# **Muddemal: Digital Seized Asset Management System**

**Handbook**

## **1. Introduction**

### **1.1 Project Overview**

Muddemal is an advanced desktop application specifically crafted to streamline and modernize the management of seized assets within Maharashtra Police stations. Leveraging advanced digital technologies, Muddemal provides enhanced accuracy, increased transparency, and significant efficiency improvements in asset tracking.

Muddemal significantly reduces administrative workloads, accelerates judicial procedures, and promotes accountability and transparency. Developed by Chainworks Digital Private Limited—trusted creators of government projects like Maharashtra's acclaimed organ transplant system "Mahaayudaan"—Muddemal is precisely tailored for law enforcement. The system is developed in close collaboration with police departments, aligning seamlessly with current operational procedures, ensuring easy adoption, reliability, and practical effectiveness.

### **1.2 Project Scope**

Muddemal covers complete management of seized assets, including:

* Automated data entry via OCR
* AI-driven asset classification
* Blockchain-based secure record-keeping
* Real-time tracking with QR codes
* Digital evidence handling (photos, videos, documents)
* Multilingual interface (English, Hindi, Marathi)

### **1.3 Intended Audience**

* Police officers and station administrators
* Maharashtra state police departments
* Judicial and legal officers

### **1.4 Definitions, Acronyms, and Abbreviations**

* **OCR:** Optical Character Recognition
* **Blockchain:** Secure digital ledger technology
* **AI:** Artificial Intelligence
* **FIR:** First Information Report
* **QR Code:** Quick Response Code
* **SQL:** Structured Query Language
* **Prisma:** Database toolkit

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## **2. Project Architecture**

### **2.1 Modules/Components**

* **Data Entry Module:** Automated FIR uploads via OCR
* **Blockchain Module:** Secure and immutable data storage
* **AI Module:** Intelligent item classification
* **Tracking Module:** QR code asset tracking
* **Digital Evidence Module:** Multimedia file management
* **Multilingual Interface:** Support for English, Hindi, Marathi

### **2.2 Data Flow**

1. FIR document scanned/uploaded → OCR module extracts data.
2. Verified data securely stored on blockchain.
3. AI module classifies seized goods.
4. QR codes generated for asset tracking.
5. Digital evidence uploaded and securely stored.
6. Real-time asset access and monitoring for authorized users.

### **2.3 Technology Stack**

* **Frontend:** React
* **Backend:** Node.js
* **Database:** SQL with Prisma ORM
* **Desktop Framework:** Electron
* **Blockchain:** Ethereum (Solidity Smart Contracts)
* **OCR Integration:** Python (Tesseract OCR script)

## **3. Installation and Setup**

### **3.1 System Prerequisites**

* Operating System: Windows 10+, MacOS, Linux
* RAM: Minimum 4 GB (Recommended: 8 GB or higher)
* CPU: Intel Core i3 or equivalent processor
* Storage: Minimum 500 MB available disk space
* Stable Internet connectivity recommended

### **3.2 Installation Instructions**

1. Download the provided executable installer.
2. Double-click and initiate setup (administrator rights recommended).
3. Follow on-screen instructions to complete the installation.

### **3.3 Running the Application**

* Launch the "Muddemal" application from the desktop shortcut.
* Authenticate with authorized police credentials.
* Navigate modules using the intuitive, multilingual user interface.

### **3.4 Troubleshooting Common Issues**

* **Database Connection Issues:** Verify server connections and firewall settings.
* **OCR Accuracy Issues:** Ensure document clarity and proper scanning methods.
* **Further Support:** Contact technical support for unresolved challenges.

**4. Usage Guide**

### **4.1 Stakeholder Profiles and Responsibilities**

* **Police Officers:**
  + Data input and asset tagging
  + Asset scanning via QR codes
  + Digital evidence uploading
* **Administrative Staff:**
  + Data verification and accuracy monitoring
  + Asset status tracking and administrative oversight
* **Judicial Officers:**
  + Real-time access to evidence and asset tracking
  + Reviewing digitally-stored case documents and multimedia evidence
* **Technical Support:**
  + System maintenance, updates, and troubleshooting
  + Continuous user support and feedback integration

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## **5. Current Seized Asset Tracking Methods**

Police stations traditionally use manual handwritten registers and physical logs stored in dedicated record rooms. Manual verification and periodic updating are essential aspects of these methods.

### **5.1 Areas for Improvement (Non-Critical Analysis)**

* Improved accuracy through automated data entry
* Enhanced accessibility via digital, real-time data systems
* Reduction in physical space required for storage
* Strengthened data integrity and security

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## **6. Advantages of Muddemal**

* Substantially increased transparency and accountability
* Considerable reduction of administrative workload
* Accelerated and streamlined judicial processes
* Immediate and continuous data tracking and reporting
* Robust data integrity assured by blockchain technology
* Multilingual, intuitive interface for widespread adoption

### **6.1 Possible Limitations**

* Initial training required for users and administrators
* Dependent on stable network connectivity
* Technical adaptation challenges during initial implementation

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## **7. Key Features Summary**

* ✅ **Automated OCR Data Entry:** Accurate and rapid data capture from FIRs.
* ✅ **Blockchain-Based Security:** Immutable and secure records.
* ✅ **AI-Powered Asset Categorization:** Smart classification of seized items.
* ✅ **QR Code Asset Tracking:** Immediate asset status updates.
* ✅ **Digital Evidence Storage:** Secure multimedia evidence management.
* ✅ **Multilingual Interface:** Accessibility for diverse user base.

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## **8. About Chainworks Digital Private Limited**

Muddemal is developed and maintained by:

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Chainworks Digital Private Limited is dedicated to delivering trusted, secure, and innovative digital solutions. With successful projects like "Mahaayudaan," Chainworks consistently proves its capability to execute complex government and institutional projects effectively.

**Join the digital transformation in law enforcement—Choose Muddemal for secure, transparent, and efficient seized asset management!**