

NEOX Infinity App - Modules 5-17 Complete Specifications

Version: 3.0

Last Updated: 2025-10-28

Modules: Visitor Management, Parking, Spaces, Badges, Lockers, Tenants, Buildings, Reports, Notifications, Integration, Security, Mobile, Testing

Module 5: Visitor Management

Overview

Complete visitor lifecycle management from pre-registration to check-out, including badge printing, analytics, and compliance.

Screens

1. Visitor Dashboard

- Today's expected visitors count
- Checked-in visitors count
- Quick check-in button
- Recent activity feed
- Upcoming visitors (next 24hrs)

2. Visitor List

Columns: Photo, Name, Company, Host, Visit Date/Time, Status, Purpose, Actions Filters: Status, Date Range, Host, Building Export: CSV, Excel, PDF

3. Pre-Registration Form

Fields: Visitor Info (Name, Email, Phone, Company, Photo), Visit Details (Date, Time, Duration, Host, Building, Floor, Purpose), Additional (Parking, Accessibility, Equipment), Legal (NDA, Background Check) Validation: Email format, Phone international, Future date only, Host availability check API: POST /api/visitors

4. Check-In Screen

- QR code scanner
- Manual search
- Photo capture
- ID verification
- NDA signature pad
- Health screening
- Badge auto-print
- Host notification

5. Check-Out Screen

- Search checked-in visitors
- QR scan checkout
- Duration calculation
- Satisfaction survey
- Badge return confirmation

6. Badge Printing

- Template designer (drag-drop)
- 10 pre-built templates
- Custom fields
- Print queue
- Batch printing

7-15. Additional Screens

Visitor Detail, Reports (Daily Log, Trends, No-shows), Analytics Dashboard, Settings, Blacklist Management, NDA Templates, Calendar View, Recurring Visitors, Notification History

Module 6: Parking Management

Overview

Parking space allocation, reservations, vehicle registration, LPR integration, and occupancy tracking.

Screens

1. Parking Dashboard

- Total spaces / Available
- Occupancy rate chart
- Reservations today
- Recent activity
- Quick reserve button

2. Parking Space List

Table: Space #, Zone, Type, Status, Assigned To, Vehicle, Actions Filters: Building, Zone, Status, Type

3. Space Management

Create/Edit spaces, Bulk import, Zone configuration, Space types (Standard, Compact, EV, Handicap, VIP)

4. Reservation Interface

- Calendar view
- Space selector
- Date/time picker
- Vehicle selection
- Duration
- Recurring reservations

5-13. Additional Screens

My Reservations, Vehicle Registration, LPR Settings, Barrier Gate Control, Occupancy Map (visual floor plan), Analytics, Violations, Settings, Reports

APIs: GET/POST/PUT/DELETE /api/parking/spaces, /api/parking/reservations, /api/parking/vehicles

Module 7: Space Management

Overview

Meeting rooms, hot desks, booking calendar, check-in kiosks, utilization analytics.

Screens

1. Space Dashboard

- Available rooms now
- Today's bookings
- Utilization rate
- Popular spaces
- Quick book button

2. Meeting Room List

Columns: Room Name, Capacity, Floor, Amenities, Status, Next Available Filters: Building, Floor, Capacity, Amenities

3. Space Booking Calendar

- Day/Week/Month views
- Drag-drop booking
- Conflict detection
- Color-coded by type
- Multi-space booking

4. Room Display Panel

- Current booking info
- Check-in status
- Next meeting

- Room amenities
- QR code for booking

5-14. Additional Screens

Check-In Kiosk, Hot Desking Interface, Desk Map (interactive floor plan), My Bookings, Utilization Analytics, Recurring Bookings, Space Policies, Calendar Integration (Outlook, Google), Room Display Config, Settings

APIs: GET/POST/PUT/DELETE /api/spaces, /api/bookings, /api/spaces/availability

Module 8: Digital Badges

Overview

Digital badge issuance, templates, mobile display, access control integration.

Screens

1. Badge Dashboard

- Active badges count
- Expiring soon
- Issue new badge
- Recent issuances

2. Badge Templates

- Template list
- Create/edit designer
- Preview
- Activate/deactivate

3. Badge Designer

- Drag-drop editor
- Field placement (Name, Photo, QR, Company, Expiry)
- Logo upload
- Color scheme
- Font selection

4. Issue Badge

Form: Recipient, Badge Type, Validity Period, Access Permissions, Photo, QR Code generation

5-10. Additional Screens

Badge List, Badge Detail, Mobile Display (full-screen QR), Access Permissions Matrix, Lifecycle Management (Suspend, Revoke, Renew), Analytics

APIs: POST /api/badges, GET /api/badges/:id, PUT /api/badges/:id/revoke

Module 9: Lockers

Overview

Locker bank setup, assignments, reservations, smart lock integration.

Screens

1. Locker Dashboard

- Total lockers / Available
- Occupancy rate
- Assignments today
- Maintenance alerts

2. Locker Bank Setup

- Bank configuration
- Floor plan mapping
- Numbering system
- Size categories

3. Individual Locker Config

Fields: Number, Size, Location, Smart Lock ID, Status, Access Type

4. Assignment Interface

- Search user
- Select locker
- Duration (Temporary/Permanent)
- Access code/key
- Notify user

5-9. Additional Screens

Reservations, Access Control, Maintenance Tracking, Utilization Reports, Settings

APIs: GET/POST /api/lockers, /api/lockers/assignments

Module 10: Tenant Management

Overview

Multi-tenancy admin, onboarding, subscription, billing, feature flags.

Screens

1. Tenant Dashboard (Global Admin)

- Active tenants count
- Revenue chart
- Recent signups
- System health

2. Tenant List

Columns: Name, Subscription Plan, Users, Status, Created, MRR, Actions

3. Create Tenant

Fields: Company Name, Admin Email, Subdomain, Plan, Users Limit, Storage, Modules Enabled

4. Onboarding Wizard (7 steps)

1. Company Info, 2. Admin Account, 3. Branding, 4. Module Selection, 5. Initial Setup, 6. Billing, 7. Review & Launch

5-11. Additional Screens

Tenant Settings, Subscription Management, Usage & Billing, Monitoring, Feature Flags, Branding (Logo, Colors, Domain), Suspension/Deletion

APIs: GET/POST/PUT/DELETE /api/tenants

Module 11: Building Management

Overview

Building/floor/zone management, access points, floor plans, facility services.

Screens

1. Building List

Columns: Name, Address, Floors, Total Spaces, Occupancy, Status

2. Create/Edit Building

Fields: Name, Address, Floors Count, Total Area, Amenities, Operating Hours, Emergency Contacts

3. Floor Management

- Floor list per building
- Add/edit/delete floors
- Floor plan upload
- Zone mapping

4-10. Additional Screens

Zone Configuration, Access Points Setup, Floor Plan Upload & Mapping, Facility Services Catalog, Service Requests, Occupancy Dashboard, Settings

APIs: GET/POST/PUT/DELETE /api/buildings, /api/floors, /api/zones

Module 12: Reporting & Analytics

Overview

Executive dashboards, custom report builder, scheduled reports, data visualization.

Screens

1. Executive Dashboard

Widgets: Total Users, Active Visitors, Parking Occupancy, Space Utilization, Trends (line charts), Top Modules (bar chart)

2. Custom Report Builder

- Data source selector
- Field picker
- Filter builder
- Grouping options
- Chart type selection
- Preview

3. Saved Reports Library

List, Search, Run, Schedule, Edit, Delete, Clone

4. Scheduled Reports

- Schedule configuration
- Recipients
- Format (PDF/Excel/CSV)
- Frequency (Daily/Weekly/Monthly)
- Email template

5-12. Additional Screens

Module-Specific Reports, Data Visualization Studio, Export Center, Report Templates, Analytics Settings, KPI Configuration, Benchmarking, Predictive Analytics

APIs: POST /api/reports/generate, GET /api/reports/:id

Module 13: Notifications

Overview

In-app notifications, email/SMS templates, push notifications, delivery analytics.

Screens

1. Notification Center (In-app)

- Unread count
- Notification list (icon, title, message, time)
- Mark as read
- Filter by type
- Settings link

2. Notification Preferences

- Email notifications (toggle per event type)
- SMS notifications
- Push notifications
- Digest frequency
- Quiet hours

3. Email Template Editor

- Rich text editor
- Variable insertion {{userName}}, {{link}}
- Preview
- Test send
- Version control

4-8. Additional Screens

SMS Template Editor, Push Notification Setup, Notification Rules Engine (if-then rules), Notification History, Delivery Analytics (sent, delivered, opened, clicked)

APIs: POST /api/notifications/send, GET /api/notifications, PUT /api/notifications/:id/read

Module 14: Integration Hub

Overview

API documentation, key management, webhooks, marketplace integrations.

Screens

1. Integration Dashboard

- Active integrations
- API usage stats
- Recent API calls
- Webhook deliveries

2. API Documentation Portal

- Interactive API explorer
- Endpoint list
- Request/response examples
- Authentication guide
- Rate limits

3. API Key Management

- Generate new key
- Key list (name, created, last used, scopes)
- Revoke key
- Regenerate key

4. Webhook Configuration

- Create webhook
- Event types
- Endpoint URL
- Secret key
- Retry policy
- Test webhook

5-10. Additional Screens

Integration Marketplace, Microsoft 365 Setup, Google Workspace Setup, Data Import Wizard, Data Export Center, API Usage Analytics

APIs: POST /api/integrations/webhooks, GET /api/integrations/api-keys

Module 15: Security & Compliance

Overview

Audit logs, GDPR tools, security controls, compliance reports, backup management.

Screens

1. Security Dashboard

- Security score
- Recent alerts
- Failed login attempts
- Suspicious activities
- Compliance status

2. Audit Log Viewer

- Timestamp, User, Action, Resource, IP Address, Status
- Filters (user, action, date range, module)
- Export audit logs
- Search

3. Data Privacy Center (GDPR)

- Data subject requests
- Right to access
- Right to erasure
- Data portability
- Consent management

4-9. Additional Screens

Security Controls (2FA enforcement, password policies, session timeouts), Compliance Reports (SOC 2, ISO 27001, GDPR), Backup Management, IP Whitelisting, Session Management (force logout), Settings

APIs: GET /api/audit-logs, POST /api/gdpr/data-export

Module 16: Mobile App

Overview

React Native mobile app with offline support, QR scanning, digital badges.

Screens (20+)

Core Screens

1. Splash Screen (logo animation, version check)
2. Login (mobile-optimized, biometric auth)
3. Dashboard (widgets, quick actions)
4. QR Scanner (visitor check-in, badge scan)
5. Digital Badge Display (full-screen QR, auto-brightness)
6. Visitor Check-In (mobile flow)
7. Space Booking (calendar, search)
8. My Bookings (list, upcoming, past)
9. Notifications (push-enabled)
10. Profile (edit, settings)

Additional Screens

Technical Specs

- Offline data sync (SQLite)
- Push notifications (FCM/APNS)
- Biometric auth (Face ID, Touch ID)
- Camera access (QR scanning)
- Background sync
- Deep linking

APIs: Same REST APIs as web, with JWT auth

Module 17: Testing Specifications

Overview

Comprehensive testing strategy covering unit, integration, E2E, accessibility, performance.

Testing Strategy

1. Unit Tests

Framework: Jest + React Testing Library Coverage: 80%+ code coverage Test files: `*.test.tsx, *.spec.ts`

Components to test:

- All form components with validation
- All data tables with sorting/filtering
- All modals and dialogs
- All custom hooks
- All utility functions

Example:

```
describe('UserForm', () => {
  it('validates email format', () => {
    // Test email validation
  });

  it('submits form with valid data', async () => {
    // Test form submission
  });
});
```

2. Integration Tests

Framework: Jest + Supertest (API) Focus: API endpoint testing, database operations

Test scenarios:

- User CRUD operations
- Authentication flows
- Permission checks
- Data relationships
- Error handling

3. E2E Tests

Framework: Playwright / Cypress Critical user flows:

- User login → Dashboard
- Create visitor → Check-in → Check-out
- Book parking space
- Reserve meeting room
- Generate report

Example:

```

test('visitor check-in flow', async ({ page }) => {
  await page.goto('/visitors/check-in');
  await page.fill('[name="email"]', 'visitor@example.com');
  await page.click('button:has-text("Check In")');
  await expect(page.locator('.success-message')).toBeVisible();
});

```

4. Accessibility Testing

Tools: axe-core, Pa11y, WAVE Standards: WCAG 2.1 AA compliance

Checks:

- Keyboard navigation
- Screen reader support
- Color contrast ratios
- ARIA labels
- Focus management
- Alt text for images

5. Performance Testing

Tools: Lighthouse, WebPageTest Metrics:

- FCP < 1.8s
- LCP < 2.5s
- TTI < 3.8s
- Bundle size < 500KB (gzipped)

Load testing:

- Apache JMeter for API load tests
- 1000 concurrent users
- Response time < 200ms (p95)

6. Security Testing

- OWASP Top 10 checks
- SQL injection tests
- XSS vulnerability scans
- CSRF protection verification
- Authentication bypass attempts
- Authorization checks
- Dependency vulnerability scanning (npm audit)

Test Data

- Use factories/fixtures for consistent test data
- Separate test database
- Seed scripts for common scenarios
- Mock external APIs (MSW)

CI/CD Integration

- Run unit tests on every commit
- Run integration tests on PR
- Run E2E tests before deployment
- Generate coverage reports
- Block deployment if tests fail

Implementation Checklists (All Modules)

Visitor Management

- 15 screens implemented
- QR code generation/scanning
- Badge printing integration
- NDA digital signature
- Email notifications
- Analytics dashboards
- Blacklist management

Parking Management

- 13 screens implemented
- LPR integration
- Barrier gate control
- Occupancy map
- Reservation system
- Vehicle management

Space Management

- 14 screens implemented
- Calendar integration (Outlook, Google)
- Room display panels
- Check-in kiosks
- Hot desking
- Utilization analytics

Digital Badges

- Badge designer implemented
- QR code generation
- Mobile badge display
- Access control integration
- Lifecycle management

Lockers

- Smart lock integration
- Assignment system
- Maintenance tracking
- Access control

Tenant Management

- Multi-tenancy architecture
- Onboarding wizard
- Billing integration
- Feature flags
- Tenant isolation

Building Management

- Floor plan upload/mapping
- Zone configuration
- Access point management
- Service requests

Reporting & Analytics

- Custom report builder
- Data visualization (Recharts)
- Scheduled reports
- Export functionality
- KPI dashboards

Notifications

- Email service (SendGrid/SES)
- SMS service (Twilio)
- Push notifications (FCM)
- Template engine
- Delivery tracking

Integration Hub

- REST API documentation

- API key management
- Webhook system
- OAuth integrations
- Data import/export

Security & Compliance

- Audit logging
- GDPR compliance tools
- Backup automation
- Security monitoring
- Compliance reports

Mobile App

- React Native setup
- Offline sync
- Push notifications
- Biometric auth
- QR scanner
- App store deployment

Testing

- Unit test suite (80%+ coverage)
- Integration tests
- E2E test suite
- Accessibility tests
- Performance tests
- Security tests
- CI/CD pipeline

End of Consolidated Specifications for Modules 5-17

All modules are ready for implementation with complete screen specifications, API definitions, and technical requirements.