

# Product Requirement Document



## Group 3

1. Yordanos Hagos
2. Fiona Wesonga
3. Mahder Belete
4. Saloi Akeza
5. Lwam Bisrat

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# **Introduction**

Access to justice is a cornerstone of Kenya's democratic framework, enshrined in Article 48 of the Constitution. Yet, systemic barriers such as lack of access, socio-economic disparities, and technological exclusion undermine its realization, particularly for marginalized groups in informal settlements and rural areas. The Legal Aid Act 2016 established the National Legal Aid Service (NLAS) to provide affordable, accessible legal aid to indigent individuals, supported by the Law Society of Kenya (LSK). Despite these efforts, over 41% of Kenya's prison population comprises pretrial detainees, with 86% lacking legal representation due to operational, financial, and structural challenges (Omware, 2021). This report integrates desk and field research to examine these barriers, focusing on lawyer engagement, coordination mechanisms, and technological innovations to provide free legal aid services. By synthesizing quantitative data, qualitative insights, and stakeholder perspectives, the report proposes a sustainable, inclusive legal aid framework to bridge justice gaps.

## **Problem statement**

In Nairobi, pretrial detainees, who constitute over 41% of the prison population, particularly underserved individuals, urgently need accessible, timely, and effective legal aid services supported by streamlined coordination among providers like NLAS, LSK, and NGOs, as well as technology-driven solutions and virtual legal aid, because systemic barriers such as limited legal aid outreach, fragmented referral systems,

and insufficient use of technology for case management and legal awareness lead to prolonged detention, human rights violations, and unequal access to justice, disproportionately affecting marginalized communities.

How might we streamline access to free legal aid so that lawyers and institutions can provide effective legal support for pretrial detainees?

## **Stakeholders**

### **1. Law Society of Kenya (LSK)**

- Acts as the professional regulatory body for lawyers in Kenya.
- Supports and promotes access to justice by encouraging pro bono legal services among its members.
- Collaborates with NLAS and NGOs to improve legal aid provision.
- Provides training, resources, and ethical guidance to lawyers involved in legal aid.
- Engages in advocacy and policy efforts to enhance legal aid frameworks.

### **2. Pretrial detainees**

- These are the primary recipients of legal aid services.
- They generally face economic hardships and have low awareness of their legal rights.
- Limited access to technology and legal knowledge restricts their ability to seek justice effectively.

### **3. Lawyers**

- They deliver legal aid through pro bono services and public interest litigation.
- They represent indigent clients, addressing justice gaps for vulnerable detainees.
- They face challenges such as uneven case workloads, political interference, and limited institutional support.
- They are motivated by professional ethics, incentives, and collaborative frameworks.

### **4. Families of Detainees**

- They provide emotional and practical support to detainees.
- They help seek and facilitate access to legal aid on behalf of detainees.
- They offer valuable insights into the challenges within the justice system from a family perspective.
- They may also confront their own economic difficulties that affect their engagement with legal processes.

### **5. Police**

- They are involved in arrest, detention, and the initial stages of the criminal justice process.
- They are responsible for ensuring detainees' rights, including timely access to legal representation.
- They can either facilitate or obstruct access to legal aid during pretrial detention phases.
- Coordination between police and legal aid institutions is often weak, which affects case progress and detainee welfare.

# Personas

[Personas Link](#)

## Proposed solution

A platform that connects lawyers with pretrial detainees in need of legal aid services and allows LSK to monitor lawyers as they take up legal aid cases, providing them with rewards as motivation, hence improving access to justice.

### Main features

MAIN FEATURES	PRIORITY	DESCRIPTION	VALUE TO PERSONA
Case Application	High	Allows users to submit a legal aid application form with personal details, case information, and supporting documents via a mobile app.	Simplifies access to legal aid for families of pretrial detainees, reducing barriers like travel costs and unclear procedures.

<b>Case Verification</b>	High	Validates eligibility (e.g., indigence) and case details before assignment to ensure legitimate requests.	Ensures only eligible cases are processed, maintaining fairness and compliance with legal aid regulations.
<b>Case Filtration and Assigning</b>	High	Uses Agentic AI to filter and prioritize cases based on urgency and lawyer suitability, with LSK approval.	Reduces manual effort, ensures equitable case distribution, and matches cases to lawyers' expertise, addressing high caseloads.
<b>Case Tracking</b>	High	Provides real-time updates on case status (e.g., pending, assigned, resolved) via app and PWA.	Keeps detainees/families informed, reducing stress from lack of updates, and helps lawyers manage cases efficiently.

<b>CPD Points Tracking</b>	Medium	<p>Logs and tracks Continuing Professional Development points for lawyers based on pro bono case completions.</p>	<p>Motivates lawyers by rewarding participation, enhancing professional growth and reputation.</p>
<b>Monthly Report and Analysis</b>	Medium	<p>Generates analytics on case volumes, assignment success, and outcomes for LSK oversight.</p>	<p>Provides insights for policy improvements, ensures transparency, and supports compliance reporting.</p>
<b>Real-Time Notifications</b>	High	<p>Sends alerts for case updates, assignments, or issues to all users via push, or in-app messages.</p>	<p>Ensures timely communication, reducing delays and improving coordination and satisfaction.</p>



## Out-of-Scope (Phase 1)

Feature	Description	Why Out of Scope	Decision
Financial Penalties / Enforcement	Payment of fines, penalties, or enforcement of judgments	Outside the mandate of legal aid digitization	Remain excluded
Offline Services	Manual, paper-based service delivery	Platform is digital-first; offline requires different infrastructure	Excluded
International/Jurisdiction Cases	Cases outside the Kenyan jurisdiction	Regulatory limitations	Excluded
Case Strategy / Legal Advice Control	Direct influence on how lawyers handle cases	Lawyers' independence must be preserved	Excluded
Reward system	Lawyers will get rewards according to their points	Lawyers can still get CPD points	Maybe

# Non-Functional Requirements

- **Scalability:** Support for thousands of pretrial detainee and lawyer accounts.
- **Reliability:** 99.9% uptime for lawyer and LSK portals.
- **Usability:** Simple, intuitive interfaces accessible even on low-end devices.
- **Compliance:** Adherence to the Kenya Data Protection Act and legal aid regulations.

## System Overview

### Case Filtering with Agentic AI

An Agentic AI system that filters cases (civil, criminal...), prioritizes urgency.

### Training data

The training data for the AI filtration and prioritization model will be sourced from different contexts, starting from the Akoma Ntoso an international technical standard that provides a structured way to represent legal documents such as executive, legislative, and judiciary texts, and other sources include diverse African context datasets that comprehensively cover civil and criminal judiciary cases across various countries.

These datasets provide rich, multi-year case-level records with detailed attributes such as case IDs, types, categories, outcomes, full texts, and metadata, making them highly suitable for legal AI applications. Datasets from Nigeria, Kenya, South Africa, Uganda, Ghana, Tanzania, Malawi,

Zambia, Lesotho, Namibia, and pan-African collections, the training data will reflect the unique legal contexts of African judicial systems. This ensures the AI model is well-calibrated to prioritize cases according to urgency, assist lawyer suitability decisions, and improve judicial efficiency within the African legal landscape.

## Model details and their Evaluation

### 1. TranslatePlus API

- **Type:** Uses internal neural machine translation models/algorithm.
- **Role:** In this case, the TranslatePlus API translates Kiswahili form inputs (e.g., “Kukamatwa wakati wa maandamano” to “Arrested during demonstration”) to English for DistilBERT/XGBoost processing, storing the original language for lawyer assignment.
- **Why:** Achieves 95% accuracy for Kiswahili-English, scalable (thousands of requests/second), no training needed, KDPA-compliant via secure calls.
- **Evaluation:**
  - ◆ Metrics (simulation, 100 Kiswahili legal texts):
    - Accuracy: 92% (correct translations).
    - Latency: 0.3s/request (target: <0.5s).
    - BLEU Score: 0.85 (translation quality, target: >0.90 with glossary).
  - ◆ Strengths: Reliable for legal terms; scalable; no overfitting.
  - ◆ Limitations: 5-10% idiom errors; mitigated with glossary uploads.
  - ◆ Method: Validated on translated Kaggle Legal Text samples; measured BLEU.
  - ◆ Production Target: >95% accuracy with glossary.

### 2. Machine learning Models

#### DistilBERT

- ➔ **Type:** transformer algorithm.
- ➔ **Role:** In this case, the DistilBERT model classifies case type (e.g., “protest,” “criminal”) and urgency (high/medium/low) from translated English text.
- ➔ **Why:** Achieves F1 >0.85 on legal texts, lightweight (~0.1s inference), robust to noisy text, explainable via attention maps, open-source (Hugging Face).
- ➔ **Evaluation:**
  - ◆ Metrics (simulation, 100 samples from Kaggle Legal Text):
    - Accuracy: 0.70.
    - Precision: 0.68.
    - Recall: 0.70.
    - F1-Score: 0.69 (target: >0.85 with 10,000+ samples).
  - ◆ Strengths: Captures urgency (80% accuracy); robust to ambiguity.
  - ◆ Method: Fine-tune (5 epochs, learning rate  $2e-5$ ); cross-validate ( $k=5$ ).
  - ◆ Production Target: F1 >0.85 for accurate assignment features.

- CaseLaw-Bert
- Law LLM
- Legal RoBERTa
- Legal-Bert
- InCaseLawBert

## End-to-End Evaluation

- Accuracy: 65% (target: 85% with 10,000+ samples).
- Latency: 0.5s (translation: 0.3s, classification: 0.1s, target: <2s).
- Edge Cases: No-match (0.5%, notify LSK); language mismatch (API handles).
- Strengths: Seamless pipeline; supports detailed forms and responses; scalable to 10,000+ lawyers.
- Limitations: Small dataset limits accuracy (65%); improve with 50,000 samples. Bias risk; mitigate with balanced data.
- Method: Simulate pipeline (Django API, PostgreSQL, Twilio). Pilot with A/B testing.

## Model Inputs

### Case Features

Input	Description	Data sources
Case type	Type of legal case (e.g., theft, assault, drugs)	Open justice datasets ( <a href="#">Kenya Judiciary</a> , <a href="#">data.gov.uk</a> ), UNODC crime data, published case records, and legal aid NGOs reports
Case description	Summary of circumstances	Extract from court archives, anonymized case studies, legal aid org websites

Date of offense	Date offense occurred	Public court records, sample datasets from the justice sector, and news articles on arrests
Urgency level	How urgent the case is (court dates)	Derived from date and prisoner rights organizations
Supporting documents	Number/type of documents submitted (ID, charge sheet, police report)	Sample legal aid forms, template forms from government portals
Location of detention	Prison/remand center/county	<a href="#">Kenya Prisons Service</a> , open prison data, NGO reports

## Lawyer Features

Input	Description	Data sources
Lawyer id	Unique ID	Open bar registry data ( <a href="#">Law Society of Kenya</a> )
Location	County, legal specialization	Bar association directories, legal aid organization member

		lists, and legal directories
Years of experience	Years practicing	Bar registry (public profiles), legal aid orgs, sample lawyer CVs
Availability status	Current workload	Estimate from interviews, surveys, or we will create synthetic scenarios
Pro bono experience	Number of free cases handled	Bar association publications, legal aid org annual reports
CPD points	Professional credits	LSK portal
Preference	Types of cases a lawyer prefers	Synthetic preferences

## Historical and System Context Data

Input	Description	Data sources
Previous assignment count	Lawyer's historical match and resolution metrics	Legal aid NGO annual reports, bar association publications
Feedback scores	Ratings from users after case closure	Research on legal aid satisfaction, survey results, and

		anonymized feedback from NGO reports
Current case Load per lawyer	How many cases each lawyer is handling	Legal aid org workload reports
Priority rules config	How the system weights urgency, location, etc.	Define based on policy documents, best practices from other countries/legal aid systems

## Assumptions

- Assigning cases to lawyers online will save their time and money for families of pretrial detainees.
- Families of pretrial detainees will apply through the platform, as the detainees won't have access to their devices.

## Success Metrics

### North Star Metric

The North Star Metric (NSM) for this platform is the Number of Successful Lawyer-Detainee Matches Resulting in Case Resolution. This metric captures the core value of streamlining access to free legal aid, directly addressing the problem of prolonged pretrial detention by ensuring effective connections that lead to resolved cases. Target: Achieve 500 successful resolutions in the first year, scaling to 1000 annually.



Product Metrics

These supporting metrics track progress toward the NSM, focusing on adoption, efficiency, engagement, and outcomes. They are categorized for clarity and include baselines, targets, and measurement methods where applicable.

Category	Metric	Description	Baseline(Current Manual Process)	Target(Phase 1)	Measurement Method
Adoption	Platform Active Users	Percentage of eligible pretrial detainees' families, and lawyers actively using the platform (e.g., logging in weekly).	Unknown (manual process: low outreach)	60% of target users (detainees/families: 150; lawyers: 50)	User analytics via app dashboards.
Access & Efficiency	Waiting Time for Lawyer Connection	Average time from case submission to initial lawyer contact.	2-4 weeks (per field research)	Reduced to less than 3 days	Timestamp tracking in the case management system.
Matching	Assignment	Percentage of	14% (based on	50% of	Total

	Success Rate	submitted legal aid requests successfully assigned to a lawyer.	86% lacking representation)	requests	number of assigned cases vs. total requests logged.
Engagement	Active Lawyers Handling Cases	Number of lawyers actively managing at least one case per month.	Low (uneven workloads)	40 active lawyers monthly	CPD points tracking and case logs.
Transparency	Report Timeliness	Percentage of weekly and daily reports generated and delivered on time to LSK.	Manual delays (inconsistent)	100% on-time	Report generation logs and audit trails.