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Utilizing Real-Time Field Inspection Reporting in the Land Registration Process: A Case Study of the Lands Commission's Land Registration Division (LRD)

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Presentation outline

- Introduction
- Problem Statement
- Objectives
- Field Inspection and Reporting
- Methodology
- Results/Merits
- Conclusion

Introduction

- In an era where technology is rapidly advancing, the use of real-time spatial data capture has revolutionized numerous industries, including land administration.
- In Ghana, the Lands Commission's Land Registration Division (LRD) plays a pivotal role in the land registration process, which is essential for securing land tenure and facilitating land-related transactions.
- The integration of Geographic Information Systems (GIS) to land registration further improves the precision of spatial data, while automated workflows significantly reduce processing times.
- This presentation discusses the importance of real-time field inspection reporting within the context of land registration, focusing on the Land Registration Division (LRD) of the Lands Commission.

Problem Statement

- **Current key Issues with land registration in Lands Commission(LRD):**
- Delays in manual report submission (weeks → months).
- Inaccurate data due to paperwork errors.
- Filed inspectors to spend considerable time documenting findings and writing of the report
- The turnaround time is affected for processing registration application.

Objectives

The key objective is to enhance the efficiency and accuracy of the land registration process through the implementation of real-time field inspection reporting by the Lands Commission.

Specific objectives to be achieved are to;

i. Ensuring that information gathered during field inspections is both accurate and current, thereby minimizing delays in submitting field inspection report.

ii. Reducing the time required for land registration by enabling immediate reporting and processing of inspection results through mobile devices.

iii. Promoting better collaboration among landowners, inspectors, and the Lands Commission through real-time updates and feedback mechanisms.

iv. Facilitating data accessibility and collaboration in a centralized systems.

Significance of study

- The significance of leveraging real-time field inspection reporting in the land registration process, particularly in the context of the Lands Commission, can be outlined as follows:
- This leads to quicker turnaround times for registration and reduces the backlog of applications, ultimately improving service delivery.
- Real-time data collection minimizes the chances of errors and discrepancies in land records. This accuracy is crucial for maintaining the integrity of land ownership and preventing disputes, thereby fostering trust in the land registration system.
- It can lead to reduced operational costs for the Lands Commission. Fewer resources may be needed for follow-up inspections and corrections, allowing for better allocation of funds and personnel.
- It can serve as a case study for the successful integration of technology in public sector processes, encouraging further innovation and modernization within the Lands Commission and other governmental agencies.

Land registration process

- The land registration process in Ghana is a structured procedure governed by legal requirements to ensure secure ownership and minimize disputes.
- The process involves several key steps, including field inspections, which play a crucial role in verifying the authenticity and suitability of the land.
- As part of the efforts to confirm the physical condition of parcels submitted for title registration, the Lands Commission conducts field or site inspections leading to a major decision.
- These inspections are essential to verify that the actual condition of the land aligns with the documentation provided.
- This process ensures that the location and description of the land correspond accurately with what has been submitted, providing assurance that there are no discrepancies between the documentation and the physical property.

Field inspection in land registration process

Field inspections are applied for a variety of purposes regarding land registration.

- Verification of land boundaries: The inspection helps confirm whether the physical boundaries of the land are as described in the submitted documents.

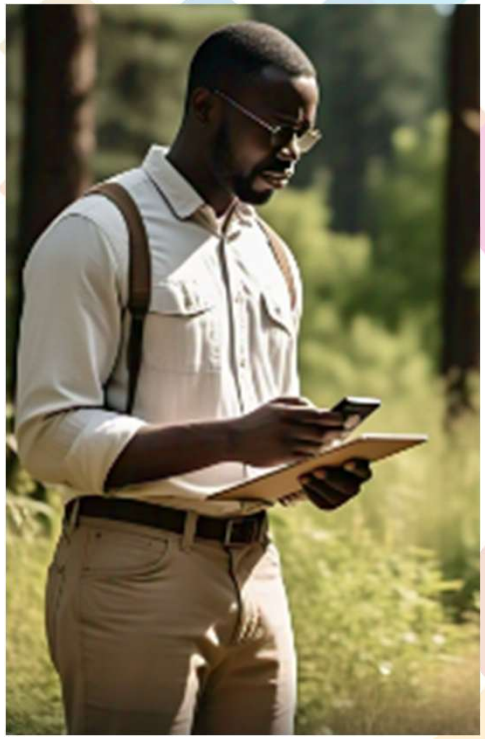
- Land Condition Assessment: Assessors check whether the land can serve its intended purpose, be it residential or commercial, among other uses, and also check for any environmental concerns.

- Prevention of Fraud: By conducting on-site assessments, officials can identify potential fraudulent claims or discrepancies in ownership.

These inspections are vital in ascertaining that all transactions are valid and buyers receive clear titles free of disputes.

Real-Time Field Inspection Reporting

- This activity refers to the process of collecting, analyzing, and disseminating data from field inspections as they occur, rather than relying on traditional methods that involve delayed reporting and data entry.
- In the context of land registration, this approach utilizes technology to enhance the efficiency and accuracy of inspections related to land parcels.



REAL-TIME FIELD INSPECTION REPORTING IN LAND REGISTRATION

- This section discusses the process of collecting, analyzing, and disseminating data from field inspections as they occur.
- This leverages technology to improve the efficiency and accuracy of inspections related to land parcels.

The key characteristics of this approach include:

- Immediate Data Collection: Data is gathered on-site without delay.
- Instant Data Transmission: Information is transmitted in real-time to relevant stakeholders.
- Technology Application: Advanced tools and software facilitate the inspection process.
- Automated Reporting: Reports are auto generated reducing manual effort and work.
- Better Communication: Clear communication channels are made for timely information to each concerned party.
- Data Analysis and Decision Making: Real-time data analysis is performed for better decision-making.
- Feedback Mechanisms: There is a mechanism to provide feedback about the inspections for further improvement.
- This modern approach to field inspection reporting is crucial for ensuring that land registration processes are both efficient and reliable.

Field inspection reporting manual workflows

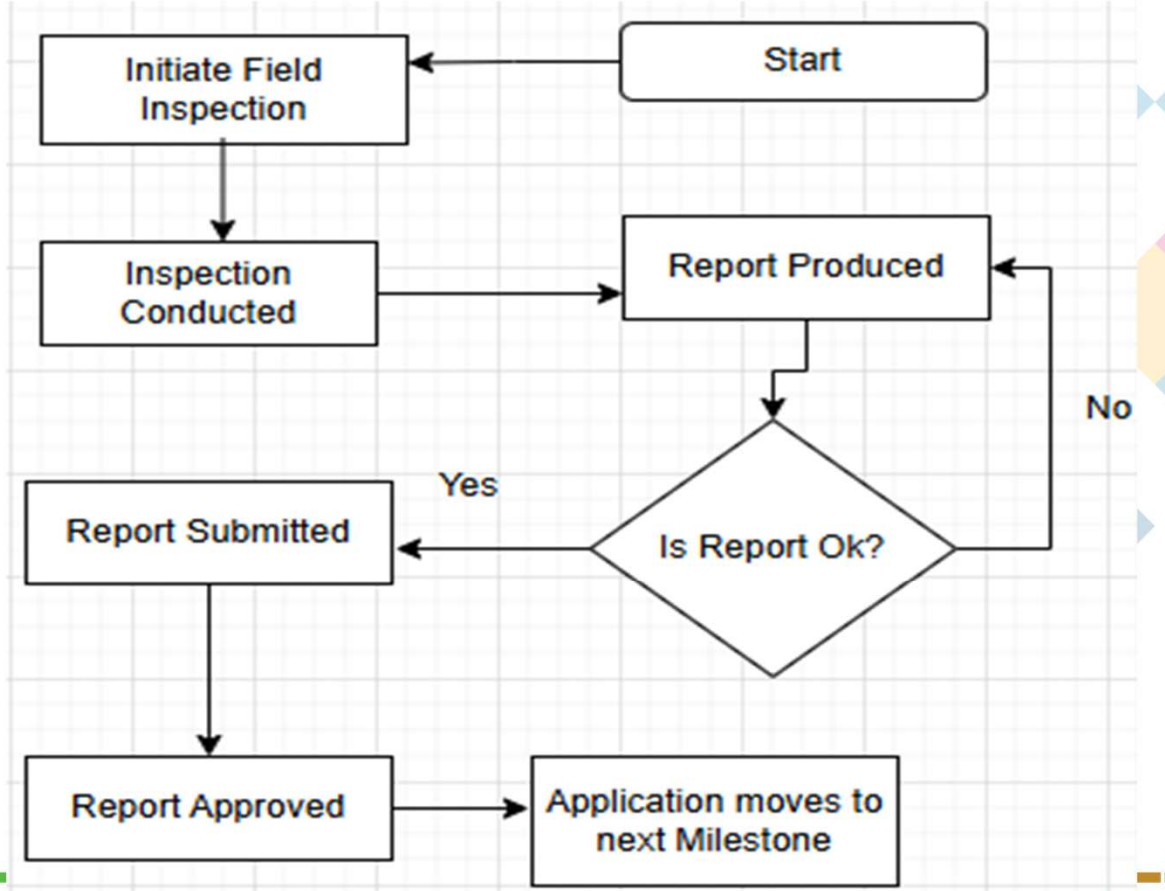


Figure 1

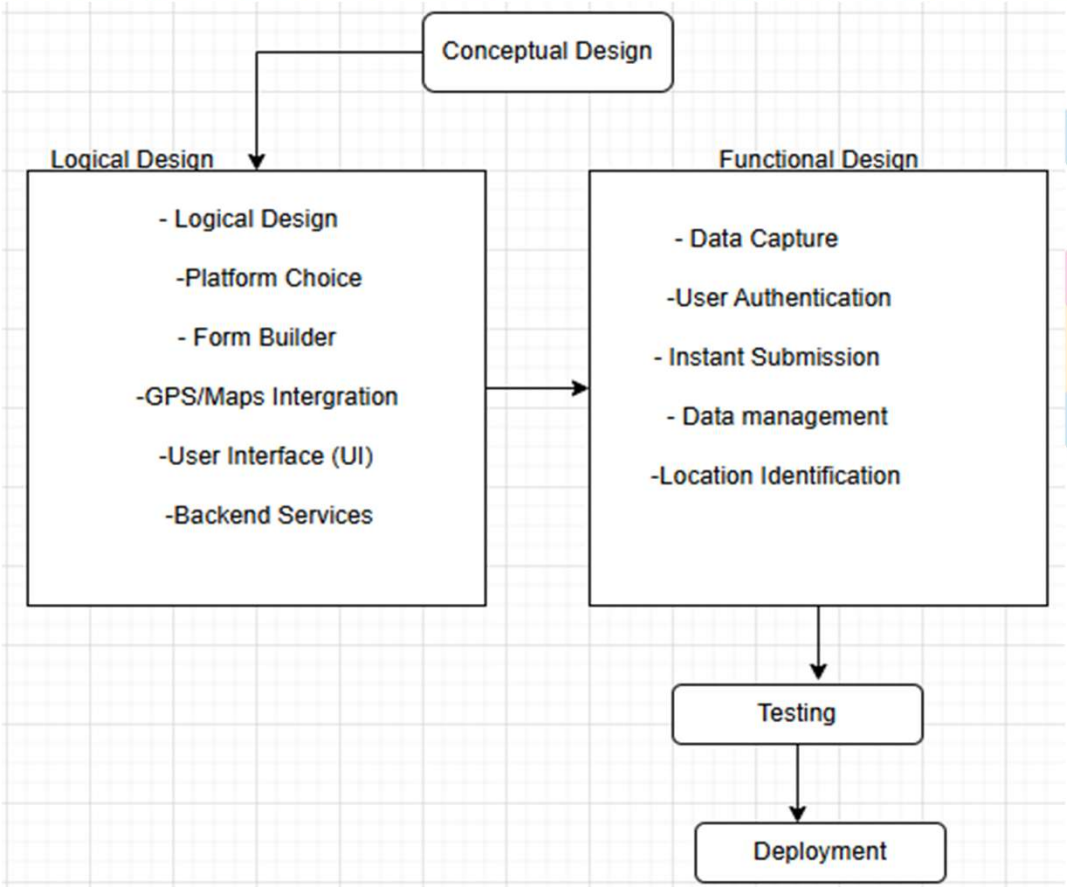
Delays in field inspection reports

- Delaying report submissions can be for reasons other than the length of time it takes to compile and submit the report.

Here are some essential factors that may cause delays:

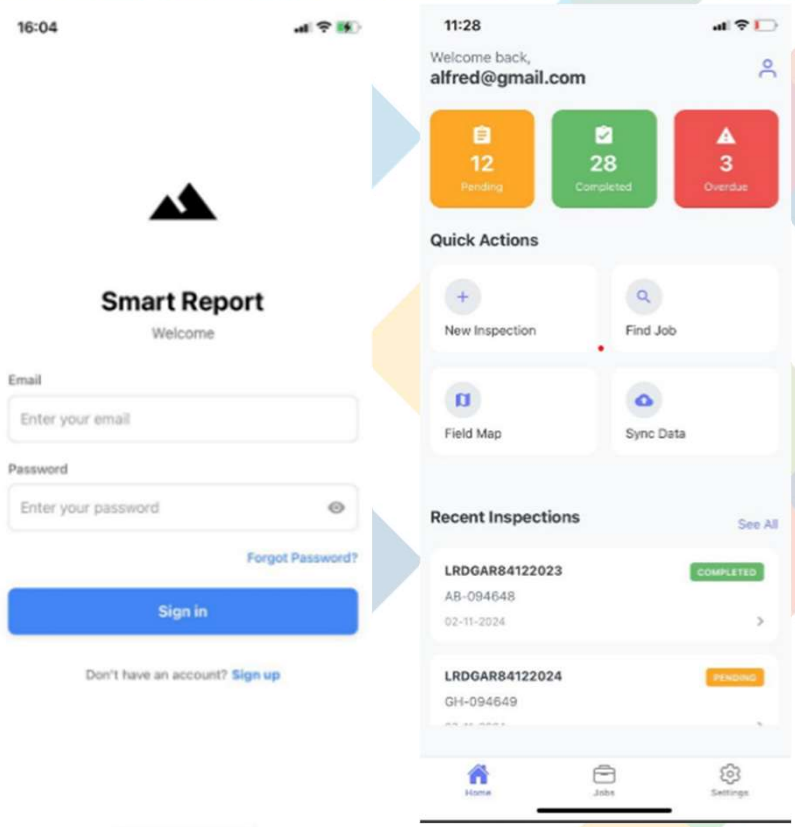
- Laziness on the part of field officers. The tendency of neglecting the writing of the report when back from the field.
- Lengthy approval processes for report drafts can delay final submission.
- Inefficient bureaucratic procedures may slow down necessary sign-offs or documentation processing.
- Issues with software or hardware used for data analysis and report writing can cause significant delays.
- Data loss due to technical failures may require re-collection of information.
- Burnout among team members due to excessive workload can lead to decreased productivity and delays.
- In light of the identified delays, the proposed solution is the development of an application known as the Smart Report, which takes us to the process of creating and designing an application.

Design and development of inspection app- Smart Report



Functions and capabilities of the Smart Report

- The mobile app developed was designed using react native framework with PHP for backend.
- The mobile app (**Smart Report**) opens/runs on mobile devices with a user login screen for which a user has to authenticate by providing username and password.
- Querying for application details using job number:
- When login is successful, the user (field officer) will have access to a dashboard displaying all applications assigned to him with a drop-down of the job numbers.
- If a job a number is selected, all other details of the application can be obtained with a search button.



Login page and dashboard of Smart Report

- Converting the centroid of the parcel:

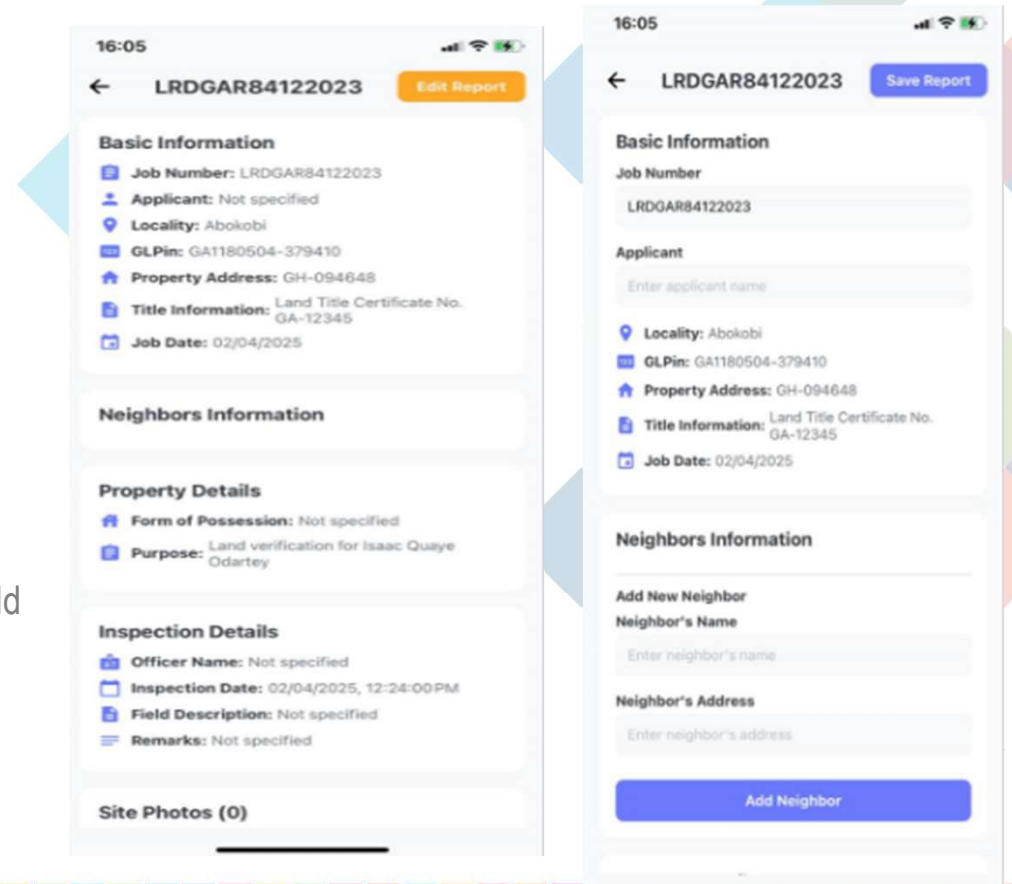
The centroid of the parcel submitted for registration which is termed Ghana Land Parcel Identification Number (GLPIN) is converted into geographical coordinates of latitude and longitude.

- Locating application location on a map:

The geographical coordinates are used to locate the application on Openstreetmap (OSM).

- Adding field data:

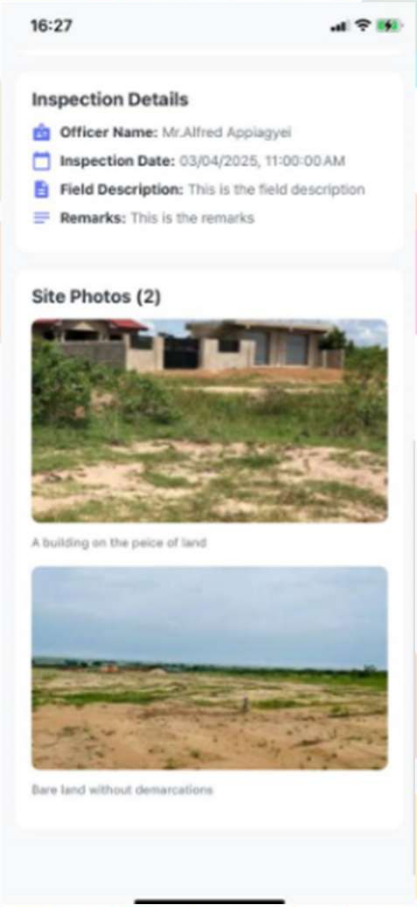
The other field data of the parcel/property/land can be added by the field officer and submitted to a database.



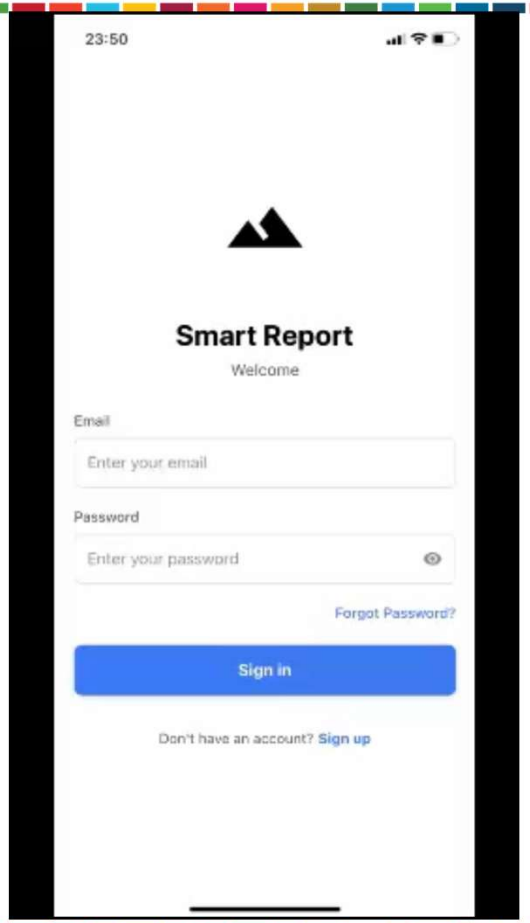
- Taking picture of property/parcel/site:

Images of the parcel/property/land can be taken and converted to pdf for attachment to the selected application.

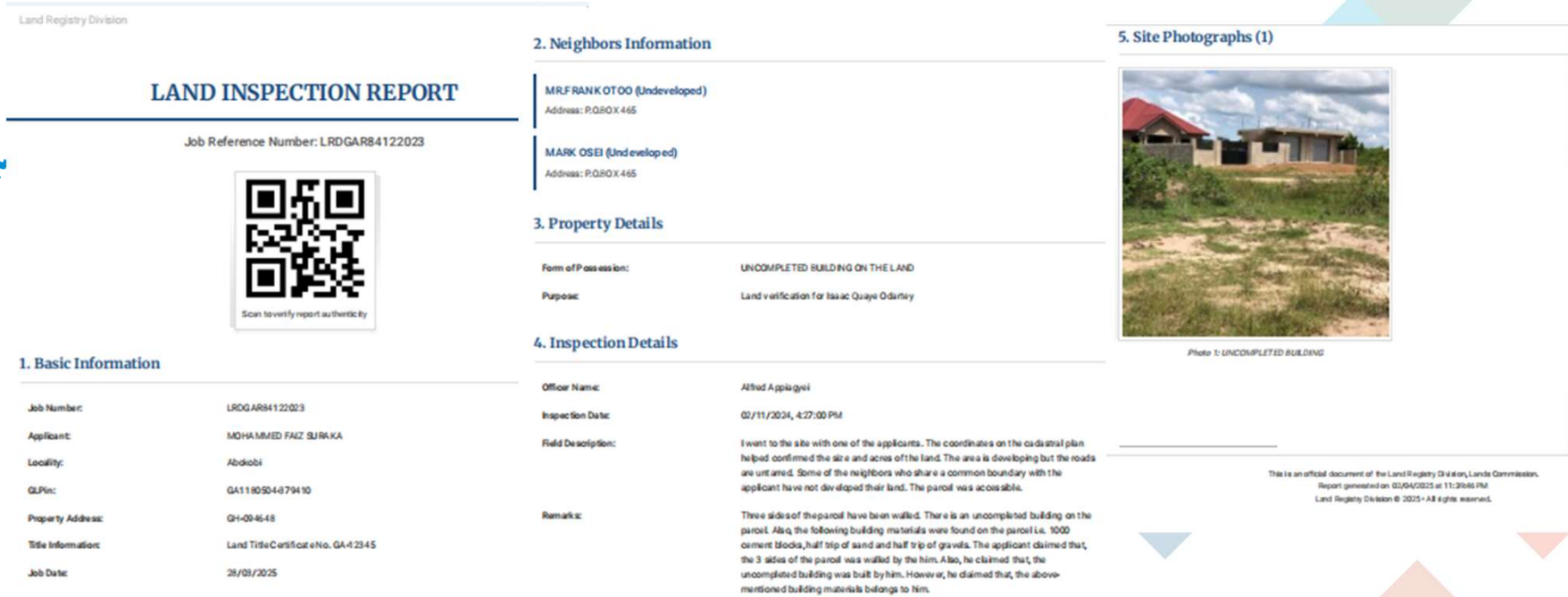
- Each picture is identified with a unique description (caption)



Smart Report Demo


23:50
Smart Report
Welcome
Email
Enter your email
Password
Enter your password
Forgot Password?
Sign in
Don't have an account? Sign up

Smart Report- Output



Land Registry Division

LAND INSPECTION REPORT

Job Reference Number: LRDGAR84122023

Scan to verify report authenticity

1. Basic Information

Job Number:	LRDGAR84122023
Applicant:	MOHAMMED FAIZ SURAKA
Locality:	Abokobi
GLPin:	GA11805-4879410
Property Address:	GH-094648
Title Information:	Land Title Certificate No. GA-12345
Job Date:	28/03/2025

2. Neighbors Information

MR.F RANK OTOO (Undeveloped)
Address: P.O.BOX 465

MARK OSEI (Undeveloped)
Address: P.O.BOX 465

3. Property Details

Form of Possession:	UNCOMPLETED BUILDING ON THE LAND
Purpose:	Land verification for Isaac Quaye Odartey

4. Inspection Details

Officer Name:	Alfred Appiagyei
Inspection Date:	02/11/2024, 4:27:00 PM
Field Description:	I went to the site with one of the applicants. The coordinates on the cadastral plan helped confirmed the size and acres of the land. The area is developing but the roads are untarred. Some of the neighbors who share a common boundary with the applicant have not developed their land. The parcel was accessible.
Remarks:	Three sides of the parcel have been walled. There is an uncompleted building on the parcel. Also, the following building materials were found on the parcel i.e. 1000 cement blocks, half trip of sand and half trip of gravels. The applicant claimed that, the 3 sides of the parcel was walled by the him. Also, he claimed that, the uncompleted building was built by him. However, he claimed that, the above-mentioned building materials belongs to him.

5. Site Photographs (1)

Photo 1: UNCOMPLETED BUILDING

The output is the combination of the initial application details and the field data

Benefits of the Smart Report App on Land Registration at the Lands Commission

- By leveraging technology, field inspectors can now collect data on-site using mobile devices or tablets.
- This data is then transmitted in real-time to the LRD, where it is processed and incorporated into the land registry database.
- This seamless transfer of information ensures that the records remain current and reflective of the latest property developments.
- Moreover, the use of real-time field inspection reports enhances the accuracy and reliability of land registration.
- The digital format allows for standardized data collection, eliminating the inconsistencies that can arise from manual transcription.
- Additionally, inspectors can attach photographs, GPS coordinates, and other relevant documentation directly to the report, providing a comprehensive and verifiable record.
- The benefits of this approach extend beyond the LRD itself.
- Improved efficiency in land registration translates into enhanced service delivery for citizens, as the process becomes faster and more transparent.
- Additionally, the availability of up-to-date and accurate land ownership records reduces disputes and conflicts over property rights, contributing to social stability and economic growth.

Conclusion

- In summary, real-time field inspection reporting revolutionizes the way land inspections are conducted by leveraging technology to ensure that data is collected, processed, and shared instantly.
- Adopting real-time field inspection reporting through a mobile app represents a transformative and innovative approach to land title registration in Ghana and addresses the challenges faced by traditional field inspection and sets a foundation for future advancements in this critical sector. The relevant SDGs related areas are as follows;
- SDG 8: Decent Work and Economic Growth, the mobile app enhances land registration efficiency, leading to increased investments and job creation. It directly supports economic activities and productivity, making it the most closely related goal.
- SDG 11: Sustainable Cities and Communities, real-time data capture improves urban planning and land management, contributing to sustainable and resilient communities. This goal is crucial for efficient land use and urban growth.
- SDG 9: Industry, Innovation, and Infrastructure, the app represents an innovative approach to land registration, fostering technological advancement and process improvements.
- By harnessing technology for immediate data capture and processing, the Lands Commission can significantly improve its operational accuracy, efficiency and transparency, ultimately benefiting all stakeholders involved in land administration.

The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG

2nd relevant SDG

3rd relevant SDG

SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

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