Tekuwami SaaS Platform Overview Overview

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Corporate SaaS Strategy Document – Tekuwami

Business & Product Planning

Vision & Problem

1

Vision:\
Tekuwami exists to empower institutions with intelligent, scalable, and secure digital infrastructure for managing data collection, geolocation, workflows, and institutional compliance.

2

Problem Solved:\
Government agencies, NGOs, and public service organizations face challenges in managing decentralized data collection, permissions, and geospatial reporting. Tekuwami offers a unified SaaS platform to streamline this process.

Business & Product Planning

Target Users

Government ministries

ministries (e.g., Agriculture, Health, Health, Urban Planning)

United Nations agencies

agencies (e.g., UNDP, WFP, FAO, UNICEF)

NGOs

working in development and humanitarian sectors

Municipal institutions

managing field agents

Academic institutions

and research institutions collecting field data

Business & Product Planning

Pricing Model

Licensing Tiers:

- Basic Institution Tier: Up to 5 users, limited forms, limited analytics
- Professional Tier: Unlimited users, advanced analytics, geospatial tools
- Enterprise Tier: Custom integrations, priority support, data isolation zones

Billing Cycle: Annual or quarterly subscription with digital license keys issued via email.

Business & Product Planning

Competitor Analysis

Platform	Tekuwami Advantage
KoboToolbox	Stronger workflow automation + geolocation
ODK	Easier user onboarding + SaaS management
ArcGIS Survey123	More affordable, tailored for institutions
Custom-built apps	Lower cost, scalable SaaS model

Business & Product Planning

Success Metrics

1. **Licensed Institutions**
   Number of licensed institutions onboarded
2. **Active Users**
   Monthly active users (field agents & admins)
3. **Forms Submitted**
   Forms submitted per month
4. **Client Retention**
   Client retention & license renewal rate
5. **Revenue Growth**
   Revenue growth per quarter

Technical Architecture Planning

Tech Stack

- Frontend: React (Admin + Portal) Portal)
- Mobile App: Flutter (for field agents and mobile admins)
- Backend: Firebase Functions + Firestore
- Auth: Firebase Authentication
- Email: SendGrid (API + email templates)
- Payments: Stripe (for license payments)

System Design

- Web & mobile clients talk to Firebase backend
- Firestore for real-time updates and role-based data
- Cloud Functions for automation (e.g., create users, email license keys)
- Firebase Hosting for web apps

User Roles

- Super Admin: Full control over institutions, licenses, users
- Institution Admin: Manages users, forms, and local data
- Field Agent: Mobile user for on-the-ground data collection

Security Model

- Role-based Firestore rules (Super Admin vs. Institution Admin vs. Field Agent)
- Cloud Functions used for sensitive tasks (credential generation)
- Password reset flow + email auth
- Secure hosting via Firebase + HTTPS enforced

Multi-Tenant Strategy

- Each institution has a scoped Firestore document (e.g., /institutions/{institutionId})
- Data collections scoped under each institution
- Institution-specific authentication and role assignment

Product Design & Prototyping

Wireframes

- Initial UX sketches for:
  - Super Admin dashboard
  - Institution portal
  - Mobile agent workflow (login > form > submit)

Design System

- Color Palette: Yellow & Black (Brand)
- Typography: Bold headings, modern UI fonts
- Icons: Lucide / Heroicons
- Components: Tailwind CSS + custom layouts for each role

User Flows

- Institution requests license > pays > gets email access
- Admins create field agents via dashboard
- Agents log in > fill dynamic form > submit with geolocation
- Data appears in admin dashboards in real time

Prototype

- Built-in Vite + Flutter environments. Prototypes visible via Firebase Hosting. Screenshots shared in pitch decks.

Infrastructure & Project Setup

Git Repository

- Monorepo hosted locally and synced to GitHub (suggested) (suggested)
- Folder structure: /functions, /admin, /portal, /flutter_app

Analytics Tools

- Google Analytics (for web usage)
- Firestore usage monitoring
- Optional: Mixpanel or PostHog for deeper tracking

CI/CD Pipelines

- Firebase CLI for deployments
- Play Store release builds with version tracking
- GitHub Actions (suggested) for auto-deploy on push

Email Infrastructure

- SendGrid integrated in Firebase Functions
- Used to send license credentials + onboarding messages

Legal & Compliance Readiness

Privacy Policy

1. Explains what data is collected, how it’s stored, and who and who owns it
2. EU and GDPR-compliant structure in progress

Legal & Compliance Readiness

Terms of Use

Clear conditions for license use, user responsibility, and platform limits

Protects Tekuwami from misuse or unauthorized redistribution

Legal & Compliance Readiness

Security Compliance

SSL enforced via Firebase Hosting

Plans for adding App Check (anti-abuse)

Firestore rules prevent unauthorized reads/writes

Planned Upgrades: We aim to meet international security standards such as:

- ISO 27001: Information Security Management Systems
- GDPR: European Union data protection compliance
- SOC 2 (Type I/II): For institutional trust and system controls
- Audit Logging: For traceability of access and actions
- Data Residency: Compliant storage within jurisdiction zones (future)
- Penetration Testing: Annual security audits by external firms

Post-Document Execution Roadmap

Final QA & Testing

End-to-end testing of Admin, Portal, and Mobile apps

Edge case testing: offline mode, invalid access, form validation validation

Post-Document Execution Roadmap

Mobile App Deployment

1. Prepare signed Play Store bundle (AAB)
2. Upload app with description, screenshots, and listing

Post-Document Execution Roadmap

Beta Testing & Feedback

Share platform with 1–3 institutions

Monitor their usage, fix bugs, and collect improvement ideas

Post-Document Execution Roadmap

International Compliance & Audit

1

GDPR Policy

Finalize and publish full GDPR privacy privacy policy

2

Penetration Testing

Schedule penetration testing with certified provider

3

Audit Log Structure

Prepare internal audit log structure using Firestore + Firebase Functions Functions

Post-Document Execution Roadmap

Marketing & Outreach

1

Launch website

www.tekuwami.com.et

2

Send outreach emails

with product PDF and links

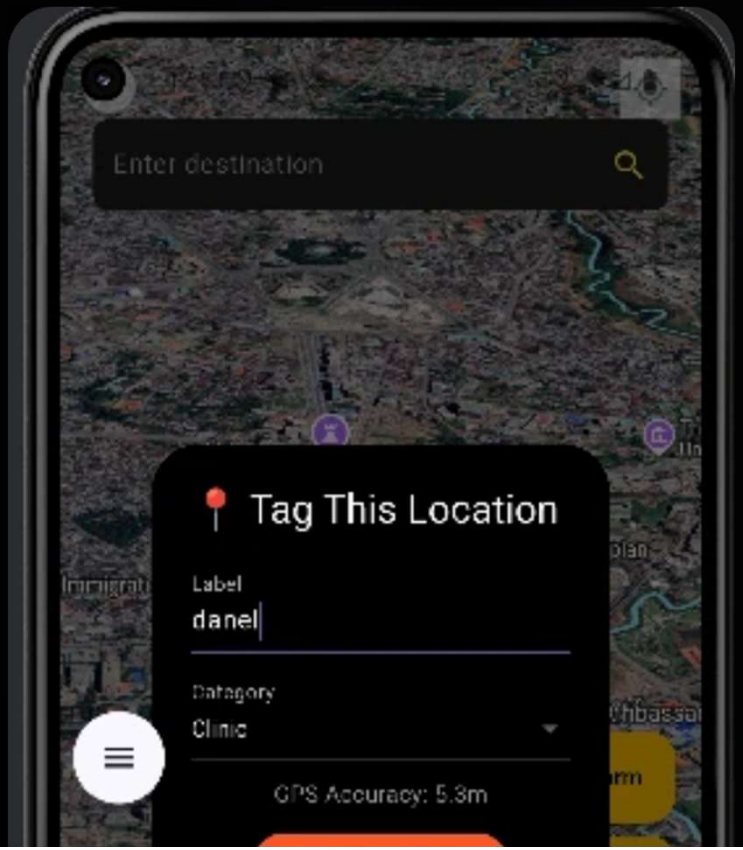
3

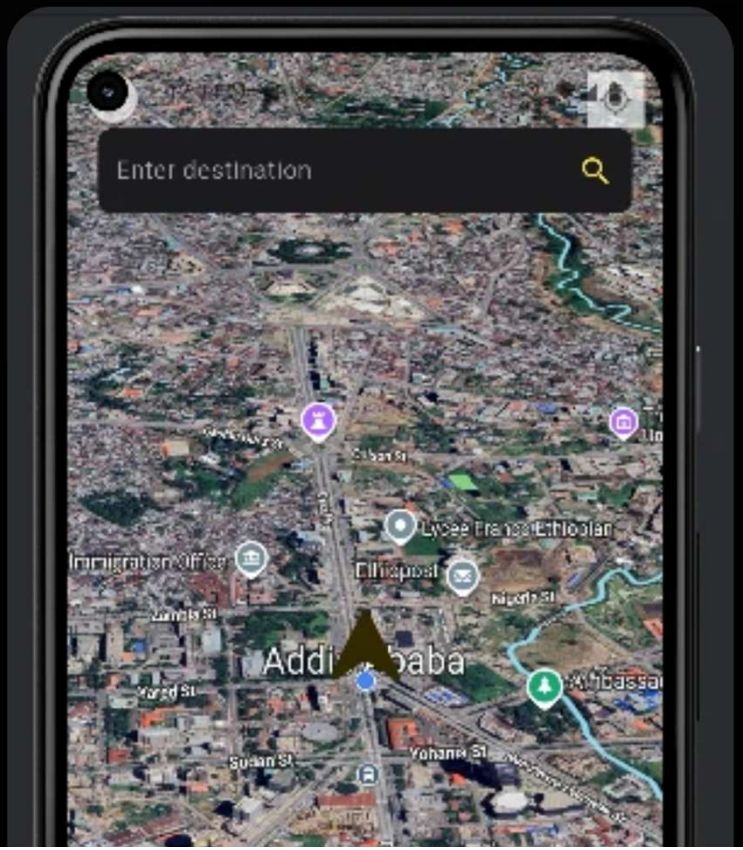
Offer live demo

booking to UN agencies, NGOs, and and institutions

Post-Document Execution Roadmap

Scaling Strategy





02

Tekuwami Security & Compliance Policy

Tekuwami Security & Compliance Policy

Introduction

Tekuwami is a multi-role SaaS platform built for government, NGO, and institutional data collection and compliance management. This document outlines the platform’s commitment to data security, privacy, and global compliance standards.

Data Protection Principles

We uphold the following principles in line with international frameworks such as GDPR and ISO 27001:

1 Lawfulness, Fairness & Transparency

Lawfulness, Fairness & Transparency

2 Purpose Limitation

Data is used only for the stated purpose

3 Data Minimization

We collect only what is necessary

4 Accuracy

Data can be reviewed and corrected by authorized users

5 Storage Limitation

Data is deleted upon request or by policy

6 Integrity & Confidentiality

Protected against unauthorized access or alteration alteration

Access Control

Role-Based Access:

- Super Admins: Full platform access
- Institution Admins: Scoped to their institution’s data
- Field Agents: Scoped to their assigned forms and data

Authentication:

- Firebase Authentication (email/password)
- Enforced password policies and reset flow
- Optional support for 2FA via Firebase extensions (coming soon)

Data Encryption

In Transit

All data is encrypted using HTTPS/TLS

At Rest

Firestore and Firebase Authentication encrypt data by default

Sensitive Fields

Email credentials and access tokens are never stored in plaintext

Infrastructure Security

1

Global Compliance

Hosted on Google Cloud (Firebase), which maintains global compliance standards

2

Protection Measures

App Check and domain validation to protect against against abuse and injection injection

3

Access Control

Firebase Security Rules tightly control read/write access by role

4

Admin Operations

Admin operations performed via Cloud Functions — never client-client-exposed

Data Privacy & Retention

1 **Data Ownership**

Institutions retain ownership of their data

2 **Data Privacy**

Tekuwami will never share or resell user data

3 **Data Management**

Institutions can request full export or deletion of their their data

4 **Data Encryption**

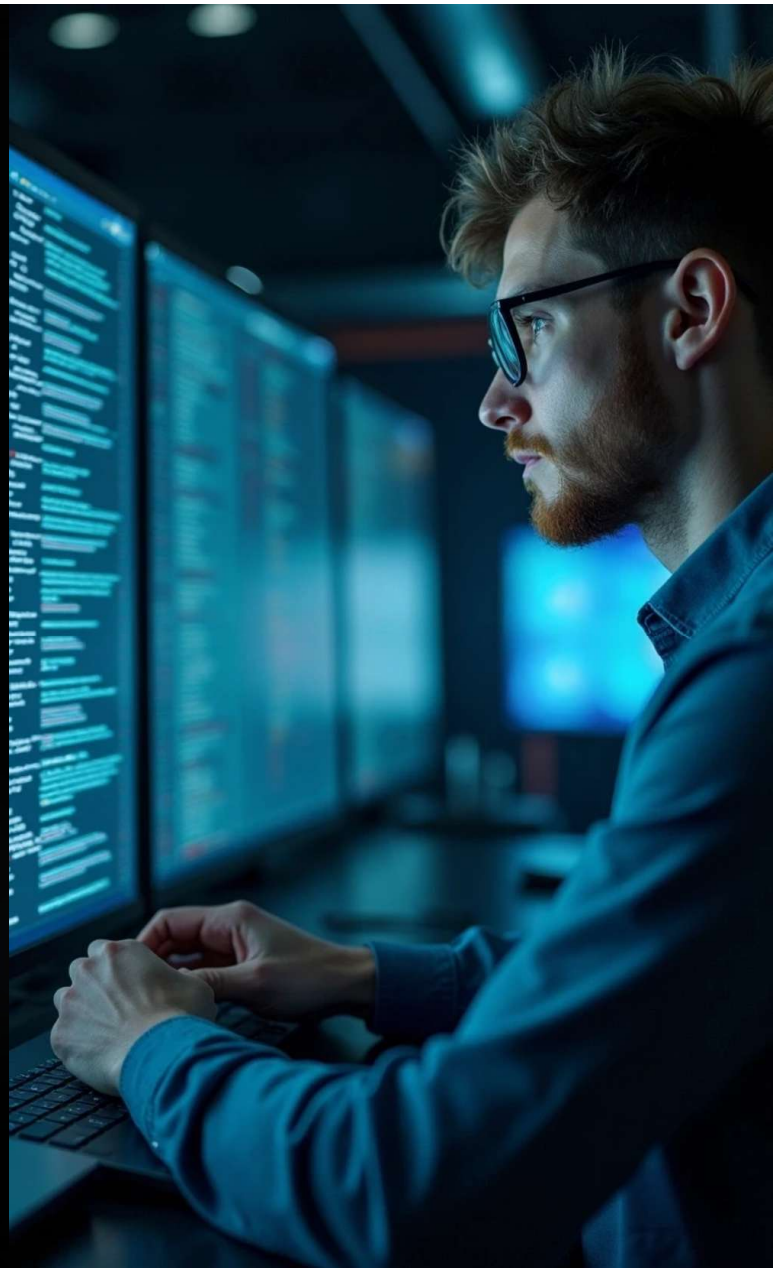
Field-level encryption and user data masking are in development

Incident Response Plan

Continuous monitoring via Firebase Logging and Alerts

In case of breach:

- Notify affected institutions within 72 hours
- Suspend unauthorized sessions
- Rotate access keys and credentials
- Full audit log review and patching



Compliance Commitments

We are actively working toward alignment with:

GDPR

EU Data Protection Regulation

ISO 27001

Information Security Management

SOC 2

Type I/II (System & Organization Controls)

Ethiopian Guidelines Guidelines

Data Protection Guidelines (where applicable)

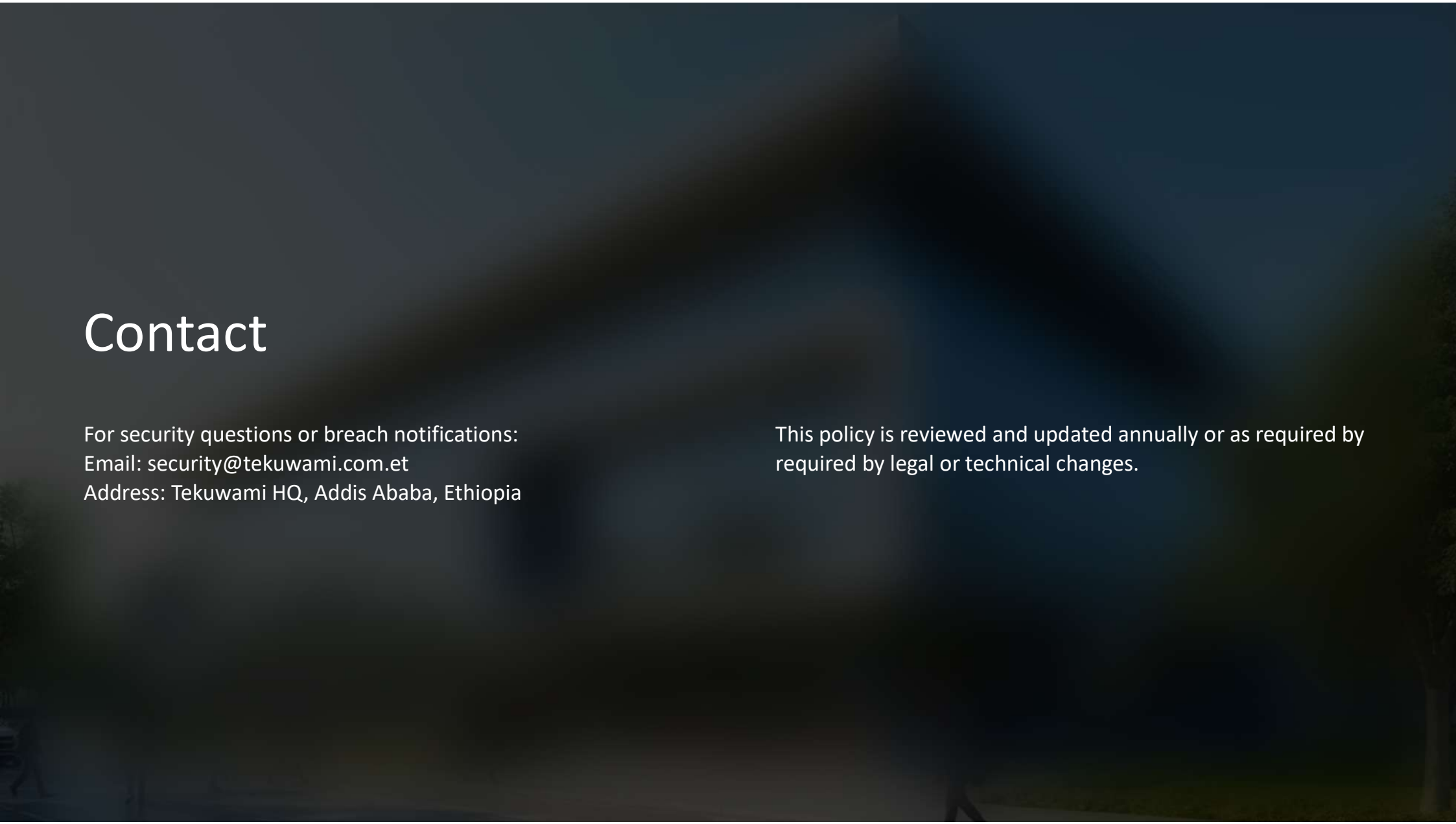
Planned milestones:

GDPR Audit

Complete GDPR audit – Q3 2025

Penetration Test

External penetration test & security audit – Annually starting 2026



Contact

For security questions or breach notifications:
Email: security@tekuwami.com.et
Address: Tekuwami HQ, Addis Ababa, Ethiopia

This policy is reviewed and updated annually or as required by required by legal or technical changes.

03

Tekuwami System Architecture Overview

Tekuwami System Architecture Overview

Overview

Summary

Overview

Tekuwami is a cloud-based, multi-role SaaS platform designed for institutions to securely manage field data collection, geolocation geolocation tracking, user workflows, and tiered access controls. It is optimized for scalability, data privacy, and real-time time synchronization across web and mobile clients.

This document outlines the technical architecture of the Tekuwami platform, detailing the system components, integrations, role-based interactions, and infrastructure layout.

Key Components

Technology

React + Vite + Tailwind CSS
- Hosting: Firebase Hosting
- Functions:
  - Create and manage institutions
  - Set pricing tiers and access levels
  - Generate user credentials via Firebase Functions
  - Monitor usage metrics and institutional activity

Technology

Flutter (cross-platform)
- Deployment: Google Play Store (Android), manual installs or future iOS support
- Functions:
  - Authenticate and log in
  - Fill and submit assigned forms
  - Capture geolocation coordinates
  - Upload offline data once online

Technology

React + Vite + Tailwind CSS
- Hosting: Firebase Hosting
- Functions:
  - Manage assigned users (field agents)
  - View submitted forms and geolocation data
  - Configure forms and submission workflows

Auth

Firebase Authentication (Email/Password)
- Database: Firestore (NoSQL, scalable, real-time)
- Functions: Cloud Functions for server-side logic (e.g. user creation, notifications)
- Storage: Firebase Hosting for static web content
- Security: Firebase Security Rules + App Check (planned)

Data Flow Summary

1 Authentication

• All roles log in through Firebase Authentication.
• Users are assigned a role (Super Admin, Institution Admin, Field Agent) via custom claims.

2 Role Access & Permissions

• Access to Firestore collections is scoped by institution ID and user role.
• Super Admins have access to all data.
• Institution Admins are scoped to their institution.
• Field Agents are scoped to the forms assigned to them.

3 Real-Time Sync

• Mobile and web clients communicate directly with with Firestore.
• Updates (form submissions, user creation, etc.) sync in real-time.

4 Secure Backend Operations

• Sensitive operations (user credential creation, license generation) are handled via Cloud Functions.
• All data transmitted over HTTPS.

Deployment Strategy

1

Web Apps Deployment

Web Apps (Admin & Portal):

- Built with npm run build
- Deployed to Firebase Hosting with firebase deploy –only hosting

2

Mobile App Upload

Mobile App (Flutter):

- Built with flutter build appbundle
- Uploaded to Google Play Store

3

Cloud Functions Deployment Deployment

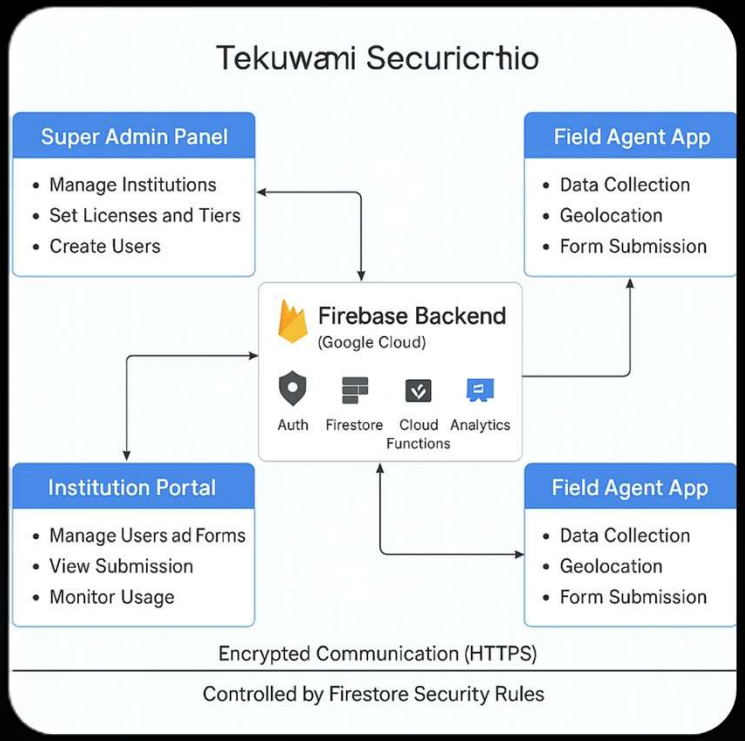
Cloud Functions:

- Deployed via firebase deploy –only functions

Planned Enhancements

Feature	Status	Target Completion
Firebase App Check	Planned	Q3 2025
GDPR-compliant Data Export	In Progress	Q3 2025
2FA Authentication	Planned	Q4 2025
Multi-language UI	Planned	Q4 2025
Penetration Testing + Audit	Scheduled	Q1 2026

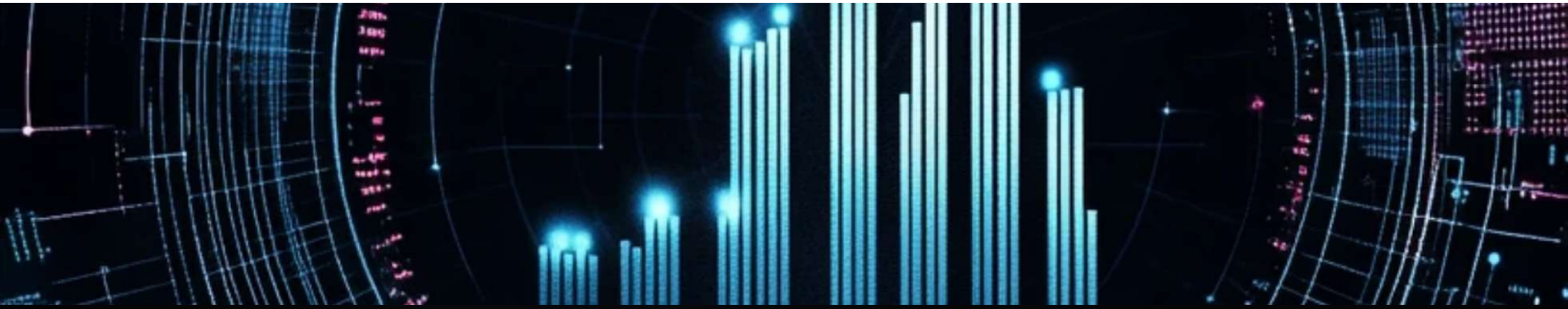
Summary



Tekuwami uses a modern, serverless, and secure architecture designed for institutions that require strong access control, data compliance, and mobile-first workflows. By leveraging Firebase, Flutter, and modular React apps, the platform is ready to scale across geographies and use cases in public sector, research, and humanitarian domains.

04

Tekuwami Data Flow & Role Permissions Matrix Matrix



Tekuwami Data Flow & Role Permissions Matrix

Overview

Overview

This document outlines how different user roles in the Tekuwami SaaS platform interact with data across the system. It defines access levels, CRUD permissions, and data flow responsibilities for each role — Super Admin, Institution Admin, and Field Agent.

The purpose is to ensure strict control over data access and institutional privacy in line with global compliance standards.
standards.

Defined Roles

Role	Description
Super Admin	Platform owner; manages all institutions, licenses, and users globally
Institution Admin	Manages only their institution’ s users, forms, and submissions
Field Agent	Assigned users responsible for field data collection using the mobile app

Permissions Matrix

Action / Resource	Super Admin	Institution Admin	Field Agent
View Institutions	✅	❌	❌
Create Institution	✅	❌	❌
Edit/Delete Institution	✅	❌	❌
View/Edit Own Institution	✅	✅	❌
Create Users	✅	✅ (within scope)	❌
Edit/Delete Users	✅	✅ (within scope)	❌

Data Submission Flow

1

Form Creation

Institution Admin creates forms in Firestore.

2

Form Assignment

Forms are assigned to Field Agents.

3

Agent Login

Field Agent logs into into mobile app and and sees only assigned forms.

4

Form Submission Submission

Agent completes the form and submits it — submission stored in submissions/ collection.

5

Data Access

Admin and Super Admin can view or export submission data.

Security Enforcement

1 **Firestore Rules**

ensure users can only access permitted documents based on their role and institution ID.

2 **Custom Claims**

in Firebase Auth determine if a a user is a Super Admin, Institution Institution Admin, or Field Agent. Agent.

3 **Cloud Functions**

execute operations that require elevated privileges (e.g. user provisioning).

This matrix is essential to protect institutional boundaries, prevent data leakage, and support audits, making Tekuwami trusted and trusted and compliant for global deployment.

05

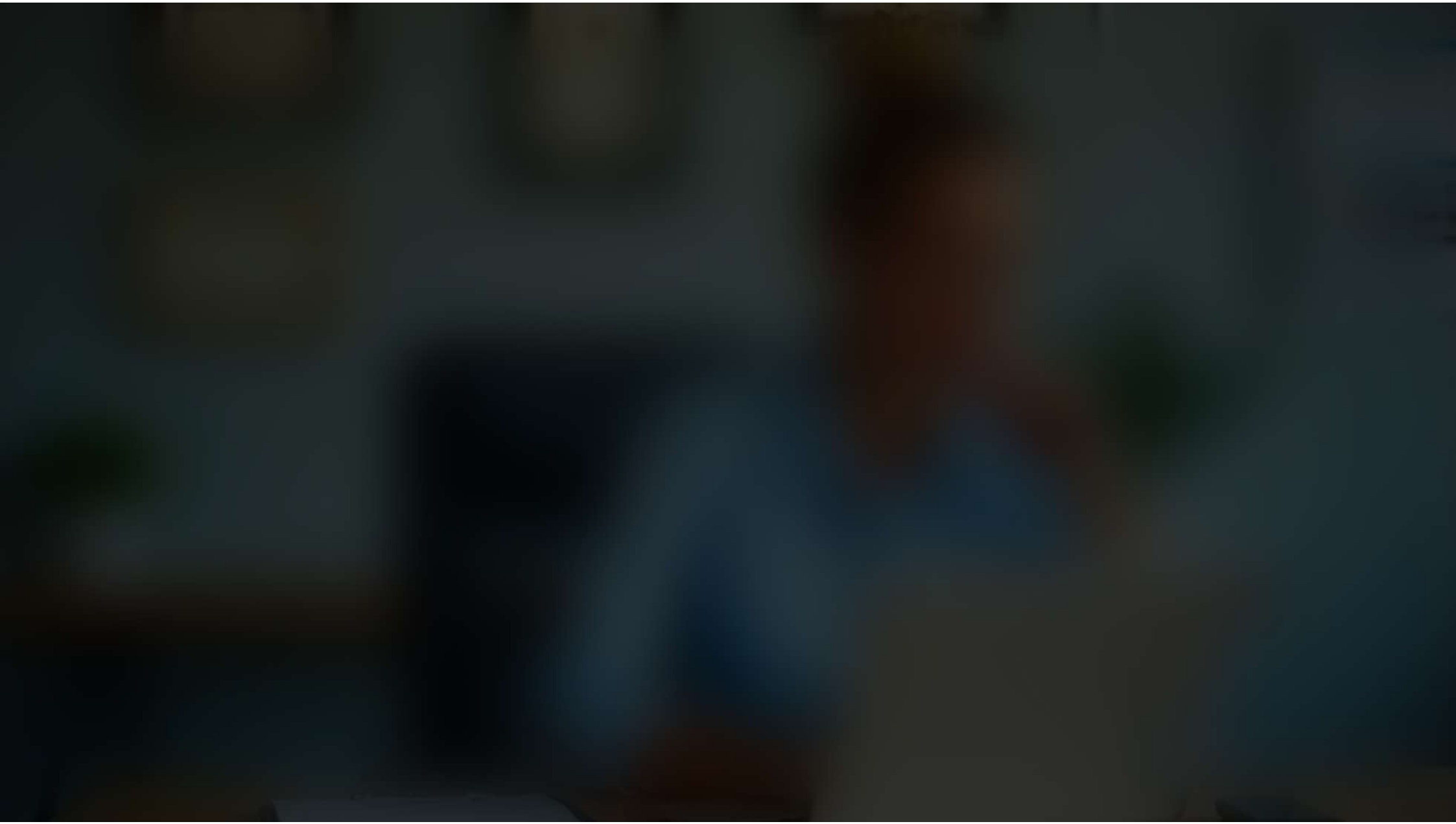
Tekuwami User Onboarding Manual (SOP)

Tekuwami User Onboarding Manual (SOP)

Purpose

Purpose

This Standard Operating Procedure (SOP) outlines the step-by-step process for onboarding new institutions and users to the Tekuwami platform. It ensures that institutions understand their roles, how to access the platform, and how to begin using its tools for secure, scalable data collection and workflow management.



Initial Setup (Institution Admin)

After receiving access:

1

Login

✅ Log in to the Tekuwami Institution Admin Portal

2

Complete Profile

✅ Complete institution profile (logo, name, address)

3

Review License

✅ Review institution's license tier and available features

4

Add Settings

✅ Add institution-level settings such as time zone zone and data access policies

Adding & Managing Users

Step 1: Create Users

- Navigate to User Management section
- Click “Add New User”
- Input name, email, role (e.g., field agent)
- Assign forms and permissions if applicable

Step 2: Distribute Access

- New users receive email instructions to set their password and log in
- Admins can resend credentials from the user dashboard if needed

Creating & Assigning Forms

Form Creation:

1

Visit Forms

Visit the Forms section

2

Create New Form

Click “Create New Form”

3

Add Fields

Add fields (e.g., name, date, location, select options)

4

Save and Publish

Save and publish

Assignment:

Assign the form to one or more field agents

Set access limits (once per day, unlimited, etc.)

Viewing Submissions & Data

From Portal Dashboard:

Institution Admins can view submissions by:

- Form
- User
- Date/time

Export to CSV for local backup or external reporting

Support & Troubleshooting

Visit www.tekuwami.com.et/help

Email support@tekuwami.com.et for:

- Login problems
- Mobile syncing issues
- Requesting new features or bug reports

Best Practices

Rotate Credentials

🔐 Rotate user credentials every 90 days

Export Data

📤 Export data monthly for auditing

Train Agents

👩‍🏫 Train field agents before large-scale data collection

Ensure Internet Stability

📡 Ensure stable internet before syncing large data sets

This onboarding guide helps institutions deploy Tekuwami with confidence and clarity. Further updates to this SOP will follow system enhancements and user feedback.

06

Tekuwami – Executive Summary One-Pager

Tekuwami – Executive Summary
Summary One-Pager

What is Tekuwami?

What is Tekuwami?

Tekuwami is a secure, multi-role SaaS platform that helps institutions manage geolocation-enabled data collection, role-based workflows, and real-time reporting across mobile and web interfaces. Built for public institutions, humanitarian agencies, and research organizations, Tekuwami is designed to scale nationally and internationally.

Core Features

Institutional Licensing System

Onboard and license organizations with tiered access

Form Builder

Create dynamic forms for mobile and web collection

Mobile App

(Flutter) – Offline and online submission with GPS tagging tagging

Realtime Dashboard

Visualize and export form submissions instantly

Role-Based Control

Super Admin, Institution Admin, and Field Agent separation separation

Geolocation Capture

Track data by region, user, and time

Secure User Management

Credential-based login and permissions enforcement

Who It’s For

1. **United Nations Offices**
   field offices (WFP, UNDP, FAO, UNICEF)
2. **National Ministries**
   (Health, Agriculture, Urban Development)
3. **NGOs**
   running data collection campaigns
4. **Academic Teams**
   & research teams conducting surveys
5. **Local Municipalities**
   with field workers

Institutional Benefits

Data Control

Own and control your data – Tekuwami enforces multi-tenant security

Onboarding Process

Rapid onboarding – license request, request, payment, portal creation, creation, done in minutes

Infrastructure

Trusted Infrastructure – built with Firebase, Flutter, React

Offline Support

Support for offline collection in remote zones

Data Access

Direct access to dashboards and data exports

Built for Compliance

GDPR Compliance

GDPR-ready data handling

ISO 27001 Strategy

ISO 27001 roadmap

User Agreement

Terms of Use & Privacy Policy

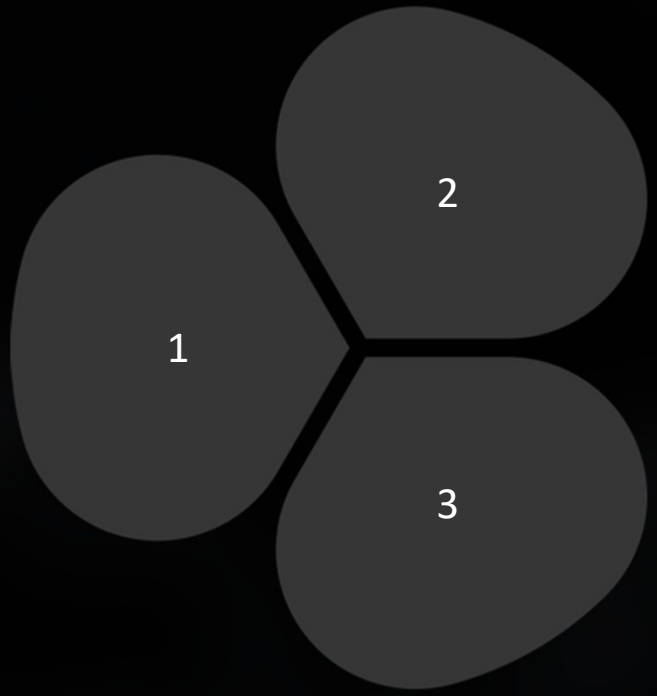
Cloud Security

Secure Cloud Functions for all sensitive ops

Platform Access

Web-based Panel

Super Admin Panel – Web-based based (React + Firebase)



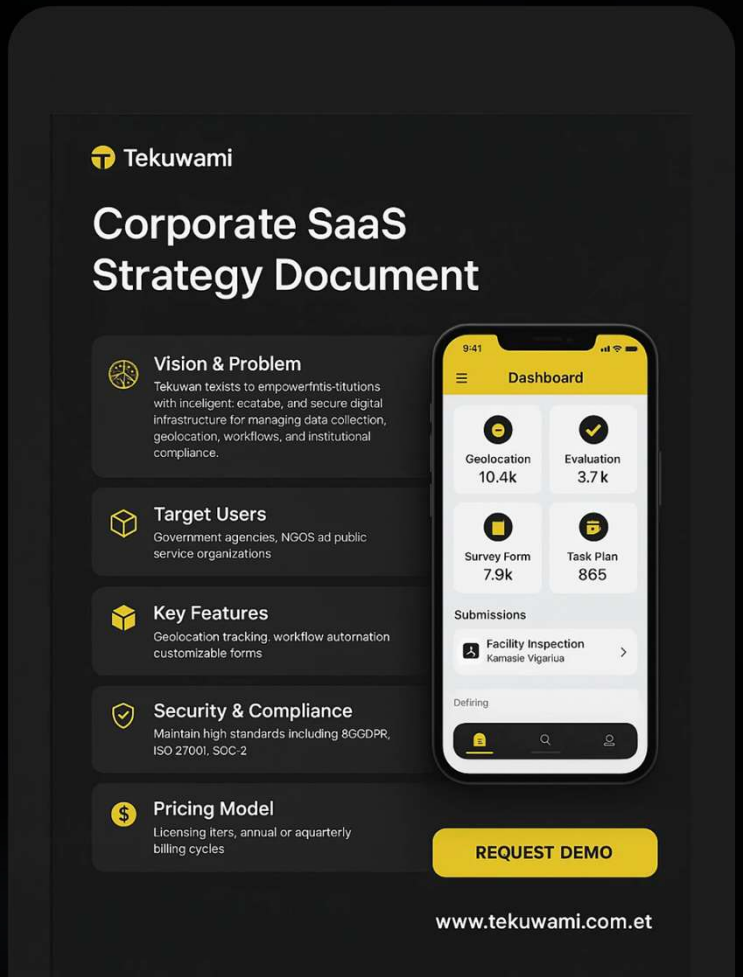
User Management Dashboard

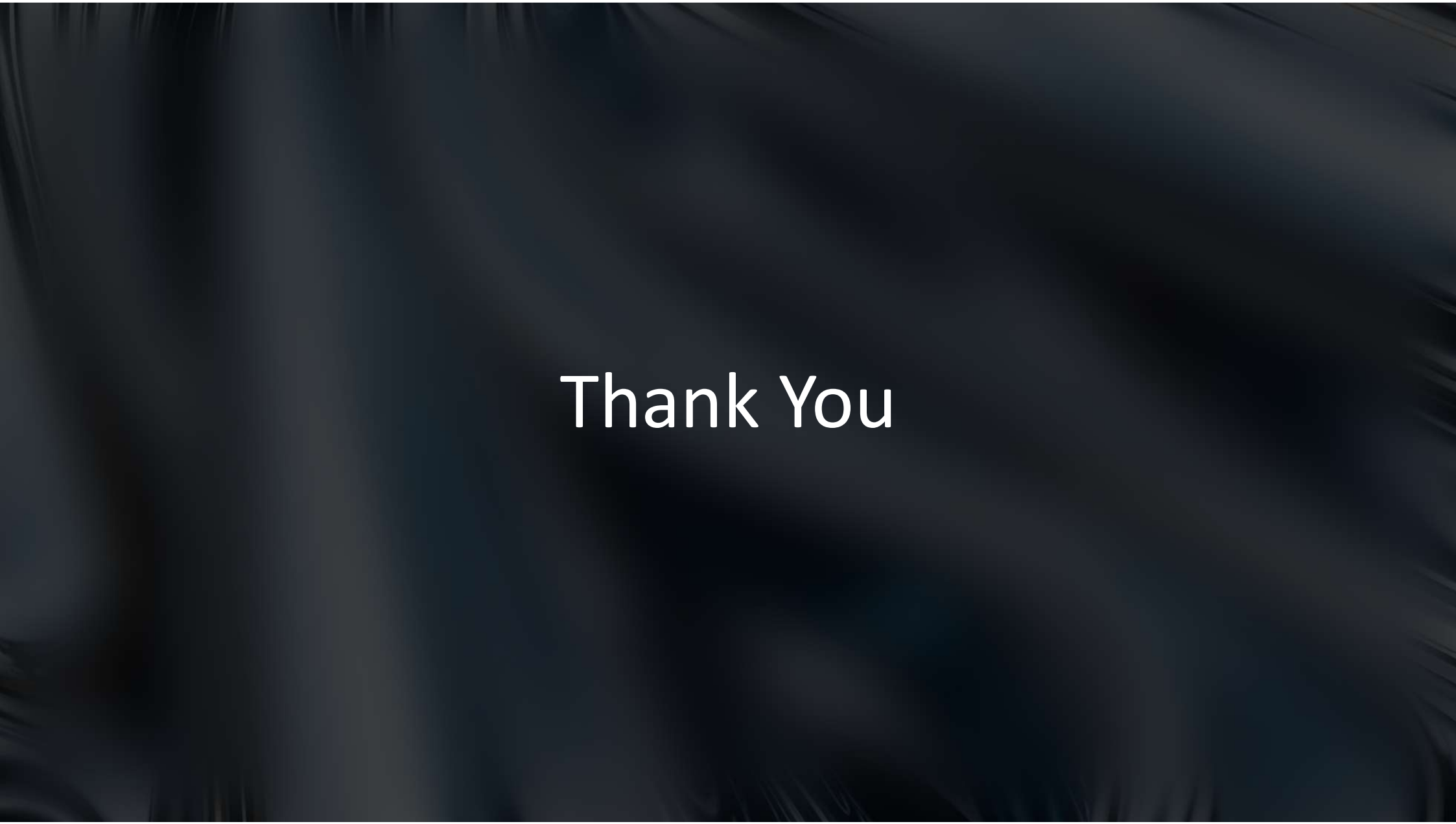
Institution Portal – Web dashboard for user/form management

Mobile App

Field Agent App – Android mobile app app (Flutter)

Contact & Demo




Thank You