



ZAMFARA STATE OF NIGERIA
ZAMFARA GEOGRAPHICAL INFORMATION SYSTEM AGENCY

Terms of Reference

Consultancy services for “Assessment of the Digital Archive System”

A. OBJECTIVE

The objective of this consultancy is to assess the existing digital archive system used in the Zamfara Geographical Information System Agency (herein after referred to as “The ZAGIS”) and deliver a comprehensive report, indicating the compliance of the existing system with the requirements indicated in paragraph D of this Terms of Reference (herein after referred to as “The TOR”) and identifying any gaps in the digitization process. The consultant shall also evaluate the degree of digitalization of records and comprehensiveness (coverage) of the digital archive records, compared to paper records.

B. SCOPE OF WORK

In undertaking the assignment, the Consultant shall work in close collaboration with the ZAGIS’s approved required activities for completing an assessment of the digital archive system. The specific tasks to be performed are as follows

- i. Draft a concise inception report to define the timeline, approach, processes and activities to perform the assignment.
- ii. Review existing workflows, rules and procedures of digitizing Certificate of Occupancy (herein after referred to as “The CofO”) records, their management in the digital archive system and physical paper archive. It should be noted also whether any land registration system is used for processing CofO records and how it is integrated with the digital archive system.
- iii. Identify document types and their attributes, captured in the digital archive system and compare it with the minimum requirements as outlined in paragraph D.
- iv. Review and gather the statistics of CofO paper archives in ZAGIS and compare it with numbers of records available in the digital archive.
- v. Identify any gap in the existing process, which can be potentially improved through the modification of the digital archive system or process re-engineering.
- vi. Review the existing digital archive system, including its technological platform, high-level architecture, required license(s), system feature, user roles, security measure and backup policy.
- vii. Prepare a comprehensive Digital Archive Assessment Report, which shall includes all findings and recommendations. The report shall cover the following points:
 1. Description of the existing process of digitizing CofOs.
 2. Document types and attributes captured in the digital archive.
 3. Statistics of digital and corresponding paper records (digital archive comprehensiveness).
 4. Identified gaps in the digitization process.
 5. Technical review of the existing digital archive system (platform, architectures, features, security and backup measures)

6. Compliance with the minimum requirements as outlined in paragraph D.
 7. Reports produced from the system.
 8. Recommendations for further improvements of processes and the digital archive system.
- viii. Present the Digital Archive Assessment Report, collect comments and finalize it.

C. MINIMUM REQUIREMENTS AND CAPABILITIES OF THE DIGITAL ARCHIVE SYSTEM

The following requirements are considered as a minimum level for the digital archive system:

- i. The archive has to capture the key information related to the property and accompanying evidence.
- ii. The following key evidence and documents have to be captured:
 - a. Certificate of Occupancy (CofO).
 - b. Land parcel survey diagram / location map.
 - c. Owner's Identification.
 - d. Allocation letter, if applicable.
- iii. The following minimum fields have to be captured:
 - a. Owner type (For example, corporate entity/private individual).
 - b. Owner(s) name.
 - c. Owner(s) gender.
 - d. Ownership type (e.g., single owned; joint/co-owned between male and female).
 - e. Property unique Identification.
 - f. CofO issuance date.
 - g. CofO registration date.
 - h. CofO reference number (a certificate or document number that matches the number on the physical record).
- iv. All other documents (evidence) should be captured with a document type and document reference number and date.
- v. The minimum requirements for the documents are the following: PDF/A format, scanning color: grayscale 8-bit, Scanning DPI: 150DPI for good quality documents, 300DPI for poor quality documents. One multipage document (PDF) per physical document.
- vi. The archive should be organized under the property or the CofO unique number so that all the documents including CofO and additional evidence are grouped and recorded and linked (linking can be the CofO unique number).
- vii. The indexed information for each CofO has to be linked to a scan of the respective paper documents (i.e., CofO certificate, maps, plans and other certificates associated with the property) and has to have a traceable reference to the physical records.
- viii. The archive has to be indexed and searchable through key alpha-numeric data. Minimum searchable field requirements are as per the data fields mentioned above. Searching by other document types would be an additional advantage.
- ix. The archive should allow for statistical reports on the overall number of CofOs, CofOs by gender, ownership type, and issuance and registration dates. The reports shall allow generating the summary statistics and by periods (e.g., monthly, quarterly, and yearly).
- x. It is an advantage if the digital archive is a multiuser system, accessible over the network and with different roles and permissions. The use of open-source platforms and tools is highly advisable.
- xi. The Agency shall possess all ownership rights to the system and avoid licenses fee or have a perpetual license in the case of a commercial solution.

D. DELIVERABLES

- i. Inception report.
- ii. Digital Archive Assessment Report.
- iii. Presentation.

E. LINE MANAGEMENT

The Consultant shall report directly to the Project Manager, ZAGIS. The Consultant shall closely collaborate with the staff of the ZAGIS to elicit system requirements and introduce the system.

F. QUALIFICATION AND SKILLS

- i. Masters or similar degree in Computer Science/Information Technologies, Land Administration or a related field (e.g. Geographic Information Engineering, Engineering, Public Policy and like).
- ii. Demonstrated knowledge of digital records management technologies and their application in land administration.
- iii. Understanding of networks, databases and other IT technologies.
- iv. The experience of drafting digital land records and archive management strategies is an advantage.
- v. International experience of similar assignments in three different countries. African countries experience is an advantage.
- vi. Proficient English and excellent technical writing skills. Ability to write clear, correct, and technical English.

G. INPUTS BY THE CLIENT

The ZAGIS will provide the Consultant with all available information and materials, relevant to the existing digital archive system and paper archives. The Client will provide access to the paper archive for their review and assessment.

The Client will assist in arranging required meetings and delegate a focal person for demonstrating the digital archive system and working with the Consultant. If required, the Client will provide an adequate office space, located at the ZAGIS premises.

H. REPORTING REQUIREMENTS

All reports shall be shared with the management of ZAGIS. Reports shall be delivered in electronic form and hard copies for the final versions. Comments, provided by the Client to be discussed at virtual and physical meetings. Required report amendments to be incorporated not later than one week after receiving these comments.

APPENDIXES

Appendix 1: Digitization Stages/Workflow

The digital archive system will be built with a MERN Stack application that will be housed in an on-premise server with a failover repository in an online dedicated server. The server will be thoroughly encrypted, and the necessary Cisco (or equivalent) firewall put in place. The archive will be indexed and searchable through key alpha-numeric data and a unique identifier number. Detailed below are the stages, relevant desks and processes to be engaged during the digitalization process and database maintenance.

STAGE	RESPONSIBLE	TASK(S)	DELIVERABLE	TIMELINE
Project Design/ Planning	Executive Secretary (ZAGIS), Project Manager and IT Team Lead	<ul style="list-style-type: none"> Review existing CofO process and document system to inform the design and business process for proposed digital archive. 	Baseline assessment and system improvement report.	1 Month
		<ul style="list-style-type: none"> Develop digitization plan in consultation with relevant stakeholders/MDAs. The plan will cover all requirements including business process engineering, ICT infrastructure, change management, maintenance, etc. 	Approved digitalization plan	
		<ul style="list-style-type: none"> Develop ToR and procurement plan. 	Approved ToR and Procurement Plan	
		<ul style="list-style-type: none"> Cost plans and develop a possible budget for project execution. 	Approved project budget	
Assignment of operational space	Executive Secretary (ZAGIS)	<ul style="list-style-type: none"> Assignment of operational space for digitalization operation and data/server room 	Assigned operational space	1 Month
Deployment, configuration, and installation of the digitalization system	Project Manager and the Consultant	<ul style="list-style-type: none"> Procurement, deployment, and installation of all software and hardware required for the digitalization system. 	Digitalization system – digital archive application, hardware, etc.	2 Months
		<ul style="list-style-type: none"> Configuration of the system including business process integration, access control definition, data security parameters. 		
Document sorting, arrangement, and preparation for scanning	Land Officers in Land Transaction Department (ZAGIS)	<ul style="list-style-type: none"> Document review and sorting, ensuring folders contain all relevant information including Certificate of Occupancy (CofO), Land parcel survey diagram / location map, Owner's ID, and Allocation letter (if applicable). This include repairing worn-out/age-weakened documents/folders. 	Reviewed and sorted CofO documents/folders by index checklist	2- 3 Months for clearing backlog while subsequent documentation is reviewed and sorted upon processing.
		<ul style="list-style-type: none"> Arrange documents with index tags using indexing checklist. 		
Scanning And Digitization	Data entry operators, ICT technicians	<ul style="list-style-type: none"> High-resolution scanning of documents reviewed and sorted by index checklist. Scanning is based on the following requirement. <ul style="list-style-type: none"> Format: PDF scanning color: Grayscale 8-bit 	Documents scanned for data entry.	2- 3 Months for clearing backlog while subsequent documentation is digitalized

		<ul style="list-style-type: none"> - Scanning DPI: 150DPI for good quality documents, 300DPI for poor quality documents, - One multipage document (PDF) per physical document. - Meta data assignment 		upon processing.
Data Entry	Data Entry Operators, Land Record Managers	<ul style="list-style-type: none"> • Indexing, feeding metadata and all needed to the document management system. Searchable fields will include Owner type (For example, corporate entity/private individual); Owner(s) name; Owner(s) gender; Ownership type (e.g., single owned; joint/co-owned between man and woman); Property unique ID; CofO issuance date; CofO registration date; CofO reference number (a certificate or document number that matches the number on the physical record) • Automated unique identifiers are assigned, ensuring the indexed information for each CofO will be linked to a scan of the respective paper documents 	Digitalized CoF O records according to indexing and meta data checklist as well as unique identifiers	2- 3 Months for clearing backlog while subsequent documentation is digitalized upon processing.
Storage and Management	IT Specialist, Database Administrator, Data Center Manager	<ul style="list-style-type: none"> • Implement backup and disaster recovery measures including periodic system, data and information security audits 	Robust data storage and security	1 month
		<ul style="list-style-type: none"> • Preservation and maintenance of physical archives 		Real-time
Document management	Land Bureau Records Managers, IT Support, DB admin	<ul style="list-style-type: none"> • Configure access controls (including API) and permissions for document retrieval protocols to support data sharing. 	Access controls and APIs assigned	Real-time
		<ul style="list-style-type: none"> • Day-to-day administration of EDMS application as well as periodic updates and monitoring of applications and records on the backend 	Optimal and updated EDMS	Real-time

Appendix 2: Snapshot of the Database Schema

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 parcel_id 📍	int(20)			No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2 location_state	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3 location_city_or_town	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 location_lga	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	5 location_parcel_number	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	6 location_streetname	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	7 type_property_occupancy_type	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	8 location_ward	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	9 parcel_main_use	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	10 parcel_main_use_others	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	11 parcel_title_type	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	12 parcel_title_type_others	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	13 parcellenced	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	14 parcel_have_swimming_pool	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	15 parcel_have_generator	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	16 parcel_area	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	17 parcel_main_water_supply	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	18 parcel_main_electricity_supply	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	19 parcel_waste_disposal_system	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	20 parcel_main_sewage	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	21 image	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	22 owner_type	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	23 owner_name	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	24 parcellegalentityname	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	25 parcel_owner_nin	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	26 parcel_owner_tin	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	27 owner_gender	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	28 parcel_owner_marital	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	29 parcel_owner_phone_home	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	30 parcel_owner_phone_mobile	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	31 parcel_owner_email	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	32 owner_parcel_number	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	33 owner_street_name	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	34 owner_ward	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	35 owner_lga	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	36 owner_state	varchar(155)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	37 created_on	datetime			No	current_timestamp()			Change Drop More

The table above depict the snapshot of the database schema.

Appendix 3: Digital Archiving System

