YOBE STATE GEOGRAPHIC INFORMATION SERVICE

YOGIS

Yobe State Secretariat.

TERMS OF REFERENCE ON CONSULTANCY SERVICES FOR "IMPLEMENTATION OFTHE DIGITAL ARCHIVE SYSTEM FOR YOGIS"

A. OBJECTIVE

The objective of this consultancy is to implement a data-centric digital archive of Certificates of Occupancy (C of Os), which meets the minimum requirements outlined in section D of this TOR. The digital archive can be implemented using existing commercial or open-source products or as a custom development. The preference should be given to free and open-source platforms, avoiding recurrent license fees. For commercial products a perpetual license should be provided and included in the overall cost.

The Consultant is expected to deliver the digital archive system and introduce it in YOGIS, train local staff, handover the system with all relevant documentation and provide technicalsupport services for [three] months.

B. SCOPE OF WORK

In undertaking the assignment, the Consultant shall work in close collaboration with YOGIS plan and agree on required activities for the implementation of the digital archive system. The specific tasks to be carried out include:

- Review existing workflows, rules and procedures of managing Certificate of Occupancy records. It should be noted whether any information system is used for processing Certificate of Occupancy records and how it can be potentially integrated with the digital archive system;
- Review and gather the statistics of C of O paper archives in YOGIS in order to understand the required hardware to run and operate the digital archive system;
- Draft technical specifications for computer hardware required for the digital archive implementation. This step can be skipped if the required equipment is available in YOGIS
- Consult with the agency and prepare the final list ofrequirements for the digital archive system. It should be the System Requirements Specification (SyRS) in the case of a custom development;
- Develop and test the digital archive system as per SyRS (for custom development);
- Prepare user and administration guides on operating and administration of the digital archivesystem;
- Introduce the digital archive system in YOGIS for testing and training;
- Prepare the training plan and programme;

- Deliver user and administrator trainings. It is expected [10] users attending the training;
- Introduce the digital archive system into production in the YOGIS
- Handover the system, documentation and source codes (for custom development); - Draft the final report;
- Provide technical support online and offline for at least 2 months after the system installation and introduction;

A. SYSTEM REQUIREMENTS

The system requirements described below should be considered as a minimum set of system functions and capabilities, required for the implementation. Existing products can deliver morefeatures.

Requirements

1. The system shall allow multi-user access over the network.

2. The system should be a Web or Desktop application with server-side component, implementingbusiness logic and database access.

3. The system can be supplied as a commercial, open-source or custom development solution.

4. If the system is supplied as a commercial solution, it shall have perpetual licenses for 10 (Ten)users or more.

5. If the system is supplied as a custom development, YOGIS shall have full ownership rights and unrestricted access to the source code. If a custom development is using any licensed components, it shall be agreed with YOGIS prior to using them and a required number of licenses provided, allowing access to 10 (Ten) users at least.

6. The system shall be supplied with the user and administration guides, as well as system documentation in case of custom development (e.g. database description, system architecture).

7. In the case of a custom development, the supplier shall provide a warranty for 6 months, coveringbugs fixing.

Functional requirements

1. The user shall be required to log into the system using the username and password, assigned bythe agency

2. The main screen shall have a list of folders (or categories or workflow steps) on the left side andrelevant list of records on the right side, allowing quick filtering of records in the system.

3. The displayed list of records shall allow sorting by visible columns and ordered by theregistration date by default.

4. The list of records shall be displayed in paged format (e.g. 20 records per page) and allow pagesnavigation.

5. The system shall allow records search by the key attributes (e.g. document type, range ofregistration dates, C of O number, owner name, folio number, status, etc.).

6. The system shall allow viewing of C of Os and relevant evidences through the search results orby opening it from the main screen.

7. The system may implement workflow steps for the data entry and its processing.

8. The system shall allow capturing of various documents and recording it under C of O case. Thosehave to include, but not limited to:
   a. Certificate of Occupancy (C of O);
   b. Land parcel survey diagram / location map;
   c. Owner's ID;
   d. Allocation letter, if applicable.

9. All document types shall be defined with relevant metadata fields, which have to include, but notlimited to the following:
   a. Document type;
   b. Document date;
   c. Document number;

10. For C of O documents, the following fields shall be captured as the minimum searchable parameters, but not limited to these fields:
   a. Owner type;
   b. Owner(s) name;
   c. Owner(s) gender (mandatory);
   d. Title purpose; /Residential/commercial/industrial/Agricultural/institutional
   e. Property unique ID / Survey plan number
   f. C of O issuance date;
   g. C of O registration number
   h. C of O reference number
   i. Ground rent
   j. Revision period of rent
   k. Improvement Premium

11. The system shall allow scanning and attaching of paper copies. It shall allow selecting file format, scanning resolution, colour mode and pages setting (single or multi-page). It shall also allow editing of a scanned document, adjusting its brightness/saturation, rotating and cropping scanned images. Native scanner

applications can be used, but it shall be integrated with the user interface of the digital archive system;

12. Captured and committed documents shall stay read-only in the system. They can be enabled for editing by a user with a dedicated role and the system should request and record the reason for modification.

13. In the case of multi-department/office access to the digital archive, the system shall allow configuration of user access by department/office. Only records, relevant to user's department/office shall be displayed and accessible.

14. The system should track the history of record creation and modification, capturing user name, event type, date and time of such events. Recording modified fields and their previous values would be beneficial.

15. Every record shall display its modification log in a simple way.

16. The system shall allow generating parametrized reports (e.g. by dates), for statistical reports, including, but not limited to the following:
    a. Overall number of C of Os;
    b. C of Os by gender;
    c. C of Os by ownership type;
    d. Captured documents by types;

17. The system shall implement various user roles, defining their access to system features.

18. A dedicated system administration role shall be implemented for managing user accounts and system settings.

B. DELIVERABLES
- Technical specification for hardware to run the digital archive system (including, server, computers, scanners, network equipment) [subject to the equipment availability in the land administration office];
- Digital archive system and its source codes (if custom development);
- System documentation (user guide, administration guide). Other technical documentation in the case of a custom development (data base catalog, architecture description);
- Training plan and program;
- Trainings;
- Final report;

C. LINE MANAGEMENT
The Consultant shall report directly to the DG/CEO YOGIS. The Consultant shall closely collaborate with the staff of YOGIS to elicit system requirements

and introduce the system.

D. PROPOSED TEAM COMPOSITION FOR CUSTOM DEVELOPMENT
- Team leader / Business Analyst (1);
- Senior Software Developer (1);
- Software Developer (1);

- Tester/Technical support (1);

E. QUALIFICATION AND SKILLS (TEAM LEADER/BUSINESS ANALYST)
- A Bsc/master's degree in Computer Science, business or related field;
- A minimum of 5 years of proven work experience as a business analyst;
- Exceptional analytical and conceptual thinking skills;
- The ability to convince stakeholders and work closely with them to determine acceptablesolutions;
- Proven experience in stakeholder analysis, requirements engineering, costs benefit analysisand processes modeling;
- Understanding of networks, databases and other IT technologies;
- Advanced technical skills and knowledge of CASE tools;
- Experience creating detailed reports and delivering presentations;
- A track record of following through on commitments;
- Excellent planning, organizational, and time management skills;
- Experience leading and developing top-performing teams;
- A history of leading and supporting successful projects;
- Experience and knowledge of digital archive systems is an additional advantage;
- Proficient English and excellent technical writing skills. Ability to write in technical Englishclear and correct;

F. QUALIFICATION AND SKILLS (SENIOR SOFTWARE DEVELOPER)
- Masters or similar degree in Information Technology;
- A minimum of 10 years of proven work experience as a software developer;
- Managerial experience is an additional advantage;
- Advanced knowledge of programming languages including JavaScript, HTML5, Java, SQL,ASP.NET and PHP;
- Knowledge of system frameworks including .NET, Git, AngluarJS;
- Ability to use version control software such as GIT and SVN;
- Experience designing and maintaining databases;
- Experience working with agile development technologies;
- Understand emerging web and mobile development models;
- Experience with digital archive systems is an additional advantage;
- Proficient English and excellent technical writing skills. Ability to write in technical Englishclear and correct.

G. QUALIFICATION AND SKILLS (SOFTWARE DEVELOPER)
- Bachelor or similar degree in Information Technology;

- A minimum of 5 years of proven work experience as a software developer;
- Solid knowledge of programming languages including JavaScript, HTML5, Java, SQL,ASP.NET and PHP;
- Knowledge of system frameworks including .NET, Git, AngluarJS;
- Ability to use version control software such as GIT and SVN;
- Experience designing and maintaining databases;
- Experience working with Agile development technologies;
- Experience with digital archive systems is an additional advantage;
- Proficient english and excellent technical writing skills. Ability to write in technical Englishclear and correct.

H. QUALIFICATION AND SKILLS (TESTER/TECHNICAL SUPPORT)

- Bachelor or similar degree in Information Technology;
- Five years of proven knowledge and experience in performing system and performance testing;
- Knowledge of best practices, methodologies and tools for conducting testing;
  - Experience inpreparation of test plans;
- Experience with Microsoft .Net, Java and databases;
- Experience of similar assignments in 3 different projects;
- Experience in providing technical support;
- Experience with digital archive systems is an additional advantage;
- Proficient english and excellent technical writing skills. Ability to write in technical Englishclear and correct.

I. DURATION OF THE ASSIGNMENT
The assignment will be fully implemented in 2 months, starting from the contract signingdate; and will be primarily conducted in Yobe State.

J. INPUTS BY THE CLIENT
YOGIS office, will provide the Consultant with all available information and materials, relevant to the implementation of the digital archive system. The Client will provide access to the paper archive for their review and quick assessment.

The Client will provide required equipment for the installation and testing of the digital archivesystem and arrange office space for conducting user trainings.

The Client will assist in arranging required meetings and delegate a focal person to work with the Consultant. If required, the Client will provide an adequate office space, located at YOGIS office premises.

K. REPORTING REQUIREMENTS
All reports will be shared with the management of YOGIS office. Reports shall be delivered in electronic form and hard copies for the final versions.

Comments, provided by the Client will be discussed at virtual and physical meetings. Required report amendments will be incorporated not later than 2 weeks after receiving these comments.

THIS TERM OF REFERENCE IS ISSUED THIS 25thDAY OF SEPTEMBER 2024 BY:

Abdullahi Hassan Gana (PhD)
DIRECTOR GENERAL YOGIS

.APPENDIXES FOR DIGITAL ARCHIVE

Appendix 1: Digitization
Stages/Workflow
Appendix 2: DigitalArchiving System

Appendix 1: Digitization Stages/Workflow:

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

STAGE	TEAM/DESK RESPONSIBLE	TASK(S)	DELIVERABLE	EST. TIMELINE
Project Design/Planning	DG/ Head of ICTs	Review existing C of O process and document system to inform the design and business process for proposed digital archive.	Baseline assessment and system improvement report.	1Month
		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.	Baseline assessment and system improvement report.	

		Develop ToR and procurementplan.	Approved ToR and Procurement Plan	
		Cost plans and develop a possible budget for project execution.	Approved project budget	
Assignment of operational space	The Director General	Assignment of operational space for digitalization operation and data/server room	Assigned operational space	1Month
Deployment, configuration, and installation of the digitalization system	The YITDA and YOGIS ICT unit	Procurement, deployment, and installation of all software and hardware required for the digitalization system.	Digitalization system – digital archive application, hardwares, etc.	2 Months
		Configuration of the system including business process integration, access control definition, data security parameters.		
Document sorting, arrangement, and preparation forscanning	Clerks, Land administration department Support Staff,	Document review and sorting, ensuring folders contain all relevant information including Certificate of Occupancy (C of O), 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 C of O documents/folders by index checklist	2- 3 Months for clearing backlog while subsequent documentation is reviewed and sorted upon processing.
		Arrange documents with indextags using indexing checklist.		
Scanning And Digitization	Data entry operators, ICT technicians, YOGIS staff and scanning officers.	High-resolution scanning of documents reviewed and sorted by index checklist. Scanning is	Documents scanned for data entry.	2- 3 Months for clearing backlog while

		based on the following requirement. • Format: PDF • scanning colour: Grayscale 8-bit • Scanning DPI: 150DPI for good quality documents, 300DPI for poor quality documents, • One multipage document (PDF) per physical document. • Meta data assignment	Scanning hard copied document into a pdf and using the application to merge all individual scanned sheets into one file document and inventorize the protocol using 4 variables :file name, file number, plot number and land location with the above inventory protocol, you can fetch any data from the Record Manager by looking for the above variables. .Next is to upload to A CLOUD, the record manager/sub feature of an EIP for the E government platform which was created to enable the government interact with Digital transactions Etc.	subsequent documentation is digitalized upon processing.
Data Entry	Data Entry Operators, Land Record Managers	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; C of O issuance date; C of O registration date ;C of O reference number (a certificate or document number that matches the number on the physical record)	Digitalized c of 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.

		Automated unique identifiers are assigned, ensuring the indexed information for each C of O will be linked to a scan of the respective paper documents		
Storage and Management	IT Specialist, Database Administrator, Data Center Manager	Implement backup and disaster recovery measures including periodic system, data and information security audits	Robust data storage andsecurity	???????
		Preservation and maintenance of physical archives		Real-time
Document management	YOGIS, IT Support, DB admin	Configure access controls (including API) and permissions for document retrieval protocols to support data sharing.	Access controls and APIsassigned	Real-time
		Day-to-day administration of	Optimal and updated	Real-time
		EDMS application as well as periodic updates and monitoring of applications and records on the backend	EDMS	

Appendix 2: digital archive system