such as the pioneering M-PESA programme in Kenya, <https://en.wikipedia.org/wiki/M-Pesa>.



European Union e-IDAS directive, which oversees electronic identification and trust services for electronic transactions in the EU, is eliminating a lot of existing barriers to cross-border digital data exchange and verification, and is expected to greatly expand digital business operations and transactions with public services.<sup>74</sup>

All of these systems, however, require robust digital identity architectures to be in place, with secure verification of identity linked back to the national identity register. MPESA and other mobile money systems, for example, require an individual to be able to authenticate their identity for the purposes of buying a cellphone. Robust digital ID management also changes the nature of public service delivery. Online services are accessible 24/7 and do not care for the location of the citizen. When rolled out properly, the addition of new digital service delivery channels can reduce the burden on, and negate the need for, physical government offices, thus potentially providing huge savings for governments. It is fair to speculate that much state service delivery in the next decades will likely be via mobile smart device and cloud based.

Furthermore, robust digital identity

management systems also allow for enhanced cross border travel, migration and trade. ECOWAS and the EU are but two regional intergovernmental bodies that have agreed on standardized physical and technological features for national identity cards that ensure machine readability across borders, often derived by standards set by the International Civil Aviation Organization (ICAO).<sup>75</sup> These developments boost not only the recognition of credentials, but also boost the global economy.<sup>76</sup>

• **The international development community’s approach to digital identity growth has been historically uncoordinated but is catching up.**

Historically, different UN agencies have been assisting different Government ministries or agencies, at national level, in an uncoordinated manner. As the UN’s children’s fund, **UNICEF**’s extensive work in identity management is largely focused on technical and advisory support around birth registration and children’s health services and vital statistics.<sup>77</sup> The UN Population Fund’s (**UNFPA**) identity work largely focuses on providing advisory and technical support on demographics, the conduct of census, and individual campaigns such as the campaign against child marriage. **UN Women** advocate for, and sometimes provide advisory and

<sup>74</sup> More information on e-IDAS is available at [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L\\_.2014.257.01.0073.01.ENG](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0073.01.ENG)

<sup>75</sup> The ICAO is a specialized UN agency tasked (as part of its mandate) with setting standards for machine readable travel documents, now often applying to ID cards. The private sector participates in the consultations that lead to setting ICAO standards in this area, including via dialogue with representatives of national ID and passport authorities.

<sup>76</sup> The ICAO forecasts that scheduled passenger traffic will more than double from 3 billion in 2012 to 6 billion by 2030, and the number of flights will increase from 30 million to 60 million. Systems whereby states can electronically recognize and process passenger documents issued by other states facilitate this process, while also accelerating the removal of visa requirements.

<sup>77</sup> The key UNICEF text on birth registration is “A Passport to Protection – A Guide to Birth Registration Programming” published in 2013, with the input of UNSD and others.

technical support to, gender sensitive CRVS and ID management systems that allow full access to women and allow women to fully assert their identity rights.<sup>78</sup> The Office of the UN High Commissioner for Human Rights (OHCHR) advocates for ID systems that empower individuals, but at the same time protect the right to privacy.<sup>79</sup> UNHCR (along with WFP, below) is almost unique among UN agencies in that their work protecting refugees and advocating for their rights (as well as the rights of stateless persons and internally displaced persons) means that they conduct the actual registration of their client population,<sup>80</sup> giving them access to Personally Identifying Information (PII).<sup>81</sup> The International Organisation of Migration (IOM) also has access to PII via work it does resettling refugees, IDPs and other vulnerable populations on behalf of Member States and the UN system. The World Health Organisation (WHO) interacts with ID management systems as part of its mandate in support of disease prevention, containment

and treatment, and in its broader work in support of health systems in UN Member States.<sup>82</sup> The World Food Programme (WFP), the UN's largest humanitarian agency fighting hunger, targets all individual beneficiaries of its food assistance programmes to be included in their SCOPE digital beneficiary and transfer management programme system by end 2017.<sup>83</sup> On top of its work supporting BVR systems, UNDP has, in recent years, been asked by an increasing number of Member States, to either assist in the development and rollout of its national identity register/card programmes, or to provide some form of assistance in specific tasks related to the rollout of such systems (e.g. Honduras, Kyrgyzstan, Malawi, Moldova, Sierra Leone, Tajikistan, Tanzania, Zambia). As previously mentioned, the **UN Regional Economic Commissions** – most notably the UN Economic Commission for Africa (UN ECA) – advise Member States on CRVS matters and implement small programmes of technical assistance.<sup>84</sup> In terms of international

<sup>78</sup> They have also recently piloted a project on property rights for women farmers in Tanzania using blockchain technology.

<sup>79</sup> They take a human rights-based approach to identity management and population registration, and believe that where possible, data should be gathered that allows for human rights bodies to examine whether people are being discriminated on matters such as ethnic, gender or religious background.

<sup>80</sup> Rather than assisting national authorities to register their client populations, as is the case with UNDP's work supporting voter registration, or UNICEF's work supporting birth registration.

<sup>81</sup> UNHCR has been collecting biometric information from refugees since 2002, as part of its registration process, and as of early 2017, UNHCR has enrolled in excess of 1 million refugees in their global Biometric Information Management System (BIMS) database, which has been used in over 23 countries. A sister programme, IrisGuard, has registered in excess of 2 million refugees, largely from Syria but now including refugees registered in five countries, since 2013.

<sup>82</sup> It has published a lengthy "resource kit" on "Strengthening civil registration and vital statistics for births, deaths and causes of death," in association with Health Metrics Network and the University of Queensland in Australia.

<sup>83</sup> <http://documents.wfp.org/stellent/groups/public/documents/resources/wfp280992.pdf>. SCOPE has also incorporated a SCOPECARD as part of its overall SCOPE delivery, where WFP issues smartcards to beneficiaries for use in WFP-registered agents or retailers.

<sup>84</sup> The UN Economic Commission for Africa (UN ECA) advises AU Member States on CRVS matters and has provided technical assistance to groups such as the African Union's African Programme on Accelerated Improvement of CRVS (APAI-CRVS).

community coordination, UNSD acts as the Secretariat for the Global Civil Registration and Vital Statistics Group, currently (as of April 2017) chaired by WHO, and including not only key UN agencies (UNICEF, UNDP, UNFPA, WHO and the UN Economic Commissions for Africa and Asia-Pacific) but also other key national bodies such as the US Center for Disease Control.<sup>85</sup> The Group was recently reconstituted (July 2016) and has both a revised Terms of Reference and a three year work plan.<sup>86</sup>

Overall, however, there is no regular forum whereby key UN agencies such as UNICEF, UNDP, WFP, UNFPA and others can meet to ensure that their individual portfolios – at the global, regional, national and policy level – are coordinated and complementary to each other, and working towards supporting a holistic vision of identity management in countries that build on solid CRVS foundations.<sup>87</sup> This is particularly the case in countries that have chosen to rollout digital national identity registers. It also means that the UN system as whole, in effect, has little position or policy on various digital identity-related matters such as the gathering and use of biometric data, the legal primacy of digital versus paper identity data, or best practice in the design and rollout of digital, biometrically-enhanced national

identity registers.<sup>88</sup>

The lack of intra-UN coordination has been mirrored external to the UN. There has historically been limited coordination between the UN (as a system) and other key international development agencies on identity management. The multilateral development banks, such as IDB in Latin America (with its Civil Registration and Identity Management programme),<sup>89</sup> have tried to address this problem and come up with a solution to this challenge that affects their client countries. There is also little UN coordination with established civil society organizations that have strong experience in identity management such as Plan International, or with philanthropic organizations such as the Bill and Melinda Gates Foundation. There has been even less cooperation between the development community and the technology sector.

One positive development in recent years, however, is the increasing coordination between, in particular, UNDP, UNHCR, UNICEF, and the World Bank's ID4D programme, which "helps countries analyze problems, design solutions, and implement new systems to increase the number of people with official identification and the development impact of the

<sup>85</sup> Other members include organisations such as the OSCE, the Organization of American States, the African Development Bank, the Asian Development Bank, and the Inter-American Development Bank.

<sup>86</sup> The overall objective of the Group, according to its revised (2016) ToRs, is "to strengthen national CRVS and related systems through coordination and collaboration on global and regional initiatives and exchange of information."

<sup>87</sup> This was one of the key findings of a short mapping study that was commissioned by UNDP's Bureau for Policy and Programme Support in December 2015, drafted by Dr. Joseph Atick.

<sup>88</sup> To its credit, the UN General Assembly issued the Resolution on the Right to Privacy in the Digital Age, 18 December 2013, A/RES/68/167, which, among others, calls upon Member States "to review their procedures, practices and legislation regarding the surveillance of communications, their interception and the collection of personal data, including mass surveillance, interception and collection, with a view to upholding the right to privacy by ensuring the full and effective implementation of all their obligations under international human rights law."

<sup>89</sup> <http://www.iadb.org/en/topics/government/civil-registration-and-identity,4032.html>

overall identification system.”<sup>90</sup> As part of both its ‘thought leadership’ and ‘global advocacy’ focus areas, ID4D shepherded a process leading to the February 2017 Principles on Identification for Sustainable Development: Towards the Digital Age, which was developed in a working group including the representation of UNDP, UNICEF, UNHCR and other bodies external to the UN such as the Bill and Melinda Gates Foundation and Mastercard. These Principles, which have no legal status, represent the first major effort of the international development community to set basic principles and best practice around the design and implementation of identity management systems, particularly in the context of the rollout of digital ID management systems.<sup>91</sup>

Ultimately, however, the siloed nature of international community support, means that funding is often available from one agency at a time, tied to a specific use case or moment (e.g. an election).<sup>92</sup> At the same time, the move to a comprehensive “birth to death” system often means such major system upheaval, and substantial financial, logistical and technical investments, that governments have tended to shy away from multi-term system planning that straddles electoral cycles and which challenges various

government ministries and agencies to work together towards one vision of identity management. Governments have tended, therefore, to make sub-optimal investments in one-time use systems largely tied to the availability of funding. And because of the intrinsic political dimension of the relationship that international development agencies – and private sector multinational companies – have with their clients, the proposed solutions and changes to existing systems are often only incremental. This issue needs to be resolved.

### IX- Whither voter registration?

With the expansion in electronic identity management systems affecting not only AU Member States but the world also, it is interesting to speculate what the future may hold for voter registration, both globally and on the African continent. Noting the extraordinary complexities, and financial cost, to rolling out standalone BVR, and noting the increasing embrace of digital identity management systems on the continent, it seems reasonable to suggest that standalone BVR systems may not predominantly

<sup>90</sup> <http://www.worldbank.org/en/programs/id4d>. ID4D has three focus areas: thought leadership, global convening and advocacy, and country and regional engagement.

<sup>91</sup> <http://documents.worldbank.org/curated/en/213581486378184357/pdf/112614-REVISED-PUBLIC-Identification-Principles-for-Sustainable-Development-Toward-the-Digital-Age.pdf>

<sup>92</sup> The lack of national ID systems has sometimes meant that documents from other registration drives such as voter registration drives have acted as de facto proof of identity without any solid basis in law. Yet voter registration campaigns are often conducted only every few years in advance of an election. Furthermore, the amount of data collected is legally limited to establish voter eligibility, registration is voluntary and therefore not universal, and the voter cards produced have limited security features. Registration is usually done afresh and a new voter ID number issued, breaking the continuity of linking an individual to a persistent identity number.

feature in years to come. Rather, it is likely that an increasing number of Member States will decide to deploy biometric registration technology with national identity registration primarily in mind.<sup>93</sup> Should this transpire, however, Member States will face some very tricky challenges. Choosing to extract a functional register like a voter register from a foundational register such as a national identity register is not simply about a country making the political decision and then enacting the legal acts to make it happen. Some of the issues that must be addressed include:

- **How will the changing face of technology impact on the process?**

Even if the growth in high-technology national identity register and card schemes is a recent phenomenon, some schemes have been in situ for a number of years now, and the technology has often become quickly outdated. Some schemes, for example, still issue plastic cards with machine readable magnetic strips, and without the 'smart card'-type chip schemes. While excellent in terms of empowering citizens (and resident foreigners, in many cases) with legal identity that can be used for identification purposes when interacting with public and private officials, use of plastic cards to access services remotely is usually not possible. The coming years are likely to see many countries

either issue smart or contactless card systems from scratch that will allow citizens to remotely access services via either port or wireless connections to smartphone/tablet devices, or upgrade their existing plastic card-based systems to same.<sup>94</sup> This will likely be coupled with expansion of online service provision by Governments so that many existing services that require in-person interaction between public administration and citizens can move to cheaper online alternatives that are both more attractive to (younger) citizens, and will reduce both government building portfolios as well as payroll.<sup>95</sup> Online automation can be expected in taxation services, healthcare, social insurance registration and claims, document issuance, etc. Furthermore, a number of countries (e.g. at state level in Nigeria with regards to a driving license) are piloting mobile IDs in the form of an official copy that exists as a certificate on a smart device with the same legal status as a plastic card. Others are, for example, noting that someone is legally allowed to drive, with a tag noted in their identity register in the event that police officers, for example, wish to check license status on the road.

Overall, therefore, and noting that the overwhelming majority of the population in each and every country has a mobile phone or other connected cellular device, the future of the

<sup>93</sup> Some countries, however, are making efforts to plan the rollout of a national identity register and card scheme taking both electoral needs and electoral timelines into account. Both Chad and Sierra Leone, for example, have decided to first rollout a BVR system, and then expand it to develop into a national identity register.

<sup>94</sup> A large portion of the global population will never have a desktop or laptop personal computer. A system of connecting a smart ID card to a desktop or laptop via a USB port connector, therefore, as currently practiced in Estonia, appears not likely to be favoured in coming years.

<sup>95</sup> In some countries, though, government jobs are the only jobs readily available, and creating unemployment is not ideal without other job opportunities.

personal digital identity carrier is likely to be connected to the SIM card of mobile devices, or via software, hardware and biometrics combinations, in close cooperation between mobile operators and other technology providers. With such approaches appearing inevitable, the obvious question arises as to whether citizens, under such systems, will be facilitated to register to vote online?<sup>96</sup>

• **How can the complexity of national identity registration be rolled out with the simpler voter registration process?** Designing and rolling out a national identity register and card scheme is significantly more complex than rolling out a BVR system. For a start, national ID schemes are expected to be permanent schemes that need to be financed and managed on an indefinite basis. BVR schemes to date on the African continent appear to have been rolled out with only one registration drive in mind. ID schemes cannot be legislatively approved, financed, developed and rolled out on the basis that their work is done once everyone has a card, as BVR systems can be. Member States must conduct long-term financial and administrative planning and ensure that the resources are made available on a long-term basis. Furthermore, there are, by necessity, usually more data fields gathered in a national ID card scheme than for a voter register. These would normally include details of the registrant's "family tree" (i.e. details of the registrant's parents, where known, and offspring, where known),

citizenship status, address or residence (where differing), birth details, etc.<sup>97</sup> National identity register schemes are also normally compulsory and thus registration of every person – both citizens and foreigners that habitually reside or are otherwise based in the country – are registered. Furthermore, ID schemes, even where ID cards are not issued to children, normally require all children to be registered in the system. Perhaps the most complex task of all is ensuring that the birth registration data, through to vaccination data, school entry data, etc., eventually feeds into the national identity data in a secure and reliable manner. This must also cover births, vaccinations and school entries performed outside of normal channels (e.g. for children born at home rather than in hospitals or village health centres). At the other end of the life tree, a reliable system of death registration must be in place to maintain public confidence. And unlike a voter register, which is sometimes required no more than once every four years and states can survive heated debate on the credibility of the register, population registers are a different matter entirely. Can the complexities of developing such complex systems then be designed and rolled out correctly while keeping in mind the much simpler – but surely as politically important, if not more important – needs of an EMB? This raises the next issue:

• **How can the longer term planning and implementation timelines necessary for the rollout of national identity schemes address and**

<sup>96</sup> This paper only addresses voter registration, and does not discuss the likely future of electronic voting.

<sup>97</sup> Estonia, for example, also records the registrant's mobile phone number and links it to their national identity records.

**accommodate shorter electoral timelines?**

Sierra Leone is but one country that faced the complex issue of how to rollout a national ID process while trying to meet electoral timelines. In the end, the decision was made that conduct a voter registration exercise first in order to meet strict electoral deadlines, and thereafter use the VR data as the “seed” for the civil registry process, to be conducted at a later date. In this context it is worth reminding that national ID systems in countries like Germany, Pakistan and even the Aadhaar system in India (with no national ID card) took up to a decade to plan and implement. It appears to be the case, in many countries, that voter registration is often prioritized by a Government in terms of releasing sufficient funding to the EMB, only when an election is imminent. The often tight timeframe for the conduct of voter registration, therefore, in a context where there is enormous political pressure on a government to meet electoral timelines, must be balanced against the complexity of rolling out a permanent national ID system – the planning and execution of which is something that should never be compromised or rushed for expediency or in order to meet timelines not central to its mandate.

**• How can the independence of a derived voter register be assured if its basis is a national population register?**

Institutional arrangements are necessary to ensure that the autonomy of both identity authorities and an EMB is respected and that public and political clarity pertaining to the ultimate responsibility for the accuracy of the register is maintained. Clear and sustainable solutions must be found in this regard. Placing

the sourcing of the voter register derived from the national identity register in the hands of the body managing the identity register makes it politically important that there is much confidence in the work of the registration authority as possible, and that there is equally as much emphasis placed on ensuring the institutional independence of that same authority. This is not to say that management of an identity management system is always best placed in the hands of an independent authority mandated by law, but it is to say that steps have to be taken to ensure that if the system does remain under the control of a Government ministry, that measures are taken to boost its independence. Some policy options here include: for a period of time leading up to an election, have the ministry – or at least the parts of the ministry responsible for identity management – placed under the authority of a cross-party parliamentary oversight committee. Another option is to allow political parties, civil society and groups of concerned citizens to conduct data analysis audits of voter registers. Audits are complex and sometimes controversial matters. The need for political groups, civil society and voters to have confidence in the accuracy of the register – including allowing them to check for the individual presence not only of their own supporters but also those that they believe should not be eligible, must be balanced against the need for the privacy of individual voters to be protected. Many EMBs, for example, operate a system where famous people or people who otherwise have cause to wish for their voting status to remain anonymous, can do so.

Nevertheless, whatever the solution, having the national ID as the basis of the voter register means that whatever body is responsible for ensuring the accuracy of the base identity data carries out its tasks independently, credibly and in accordance with the law.

• **How can accuracy of the voter register ultimately be consistently achieved?** Equally important is ensuring that the role of the EMB publishing its voter list is not simply to “pass on” the identity register data without ensuring its accuracy. Ideally, procedures would be in place that would allow the EMB to not only be able to check the data’s accuracy in terms of universality of coverage, but

also that the job of allocating voters to polling locations is done with maximum accuracy. Ideally procedures would also be developed for the EMB to address citizens that do not appear on the voter list or whatever reason. One such way – but one that has financial implications – is for EMBs and identity authorities to have an online system that allows voters to check their voting location right up to the close of polls on the day (or days) of the elections. At the very least, tendered ballot procedures allow voters whose eligibility is in question to be allowed to cast a ballot, and where their eligibility to both cast a ballot, and for that particular voting constituency, etc., is later checked prior to the announcement of final results for that location/constituency.<sup>98</sup>



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<sup>98</sup> Many electoral systems allow for votes to be counted on site at the polling location then transmitted to centralized locations.





## ABOUT THE AUTHOR



Dr. Joseph J. Atick  
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Dr. Atick is a recognized worldwide expert and advocate on identity matters, having been one of the founders of the identity industry more than 25 years ago, where he had led several companies in the space and developed some of the foundational algorithms underlying secure digital identity today. He retired from the industry in 2010 and founded the Identity Counsel International, to focus on helping nations, especially in developing countries, and international organizations seeking to design and launch responsible digital identity programs to accelerate socio-economic development, improve service delivery and security and enhance privacy and people's rights. He has been a strong advocate of privacy and responsible use of identity technology for social protection.

In 1998, he co-founded in Washington the International Biometrics and Identification Association, to provide responsible use guidance to the industry and to policy makers. He has an active ongoing partnership with the World Bank and several agencies of the United Nations on identity matters and has participated in a large number of identity missions in Africa and the developing world.

He is currently the Executive Chairman of ID4Africa, a pan African movement to promote the responsible use of digital identity in Africa.

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Since 2005, he has worked for a number of both UN and EU field missions, providing frontline electoral assistance to the national electoral authorities in Sierra Leone, Lebanon, Liberia, Zambia, Yemen and Afghanistan.

In election observation, he observed at Deputy Chief Observer/Deputy Head of Mission level for the European Union and the OSCE Office for Democratic Institutions and Human Rights in Sudan and Croatia, and he also served in numerous other Core Teams for OSCE/ODIHR in Romania, Hungary, Bosnia and Herzegovina and Croatia.

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