

NEOX Infinity App - Modules 5-17 Complete Specifications

Version: 3.0
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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.