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# 'Identityless' Africa

- **One continent – 22% of the overall landmass of the earth**
- **55+ sovereign states (depending on your political point of view)**
- **1,3 billion people (2017)**
- World Economic Forum, more than 500 Million people in sub-Saharan Africa cannot officially prove their identity
- Africa faces large numbers of people that migrate across border:
  - refugees, fleeing the continent or a specific region
  - people that live a nomadic life
  - illegal migrants into another country to seek employment
  - people that just work “on the other side of a border” every day and return in the evening
- Securing the identity of an individual is almost impossible although many countries try to tackle the problem



# Classical approach

- **Each country issues an identity card**
- **To achieve interoperability the countries try to standardize the cards (ECOWAS, ICAO compliance)**
- **Most countries build up a Biometric directory**

## **BUT**

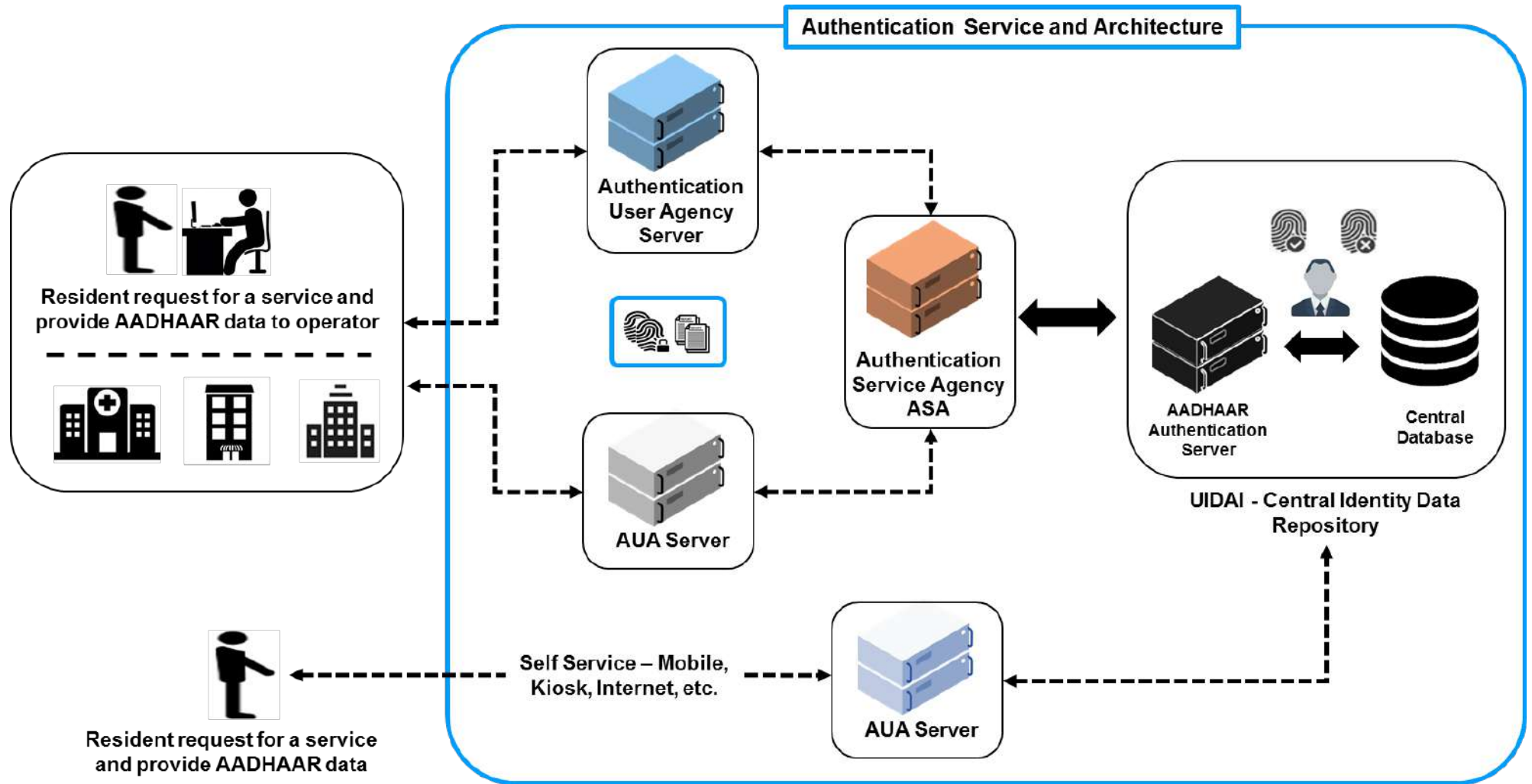
- Strong Biometric authentication requires a complex infrastructure (ICAO)
- The countries don't want or are not allowed to share Biometric information
- ID cards are expensive and most people can't or don't want to pay for them, saturation is low



# Looking at India's Aadhar (UID)

- **Aadhar – a Hindi word which means “Foundation” or “Base” ! It is also called as UID – Unique Identity Project !**
- AADHAAR project started in India in January 2009, **establishing Unique Identity Authority of India (UIDAI)** to register every eligible citizen of India and provide with a Unique Identity Number. The citizen is provided with an **AADHAAR Card which is a number that serves as a PoI – proof of identity and PoA – proof of address, anywhere in India.**
- Aadhar is used in the administration of a growing range of civil services. Not only is Aadhaar used to verify individuals for government subsidy access and for banking, it's also being considered for more niche applications such as vetting organ donors to disrupt illegal trafficking.
- Authorities now starting to assign Aadhaar numbers to new-borns, a new generation will grow up with their biometrics tied to a huge range of civic activities.

# Authentication Architecture in India



# Looking at India's Aadhar (UID) – Sat, June 15th

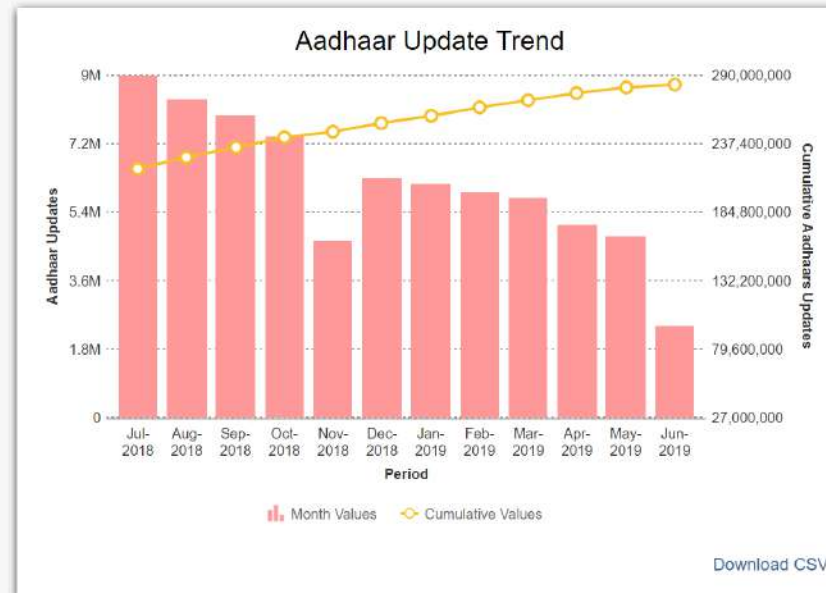
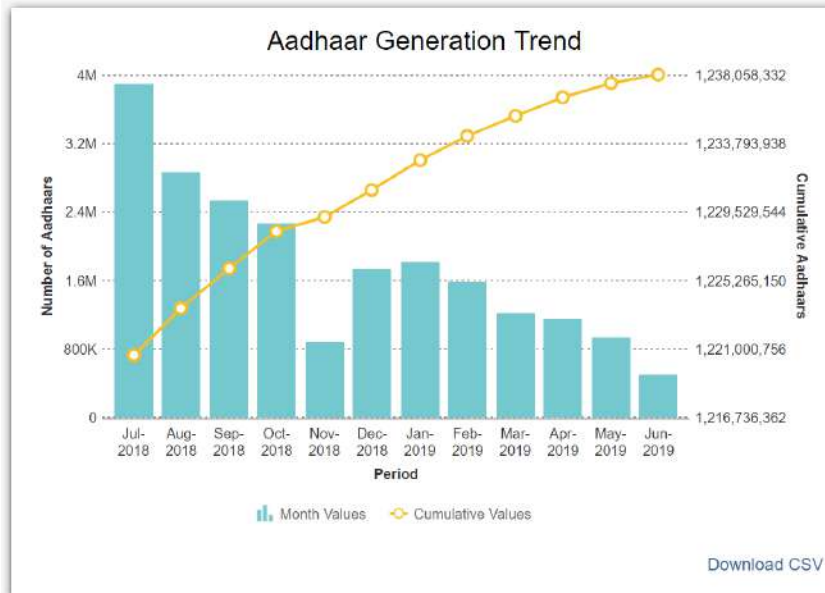
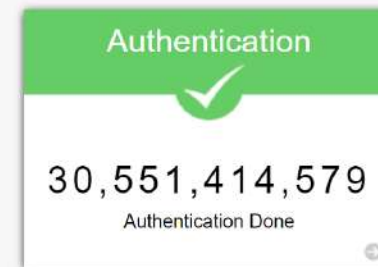
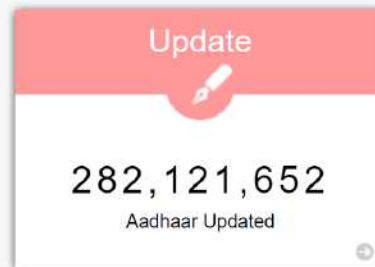


Unique Identification Authority of India  
Government of India

Mera Aadhaar, Meri Pehchaan



Welcome to AADHAAR Dashboard



# Generation of AADHAAR Number / UID Number

**The UIDAI has implemented a 12-digit number that meets these requirements. The salient points are:**

- **Numbers only** – no alphabets, since this must be useful across all languages and easily usable on numeric phone keypads.
- **First digit may not be 0 or 1.** This is reserved for future extensibility.
- **Last digit is a checksum digit** – computed with the **Verhoeff algorithm**, protects against most simple errors like a single digit change, or transposing of digits.
- **Length** – 11 digits out of 12 (last digit being check digit) allows 80 billion possible numbers – enough to accommodate our population at least for next 100- 200 years.



# Bringing UID to Africa – a Federated All-African UID

**00** 1234 XXXX XXXX



**Respective  
Country Code**





# Federated All-African UID

**Africa extends the original by 2 digits – 2 country digits before the 12 digit number:**

- **Numbers only** – no alphabets, since this must be useful across all languages and easily usable on numeric phone keypads.
- **First 2 digits identify the country**
- **The 3<sup>rd</sup> digit may not be 0 or 1.** This is reserved for future extensibility – just like UID.
- **Last digit is a checksum digit** – computed with the **Verhoeff algorithm**, protects against most simple errors like a single digit change, or transposing of digits.
- **Length** – 11 digits out of 12 (last digit being check digit) allows 80 billion possible numbers – larger than every African country in the foreseeable future.

**Each country enrolls its own people, de-duplicates people and provides them “their” number**

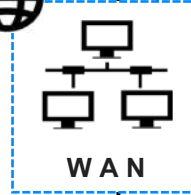
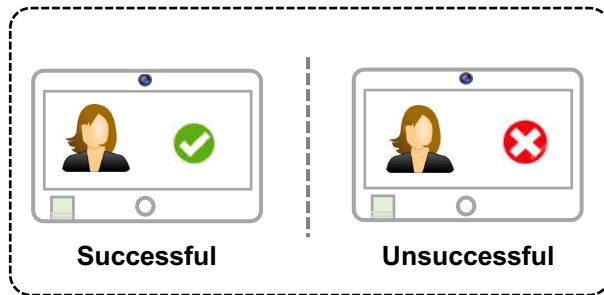
- **Lower costs** – no cards required, but giving the full benefits of Identity Assurance.
- **Full control** – no country needs to share Biometric information.
- **Authentication across borders** – each country can provide an authentication gateway, based on MINEX III templates and the UID number



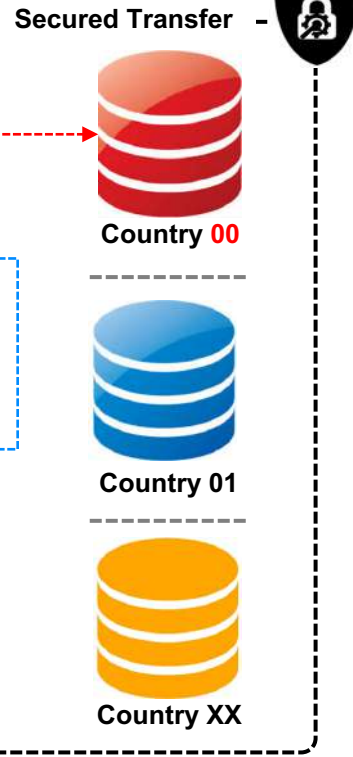
Operator enters 14 digit UID number and captures biometric template



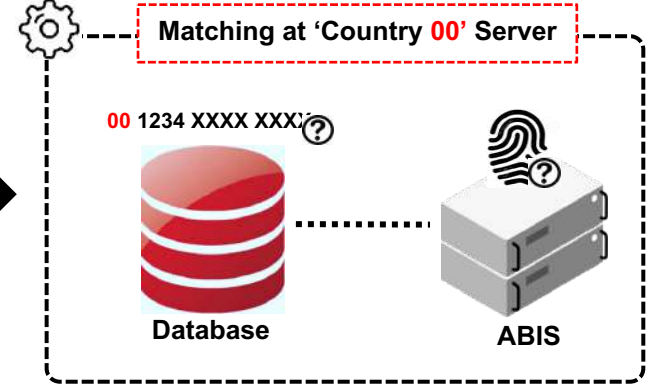
Operator



WAN



With reference to the country code, the data goes to the respective country's database for matching



System looks for the respective UID and the Biometric information for matching

Sends response to the operator for 'Match' / 'No Match'





# Federated All-African UID – chances

- **Countries** that have a complete or almost complete directory **can join in easily** by providing and authentication gateway

Many countries could join, with minimal effort, tomorrow. A large initial base can be easily achieved.

- **Countries** that build up one can **follow the same blueprint – lower costs and proven approach**

But it does not force countries to take the same vendor, same material or agree to complex systems

- **Countries** can take **immediate advantage** for **eKYC, fraud prevention and misuse of social benefits**

The country will have an immediate, long lasting, positive impact.

The investment is for benefit of the country, the Federated All-African UID is the cherry on top.



# Federated All-African UID – chances

- **NO COUNTRY EXPOSES the data of Citizens**

The system provides a proof of identity without the risk of exposing biographic or biometric data

- The **ID Card** becomes **optional** lowering the investment

A citizen of a country that participates would (theoretically) only need a passport to travel to non-participating countries



# Federated All-African UID – chances

- **Identities** can be proven **across border** – **easy interoperability**

The system requires a minimal agreement on the data being exchanged – like UID number and MINEX III template and base encryption model

- Each investment in the mobile **infrastructure** will extend the reach

To get more authentication points only access to the mobile network is necessary

- A **verifiable transaction ID** would make a simple digital signature possible in Africa

If the Yes/No answer of the countries UID system is combined with a verifiable transaction ID Africa would leap-frog  
many initiatives and could proof presence of a citizen at an authentication point in another country

The UID system can cater for 1,3 Billion people and more.

**India has proven it working - Now it is up to Africa to take it to the next level!**

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