



**BAUCHI STATE GEOGRAPHICAL INFORMATION SYSTEMS AGENCY
TERMS OF REFERENCE FOR A DATA-CENTRIC DIGITAL ARCHIVE OF
CERTIFICATES OF OCCUPANCY:**

Background/Context:

The current land document management system in Bauchi State is antiquated, relying heavily on paper-based records and manual procedures. This outdated approach leads to delays, errors, and the potential loss or damage of crucial documents.

The introduction of technology to digitise land documents is necessary to enhance efficiency, transparency, and security. Implementing a digital land document management system promises several advantages:

- Swift and easy retrieval of documents.
- Streamlined document search processes.
- Enhanced document security.
- Systematic organisation and tracking of document changes and updates.

Transitioning to a digital land document management system allows the Bauchi State government to encourage good governance and facilitate smoother business operations. By establishing a data-centric digital archive for land ownership documents, we aim to address these shortcomings by offering a more efficient, secure, and technologically advanced approach to managing land-related documents.

Objective:

We aim to develop a secure, user-friendly, and easily accessible digital archive to process, handle properly, and preserve long-term land ownership documents, including Certificates of Occupancy (CofOs) in Bauchi State.

Scope:

The project scope encompasses the following aspects:

- System and user requirements, including business processes, indexing, and metadata integration.
- Deployment of a MERN stack application and necessary hardware.
- Data management and migration.
- Establishment of system backup and disaster management protocols.
- Quality assurance, testing, and training initiatives.
- Development of an operations manual governing the Digital Archive's management (e.g., access control, filing and storage, data sharing protocols, etc.).

Requirements:

1. Indexing:
 - Owner type (e.g., corporate entity/private individual).
 - Owner(s) name.
 - Owner(s) gender.
 - Ownership type (e.g., single-owned; joint/co-owned between man and woman).
 - Property uniqueID.
 - CofOissuance date.
 - CofO registration date.
 - CofO reference number (matching the physical record number).
2. Scanning and Archiving:
 - Raw File format: TIFF/JPEG Standard.
 - File format: PDF.
 - Resolution: 200 dpi.
 - Colour depth: 1-bit bi-tonal (B/W) and 24-bit colour.
3. System Security and Privacy:
 - JSON web token for authentication within an API interface.
 - Strict storage of tokens in cookies with enforced security measures.
 - Utilisation of HTTPS/encryption protocols.

Project Team:

- Commissioner of Finance.
- Special Adviser Land Bureau/e-GIS.
- Senior Special Adviser on GIS.
- Data Centre Manager.
- IT Head, Bureau of Lands.

Appendixes:

The digital archive system will be developed using a MERN Stack application and will reside in an on- premises server with a failover repository in an online dedicated server. The server will undergo extensive encryption, including implementing necessary Cisco firewalls. The archive will be indexed and searchable via key alpha-numeric data and unique identifier numbers.

Stage	Team/Desk Responsible	Tasks	Deliverables	Estimated Timeline
Project Design/Planning	PM BAGIS, Datacentre Manager, IT Head	- Review existing CofO process and document system for insights into designing the proposed digital archive.	Baseline assessment report, Approved digitization plan, ToR, Procurement Plan, Approved budget	1 month
Assignment of Operational Space	PM BAGIS	- Allocate operational space for digitalization	Assigned operational space	1 month

		operations and the data/server room.		
Deployment, Configuration, and Installation of the Digitalization System	Head IT, Data Centre Manager, Support Staff	- Procure, deploy, and install necessary software and hardware. - Configure the system with specified parameters.	Deployed digitalization system (software/hardware), Configured system	2 months
Document Sorting, Arrangement, and Preparation for Scanning	Clerks, Land Bureau Office Support Staff, KSGISO Office Support Staff	- Review, sort, and repair documents. - Arrange documents with index tags.	Reviewed and sorted CofO documents/folders, Documents arranged with index tags	2-3 months (for backlog clearance)
Scanning And Digitization	Data Entry Operators, ICT Technicians	- Conduct high-resolution scanning as per specifications. - Assign metadata to scanned documents.	Scanned documents ready for data entry, Documents digitized as per checklist specifications	2-3 months (for backlog clearance)
Data Entry	Data Entry Operators, Land Record Managers	- Indexing and inputting metadata into the document management system. - Assign automated unique identifiers.	Digitized CofO records with indexing, metadata checklist, and unique identifiers	2-3 months (for backlog clearance)
Storage and Management	IT Specialist, Database Administrator, Data Centre	- Implement backup and disaster recovery measures. -	Robustly secured digital archives with backup and disaster recovery measures in place	End of the project

	Manager	Preserve and maintain digital archives.		
Document Management	Land Bureau Records Managers, IT Support, DB Admin	- Configure access controls and permissions for document retrieval. - Administer day-to-day EDMS operations.	Assigned access controls and APIs, Ongoing and updated EDMS maintenance	Real-time throughout the project