

August 2018

Study of Options for Mutual Recognition of National IDs in the East African Community

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Glossary of Terms and Acronyms

2D barcode	Two-dimensional (2D) barcodes look like squares or rectangles that contain many small, individual dots. A single 2D barcode can hold a significant amount of information and may remain legible even when printed at a small size or etched onto a surface.
ABIS/AFIS	An Automated Biometric Identification System (ABIS) is a biometric identification methodology that uses digital imaging technology to obtain, store, match, compare and analyze biometric data, e.g. fingerprints, irises and faces. When used exclusively for fingerprints, they are also known as an Automated Fingerprint Identification System (AFIS).
AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
API	An application programming interface (API) is a set of clearly defined methods of communication between various software systems or components.
Barcode	A machine-readable code in the form of numbers and a pattern of parallel lines of varying widths, printed on and identifying a product.
Biographic	Facts about an individual, e.g. name, date of birth, gender, or address.
Biometric	Physical or behavioral attributes of an individual, including fingerprints, irises, facial images, gait, signatures, keystrokes, etc.
Biometric recognition	Biometric recognition is defined by the International Standardization Organization as the “automated recognition of individuals based on their biological and behavioral characteristics.” Based on current adopted technologies, fingerprint, iris and facial images are the most widely used forms of biometric recognition.
CMP	The EAC’s Common Market Protocol
Credentials	A document, object, or data structure that vouches for the identity of a person through some method of trust and authentication. Common types of identity credentials include—but are not limited to—ID cards, certificates, numbers, passwords, or SIM cards.
Digital Identification	A set of electronically captured and stored attributes and/or credentials that uniquely identify a person.

Digital signatures	Digital signatures are often used to implement electronic signatures for transactions which require a high level of assurance. Digital signatures are mathematical schemes that act like electronic “fingerprints.” A valid digital signature gives a recipient reason to believe that the message was created by a known sender (authentication), that the sender cannot deny having sent the message (non-repudiation), and that the message was not altered in transit (integrity).
eKYC	Electronic Know Your Customer (eKYC) facilitates banking, insurance, telecoms, and other institutions to validate the identity of an individual by verifying their personal details, such as name, address, etc., against his or her biometric information stored in a national ID system.
Electronic signatures (e-Signatures)	Electronic signatures are defined as an electronic sound, symbol, or process attached to or logically associated with a record adopted by a person with the intent to sign the record. Electronic signatures are electronic data which carries the intent of a signature.
G2P	Government-to-person
Legal identification	Government-recognized credentials—such as birth certificates, identity cards, unique identity numbers or digital certificates—that serve as proof of identity.
Mobile ID	Mobile ID is a special SIM card which the customer must request from the mobile phone operator (as per defined verification/authentication processes). Private keys are stored on the mobile SIM card along with a small application delivering the authentication and signature functions. Estonia and Moldova use mobile ID as a digital identity.
MRZ	A machine-readable zone (MRZ) on a document (such as a passport) or card refers to a specific physical area on the document or card where data is encoded in a machine-readable format. A prominent example of a MRZ is the bottom two lines on the bio-page of a passport, which is standardized by the International Civil Aviation Organization (ICAO) Document 9303 standard.
Non-repudiation	Nonrepudiation is the assurance that someone cannot deny something. Typically, nonrepudiation refers to the ability to ensure that a party to a contract or a communication cannot deny the authenticity of their signature on a document or the sending of a message that they originated.
OSBP	One Stop Border Post
PKI	A public key infrastructure (PKI) is a set of roles, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates and manage public-key encryption. A PKI implements secure electronic transactions over insecure networks and is used to authenticate identities for the purposes of data encryption and signing.
SDG	Sustainable Development Goal
Smartcard	A plastic (or polycarbonate) card with a built-in microprocessor that can store data.

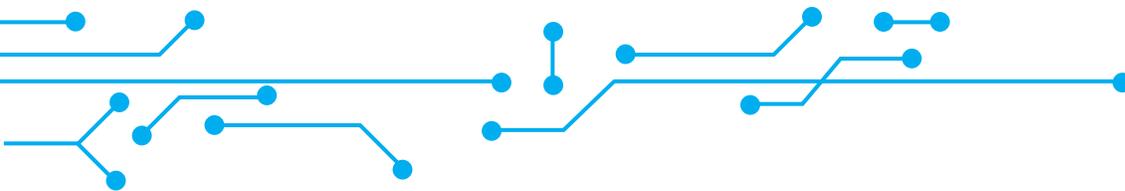


Executive Summary

Through Article 8 of the Protocol on the Establishment of the East African Community (EAC) Common Market (“Common Market Protocol”, CMP), the EAC Partner States have committed to work progressively towards, “...a common standard system of issuing national identification documents to their nationals.” The six EAC Partner States are at varying stages of introducing new or strengthening existing national ID systems, and Kenya, Rwanda, and Uganda already recognize each other’s national IDs as valid travel documents in lieu of a passport. This report, which summarizes research carried out over the course of 2017, intends to help the EAC Partner States realize the aims of the CMP by proposing use cases and the most appropriate regional architecture for mutual recognition of national IDs in the EAC. It is hoped that the EAC can carry this work forward through consideration and further development by its formal processes.

Examples across the world demonstrate that robust, inclusive, and responsible national ID systems are powerful drivers of inclusive and sustainable development. For individuals, a national ID enables them to exercise their rights, including to vote and access services such as social assistance, healthcare, education, and finance. For governments and businesses, national ID systems provide a platform to uniquely identify and authenticate the people they serve, which increases their effectiveness, efficiency, and integrity. Using a national ID system to deliver social protection, for example, can help with better targeting of cash transfer or subsidy programs designed to bring people out of poverty.

Mutual recognition of national IDs within regional economic blocs can significantly accelerate regional integration. It can make it easier for people—and especially the poor, who may face challenges accessing traditional passports—to travel, trade and make payments through regular channels, and to do business and access services across borders. Furthermore, as more cross-border transactions take place online and digital single markets emerge, trust between parties in different countries will need to be established through digitally-enabled and mutually-recognized national ID systems. These outcomes are closely-linked with realizing the CMP, and in particular the free movement of goods (Article 6), persons (Article 7), labor/workers (Article 10), services (Article 16), and capital (Article 24), as well as the rights of establishment and residence (Articles 13 and 14, respectively).



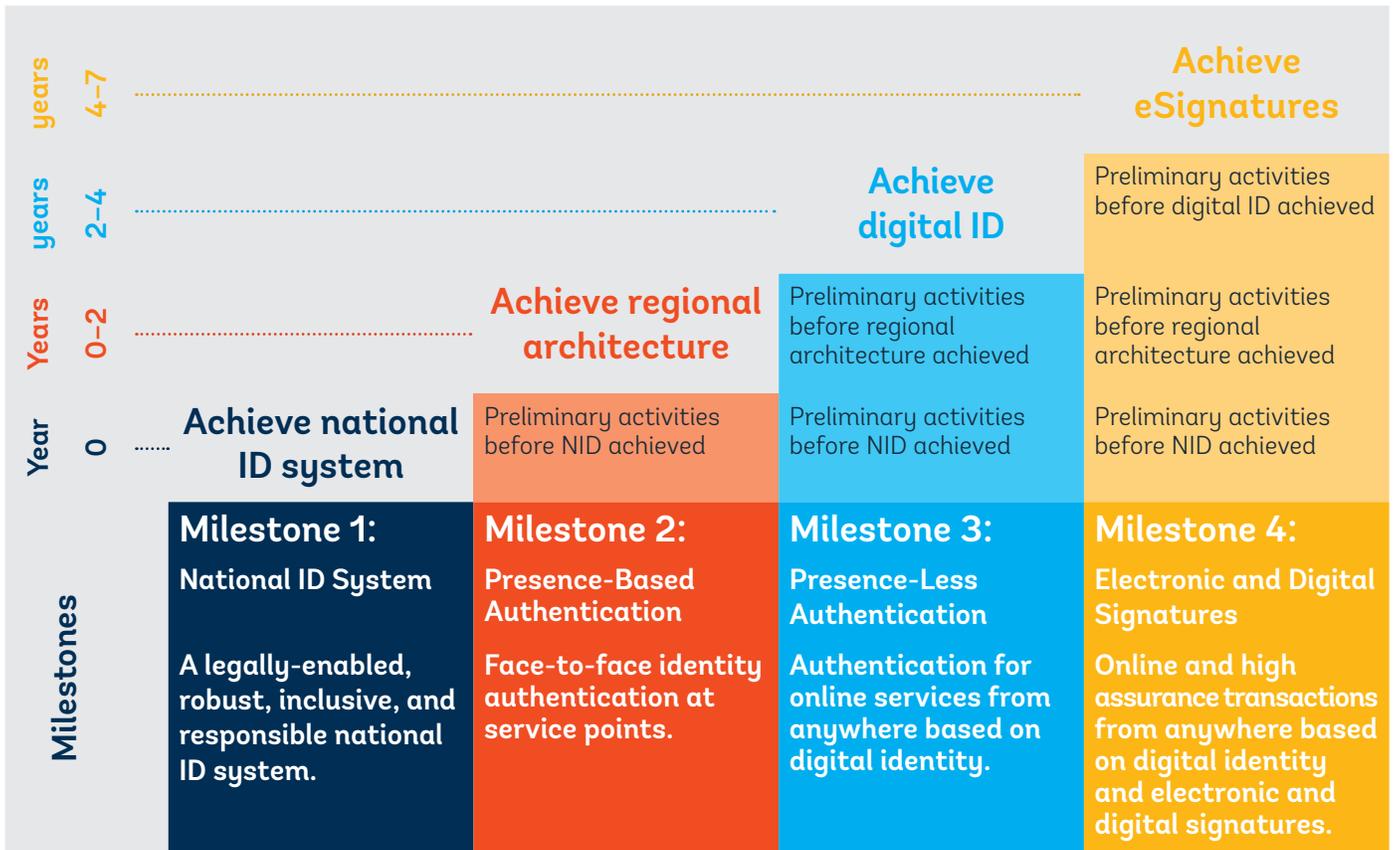
Mutual recognition can be achieved either through standardization and interoperability (i.e. minimal regional standards enabling national systems to ‘talk’ to each other) or harmonization (i.e. one regional ID system). The EU’s eIDAS initiative, which enables a digital ID issued by a member State to be recognized in all other member States, demonstrates that standardization and interoperability allows participating countries to move at their own speed and to design national ID systems that simultaneously meet their domestic needs, while also meeting regional requirements and creating global opportunities. In contrast, slow and inconsistent implementation of the Economic Community of West African States (ECOWAS) National Biometric Identity Card, which prescribes strict technical specifications, demonstrates the challenges of harmonization.

Considering the unique circumstances of the EAC and in the spirit of variable geometry, this study proposes a model of mutual recognition of national IDs through standardization and interoperability. Towards this end, this study outlines Guiding Principles and four Milestones, that can be followed independently by each Partner State over the course of 7 or more years. Based on the understanding gained of the conditions in each of the six Partner States, the ‘to-be’ architecture proposed by this study should require minimal technical, legal, and policy reforms at the national level. However, it will require a series of actions at the regional level, including agreement on standards and development of appropriate legal frameworks and processes, especially to ensure privacy and data protection.

The use of national IDs as travel documents to streamline migration, generally speaking, is the most compelling and practical use case for mutual recognition of national IDs. However, it is acknowledged that each Partner State should maintain the ability to determine what travel documents are accepted at their borders. Any efforts to facilitate mutual recognition of national IDs for migration and trade is closely linked to the EAC’s initiatives on One Stop Border Posts and e-immigration.

Other potential use cases include facilitating trade, especially for cross-border women traders, and access to services across borders, especially financial services, business registration, and for those living in border communities wishing to access healthcare, education, or financial services in the neighboring country. While cross-border e-commerce and e-government is still in its infancy in the EAC, mutual recognition of national IDs will eventually be instrumental for achieving a vibrant digital economy in the EAC.

Figure 1. Overview of Milestones



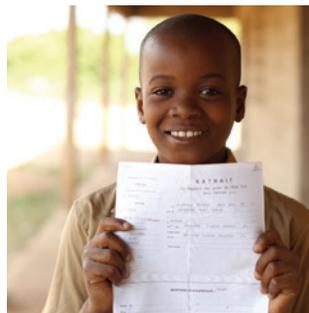
- **Milestone 1: National ID System** envisions achievement of a legally-enabled, robust, inclusive, and responsible national ID system. This includes a national ID database that enables electronic authentication of individuals for electronic delivery of services, and the capacity to present a credential for electronic authentication at a service delivery point or for an online service.
- **Milestone 2: Presence-Based Authentication** envisions face-to-face identity authentication at service points through various methods. Cross-border delivery of services would be based on authentication of a user with their national ID at the service delivery point, such as: border crossings; hospitals or schools; and banks.
- **Milestone 3: Presence-Less Authentication** envisions identity authentication for online services from anywhere or from any device based on digital identity. Access to services would be enabled by assurance levels or trust levels through digital identity to open bank accounts, apply for a driver’s license, or apply to an educational institution, all online.
- **Milestone 4: Electronic and Digital Signatures** envisions the capacity for online and high assurance transactions from anywhere based on digital identity and electronic and digital signatures. Users would be able to perform transactions which require legally acceptable signatures, such as electronic voting, land purchase transactions, or issuance of online certificates by Government/educational institutions.

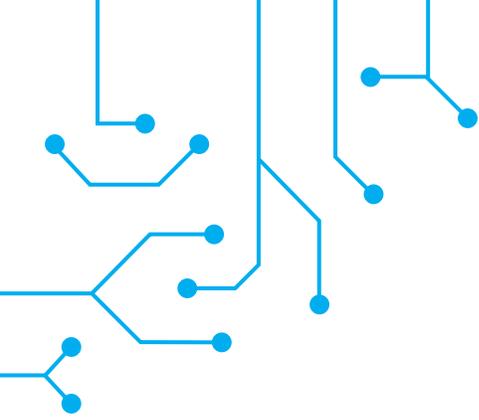
1. Study Methodology

This report summarizes key findings of research that was carried out between April and December 2017 through a participatory process that involved a wide variety of stakeholders. The EAC Partner States, EAC Secretariat, development partners, donors, and technical experts, were consulted extensively in the research. The methodology involved desk reviews, surveys, formal and informal consultations with Partner States and other stakeholders, and follow up technical missions by the World Bank Group team.

Desk reviews provided background information on the status and coverage of ID systems in EAC Partner States, and case studies from other relevant regional ID initiatives (e.g. eIDAS, X-Road between Estonia and Finland, ECOWAS). The World Bank Group also developed a survey to understand the coverage, quality, and technical specifications of national ID systems in the EAC Partner States.

Workshops were co-organized with the EAC Secretariat in July and December 2017 to engage with representatives of EAC Partner States, including national ID agencies, immigration bureaus, ministries of EAC affairs, ministries of home affairs, ministries of ICT and ministries of finance. The IOM, UNHCR, UNICEF, CGAP, the Bill and Melinda Gates Foundation, and the European Commission also participated in these workshops.





2. The Transformational Potential of Identification

The ability to prove and verify one's identity is a prerequisite to exercising rights and accessing services. Historically, individuals could prove who they were through informal means such as recognition by their community or verbal explanations to persons or officials they encounter. However, in today's digital age, and as service delivery becomes electronic and more sophisticated, it has become critical that individuals possess a unique identity credential issued and officially-recognized by governments. For these reasons, countries around the world have introduced national ID systems, and the international community has set SDG target 16.9 to provide legal identity for all, including birth registration, by the year 2030.

Box 1. ID and the Sustainable Development Goals

In 2015, all countries committed to realizing the 17 Sustainable Development Goals (SDGs) by 2030, including 169 targets. Strengthened national ID systems can be instrumental in making progress in over 30 of those targets.

Regional mutual recognition of national IDs in the EAC directly contributes to the following SDG targets:

- 5.2: Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- 10.7: Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies
- 16.9: By 2030, provide legal identity for all, including birth registration

Robust, inclusive, and responsible national ID systems—integrated with civil registration—can be transformational for a country's development and are integral in ensuring individuals are able to exercise their basic rights. ID systems are a fundamental tool for eradicating poverty and making progress in a wide range of development outcomes such as health, education, financial inclusion, social protection, and political participation—especially for the most vulnerable populations. Similarly, they offer a digital platform for public and private service providers to strengthen

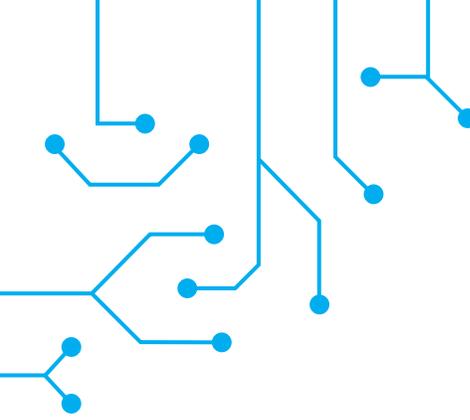


how their services are delivered, including by offering a foundational database of all people in the country and the ability to reliably and quickly verify the identity of users, including with biometrics.

When national IDs can be used to prove identity in other countries (e.g. to open a bank account, to trade goods or services, to cross borders), they also become a powerful driver of regional economic and social integration. Mutual recognition and/or interoperability of national ID systems—especially within regional communities—make it easier for people to travel, trade, and do business in other countries, and create opportunities for managed labor migration, women’s empowerment, regional digital single markets, integrated payment systems, portability of social protection programs (e.g. pensions and health insurance), and better management and protection of refugees and displaced persons, among others.

Despite the importance and benefits of national ID systems, the World Bank estimates that 1 billion people around the world lack an officially-recognized identity document. Of these, 493 million are in Sub-Saharan Africa, representing 49 percent of the total population, and 71 million are in EAC Partner States. This 71 million represents 38 percent of the total population of the EAC. Strengthening the national ID systems of EAC Partner States and ensuring mutual recognition are therefore critical goals for the EAC.

National IDs can be a powerful driver of regional economic and social integration.



3. Rationale Within the EAC: The Common Market Protocol

There is a strong rationale for mutual recognition of national IDs in the EAC. The EAC's Regional Integration Pillars, particularly the successful achievement of the CMP, are dependent on robust national ID systems and would benefit greatly from national IDs being recognized across borders.

The CMP has been in force since 2010, in line with the provisions of the EAC Treaty. The CMP requires that EAC Partner States progressively change their national laws as necessary to allow for its full implementation.

Under the CMP, EAC Partner States have agreed to work progressively towards free movement of goods (Article 6), persons (Article 7), labor/workers (Article 10), services (Article 16), and capital (Article 24), as well as the rights of establishment and residence (Articles 13 and 14, respectively).

Box 2. The EAC's Regional Integration Pillars

The EAC Partner States have agreed on four Regional Integration pillars: the Customs Union, the Common Market, the East African Monetary Union, and, ultimately, the Political Federation.

The Customs Union, in force since 2005, became fully fledged in 2010 and allows for free trade (or zero duty imposed) on goods and services amongst EAC Partner States and a common external tariff, whereby imports from countries outside the EAC zone are subjected to the same tariff when sold to any EAC Partner State.

The Common Market calls for free movement of goods, persons, labor/workers, services, and capital, as well as the rights of establishment and residence. The goals of the Common Market are particularly dependent on the establishment and expansion of robust national ID systems which work across borders not only for travel, but also for authentication in the context of a wide variety of services.

The East African Monetary Union (EAMU) Protocol lays groundwork for a monetary union within 10 years and allows the EAC Partner States to progressively converge their currencies into a single currency. The EAC Partner States aim to harmonize monetary and fiscal policies; financial, payment and settlement systems; financial accounting and reporting practices; policies and standards on statistical information; and, establish an East African Central Bank.

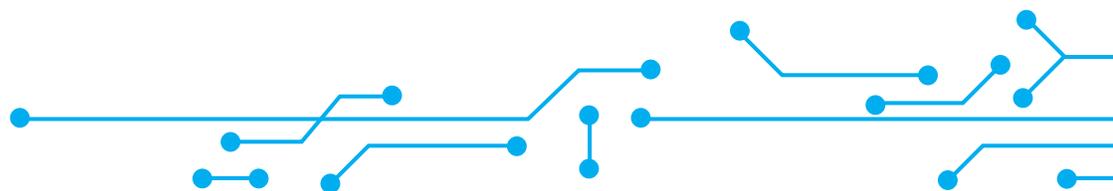
The Political Federation is based on Article 5(2) of the Treaty for the Establishment of the East African Community and founded on three pillars: common foreign and security policies, good governance and effective implementation of the prior stages of Regional Integration.

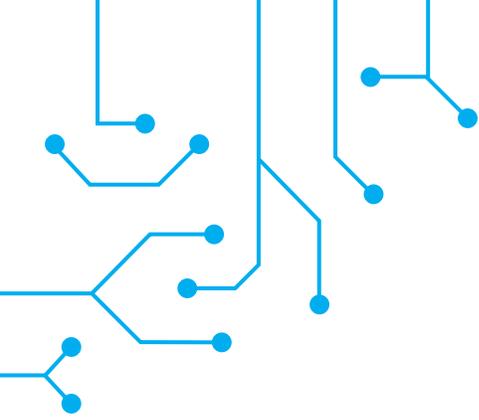


Of key relevance are Article 8, which requires States Parties to “establish a common standard system of issuing national identification documents to their nationals” to enable identification of citizens within the Community, and Article 9 which allows for travel to Partner States with a “common standard travel document”—this includes machine readable travel documents (MRTDs) in the form of a passport (like the EAC e-passport) and possibly also national IDs.

These core provisions on identification are critical for the achievement of all four freedoms and two rights in the CMP. To cross borders, whether for movement of people, goods, and services, or to exercise rights of establishment and residence, a person must present evidence of a valid common standard travel document or a national identity card (where accepted). Similarly, to facilitate the movement of capital, a person must be able to identify themselves within the financial sectors of the EAC Partner States.

Full implementation of the commitments under Articles 8 and 9 of the CMP is premised on a regional framework to be developed by the EAC. Absence of this framework has constrained development of a coherent regime thus far. This study and associated consensus building have been identified as key in the process of developing an identification system by any Partner State.





4. Priority Use Cases for Mutual Recognition of National IDs in the EAC

This chapter outlines the priority use cases for mutual recognition of national IDs in the EAC. These include increasing access to services from finance to education and health, facilitating trade, safe and orderly migration, and addressing issues of inclusion and gender gaps, particularly in the context of cross-border trading.

4.1 MIGRATION

A key provision of the EAC's CMP is the free movement of people and labor, as articulated in Articles 7-12. The CMP's guarantee of free movement is facilitating growing migration and cross-border trade in the region. And these will continue to grow as development remains uneven, with citizens seeking greater economic opportunities, as well as refugees and asylum seekers fleeing discrimination and violence in neighboring countries. Similarly, communities in border areas are increasing the amount of trade they do across borders. These factors necessitate appropriate identification of individuals at the borders to ensure safe and orderly migration.

4.1.1 Safe and Orderly Migration

Safe and orderly migration depends on well-managed borders, secure and standard travel and identity documents, and strong intra- and inter-governmental cooperation. A significant number of people are moving within the EAC. In 2015, UNDESA data showed that 34 percent of migrants in all EAC Partner States originated from another Partner State, and these official figures do not consider informal migration which may also be significant.

In addition to serving as breeder documents for passports, national IDs can act as valid travel documents within the EAC, if a Partner State chooses to accept this. They should be considered because they are cheaper and more accessible than a passport, they are more durable,¹ and they are also more practical for cross-border traders and others who cross borders frequently. High coverage of national IDs and mutual recognition will also reduce risks of trafficking and people smuggling, and mutual recognition of national IDs will allow migrants to assert their rights more easily.

¹ When NIDs are used as an electronic machine-readable travel document (eMRTD) in accordance with the ICAO 9303 standard, it is best practice to separate the eMRTD and other functionalities through bifurcated chips, two chips, or a similar technical solution.



Table 1. Migration in the EAC in 2015

EAC Partner State (PS)	Total No. of Migrants Received by EAC PS	Percent Migrants Originating from Other EAC PSs	No. of Migrants Originating from that EAC PS	No. of Migrants Received from Other EAC PSs
Burundi	286,810	33%	201,290	94,294
Kenya	1,084,357	44%	83,930	476,754
Rwanda	441,525	46%	148,135	202,053
South Sudan	824,122	18%	92,355	150,165
Uganda	749,471	46%	572,339	191,039
Tanzania	261,222	34%	136,040	119,784
TOTAL	3,647,507	34%	1,234,089	1,234,089

Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). Trends in International Migrant Stock: The 2015 Revision. (United Nations database, POP/DB/MIG/Stock/Rev.2015).

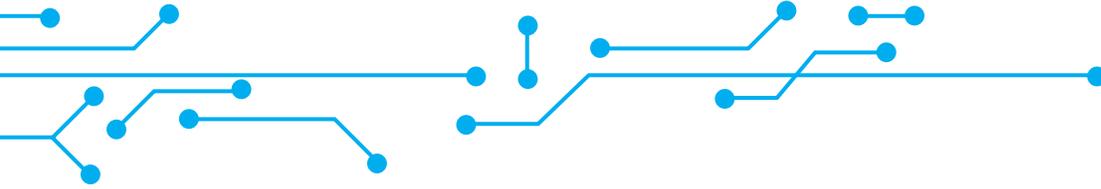
Using national IDs as e-MRTDs within the EAC would require significant reforms to the border and migration management policies and systems. For example, a practical reason why some EAC Partner States would prefer to use passports is that entry/exit stamps are put onto the pages, making it easier for border and other authorities to determine someone’s migration status. Technology can enable such facts to be checked either based on data stored on a national ID card’s chip or on the border management software, however the implementation of this technology would require significant investment that is not necessarily a priority for immigration authorities, compared with basic ICT equipment and connectivity, and appropriate lighting and facilities.

Linkages between migration management systems and national ID systems, alongside the use of electronic gates (e-gates) at borders, would further facilitate migration and data capture, enabling border posts to move travelers through more quickly while maintaining a high level of security. Already in Rwanda e-gates are facilitating 45,000 movements per day at one border post alone, primarily servicing cross-border traders who make frequent border crossings using smartcards.

Box 3. EAC e-Immigration

In 2014, the EAC Secretariat published the Regional Strategic Framework for e-Immigration for 2014/5-2019/20. This report provides a comprehensive analysis of the capacity of EAC Partner States with respect to using ICT for border management and proposes steps to improve that. The absence of robust national ID systems is noted as a threat to making progress in border and immigration management.

See: <http://repository.eac.int:8080/bitstream/handle/11671/1697/final%20%20e-immigration%20strategic%20framework.pdf?sequence=1&isAllowed=y>



4.1.2 Labor Migration

The free movement of labor is particularly important for the development of the EAC economies. The EAC faces labor market challenges including labor scarcity, insufficient skills, unemployment, and a mismatch between the needs of hiring firms and the skills of the domestic labor force. Movement of labor can address these challenges, encourage regional transfer of skills, allow for the exchange of non-tradeable services, introduce competition, and promote entrepreneurship.

The Common Market Scorecard 2017 found that, on average, EAC Partner States scored 55 percent in implementation of the crosscutting commitments on the free movement of labor. Rwanda scored 62 percent, followed by Kenya (58 percent) and Burundi (54 percent). Uganda and Tanzania each scored 50 percent.²

The Common Market Scorecard 2017 explicitly recommended the harmonization of agreed initiatives on electronic identification and operationalization of the border posts in order to fast-track movement of labor within the EAC. It also called for Partner States to explore modalities for developing mutual recognition and interoperability of national IDs. This means continued progress on implementation of CMP Articles 7, 8, and 9 on movement of persons, common standard system of issuing national IDs, and the use of valid common standard travel documentation (including IDs).

4.1.3 Forced Displacement

According to UNHCR figures, forced displacement is at a record high within the EAC. As of the end of 2017, there were an estimated 4.6 million displaced persons in the EAC, of which 2.6 million were refugees and 2 million IDPs.

Currently within the EAC, Rwanda includes refugees as a category in its foundational national ID system, while Tanzania is preparing to do the same. Kenya essentially provides a foundational ID to refugees—it has a separate refugee ID system, of which the database is integrated with (and thus deduplicated against) the national ID system and alien registration system through the Integrated Population Registry Service. Uganda issues IDs from a functional refugee ID system. While refugees in Burundi and South Sudan are registered and provided documents by UNHCR on behalf of the government. It is important that the ID issued to refugees actually enables access to services, freedom of movement, and durable solutions, as well as facilitates the efficient delivery of humanitarian assistance. With appropriate safeguards to ensure the protection of refugees, mutual recognition of national IDs can facilitate better management of forced displacement flows, including facilitating alternative pathways. Furthermore, mutual recognition of national IDs issued by countries of asylum can facilitate dignified returns to the country of origin when it is safe to do so.



² World Bank. East African Community Secretariat. 2017. EAC Common Market Scorecard 2017: Tracking EAC Compliance in Movement of Labour, Right of Establishment and Residence. (Forthcoming)

Figure 2. Relationship Between Forced Displacement and Identification

Forced Displacement → Lack of ID	Forced Displacement → Lack of ID
<ul style="list-style-type: none"> ▪ Documents are lost or left behind as people flee ▪ Deliberate destruction of documents as part of campaign of ethnic cleansing ▪ Documents are confiscated or destroyed by border guards or traffickers ▪ Those displaced who fear they may have no claim to refugee status destroy documents themselves ▪ Births of migrants are not registered ▪ Orphans and children separated from their parents have nobody to attest to their origins ▪ Restrictions on transmission of nationality to children born abroad mean that children cannot acquire their mother’s nationality if their fathers are unknown, dead or missing (e.g., Syria) ▪ Naturalization processes are hard to access and no protections against statelessness for those born in host country 	<ul style="list-style-type: none"> ▪ Lack of official identification creates risk of deportation on grounds of illegal presence ▪ Exclusion of a particular group from nationality leads to conflict, causing outflows of refugees ▪ Mass expulsions of members of a group whose nationality is collectively not recognized ▪ Lack of documentation facilitates human trafficking, especially of children ▪ General exclusion due to lack of identification can drive people to migrate for better opportunities ▪ Refusal of identity documents or rights in first country of refuge may cause refugees to move to third countries

Source: Manby, Nonie Bronwen. 2016. *Identification in the context of forced displacement: identification for development (ID4D)*. Washington, D.C.: World Bank Group.

4.2 SERVICES

In terms of services being accessed across borders, priorities for the EAC under the CMP include access to health, education and financial services, as well as the portability of social security benefits.

4.2.1 Health

As part of the EAC Vision 2050, Partner States have agreed to harmonize their health systems. They are meant to provide a uniform standard of services, products and technologies, and to enhance collaboration and cooperation to strengthen health systems through increased health financing, recruitment, development and training and retention of the health workforce. The first step to realizing this vision is the EAC’s “Strategy and Roadmap for Social Health Protection (SHP) Portability within the context of the EAC Common Market Protocol and the EAC Vision 2050.”

Validated in July 2017, the strategy aims to achieve universal health coverage and harmonization of the health systems in the EAC. For this, the portability of health benefits across borders is a key need. The strategy calls for, among other things, the establishment of ICT systems which allow access to member information across borders, the creation of an electronic universal health insurance member card, and for Partner States to recognize one another’s public schemes.³

Priorities for the EAC include access to health, education, and financial services.

³ EAC, Situational Analysis and Feasibility Study of Options for Harmonization of Social Health Protection Systems Towards Universal Health Coverage in the East African Community Partner States.

The mutual recognition of national IDs across borders can help immensely in achieving portability of health benefits in the EAC. First, it can negate the need for a separate universal health insurance card. More broadly, it can help individuals to be identified by foreign health systems in conjunction with their insurance card and, eventually as systems move online, with their ID alone. As the capacity to access services grows with the progression of the proposed Milestones, national IDs will be able to facilitate not only identification, but also access to member information across borders.

4.2.2 Education

Lack of identification (whether birth certificates or national IDs) is a recurrent impediment to students' accessing and completing primary and secondary education where such identification is required to prove the age of the student and to sit exams to graduate from school. Identification can remove barriers to enrolment and support countries' educational management information system (EMIS), used by Ministries of Education and others to for policy planning, research, and monitoring of education outcomes and indicators.

The EAC's commitment to education is spelled out in Articles 5 and 102 of the EAC Treaty. Partner States' commit to undertake concerted measures to foster cooperation in education and training within the EAC.

For children residing in border areas in the EAC, or those who have been displaced, access to education often means attending schools in a different Partner State. The capacity to accept and authenticate national IDs across borders in the EAC would enable such students to smoothly enroll in and complete school with recognized credentials. This would further support the EAC's commitment toward facilitating ease of movement of learners in its work toward harmonization of curricula under CMP Article 11(1).

On the higher education front, in May 2017, the EAC heads of state declared the EAC Common Higher Education Area. This provides for a common frame of reference to facilitate comparability, compatibility and mutual recognition of higher education and training systems. As a result, a graduate from one Partner State should be able to apply, and be considered for a job, in any other Partner State as the quality of graduates produced within the region will be comparable. Regional mutual recognition and authentication of national IDs in the EAC can support student mobility by facilitating travel, enabling identification for enrollment, and potentially enabling access to records across borders in the long term. Presently, despite the existence of the common higher education area, many students must present passports in order to enroll for higher education in other Partner States. These can be prohibitively expensive and they are duplicative in an age where IDs are accepted as travel documents by a number of EAC Partner States.

4.2.3 Social Security

The new global economy means people move from job to job from place to place and from country to country, often negatively impacting their social security benefits. Individuals have the right to social protection under international conventions and



national legislation and these rights, at least the acquired ones, should carry over when leaving the country or profession.⁴

Social insurance credits, for example, need to be transferable across borders to match the needs of a mobile workforce, particularly in regions like the EAC which are implementing freedom of movement. The EU has made some inroads, particularly with regard to pensions, by facilitating the transfer of acquired supplementary pension rights between schemes in different Member States. One study found that a positive experience transferring social security benefits across countries in the EU may increase the likelihood that someone would move abroad for professional reasons.⁵

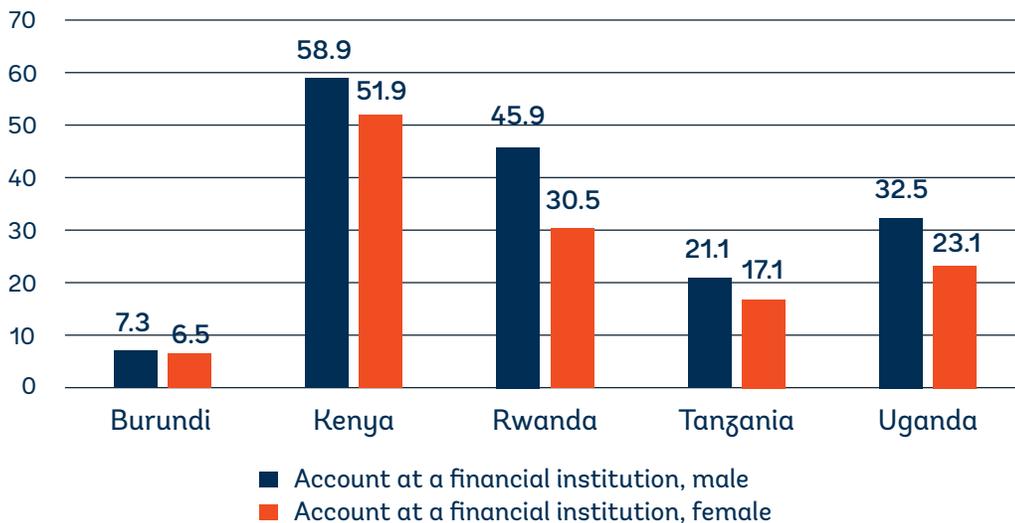
As with the portability of health benefits, the EAC Partner States have drafted a policy framework to harmonize retirement benefits schemes which will allow workers to receive payments before they retire from formal employment and to benefit from annuitized pensions from companies they worked for outside of their countries but within the EAC. Mutually recognizable national IDs can support this framework in facilitating access to retirement benefits across borders, by providing a reliable means for identifying and authenticating an individual and facilitating harmonized online access to services.

Globally, 18 percent of adults say they do not have a bank account because they lack identification.

4.2.4 Financial Services

According to the Global Findex Survey, 18 percent of unbanked adults globally (more than 350 million people) say one of the reasons they do not have an account is because they lack the necessary identity documentation. In the EAC, data from Global Findex shows a gap in the number of men and women who have a bank account

Figure 3. EAC Gender Gaps in Access to Bank Accounts (%)



4 Holzmann, Robert; Koettl, Johannes. 2011. Portability of pension, health, and other social benefits: facts, concepts, issues. Social Protection discussion paper; no. SP 1110. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/613941468170350968/Portability-of-pension-health-and-other-social-benefits-facts-concepts-issues>

5 Anna Cristina d’Addio, Maria Chiara Cavalleri. 2015. Labour Mobility and the Portability of Social Rights in the EU. CESifo Economic Studies. Volume 61, Issue 2. <https://doi.org/10.1093/cesifo/ifu014>

or otherwise engage in formalized financial transactions. In Rwanda, the observed difference is almost twice the global average differential of 9 percent, while in Kenya and Uganda, it lies closer to 9 percent.⁶ In Kenya, 24 percent of women without an account cite lack of documentation as one of the personal barriers to opening a bank account, compared to 35 percent of unbanked men. In Rwanda, only 9 percent of unbanked women mention lack of documentation as a significant barrier, compared to 14 percent of men. In Uganda, the dynamic is the opposite: 29 percent of unbanked women cite lack of documentation as a reason for not having a bank account, compared to 24 percent of unbanked men (see Table 2).

Table 2. Global Findex (Selected Indicators)

Indicator	Burundi*	Kenya	Rwanda	South Sudan	Tanzania	Uganda
Account at a financial institution, male	7.3	65.5	40.5	12.5	23	38.9
Account at a financial institution, female	6.5	46.9	33.2	4.7	18.9	27.1
Credit Card, male	0.3	8.1	1.3	1.9	0.5	2.8
Credit Card, female	0.3	3.5	0.2	1	0.6	1.8
Mobile account, male	0.8	76.8	36.8	n/a	44.1	58.6
Mobile account, female	0.7	69.3	26	n/a	33.1	42.9
Barrier: lack of documentation, male	n/a	34.5	13.7	n/a	n/a	24.5
Barrier: lack of documentation, female	n/a	23.6	8.6	n/a	n/a	29
Barrier: lack of documentation, total	4.8	28.2	10.8	n/a	28.6	26.9

Source: Findex, 2017 and 2014. Notes: % age 15+, Burundi and lack of documentation data from Findex 2014.

IDs that work across borders to authenticate a person can facilitate access to financial services, making it possible for them to open bank accounts or access credit. Facilitating cross-border access to financial services also enhances choice, service quality, and lowers prices of financial services.

Electronic Know Your Customer (eKYC), for example, facilitates banking, insurance, telecoms, and other institutions to validate the identity of an individual by verifying their personal details, such as name, address, etc., against his or her biometric information as stored in a national ID system. Robust national ID systems (with authentication mechanisms) can reduce Anti-Money Laundering/Combating the Financing of Terrorism (AML/CTF) risks by supporting financial institutions to reliably identify and authenticate users through eKYC. In India, for example, Aadhar eKYC facilitated the opening of 73 million new bank accounts.

⁶ World Bank (2017): Global Findex.

National IDs accepted by the banking system for KYC purposes can also be used by recipients of government-to-person (G2P) transfers for social assistance transfers, scholarships, or pensions. And linking national IDs to receipt of G2P transfers can in turn incentivize individuals to apply for a national ID. For example, in Pakistan when the national ID agency linked cash transfer payments to female heads of households, female enrollment increased by 100 percent from 2008 to 2014 and led to the creation of 12 female only enrollment centers.

National ID systems also offer a platform on which payment systems can be built, including through the use of national ID numbers as financial addresses, as in Aadhaar and Bangladesh's national ID system, and by integrating identity verification and payment switches. By increasing payments options, costs of remittances can also be brought down. Three remittance corridors within the EAC are among the 30 most expensive across the world per the World Bank's Remittances and Migration Factbook 2016. As the economies of the EAC become more integrated and increase trade, efforts must be made to reduce the costs of remittances and payments across borders.

Table 3. Bilateral Remittance Estimates for 2016 using Migrant Stocks, Host Country Incomes, and Origin Country Incomes (millions of US\$) (October 2017 Version)

Remittance-receiving country (across) - Remittance-sending country (down)	Burundi*	Kenya	Rwanda	South Sudan	Tanzania	Uganda	EAC Total
Burundi	0	2	25	0	29	1	57
Kenya	0	0	2	0	39	57	98
Rwanda	7	3	0	0	53	180	242
South Sudan	0	18	0	0	0	202	219
Tanzania	28	126	12	0	0	34	200
Uganda	2	95	31	0	29	0	157
Total remittances received from all states	51	1,739	173	0	411	1,016	3,390
Remittances received from other EAC States	37	244	70	0	150	474	974
Proportion of remittances coming from other EAC countries	73%	14%	40%	0%	36%	47%	29%

Notes: These estimates are based on the methodology developed by Ratha and Shaw, 2007, "South-South Migration and Remittances," World Bank (<http://www.worldbank.org/en/research/brief/migration-and-remittances>). The remittance data is for 2016, disaggregated using host country and origin country incomes, and estimated migrant stocks from 2013.

These are analytical estimates based on logical assumptions and derived from a global estimation of bilateral remittance flows worldwide. They are not actual officially reported data. The caveats attached to these estimates are: (a) the data on migrants in various destination countries are incomplete; (b) the incomes of migrants abroad and the costs of living are both proxied by per capita incomes in PPP terms, which is only a rough proxy; and (c) there is no way to capture remittances flowing through informal, unrecorded channels.

These estimates are based on the Migration and Remittances Factbook 2016, which includes new bilateral data on migration stocks", World Bank (<http://www.worldbank.org/en/research/brief/migration-and-remittances>).

4.3 TRADE

Mutual recognition of national ID cards and numbers will remove what can be a significant barrier to conducting business across borders: the inability for an identity to be reliably and quickly verified. Trade facilitation and customs can be streamlined and made paperless through usage of national ID cards and numbers (e.g. pre-filling forms). For individual traders and small to medium enterprises, especially those in border areas, making it easier and cheaper to cross the border will create more opportunities. And national ID systems with digital ID capacity will also create new online markets (e.g. e-commerce) through the introduction of digital signatures.

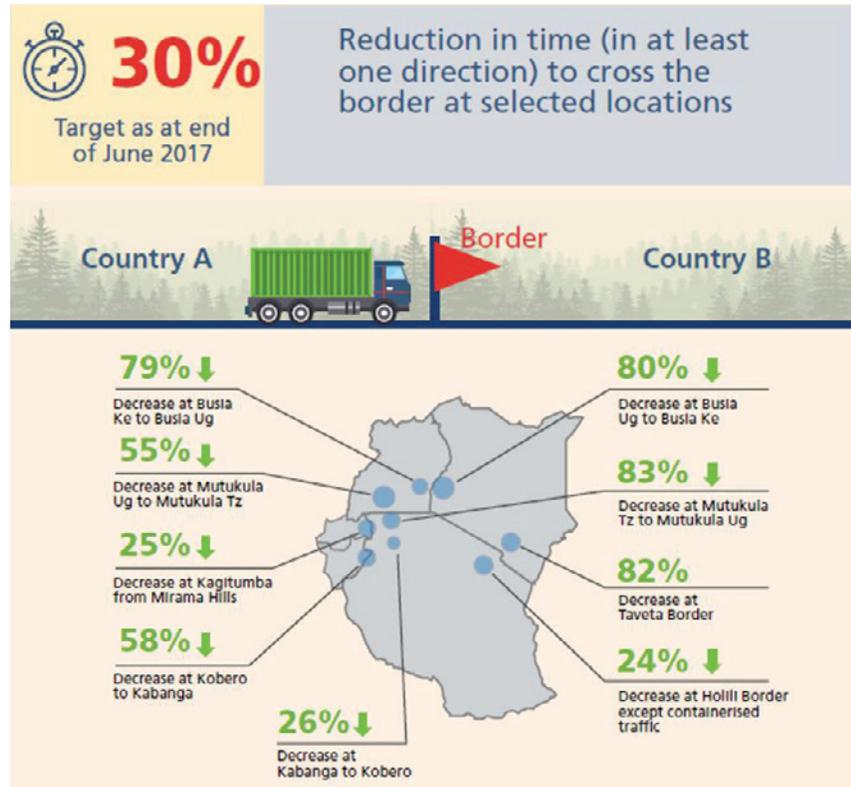
4.3.1 One Stop Border Posts

One Stop Border Posts (OSBPs) promote a coordinated and integrated approach to facilitating trade, the movement of people, and improving security. OSBPs eliminate the need for travelers and goods to stop twice in order to cross a border, creating efficiency. In addition, OSBPs foster collaboration and information and data sharing between countries who partner to implement them.

There are more than 12 OSBPs in operation and three more under construction in the EAC. TradeMark East Africa reported a 20 percent increase in traffic volumes as a result of the OSBPs and a 50 percent reduction in border crossing time as a result of



Figure 4. Reduction in Time to Cross the Border by OSBP



Source: World Bank. East African Community Secretariat. 2017. EAC Common Market Scorecard 2017: Tracking EAC Compliance in Movement of Labour, Right of Establishment and Residence.

improved border clearance systems and processes.⁷ Reductions in border crossing times vary significantly, ranging from 24 to 82 percent (see Figure 6).

For countries electing to accept national IDs as travel documents, mutual recognition of national IDs for cross border authentication of identity would further facilitate migration through OSBPs and remove the present system of paper-based Interstate passes employed by Kenya, Uganda, and Rwanda. Strengthening national IDs and facilitating regional mutual recognition would also support speedier registration of traders in initiatives such as the Ugandan Electronic Single Window, a paperless system which simplifies submission and processing of trade information for export and imports.

4.3.2 Informal Cross-Border Trade

Informal cross-border trade enables small-scale entrepreneurs to escape poverty and meet education, housing, and other basic needs for a significant number of dependents, as well as creating employment opportunities for others. According to surveys conducted by TradeMark East Africa, in the EAC the majority of informal cross-border traders are women and youth ages 20-50, of which 75 percent trade in agricultural commodities and 25 percent in manufactured goods and livestock products. About 70 percent of small-scale cross-border traders have an average capital base of US\$500-1,000 and make about US\$100 in profit monthly.⁸

Studies have found that informal cross-border women traders within the EAC region often do not use formal structures for their economic transactions, or national travel documents such as passports to carry out their activities.⁹ This leaves them vulnerable to harassment and extortion, and creates significant gaps in the data on trade within the region. Increased investment in digital identification has the potential to strengthen protection of women traders from harassment and extortion at the border and in the market place, as well as eliminate losses due to inefficiency of customs and border control procedures.

Where national IDs are in use to cross borders, for example between Kenya and Uganda, field research found that national IDs have helped women cross-border traders in several ways. Having an ID contributes to the traders' ability to approach officials and learn out about customs regulations and taxes. As a result, many now cross through the borders posts rather than at illegal crossing points and the risk of robbery, attack, and gender-based violence has been reduced. Trade has also become more formalized as taxes on goods imported are now being paid. Women traders in Uganda noted how national IDs (which many have acquired recently in the registration drive) have made it possible to open bank accounts, get tax ID numbers, and access loans. At the new OSBPs, having an ID has improved efficiency by reducing time spent in queues. Being able to use IDs to cross borders between Uganda and Kenya has eased the process of moving from one country to another compared with



7 TradeMark East Africa. 2017. Gender and Trade Compendium Volume 2 / 2016-2017. <https://www.trademarka.com/download/17050/>

8 TradeMark East Africa. 2017. Gender and Trade Compendium Volume 2 / 2016-2017. <https://www.trademarka.com/download/17050/>

9 Masinjila, M. (2009). <http://www1.uneca.org/Portals/atpc/CrossArticle/1/WorkinProgress/78.pdf>

the previous procedures that required several different types of documentation and costly passports. In contrast, women crossing from Uganda into Tanzania, where their IDs cannot be used to cross the border, reported incurring additional costs for travel documents and experiencing additional barriers to both movement and trade.

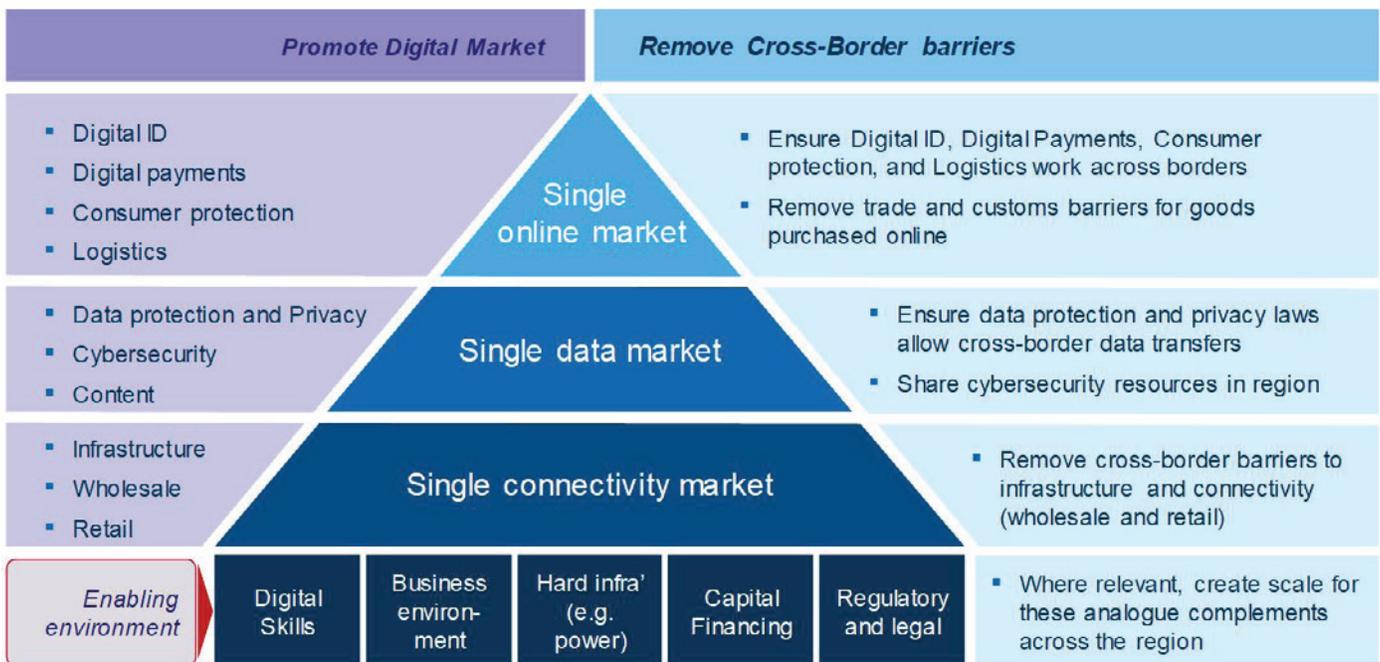
4.3.3 EAC Single Digital Market

The World Bank Group, supported by a grant from SIDA, is working with Partner States, regional institutions, private sector, and other partners in East Africa to help define the EAC’s aspirations for a single digital market and to agree on a concrete set of objectives, investments, and reforms needed to make this vision a reality. At the same time, the World Bank Group is working with EAC Partner States to develop their digital economies through the Digital Economy for Africa (DE4A) initiative.

The EAC is well positioned to start transitioning to a single digital market which could offer new ways to do business and provide services more efficiently, built on a backbone of expanded broadband access. A single digital market would also provide opportunities to use electronic and mobile technologies for economic growth, job creation, government transparency, access to services, and better linkages to the regional and global economies.

A prerequisite for effective online engagement between Governments and citizens and between citizens and businesses is the existence of a robust, digital identification system that can authenticate users of online transactions. The milestones proposed in

Figure 5. Overview of Proposed Single Digital Market Vision and Conceptual Framework



Source: World Bank- EAC Single Digital Market Initiative.

this study can contribute directly to the achievement of such an ID system to support the elaboration of a single digital market. The legal and enabling environments for both digital identification and the single digital market also overlap substantially and present another opportunity to support reforms necessary for the achievement of the single digital market.

4.4 GENDER AND INCLUSION

Gender equality and protection of marginalized and vulnerable groups are key provisions of the CMP. Article 39 states that “Partner States undertake to coordinate and harmonize their social policies to promote decent work and improve the living conditions of the citizens,” this includes in particular the “promotion of equal opportunities and gender equality” and the “promotion and protection of the rights of marginalized and vulnerable groups.”¹⁰ Regional work relating to digital identification and interoperability could contribute to equal access to finance, markets, and protection mechanisms for women and marginalized groups across the East African Community.

Regional ID could also contribute to the stated goals and aims of the recently passed EAC Gender Equality, Equity and Development Bill, 2016. The bill aims to promote non-discrimination and women’s equal participation, harmonize national laws across the region, and enhance the level of implementation of women’s rights. It addresses issues including equal access to and participation in trade, access to services such as education and health, access to inheritance and human rights for orphans, widows, wives of polygamous families, and women’s economic empowerment, all of which can be facilitated by mutual recognition of IDs.¹¹

Equal access to identification documents can contribute to the economic and social empowerment of women and marginalized groups, for example by facilitating access to social protection programs, legal protection, financial services, or by strengthening political participation and removing barriers to voter registration.¹² Presently, the laws in EAC countries on access to ID present no legal barriers or additional hurdles for women. Women can apply for and receive national ID cards in the same way as men throughout all EAC countries. While in some cases, married women have to provide their husband’s name at the time of application for passports, no greater institutional obstacles are in place to hinder women from accessing identification documents, entering into commercial contracts, or opening a bank account.¹³ It is important to note that any changes made to law and policy governing IDs must conform with the stated aims of the EAC Gender Equality, Equity and Development Bill.

Better access to identification documents can be expected to have positive impacts on women’s economic empowerment. In future, many more women will need accounts at a financial institution to be paid, save, or access credit. As Table 2 shows, in several EAC Partner States the percentages of both men and women with accounts is low and

10 Article 39, CMP.

11 The bill awaits assent by EAC Heads of State.

12 Dahan, M. and Hanmer, L. (2015). *The Identification for Development (ID4D) Agenda: Its Potential for Empowering Women and Girls*. Washington, DC: The World Bank.

13 World Bank (2017): Women, Business, and the Law.

there is a sizable gender gap between men’s and women’s access to accounts. Easier access to national ID can also support women entrepreneurs, as many women in the EAC play an important role in the region’s economy as small traders. Easier access to identification documents can support their trading activities and make them more profitable by enabling them to cross borders more easily and buy goods and services (e.g. through mobile money services and SIM cards).

However, gender inequality and marginalization can also make it harder for women and members of marginalized groups to obtain identification documents in the first place, even where there are no formal or legal barriers directly preventing them from having IDs. Women, for example, are often disproportionately affected by informal barriers such as lack of money to meet the costs associated with getting an ID, inability to leave the home for long periods of time, lack of safe transport to government offices to apply for an ID, and lack of a birth certificate or another ‘breeder’ document required for an ID to be issued.

Members of marginalized groups face these same informal barriers, in addition to formal barriers such as restrictive nationality laws which make it difficult to prove citizenship and leave certain groups vulnerable to statelessness or requirements for certain breeder documents in order to obtain an ID. In Tanzania, Uganda, and South Sudan, data shows that at least one in five children under five do not possess a birth certificate and more than half are unregistered.¹⁴ As birth certificates are required to obtain a national ID in all EAC countries except South Sudan, this creates a barrier for marginalized groups like the poor, people living in remote rural areas, and the illiterate and less educated who may not be able to afford the cost associated with obtaining late birth certificates. If national ID system reforms do not proactively engage marginalized populations, they may remain excluded from accessing services for which they are eligible. And without consideration for marginalized groups, they may even face additional barriers to access to services and entitlements as IDs become more institutionalized and normalized across programs and services.

Table 4. Birth Registration Figures

Country	Birth Registration, Overall	Birth Registration Male	Birth Registration Female	Source	Year	Unregistered Pop. (2017)
Burundi	75.2	75.4	74.9	DHS	2010	29.3
Kenya	66.9	67.4	66.4	DHS	2014	38.7
Rwanda	63.2	63.6	62.9	DHS	2010	17.9
South Sudan	14.7	14.8	14.6	SHHS-2	2010	45.5
Tanzania	35.4	34.9	36	Census	2012	51.5
Uganda	29.9	29.9	29.9	DHS	2011	48.8

Source: ID4D Dataset

¹⁴ World Bank (2017): Identification for Development (ID4D) Dataset.

Estimates of the number of people without a form of legal ID in the EAC Partner States show that while in Rwanda, only about one in five people may not possess a legal form of ID, in South Sudan, Tanzania, and Uganda it is estimated that nearly 50 per cent of the population do not possess IDs (see Table 4). The data on lack of documentation suggests that providing easier access to legal ID in the EAC could help boost economic activity across the region, especially for women and poorer groups. Increased financial inclusion, including access to credit, helps encourage investments and spurs economic activity among disadvantaged population groups that otherwise lack opportunity to participate in the economy. Access to savings and insurance mechanisms further reduces the risks faced by the poor and marginalized in relation to external shocks. A growing body of research shows that more inclusive markets benefit economies through increased growth levels, lower unemployment, and more steady flows of internal revenue.

4.5 ADDRESSING STATELESSNESS

There is little data on statelessness in the EAC.¹⁵ UNHCR estimates 10 million people are stateless worldwide, but only 3.5 million are reported in statistical reports. One of the key risk factors of statelessness is lacking birth registration and/or a national ID.

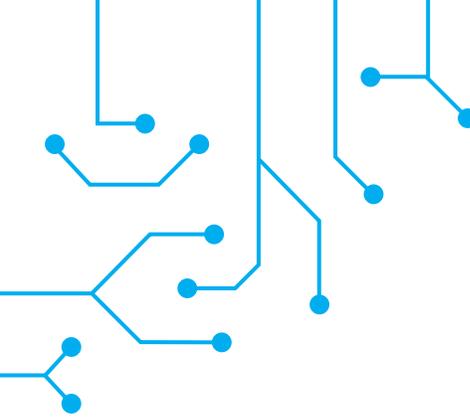
Within the EAC, there are likely many people at risk of statelessness. The introduction of national ID systems and efforts to achieve universal birth registration are revealing the extent of the problem in East Africa, as the formalization associated with these efforts is forcing people to only now find out they may not be considered a national under the law of the country where they are residing and potentially also under the law of the country where their ancestors came from.

For stateless persons, lack of an ID exacerbates vulnerabilities to discrimination, harassment, and exclusion. A recent study of stateless persons in Kenya found they wanted an ID to access services and for freedom of movement. Recently, for example, some members of the Makonde minority community in Kenya were granted Kenyan nationality and given national IDs. Prior to this they face challenges accessing forms, could not travel or own property, had difficulty accessing birth and marriage certificates, and their children were unable to graduate or access sponsorship for higher education.¹⁶ There are many more communities in East Africa in a similar position to the Makonde. Mutual recognition of national IDs can further support these positive developments by providing a mechanism for ensuring that all residents of EAC Partner States have legal identification and can access protection, including migrants and *in situ* stateless persons.

Lack of ID exacerbates vulnerabilities to discrimination, harassment, and exclusion.

15 A stateless person is defined as “a person who is not considered as a national by any state under the operation of its law” under the 1954 Convention on the Status of Stateless Persons. The African Commission on Human and Peoples’ Rights further clarified this definition to include a person who is unable to establish a nationality in practice. In recognition of the importance of legal identity, the international community set SDG target 16.9 to provide legal identity for all, including birth registration, by the year 2030. See Bronwen Manby. 2017. Statelessness and Citizenship in the East African Community. UNHCR. (Forthcoming).

16 UNHCR. 2017. ‘I feel like I am born again’: citizenship brings hope to stateless minority in Kenya. <http://www.unhcr.org/news/latest/2017/11/59f9a6c94/feel-born-citizenship-brings-hope-stateless-minority-kenya.html>



5. Status of National ID Systems in the EAC

5.1 BURUNDI NATIONAL ID SYSTEM STATUS

Population	12 million
Coverage of official identification (ID4D Dataset, 2017)	71%
Coverage of birth registration among children aged under 5 (UNICEF)	75%

Since 1980, the national ID in Burundi has been a paper ID issued to citizens aged 16 and older by the police, under the Ministry of Interior. Municipalities are responsible for registering births and deaths, and no central archive is kept.

To obtain a national ID card, citizens need to submit supporting documents such as a birth certificate, two recent passport photos, medical assistance card, and affiliation card for *Mutuelle de la Fonction Publique* (maternal health insurance scheme). No unique ID number is issued to the individual and no central electronic database is kept.

In 2013, Burundi launched a pilot project to issue national ID smartcards with a machine-readable zone to individuals aged 16 and older. The piloted smartcard contains the cardholder's name, sex, date of birth, province, commune, address, parent's names, and children's name(s), bank account details, signature, education, marital status, medical assistance information, fingerprint, and blood group. As of 2017, the Government of Burundi was planning the nationwide rollout of the smartcards with a machine-readable zone.

5.2 KENYA NATIONAL ID SYSTEM STATUS

Population	48.5 million
Coverage of national ID card (% age15+, Findex 2017)	91%
Coverage of birth registration among children aged under 5 (UNICEF)	67%

The history of issuance of National ID cards in Kenya as far back as 1915 when the colonial government passed a Native Registration ordinance that made it mandatory for all male Africans 16 years and older to register. The first identity cards were however issued in 1947. The current national ID card was introduced in 1995 by the National Registration Bureau (NRB) under the Ministry of Interior. The Department of Civil Registration, also under the Ministry of Interior, maintains a separate registry of births and deaths. The register of marriages is maintained by the office of the Attorney General.

Citizens aged 18 and older are eligible to register for a national ID card free of charge and at the same time are issued a unique 7- or 8-digit (depending on the time of registration) national ID number which is sequential. A unique 9-digit serial number is also associated with each card. Aside from a photo, signature, and basic biographic data displayed on the front, the national ID card includes an ICAO-compliant machine-readable zone and an image of a fingerprint on the back. The card contains holograms



and micro-printing as security features. NRB collect 10 fingerprints and use these with an Automated Fingerprint Identification System (AFIS) to deduplicate and ensure the uniqueness of registered citizens, including cross-checking with databases of registered foreign nationals and refugees managed by the Ministry of Interior. As of June 2017, over 25.3 million national ID cards had been issued, but this total may include duplicates as well as inactive cards of deceased individuals.

Presentation of a national ID card is required to access almost all government services (including to obtain a voter ID card) and many other services, such as opening a bank account. The national ID card can be presented at departure border post for the holder to receive a border pass to enter Rwanda or Uganda without a passport.

The Government of Kenya is undergoing a process to consolidate the biometric and biographic data held by the NRB, Department of Civil Registration, Department of Immigration Services, and Department of Refugee Affairs into the Integrated Population Registration System (IPRS). Through the IPRS, service providers can already verify online a national ID card or birth certificate based on the card or those documents. The fingerprints collected and stored in the NRB database and IPRS are not yet used for online identity verification but the fingerprint printed on the national ID card allows for manual matching.

5.3 RWANDA NATIONAL ID SYSTEM STATUS

The first paper based ID system in Rwanda (after the genocide) started in 1997, where no ethnicity information was recorded on the ID.

Rwanda’s electronic National Population Register was launched in 2008 and the first national ID cards were issued based on the NPR in the same year. The National Identification Agency (NIDA) was established as a permanent agency in 2011. Representatives from 14 different bodies including Statistics, Electoral, Local Government, Police, Immigration, Rwanda Development Board, ICT, Planning, Finance, Justice, Banking Regulator & Telecom Regulator were part of the team to come together to define the roles and responsibilities of NIDA at its inception.

Population	12.2 million
Coverage of official identification (ID4D Dataset, 2017)	91%
Coverage of birth registration among children aged under 5 (UNICEF)	63%

NIDA considers different legacy or present documents that can justify one's identity in order to issue an ID card. These include student IDs, the old paper-based ID, birth certificates, social security records, old passports, academic records, etc.

Since 2016, civil registration is carried out by civil registration officers at sector level, who report the birth and death data electronically to NIDA for a record to be created or flagged in the NPR.

The first drive for registration, deployed 15,000+ volunteers over 3 days to create paper records of all people (9.5 million in 2008) which were eventually digitized and later the people were called for giving their biometrics. Refugees were added to the database in 2009 and foreigners in 2013. Due to the separation of processes for biometric and biographic data collection there have been cases of mis-linking biographic and biometric data. Today, the NPR includes over 11 million people, including citizens living outside of Rwanda, legal foreign residents, and refugees. Foreigner IDs are categorized as Diplomat, Technical Assistance, and Foreigners. Each person is issued a 16-digit ID number based on logic. Starting from the left, the number provides the following information - 1st digit - Individual type (1- citizen, 2- refugee, 3 - foreigner), Digits 2-5 - Year of birth, Digit 6 - Gender (7-female, 8-male), Digit 7-13- sequential number of 7 digits, Digit 14 - issuance number (0 - means first time ID is issued, and increased with each duplicate/update) finally Digit 15-16 are a check sum of two digits.

Thumbprints are collected at the time of issuance of the national ID cards in order to deduplicate and ensure uniqueness. Aside from a photo, signature, and basic biographic data on the front, the national ID card has an unencrypted 2D barcode on the back with biographic data and a single thumbprint minutia encoded, as well as an ICAO-compliant machine-readable zone. The card contains UV holograms and micro-printing as security features. The first national ID card costs RWF 500 (approximately USD 0.80) and every replacement issued thereafter costs 1,500 RWF (approximately USD 1.60). NIDA estimates that over 95 percent of the eligible population have been issued a national ID card.

While NIDA has records of all citizens in Rwanda including birth details as part of the three-day survey exercise conducted in 2008, birth records have also been digitized since 2007. Since 2016 all local departments issuing birth certificates also make direct digital entries in the NIDA system.

A national ID card or number is required for accessing most services in Rwanda, including healthcare, higher education, taxation, pensions, social assistance, financial services, and SIM registration. Currently, there is no biometric verification, however service providers can access a secure online portal where they can access the identity and biographic data using a person's national ID number. NIDA is currently building the capacity for online biometric verification. A citizen's national ID card can be presented at a departure border post for the holder to receive a border pass to enter Kenya or Uganda without a passport. UBUDEHE, the social protection system under the Ministry of Local Government (MINALOC), is currently in the process of being connected to the NIDA system for online access.

NIDA will soon introduce an optional multipurpose national ID smartcard, available for RF 15,000 (USD 18.17), which will enable biometric verification using the thumbprints stored on the card and will initially contain photo, driving license, passport, social security, taxpayer, and health insurance data, as well as biographic data on dependents. It will also keep an ICAO-compliant machine-readable zone. NIDA will also soon issue child ID cards to citizens, foreign residents, and refugees younger than 16, which will have the same designs as the current cards issued to individuals aged 16 and older. These cards will come in non-smart card and smart card forms at the same price as the adult cards.

NIDA has the data for under people 16 in their database, but IDs are not issued to them due to shortage of funds. As people reach 16 their IDs are printed and sent to them. Biometrics of these people will be captured if funding is available to issue them cards. About 5 million people are under 16. With IDs they could benefit from health services, insurance, education, travel, pensions, and social programs.

De La Rue is a UK-based technology provider for NIDA. It delivered the entire end-to-end ID system and provides periodic maintenance.

A modernized CRVS system for comprehensive coverage needs touch point coverage at 1000-1100 locations for timely digital recording of births, deaths, adoptions and guardianship, nationality, and divorce, and marriage. The consultant PBLQ have done a feasibility study of the proposed CRVS expansion project. Rwanda is now embarking on the CRVS Information Management System.

Currently the national ID system is connected to different public and private institutions to provide real time authentication.

5.4 SOUTH SUDAN NATIONAL ID SYSTEM STATUS

In South Sudan, formed in 2011, 70 percent of the population is below 30 years of age and 80+ percent of the population is in rural areas. South Sudan plans to issue two different ID documents, namely the Nationality Certificate and the national ID card. The Nationality Certificate is given to citizens of all age groups, while the national ID card is issued only to adults and includes refugees and immigrants. The matter of what age to issue cards at (16 or 18) is before Parliament.

Since 2015, the Directorate of Nationality, Passport and Immigration under the Ministry of Interior has been issuing Nationality Certificates. The Nationality Certificate has a 9-digit unique number. The German company MUHLBAUER has been given the tender for issuing the Nationality Certificate. The Directorate of Nationality, Passport and Immigration has also been tasked with establishing a civil registration system

Over 1 million people have been issued national ID cards to date. People in South Sudan eligible to register for the national ID card are issued a unique 14-digit alpha numeric personal identification number at the card issue point. The card displays a photo, basic biographic information, and nationality status on the front, while the back has a thumbprint image, a 2D barcode with biographic data encoded, and an

Population	13.1 million
Coverage of official identification (ID4D Dataset, 2017)	21%
Coverage of birth registration among children aged under 5 (UNICEF)	35%

ICAO-compliant machine-readable zone. South Sudan currently has 170 registration devices spread across the country and embassies, and about 100 handheld read and verify devices largely distributed across the borders. South Sudan is considering a multi-modal biometric approach, due to a larger population of people being rural and involved in professions which may have affected their finger prints, in addition the amputees from the war.

5.5 TANZANIA NATIONAL ID SYSTEM STATUS

Population	56.9 million
Coverage of official identification (ID4D Dataset, 2017)	48%
Coverage of birth registration among children aged under 5 (UNICEF)	15%

The National Identification Authority (NIDA) under the Ministry of Home Affairs was established in 2008 and launched the current national ID project in 2011, with the aim of registering all citizens, legal residents, and refugees aged 18 and over to establish a national population registry and providing registered individuals with a 20-digit national ID number and national ID card. The Registration, Insolvency and Trusteeship Authority (RITA) under the Ministry of Legal and Constitutional Affairs is responsible for civil registration.

Tanzania’s national ID card is a smartcard, with 80Kb in memory and contactless capabilities. It has a barcode with the national ID number of the holder. However, there is ICAO-compliant machine-readable zone. A different color card is issued to citizens, legal residents, and refugees, respectively. As of mid-2018, approximately 14.7 million of the targeted 25 million citizens had been registered by NIDA, 6.3 million have been issued with their national ID number card.

Ten fingerprints are collected at the time of registration and are de-duplicated to ensure uniqueness. The ten fingerprints are stored on the card’s memory, which enables offline biometric verification, and these fingerprints can also be used for online biometric verification against NIDA’s database. The front of the national ID card displays a photo, signature, and basic biographic information. Apart from digital certificates stored on the card’s memory, the card contains UV holograms and micro-printing as security features.

Once the national ID number and card have reached high coverage, it is expected that they will become essential for accessing services. Pilots are already taking place among banks and mobile network operators to use NIDA’s database for offline and online biometric verification.

5.6 UGANDA NATIONAL ID SYSTEM STATUS

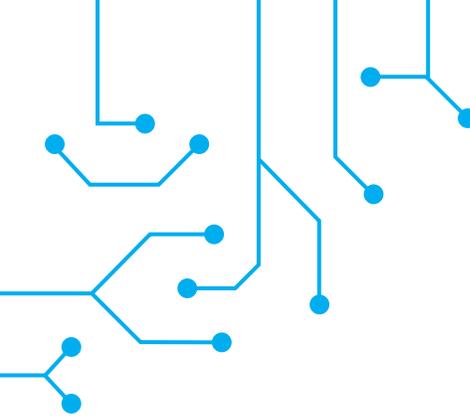
Uganda's national ID project—officially known as the National Security and Identification System (NSIS)—was launched in 2014 as a multi-sectoral project, under the leadership of the Ministry of Internal Affairs. After the project registered nearly 15 million citizens in the lead up to the 2016 election (of 18 million targeted), the National Identification and Registration Authority (NIRA) was established in 2016 as a permanent agency with responsibility for maintaining the national identification register, issuing unique 14-digit national ID numbers and cards to citizens and legal residents aged 16 and older, and taking over civil registration from URSB.

The national ID card for citizens displays a photo, signature and basic biographic data on the front, and a fingerprint image, ICAO-compliant machine-readable zone and 2D barcode encoded with biographic data on the back. The card has UV and micro-printing as security features. Citizens receive their first card for free. NIRA intends to begin the registration of foreign residents soon, after which they will be issued with a smartcard to store immigration/visa data.

Ten fingerprints are collected at the time of registration to deduplicate and ensure uniqueness of each individual in the national identification register. At this stage, there is no online biometric verification, however there is limited biographic verification (matching national ID numbers with names). In May 2017, NIRA commenced the registration of school pupils aged 5 to 16 to issue them with national ID numbers. NIRA is also reconfiguring the civil registration system to issue national ID numbers at the time of birth registration.

Population	41.7 million
Coverage of official identification (ID4D Dataset, 2017)	81%
Coverage of birth registration among children aged under 5 (UNICEF)	30%





6. Proposed Guiding Principles

This study is aligned with the 10 *Principles on Identification for Sustainable Development*,¹⁷ which have been endorsed by over 20 international organizations since January 2017. The Principles offer an important guiding framework, based on international experience and best practice, for the development and implementation of the Partner States' national ID systems across three themes (coverage, design, and governance). Partner States' adherence to the Principles will support and accelerate implementation (e.g. Principle 3 on establishing unique, secure, and accurate identities, and Principle 4 on creating a platform that is interoperable and responsive to the needs of various users). At the same time, any efforts for mutual recognition of national IDs in the EAC should not contravene the Principles (e.g. Principles 6 and 8 on safeguarding privacy and user rights).

In addition, implementation of the proposed architecture should be guided by the following additional Principles:

- 1. National sovereignty and variable geometry:** In the spirit of the EAC instruments, Partner States retain full responsibility for their national ID systems and discretion on whether to and how to implement the proposed architecture, including which use cases are adopted. The development and implementation of national ID systems are the ultimate responsibility of individual Partner States, which each have their own unique cultural, social, legal, and political context. As a critical piece of State infrastructure, national ID systems closely reflect those domestic conditions, including in their technical and functional features and the pace at which they are being developed. The proposed architecture promotes mutual recognition through standardization and interoperability (i.e. minimal regional standards enabling national systems to 'talk' to each other where appropriate), rather than by harmonization (i.e. one regional ID system). The proposed architecture should require minimal or no technical, legal, and policy reforms at the national level.

¹⁷ World Bank. 2017. Principles on identification for sustainable development: toward the digital age. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/213581486378184357/Principles-on-identification-for-sustainable-development-toward-the-digital-age>



- 2. Stepwise approach:** This study articulates a practical and gradual approach to achieving mutual recognition of national IDs in the EAC, across four Milestones: legally-enabled national ID systems, presence-based authentication, presence-less authentication, and e-signatures. While efforts to realize each of the Milestones are not mutually exclusive (especially enabling laws and technical systems), they do build off each other, especially in terms of Partner States generating trust in each other's national ID systems.
- 3. Inclusive and accessible:** In implementing the proposed architecture, Partner States should ensure no person residing in the EAC experiences exclusion or discrimination (e.g. barriers to accessing services). Special efforts should also be made to ensure that vulnerable persons have access to national IDs and to the authentication services offered through mutual recognition of national IDs. In practice, this includes making registration and national ID services available across Partner States' territories, designing and implementing the technology in a user-centered manner, and developing exception handling protocols in case the technology is unable to process authentications. People should have access to grievance mechanisms, including administrative and judicial review, if they face challenges such as a rejected application.
- 4. Safeguard privacy and data:** As a pre-condition for implementing the proposed architecture, Partner States (as data controllers) should take all legal, technical, and policy steps necessary to ensure the protection of individuals' data (as data subjects), including following best practices¹⁸ regarding minimal data collection and use, security, consent, and accountability. The technical architecture takes a 'privacy by design' approach to addressing the fact that national ID systems involve some of the most sensitive personal information on individuals and that cross-border flows of this data pose very particular risks. In practical terms, this means that unless necessary (e.g. for eKYC to open a bank account), cross-border

Partner States should ensure no person residing in the EAC experiences exclusion or discrimination.

¹⁸ See the General Data Protection Regulation (Regulation (EU) 2016/679) of the EU, a regulation which aims to strengthen and unify data protection for all individuals within the EU, including the export of data outside the EU. The GDPR aims primarily to give control back to citizens and residents over their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU. <http://www.eugdpr.org/>

authentications should just be confirmation that data being presented by an individual matches data in a Partner State's national ID system, which means that no data should be exposed to service providers. If data is to be 'pulled' (e.g. for eKYC), then it should only be with the consent of the individual and should only include the minimum data that the service provider is legally required to have for that purpose. Safeguards should be established at national levels as well to ensure that personal data is used in accordance with the law and does not lead to adverse consequences such as exclusion or discrimination against vulnerable groups, including asylum seekers and refugees.



- 5. Partnership and cooperation:** EAC Partner States should support each other in implementing the proposed architecture, including through the transfer of knowledge and experience, and the sharing of resources and solutions where appropriate. Although each Partner State has their own unique context, some have already overcome challenges associated with implementing national ID systems that others are now experiencing. In the same vein, familiarity with each other's systems, gained through regular contact, will contribute to generating trust and to realizing systems that are more closely aligned.
- 6. Promotion of development and regional integration:** The primary objective of the proposed architecture is to accelerate Partner States' sustainable development, including the SDGs, and fulfilment of the EAC CMP through the transformational potential of digital identification. To this end, this study identifies use cases in which mutual recognition of national IDs can facilitate inclusion, economic growth, enhancement in how services are delivered, and the creation of new markets (e.g. in border areas and the digital economy). It is crucial that Partner States responsibly maximize these use cases, including making mutual recognition of national IDs for commercial and private as well as public-private service providers.
- 7. A building block for mutual recognition in Africa and beyond:** Mutual recognition of national IDs in the EAC should be a stepping stone towards mutual recognition of national IDs across and outside Africa, including realization of the Africa 2063 vision of free movement of persons across the continent. Participation of EAC citizens and residents in the regional and global economies, as well as facilitating the participation of other non-EAC citizens and residents in the EAC market, will create new opportunities that could greatly accelerate economic growth and innovation. To realize this, the standards that the EAC sets to facilitate mutual recognition of national IDs and interoperability of systems should be as minimal as possible and align with internationally agreed standards. Likewise, the EAC should participate in other regional and global discussions on mutual recognition of national IDs, such as in ECOWAS and in the EU (eIDAS).



7. Summary of Proposed Architecture for Regional Mutual Recognition in the EAC

This study suggests an overall architecture for regional mutual recognition of national IDs in the EAC based on the achievement of four Milestones. Each Partner State can proceed at their own pace over the course of 7 years or more to progressively realize the four Milestones. The timelines indicated here are suggestions and should be tailored to each Partner State’s particular circumstances.

The achievement of Milestone 1, a legally-enabled national ID system meeting certain functional requirements, is a pre-requisite for the other three Milestones. However, work on Milestones 2 to 4 can happen in parallel, and ideally, should begin as early as possible since some activities like legal and regulatory reform may take longer to implement.

Much of the work toward Milestone 1 has already been achieved. Five of the six EAC Partner States (excluding Burundi) have used biometrics for the unique identification of individuals and for the issuance of ID cards after deduplication using AFIS. Three (Uganda, Kenya, and Rwanda) have excellent coverage of their target populations (over 90 percent). And in terms of credentials, Tanzania already has a smartcard, Kenya’s ID card has an MRZ, Rwanda’s has a barcode, and South Sudan and Uganda have cards with both a barcode and MRZ. The design outlined here aims to leverage these existing strengths to rapidly achieve mutual recognition of national IDs in the EAC.

Alongside the four Milestones, there is a need to objectively and rigorously assess the existing legal and regulatory frameworks which relate to ID at national and regional levels in the EAC to ensure a strong legal and policy basis for achievement of the four Milestones. This activity cuts across Milestones but should ideally be completed as part of Milestone 1 to enable the recommendations to inform the necessary legal and regulatory changes for successful implementation of Milestones 2 to 4.

Each Partner State can implement the proposed architecture at their own pace.

7.1 MILESTONE 1: NATIONAL ID SYSTEM

The primary prerequisite for achieving mutual recognition of national IDs for cross-border services in the EAC is a legally enabled, robust, inclusive, and responsible national ID system which can be used for electronic delivery of services in country. Per the Guiding Principles outlined above, the national ID system needs to have high quality, high performance, and high reliability. It should be trustworthy, ensure uniqueness, and have functioning electronic authentication services. The system should not only have high levels of coverage, but also be accessible to vulnerable populations, particularly communities living in border areas. And the system must responsibly address data privacy, data protection, and cybersecurity concerns, with some vulnerable populations having specific concerns that should be accommodated.

Some technical considerations in addition to those specified in the Guiding Principles:

1. To enable high assurance authentication of the individual for electronic service delivery, the identity system should associate a strong credential after validation and verification of the individual.
2. Identity numbers should only be issued after ensuring the uniqueness of the individual through processes like biometric deduplication using Automated Fingerprint Identification Systems (AFIS).¹⁹
3. Mobile devices should be leveraged for authentication.
4. If a card (plastic or smartcard) is issued to the individuals, the card should have features like a machine-readable zone or chip to enable electronic readability of data on the card. A 2D bar code is an alternative for reading data using a bar code scanner or an app on a mobile device.

7.2 MILESTONE 2: PRESENCE-BASED AUTHENTICATION

Presence-based authentication means face-to-face identity authentication at service points using the national ID (e.g. crossing at border posts, opening a bank account at a bank branch, accessing health services at a public hospital, enrolling in education). Depending on the service, different assurance levels for authentication will be required. For some services, physical examination of the card for genuineness and comparison of the data on the card (photo, gender, age, etc.) with the person may suffice. For others, a biographic information match may be sufficient. While still others, like cross-border movement of people, will require high assurance authentication to be achieved via a match of the fingerprint taken at the service point with the fingerprint in the national identity database.

A biometric based identity system must exist prior to reaching Milestone 2. To achieve Milestone 2 there are several different options. Partner States could choose to employ cross-border interoperability architecture for online authentication, a web portal for online authentication, or smartcards for online or offline authentication.

¹⁹ This is the model followed by the five EAC countries which have issued ID cards.

7.3 MILESTONE 3: PRESENCE-LESS AUTHENTICATION

When this milestone is reached, the users would be able to access public and private sector services from any of the EAC partner countries using their digital identity. They would not need to go to a service provider in person. To open a bank account, for example, they could authenticate themselves online using their digital identity from the comfort of home. Digital identity would also enable countries to extend access to existing online services to citizens of other EAC states, as permitted under the CMP.

A prerequisite for this Milestone is the existence of digital identity tied to or based on the “trust” established by the national ID.

The assurance and trust level in the digital identity itself will determine the type of services that people can access. A mobile device can be used for second factor authentication or a mobile ID can be used to enhance the assurance level of authentication for online delivery of services which require substantial and high trust assurance levels.

Box 4. Defining Digital Identity

A **Digital identity** is a collection of electronically captured and stored identity attributes that uniquely describe a person within a given context and are used for electronic transactions. A **digital identity system** refers to the systems and processes that manage the lifecycle of individual digital identities.

A person’s digital identity may be composed of a variety of attributes, including **biographic data** (e.g., name, age, gender, address) and **biometric data** (e.g., fingerprints, iris scans, hand prints) as well as other attributes that are more broadly related to what the person does or something someone else knows about the individual. When these data are collected and verified, they can be used to **identify** a person by answering the question “who are you?”. These attributes, along with **credentials** issued by the service provider (e.g., unique ID number, eDocument, eID, mobile ID) can then also be used as **authentication factors** to answer the question “are you who you claim to be?”. The attributes and authentication factors used in a digital identity may vary from one context or country to the next depending on the type of identity system.

Source: World Bank. 2016. Digital identity: towards shared principles for public and private sector cooperation. Washington, D.C.: World Bank Group.

7.4 MILESTONE 4: ELECTRONIC AND DIGITAL SIGNATURES

Some services and transactions legally require a high level of trust, such as that placed on handwritten signatures, to ensure integrity and non-repudiation. Electronic and/or digital signatures are used to replace hand written signatures in the digital world, and authentication mechanisms based on biometric, digital signature, or multi-factor authentication ensure a high level of assurance in the authentication decision. Using digital identity and electronic or digital signatures would enable users to perform all types of transactions from anywhere. Estonia, for example, uses digital signature-based authentication and digital signatures for signing transactions to allow electronic voting by its citizens anywhere in the world. In India, eSign, an online



electronic signature service, is used to digitally sign documents using digital signature certificates which are considered legally the same as ink signatures.

At this Milestone, users would be able to perform transactions that would normally require ink signatures online via electronic or digital signatures. The implementation of electronic or digital signatures using PKI would enable high value and high trust transactions that require integrity and non-repudiation to be performed digitally online.

One major advantage of remote signatures is that they provide a great deal of flexibility in which authentication method is used. Since the signature is made centrally, authentication can be made with a nationwide digital identity with an existing login system, or with some other authentication method. This means that any device—such as a tablet, computer or mobile phone—can be used, while a traditional digital signature is often limited to a particular device or requires a USB token.

Box 5. Electronic vs. Digital Signatures

Electronic signatures are defined as an electronic sound, symbol, or process attached to or logically associated with a record adopted by a person with the intent to sign the record. Electronic signatures are electronic data which carries the intent of a signature.

Digital signatures are often used to implement electronic signatures for transactions which require a high level of assurance. Digital signatures are mathematical schemes that act like electronic “fingerprints.” They use PKI to provide the highest levels of security. A valid digital signature gives a recipient reason to believe that the message was created by a known sender (authentication), that the sender cannot deny having sent the message (non-repudiation), and that the message was not altered in transit (integrity).

In legal terms, the eSign Act of the US treats electronic signatures as equivalent to ink signatures for the majority of electronic transactions. Electronic signatures also have legal significance in the EU.

The eSignature building block of the EIDAS framework facilitates electronic signatures for the EU. It was developed as an open source suite of tools which can be leveraged by the EAC.

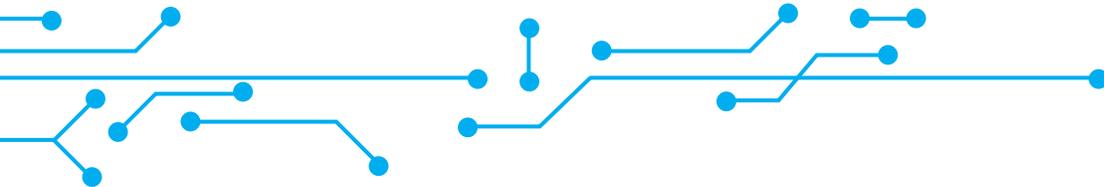
8. Conclusion

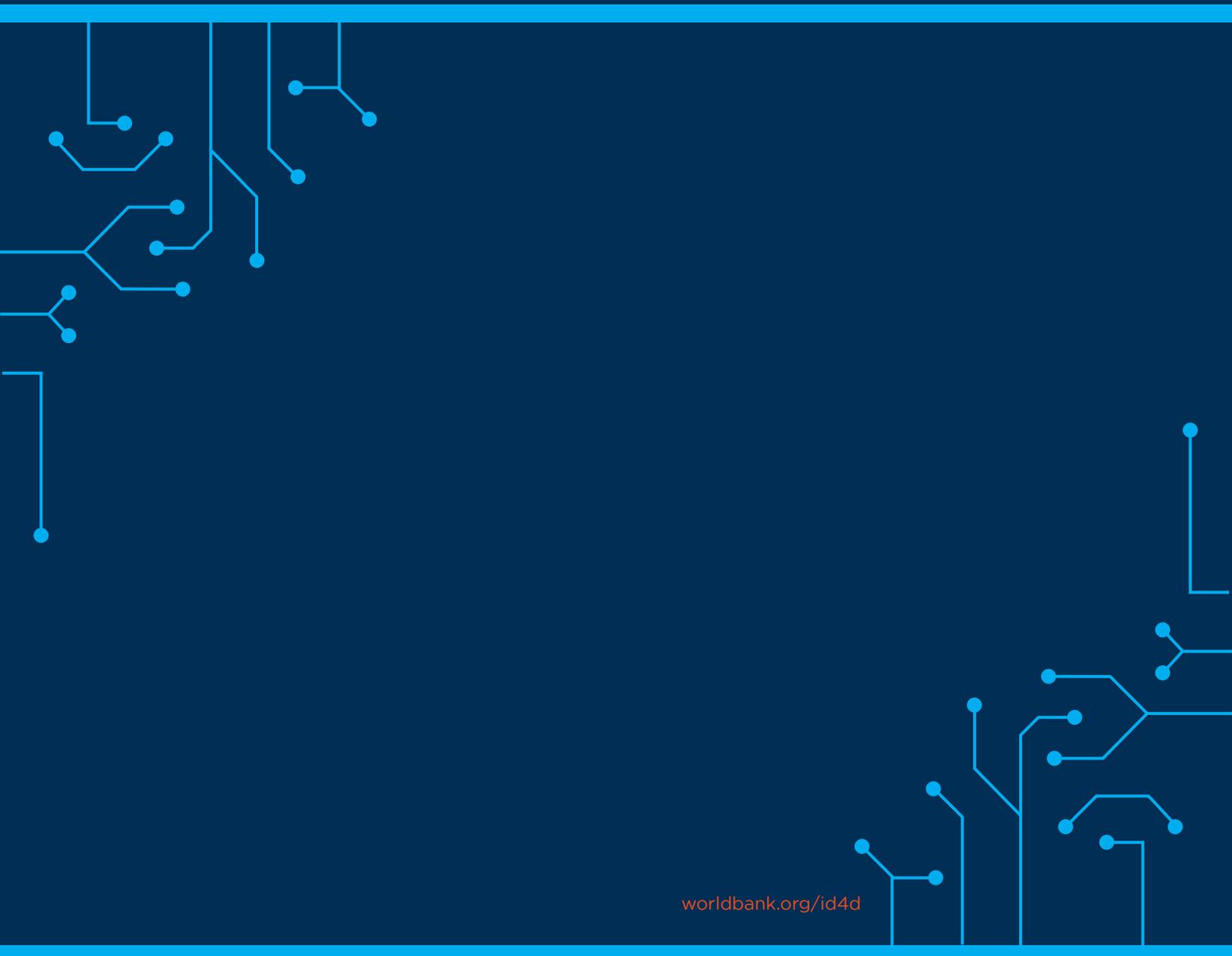
This study is intended to help the EAC Partner States realize the aims of the CMP by proposing use cases and the most appropriate regional architecture for mutual recognition of national IDs in the EAC. The CMP seeks to achieve a common standard for issuing national IDs across Partner States (Article 8), as well as free movement of goods (Article 6), persons (Article 7), labor/workers (Article 10), services (Article 16), and capital (Article 24). Mutual recognition of national IDs can be invaluable in realizing these aims and accelerating regional integration.

The potential uses cases for mutual recognition of national IDs in the EAC range from safe and orderly migration, to access to trade, finance, and services like health and education, particularly for cross-border communities.

The architecture proposed in this study considers the unique circumstances of the EAC and the spirit of variable geometry. It proposes a model of mutual recognition of national IDs through standardization and interoperability, based on four Milestones to be implemented over the course of 7 or more years by each Partner State at their own pace.

The preparation of this study has enabled a unique policy dialogue around mutual recognition of national IDs in the EAC. It is hoped that the EAC can now carry this study forward through consideration and further development by its formal processes.





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