

Smart Village Management System - Project Schedule

Project Overview

The Smart Village Management System is a comprehensive platform designed to streamline and enhance the management of residential communities. As a commercial product, this system integrates access control, financial management, and resident communication into a unified platform, improving efficiency and transparency for village administrators and enhancing the living experience for residents.







Development Approach

We will follow an Agile development methodology with 2-week sprints, allowing for regular deliverables, feedback incorporation, and course corrections. The project is divided into four major phases, with each phase building upon the previous one to deliver incremental value.

Phase 1: Foundation & MVP (Completed)

Duration: 4 weeks (June 1 - June 28, 2025)

This phase has been completed with the delivery of the MVP backend. Key accomplishments include:

-  Project kickoff and team setup
-  Development environment preparation
-  System architecture and database design
-  MVP core API endpoints implementation
-  Validation and testing
-  Code repository setup and initial commit

Phase 2: Frontend & Mobile Development (Completed)

Duration: 8 weeks (July 1 - August 22, 2025)

Sprint 1: Admin Dashboard Foundation (July 1 - July 12)

- Design system and UI component library setup
- Authentication and user management screens
- Dashboard overview and analytics components
- Responsive layout framework implementation


Sprint 2: Property & Resident Management (July 15 - July 26)

- Property listing and detail views
- Resident management interface
- Property assignment and status management
- Search and filtering capabilities

Sprint 3: Financial Management (July 29 - August 9)

- Invoice creation and management
- Payment processing and verification
- Expense tracking and categorization
- Financial reporting and export features

Sprint 4: Mobile App Core Features (August 12 - August 22)

- Mobile app architecture and navigation
- Authentication and profile management
- Property information and notifications
- Gate access control functionality  **Status: Completed**

Deliverables:

- Admin dashboard web application
- Resident mobile application (iOS and Android)
- Integration with backend APIs
- User acceptance testing documentation
- User guides and documentation

Phase 3: Integration & Enhancement (In Progress)

Duration: 6 weeks (August 25 - October 3, 2025)

Sprint 5: Access Control System Integration (August 25 - September 5)

- Hardware integration for gate control
- QR code and RFID scanning capabilities
- Visitor management system
- Access logs and security reporting

Sprint 6: Notification & Communication (September 8 - September 19)

- Email notification system
- SMS integration
- In-app messaging
- Announcement and bulletin board features

Sprint 7: Advanced Features & Optimization (September 22 - October 3)

- Community event management
- Facility booking system
- Performance optimization
- Cross-platform testing and bug fixes

Deliverables:

- Fully integrated access control system
- Communication and notification system
- Advanced community management features
- Performance optimization report
- Integration testing documentation

Phase 4: Deployment & Commercialization (Planned)

Duration: 4 weeks (October 6 - October 31, 2025)

Sprint 8: Deployment Preparation (October 6 - October 17)

- Production environment setup
- Data migration tools and procedures
- Monitoring and logging implementation
- Backup and disaster recovery setup

Sprint 9: Launch & Support (October 20 - October 31)

- User training materials creation
- Customer support system setup
- Final security audit
- Commercial launch preparation

Deliverables:

- Production-ready system
- Deployment documentation
- Training materials and user guides
- Support documentation and procedures
- Commercial launch plan

Post-Launch Support & Maintenance

Ongoing (Starting November 1, 2025)

- Bug fixes and maintenance
- Feature enhancements based on user feedback
- Regular security updates
- Performance monitoring and optimization
- Customer support

Resource Requirements

Development Team:

- 2 Backend Developers
- 2 Frontend Developers
- 1 Mobile Developer
- 1 UI/UX Designer
- 1 QA Engineer
- 1 DevOps Engineer
- 1 Project Manager

Infrastructure:

- Development and staging environments
- CI/CD pipeline

- Cloud hosting (AWS/Azure/GCP)
- Database servers
- Storage solutions
- Monitoring tools

Risk Management

Identified Risks:

1. **Integration Challenges:** Hardware integration for access control may present unforeseen technical challenges
2. **Timeline Pressure:** Ambitious timeline may require adjustment based on development progress
3. **Scope Creep:** Additional feature requests may impact delivery schedule
4. **Resource Constraints:** Specialized skills may be required for certain components

Mitigation Strategies:

1. Early prototyping of hardware integration
2. Regular progress reviews and timeline adjustments
3. Strict change management process
4. Resource planning and early identification of skill gaps

Success Criteria

1. System meets all functional requirements
2. Performance benchmarks are achieved
3. Security standards are met
4. User acceptance testing is successful
5. Documentation is complete and comprehensive
6. Commercial readiness is achieved

Conclusion

This schedule provides a comprehensive roadmap for the development and commercialization of the Smart Village Management System. Regular reviews and adjustments will be conducted to ensure alignment with project objectives and timely delivery of a high-quality commercial product.

Progression Update

Date: 6/12/2025

Key Updates:


- **Phase 2: Frontend & Mobile Development** is now **Completed**. This includes the successful development and testing of the core Mobile App features (Sprint 4).
- The Mobile Application for residents (iOS and Android) is now developed and ready for deployment.
- **Phase 3: Integration & Enhancement** is now **In Progress**, building upon the completed mobile app core features.


Latest Progression Update


Date: 6/13/2025

Major Updates:

Phase 3: Integration & Enhancement - Significant Progress

Completed Sprints: -  **Sprint 5: Access Control System Integration** (Completed) - QR Code system for visitors and residents - Hardware simulation for gate control and RFID - Access logging and security features

-  **Sprint 6: Notification & Communication** (Completed)
 - Real-time notification system
 - Multi-channel communication (In-app, Email, SMS, LINE)
 - Integration with access control events

Currently In Progress: -  **Sprint 7: Advanced Features & Optimization** (In Progress) - **NEW:** Hikvision Intercom Integration - **NEW:** CCTV Integration for resident access - Enhanced QR Code system with time-based validity - Manual release system for stuck entries

Key Enhancements Added

Hikvision Integration Features: - Remote gate control via Intercom system - CCTV viewing through mobile app - Two-way communication with visitors - Visual verification before gate opening - Backup system for when security staff unavailable

Enhanced Entry/Exit Methods: The system now supports **6 different entry/exit methods:** 1. QR Code scanning (manual by security staff) 2. QR Code scanning

(automated fixed scanners) 3. RFID/Key Card access 4. Mobile app gate control 5. **NEW:** Hikvision Intercom control 6. **NEW:** CCTV-assisted manual verification

Dual-Mode Operation: - Scheduled switching between staff-assisted and automated modes - Temporary mode override capabilities - Real-time mode status monitoring

Updated Timeline

Phase 3 Completion: Expected by end of June 2025 (on track) - Sprint 7 completion: Mid-June 2025 - System integration testing: Late June 2025

Phase 4 Preparation: Starting July 2025 - Commercial deployment preparation - Final optimization and testing - Documentation completion

Risk Assessment Update

New Risks Identified: - Hikvision SDK integration complexity - Video streaming performance optimization - Increased bandwidth requirements

Mitigation Actions: - Early SDK testing and prototyping - Performance benchmarking for video streaming - Infrastructure capacity planning

Success Metrics Update

Achieved: - Mobile app development completed ahead of schedule - Access control system fully functional - Notification system operational - Multi-method entry/exit support implemented

In Progress: - Hikvision integration testing - Performance optimization - Security enhancement validation

The project continues to progress well with the addition of significant value-added features that address real-world usage scenarios and enhance the overall system capability.