

Innovations for Africa Digital Census Mapping (Enumeration Area Delineation-EAD) - Nigeria and Sierra Leone

Digital EAD: The Foundation for Modern Governance in Africa

Presented by: Milsat Technologies Limited



AfricaGIS 2025



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Geographic Information and Uneven Policies

The Challenge

Policies are uneven in Africa because core geographic information is incomplete, inconsistent, or outdated

.even though governments have intent.



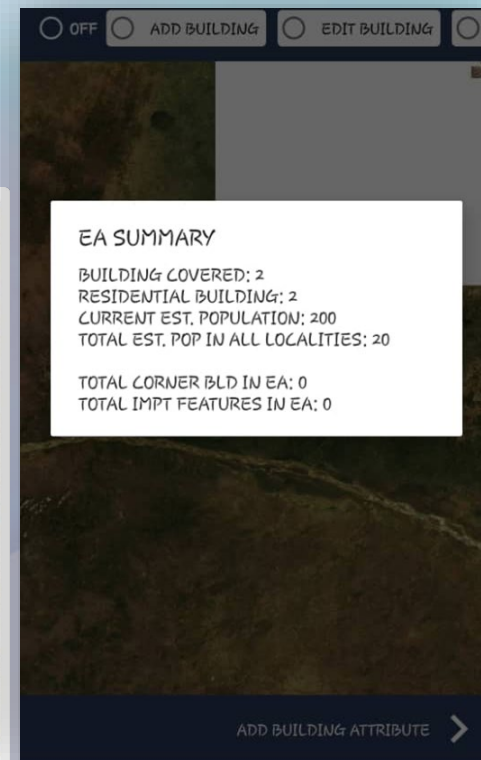
The Solution- *Digital Baseline Mapping*

Before a government can plan, it must first see its population and settlements with accuracy. *Digital Enumeration Area Demarcation (EAD)* enables countries to track people's locations, living conditions, and needs consistently and



What is EAD?

Enumeration Area Demarcation divides the entire country into smaller units with clearly defined boundaries, called Enumeration Areas (EAs). These areas have no overlap or gaps and determine an enumerator's workload during censuses and surveys.



EAD The Right Way: The EADPad and Processes

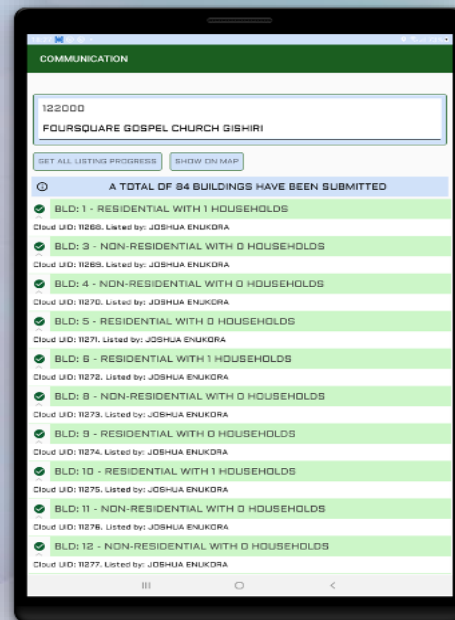
A native mobile app built to meet all field operational requirement for enumerators, supervisors and quality assurance

Field Software Tools

- ICU - Imagery Compression and Upload
- EAD Web Portal
- EAD Pad (Mobile App)
- Quality Assurance Pad (Mobile App)

Field Process (Summarized)

- Imagery preparation and upload
- Functionary profiling
- Enumeration Area creation
- Data verification and approval
- Data storage



EAD The Right Way: Offline Digital Basemaps

Basemaps guide field actions. EADPAD bulk-compress procured and geo-referenced based map imageries for lighter and faster streaming during field activities

- **Compression:** Reduction of imagery size by 70% - 90%
- **Upload and Stream:** Leverage AWS s3 bucket and mapbox to store and stream imageries
- **Requirement:** Windows desktop/laptop and internet facility

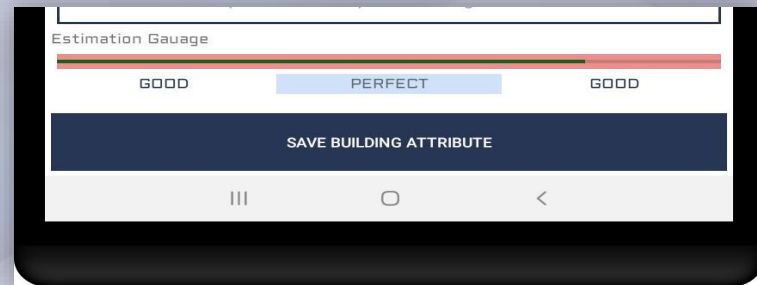
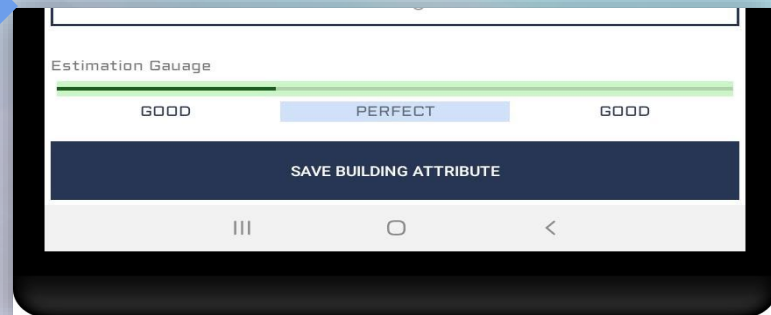


EAD Pad: The Mobile App

Statistical Data and Geographic Reference in one place, collected in a single action

Data Entry & Logic

- **Geometric and statistical data entry:** Enumerators can capture and relate geometrical and statistical data.
- **Geospatial and statistical logic and relationships:** Create skips and logics across geospatial and statistical data entries
 - Stats to Geo: Notification to create an EA polygon when total household statistics in between 50 to 100 count
 - Geo to GeoNotification when two EA polygon overlaps
 - Stats to Stats: if building use is commercial *skip to next*
- **Unique Coding:** Leverages spatial and stistical entry to generated serial numbering which starts and end within an EA



EAD Pad: The Mobile App

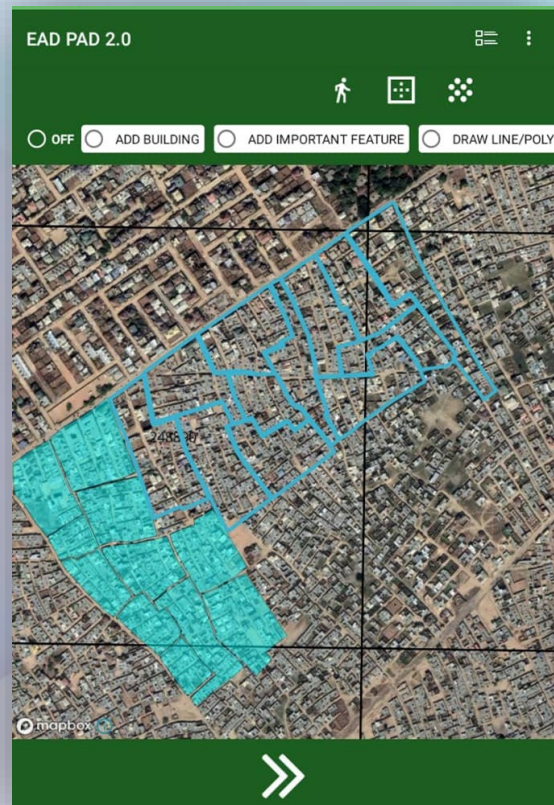
Imagery and Basemap

Basemap provisioning: All field functionaries can provision his/her smart device with recent basemap imagery, important annotations (road names, landmarks e.t.c), area of assignment and locality descriptions.

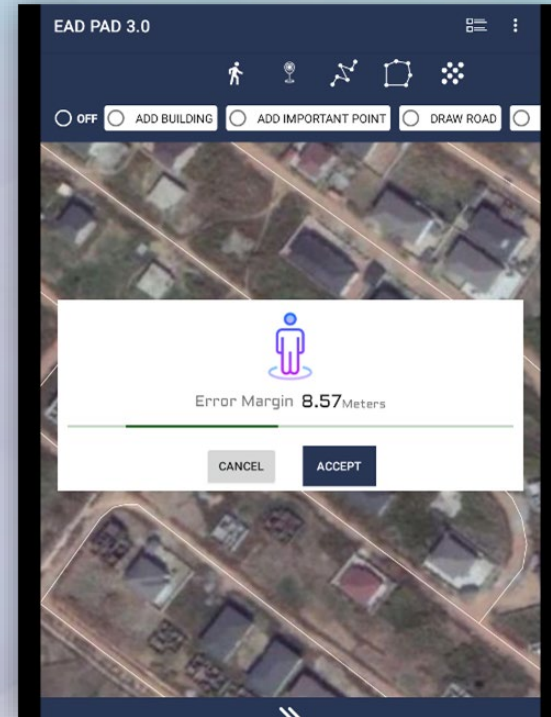
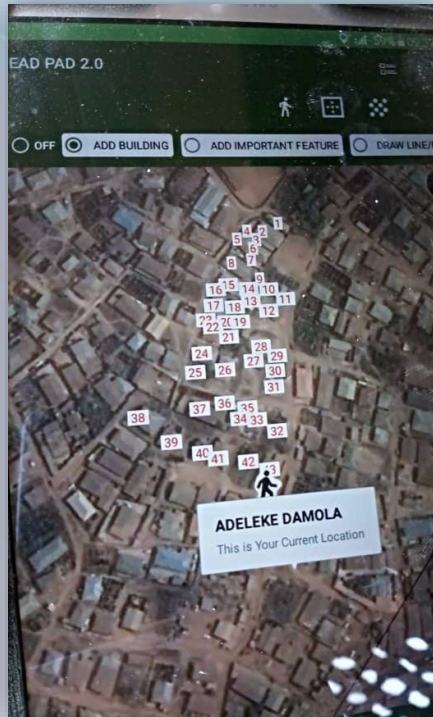
Basemap patching: During field work, field functionaries can discover blurry imageries and request for an update patch

Locate me: A simple feature designed to support field functionaries with auto-map orientation

Direct me: Routing system designed to support field functionaries in locating their area of assignment.



EAD Pad: The Mobile App



EAD Web Portal

End to end management of people, data and working tools.

People Management

Profiling: Provide a robust profiling of all designations engaged in the project

Task Manager: Assign and manage tasks across designation

Performance: Provide statistical record of field worker's performance across project timeline

Team tagging: Provide access to pair field enumerators

Tool Management

Tools Profiling: Profile all assets such as tablet, laptop and power banks

Tools Allocation: Digitally allocate tools to each profiled designation, records date of collection and retrieval

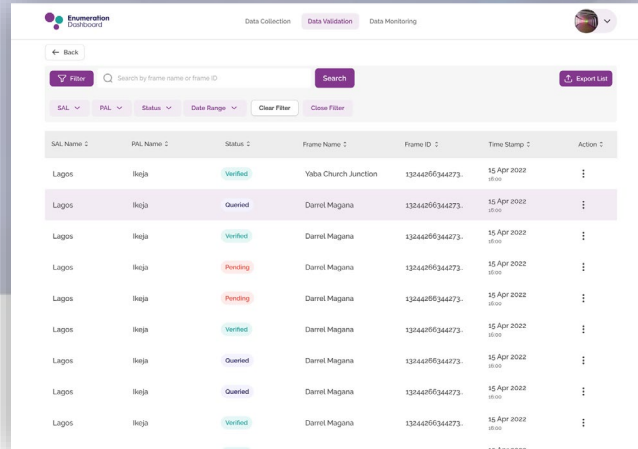
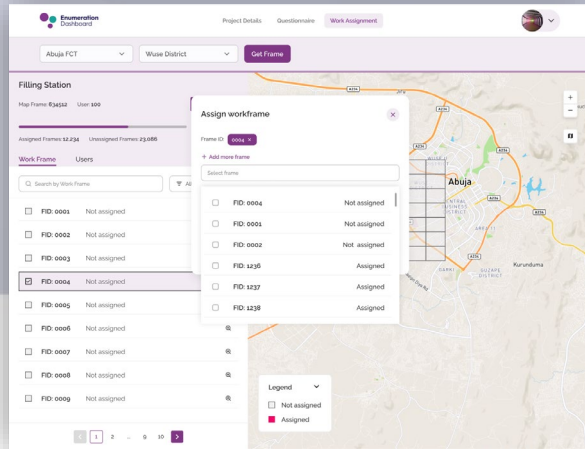
Tool Accountability: Provide statistical record of all tools used on and off field, its collection and retrieval status

Data Management

Questionnaire: Create questionnaires with geospatial and statistical capability

Data filter: filter data with up to 4 layer boundaries, Verification: Verify geospatial and statistical data consistency

Coverage and Completeness: Track the geographical completeness of EA captured by field enumerators per hour/ day



The Governance Transformation

What changes when a country finally has accurate, verified EA boundaries?

Governments can answer questions that once relied on assumptions:

- Where are underserved communities?
- Which settlements are expanding fastest?
- How many households truly exist in each ward?
- Which locations should get new clinics, schools, boreholes, or energy access
- Which areas are most climate-vulnerable?



Proven Success: Nigeria & Sierra Leone

Two national systems — different contexts, same breakthrough: clarity.

Nigeria

Complete EAD dataset, powering

- Support Digital Postcode design
- Secure private sector data sharing
- Regional demographic and housing survey
- International and Continental donor data projects
- Census preparation

Sierra Leone

Ongoing EAD mapping, positioned to enable

- Nationwide Census
- Support Digital Postcode design
- Better Settlement classification
- Social and health planning across the six districts
- Data unification across all demographic data sources



The Opportunity for Your Country

Using the EAD Pad can transform your country's planning capability, just as it is doing in Nigeria and Sierra Leone.

Clear Settlement Picture

A comprehensive view of all settlements and households across your nation.

Efficient Census System

More efficient census and survey operations with verified boundaries.

Better Service Delivery

Improved planning across ministries for healthcare, education, and infrastructure.

International Data Standard

Enhanced donor alignment, monitoring, and private-sector innovation opportunities.

Africa does not lack data. What it lacks is the **right spatial structure** to make data work across governments, donors, and markets. Digital EAD provides that structure; clearly, consistently, and sustainably.

The system is proven. Your country can benefit next.



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