PUBLIC KEY INFRASTRUCTURE ADOPTION – REGULATORY FRAMEWOK

the National ICT Regulator
– Regulating ICT for a Digitalised Ghana

Background

- National Information Technology Agency Act 2008, Act 771
  - ✓ to establish the National Information Technology Agency to regulate information communications technology and to provide for related purposes

- Electronic Transaction Act 2008, Act 772
  - ✓ The object of this Act is to provide for and facilitate electronic communications and related transactions in the public interest

NITA's MANDATE

Regulator

- Regulate the ICT space in Ghana
- Consumer protection within the ICT space in Ghana
- Setup and enforce standards across the public sector
- Periodic audit of IT systems within the public sector
- Registration and certification of players within the ICT space

CTO

- Lead the national digitalization and innovation efforts
- Provide technical advisory, consultancy and support for IT projects across the public sector.
- Provide technical advisory, consultancy and support in operational and maintenance issues across the public sector.
- Align technology projects to the digitalization vision and framework
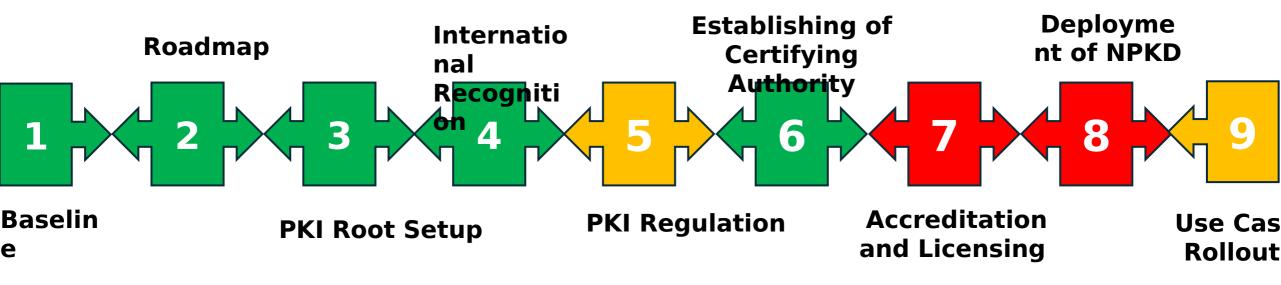- Implement the policies churned out by government

PKI Provision in the ETA

- **Section 10 -14, 28 – 45 of the ETA provides the legal famework and mandate for the PKI and adoption as a country**

- **The ETA mandate NITA to establish the Certifying Authority for Ghana**

- **The Certifying Authority shall establish and manage the country root certificate authority**
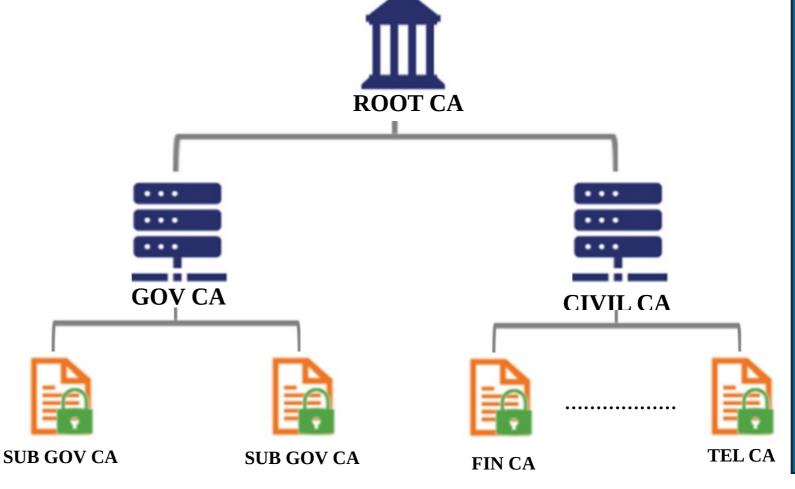
PKI ADOPTION GHANA'S APPROACH

GHANA PKI ROADMAP

GLOBAL (Country Signer)

NATIONAL

ROOT CA

GOV CA

CIVIL CA

SUB GOV CA

SUB GOV CA

FIN CA

TEL CA

• **This will largely serve government**

• **Operated by a private partner**

• **Provide dedicated certificate services**

• **Provide shared certificate services**

• **This CA is dedicated to the private or commercial sector**

• **This CA will also be administered by NITA through the Certifying authority**

• **Will certify Private CAs to provide certificate services to the private sector**

NATIONAL

ROOT CA

- Operated by NITA

- Will serve as the National Root

- Largely serve national certificate services

- National Public Key Directory (NPKD)

- Supervised by Certifying Authority

GOVERNMENT

GOV CA

- This will largely serve government

- Operated by a private partner

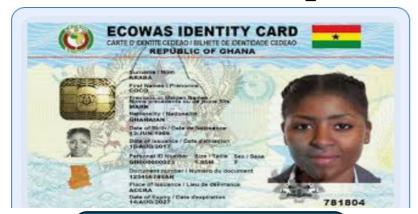- Provide dedicated certificate services

- Provide shared certificate services

PRIVATE SECTOR

CIVIL CA

- This CA is dedicated to the private or commercial sector

- This CA will also be operated by NITA through the Certifying authority

- Will certify Private CAs to provide certificate services to the private sector

PKI implemented Use Cases

National ID System

e-Visa

e-Passport

New PKI Use Case

Digital Signature

Time Stamps

Digital Seals

Power of Attorney

Certified Bank Statement

AS DPI

PRIVATE SECTOR INNOVATION
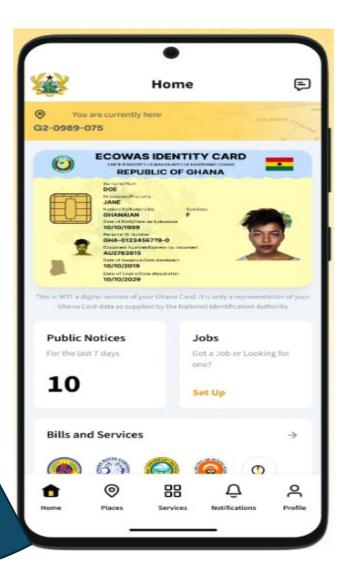
Digital ID

Drivers License

Land Title Deed

Tax Certificates

Business Registration Cerst

Educational Certs

Permits

CITIZENS APP

STATUS GHANA'S PKI IMPLEMENTATION

- Pre Implementation stakeholders' engagement

- We are identifying certain kind of use cases to make it mandatory for each sector

- As a result we are working with sectoral regulators in the implementation and enforcement

CONTINENTAL PKI IMPLEMENTATION

- Currently, PKI adoption on the African continent is very low. Most countries on the continent do not have the necessary framework and infrastructure to do so
- The reasons include lack of technical expertise, funding, enabling environment, etc
- Participation of Africa at the global with respect to PKI is also non encouraging
- This put the digital ecosystem in Africa as a whole at a greater risk as the ecosystem will largely not be trusted by other jurisdiction

CONTINENTAL PKI IMPLEMENTATION

Africa PKI Consortium (APKIC) – Maiden AGM

Theme: Fostering Digital Trust and Interoperability across Africa

Accra, Ghana • 26–27 August 2025

Why APKIC now?

- Continental push for secure digital transactions and trusted identities
- Need for cross-border interoperability and mutual recognition
- Shared capacity building and common standards accelerate adoption
- Neutral, non-profit forum to coordinate policy, technology, and trust services

Vision & Mission

- Vision:
  - A secure, trusted, interoperable digital ecosystem in Africa
- Mission highlights:
  - Promote PKI standards and best practices
  - Facilitate a harmonized PKI framework
  - Support capacity building and awareness
  - Advocate enabling policies and regulations
  - Foster innovation across sectors

Core Objectives

- Standardization & harmonization aligned to global best practice
- Interoperability: cross-border recognition of certificates and trust services
- Capacity building: training, certification, and knowledge-sharing
- Policy advocacy: PKI-friendly regulations and compliance frameworks
- Industry-focused regulation: enable adoption and use
- Research & innovation: blockchain-PKI, post-quantum, decentralized identity
- Public awareness across stakeholders

Thank You