



# **GEDW**

Ghana Electronic Document Wallet

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CONCEPT NOTE

# **GHANA'S ELECTRONIC DOCUMENT WALLET (GEDW) ECOSYSTEM**

**A NATIONAL FRAMEWORK FOR SECURE DIGITAL DOCUMENT ISSUANCE, STORAGE,  
SHARING & VERIFICATION**

# 1. BACKGROUND & RATIONALE

Ghana continues to advance in digital public infrastructure through systems such as the Ghana Card (NIA), Ghana.GOV, the National Data Exchange (NDX) and sector-specific digitalization reforms.

Despite these gains, citizens, businesses, and institutions still rely heavily on physical documents, photocopies, and manual verification processes. This creates inefficiencies in service delivery, identity verification, onboarding, compliance checks, and secure data exchange.

To address these challenges, NITA is establishing a national Electronic Document Wallet (EDW) Ecosystem. The objective is to enable citizens, residents, and businesses to receive tamper-proof, digitally signed, verified documents from trusted Issuers, store them securely in an Electronic Document Wallet of their choice, and share them—upon consent—with authorized Requesters.

Unlike other countries where government directly operates the digital wallet (e.g., India's DigiLocker), Ghana will adopt a multi-provider model. Independent, accredited Electronic Wallet Service Providers (EWSPs) will operate the wallets under NITA's regulatory and technical standards. This model promotes innovation, private-sector participation, competition, and citizen choice.

## 2. VISION & OBJECTIVES

### 2.1 Vision

To enable a trusted, interoperable, innovative ecosystem where citizens and businesses securely receive, store, and share authentic digital documents—driving efficiency, reducing fraud, and enabling seamless digital transactions nationwide.

### 2.2 Objectives

#### 1. Empower Citizens & Businesses

- Provide secure access to verified digital documents through accredited wallet providers.

#### 2. Enhance Trust in Digital Services

- Ensure documents issued by trusted institutions are tamper-proof, signed, and verifiable.

#### 3. Promote Private-Sector Participation

- Enable a marketplace of competing wallet providers operating under regulated standards.

### **Streamline Service Delivery**

- Reduce paperwork, eliminate photocopies, and enable presence-less, paperless transactions.

### **4. Strengthen National Digital Infrastructure**

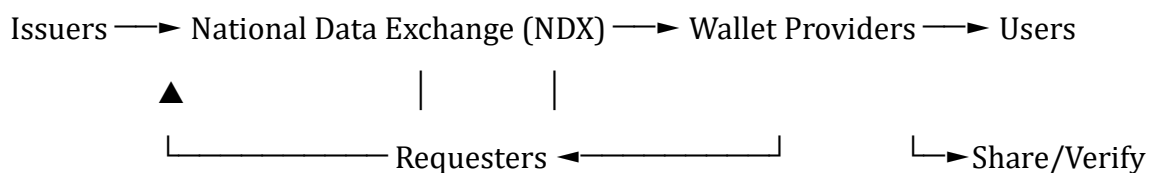
- Leverage the Ghana Card, National Data Exchange (NDX), and sector digital systems.

### **5. Ensure Data Protection & User Consent**

- Embed privacy-by-design, user consent, and secure data access principles.

## **3. OVERVIEW OF THE EDW ECOSYSTEM**

The EDW ecosystem connects Issuers, Electronic Wallet Service Providers (EWSPs), and Requesters through the National Data Exchange (NDX) or secure APIs, under NITA’s governance.



### **3.1 Key Participants**

#### **A. Issuers**

Organizations legally authorized to issue official digital documents.

Examples:

- National Identification Authority (NIA)
- DVLA
- GRA
- Births & Deaths Registry

- WAEC, universities, professional bodies
- Banks, insurers, utilities, telcos (subject to licensing rules)

## **B. Users**

- **Individuals** (citizens, residents, foreign workers)
- **Businesses & Institutions** (companies, SMEs, NGOs)

## **C. Requesters**

Entities that need to verify or receive documents for service delivery.

Examples:

- Banks (KYC, onboarding)
- Employers
- Insurance companies
- Schools and admission institutions
- Law enforcement agencies
- Government service portals

## **D. Electronic Wallet Service Providers (EWSPs)**

Independent private entities licensed by NITA to:

- Offer secure wallet apps/web portals
- Store user-uploaded documents
- Receive verified documents from Issuers
- Enable user-consented document sharing
- Integrate with NDX and verification APIs

## **E. Regulator: NITA**

NITA will:

- Define technical standards
- Accredite and license EWSPs

- Certify Issuers and Requesters
- Provide trust services (PKI, timestamps, digital signatures)
- Operate the National Data Exchange (NDX) fabric
- Conduct compliance audits
- Maintain ecosystem security guidelines

## 4. FUNCTIONAL SCOPE OF THE EDW

The EDW ecosystem shall provide, at minimum, the following features:

### 4.1 Digital Document Issuance

- Issuers expose digital documents via APIs. The wallet service provider shall not store a copy of the issued document in the wallet. The wallet shall be blind to the wallet. The wallet shall store only metadata and secure links (URL).
- All official documents must be digitally signed and contain:
  - issuer signature
  - document hash
  - metadata
  - validity period
  - revocation status

### 4.2 Digital Document Storage

Users store documents in their wallet:

- Government-issued documents (fetched via NDX)
- Business-issued documents
- Self-uploaded documents (with no legal equivalence)

### 4.3 Consent-Based Sharing

Users explicitly authorize Requesters before any document is shared:

- OAuth2/OIDC-like consent flows
- Purpose-bound, time-limited access tokens
- Audit trail for every sharing event

#### 4.4 Verification Services

Requesters can verify:

- Issuer signature
- Document integrity
- Revocation status
- Authenticity via QR code or verification API

#### 4.5 Legal Equivalence

Government-issued documents delivered through EDW shall have:

- Full legal validity, equivalent to physical originals
- Recognized under a forthcoming the upcoming revised Electronic Transaction Act and related regulations thereof.

## 5. GHANA'S MULTI-PROVIDER MODEL (HOW IT DIFFERS FROM DIGILOCKER)

This section seeks to compare the proposed Ghana model to that of India's which is one of the most successful implementations around the world.

Feature	India DigiLocker	Ghana EDW Approach
Wallet provider	Government-operated	Private licensed providers under NITA
Market model	Single state-run platform	Competitive ecosystem of wallet providers
Integration layer	DigiLocker APIs	National Data Exchange (NDX) + Open APIs
Innovation	Governed centrally	Driven by market competition
Oversight	MeitY	NITA as regulator, policy-setter and auditor

This model encourages:

- Innovation and differentiated features
- Local tech firms' participation

- Economic opportunity and digital entrepreneurship
- Avoids reliance on a single government-run digital wallet

## 6. TECHNICAL ARCHITECTURE (CONCEPTUAL)

### 6.1 Core Components

1. **National Data Exchange (NDX)** – secure data exchange fabric
2. **PKI Infrastructure** – certificates, digital signatures, timestamps
3. **EWSP Platforms** – wallets, storage, APIs, consent UX
4. **Issuer Systems** – government & private back-end systems
5. **Requester Systems** – banks, employers, agencies
6. **Verification Service** – central signature/metadata verification
7. **Audit & Monitoring Layer** – logs, analytics, compliance

### 6.2 Standards to Be Provided by NITA

- API & payload standards (JSON, XML, PDF, verifiable credential formats)
- Identity binding & authentication (Ghana Card, mobile-ID, biometrics)
- Document metadata schema
- Consent and authorization protocol
- Eligibility and accreditation criteria for issuers and requesters
- Operational security and uptime requirements
- Data retention and privacy standards
- Financial Model for the business case

## 7. ROLE OF ISSUERS

Issuers must:

1. Digitize issuance processes.

2. Implement approved document signing standards.
3. Integrate with NDX or publish secure APIs.
4. Maintain up-to-date revocation lists for invalid documents.
5. Ensure real-time or periodic document availability.
6. Support metadata APIs for verification and validation.

Issuers are encouraged to **begin aligning their systems** with the proposed data and document formats, signing mechanisms, and onboarding procedures.

## 8. ROLE OF ELECTRONIC WALLET SERVICE PROVIDERS (EWSPS)

EWSPs must:

1. Offer secure, user-friendly wallet apps (Android, iOS, Web).
2. Maintain encrypted storage and secure key management.
3. Support NITA's mandatory technical standards (APIs, signatures, formatting).
4. Provide consent-based document retrieval and sharing.
5. Ensure full privacy compliance and implement breach notification protocols.
6. Offer multi-factor authentication and FIDO2 readiness.
7. Support individuals, businesses, and institutional users.
8. Provide value-added services (optional):
  - automated KYC
  - document classification
  - automated form-filling
  - analytics dashboards for businesses

NITA will license EWSPs based on:

- Technical readiness
- Security maturity

- Operational capacity
- Financial stability
- Compliance track record

## 9. ROLE OF REQUESTERS

Requesters (banks, schools, companies, etc.) must:

1. Integrate with NDX or EWSP APIs.
2. Request only the documents or attributes needed for a legitimate service.
3. Present clear purpose and retention limits during consent.
4. Verify documents using NITA-approved processes.
5. Securely store or discard documents based on regulations.

## 10. GOVERNANCE, LEGAL & REGULATORY FRAMEWORK

NITA will introduce a **National Digital Trust Framework**, covering:

### 10.1 Legal Foundations

- Recognition of digital documents as legally binding.
- Roles and responsibilities of Issuers, EWSPs, and Requesters.
- Penalties for misuse, unauthorized access, or data breaches.

### 10.2 Compliance & Certification

- Annual audits
- Technical certification for wallet providers
- Data protection compliance (aligned with Data Protection Act, 2012)

### 10.3 Licensing Regimes

- EWSP licensing
- Issuer registration

- Requester accreditation

#### **10.4 Liability & Accountability**

- Clear allocation of liability for:
  - Document authenticity
  - Data misuse
  - Breach responsibility
  - Consent violations

## **11. BENEFITS TO STAKEHOLDERS**

### **For Citizens**

- No more photocopies, queueing, or lost documents
- Secure, convenient, mobile-first access
- Full control and audit of who accesses their information

### **For Businesses**

- Faster onboarding (KYC, due diligence)
- Fraud reduction
- Reduced paperwork and cost

### **For Government Agencies**

- Reduced operating overhead
- Seamless e-government services
- Standardized secure data exchange

### **For Wallet Providers**

- Commercial opportunities in security, fintech, and digital services
- Innovation in identity, verification, and data portability

## 12. ROADMAP & NEXT STEPS

### Phase 1 – Framework Development

- Technical standards
- Regulatory framework
- Data exchange policies
- Issuer onboarding guidelines
- EWSP licensing requirements

### Phase 2 – Pilot

- Select initial issuers (DVLA, NIA, WAEC, GRA)
- License 2–3 wallet providers
- Integrate prototype wallets
- Early user testing

### Phase 3 – National Rollout

- Expand issuer coverage
- Expand requester adoption
- Public awareness and digital literacy campaigns

### Phase 4 – Ecosystem Growth

- Full interoperability
- Cross-border document verification
- Integration with digital trade platforms
- Continuous policy refinement

## 13. CONCLUSION

Ghana's Electronic Document Wallet ecosystem represents a major leap in national digital transformation. By adopting a regulated multi-provider model, Ghana positions itself as the first African country to build a *market-driven, standards-based* digital document wallet ecosystem.

This approach:

- Empowers citizens

- Stimulates private innovation
- Enhances trust in national digital services
- Streamlines government and private-sector operations
- Reduces fraud, paperwork, and identity theft risks

NITA invites Issuers, Wallet Service Providers, and Requesters to begin aligning their systems, processes, and business models with this national initiative.