

Architectural & Engineering Specification Document

Visitor Management System

1. General Overview

The customer requires a **comprehensive visitor management system** designed to **manage and secure facility entry** by scanning or registering guests, visitors, temporary staff, and contractors requiring physical access to the site.

The system should consist of a **multi-platform solution** supporting **self-service kiosks, handheld devices, web portals, and a mobile app**, providing a **secure, user-friendly, and efficient** method for managing access at various control points throughout the facility.

It will enable **security personnel and site administrators** to efficiently **register, verify, and monitor** visitors, contractors, employees, and vehicles using a **centralised system**. Additionally, the system must support **multi-site environments**, adhere to **data protection regulations**, and integrate seamlessly with **existing access control security systems**.

The access control system integration should allow **hi-speed visitor to access control processing**, providing a seamless entry and exit for visitors.

2. System Components

- Choice of On-Premise Visitor Management Server or Cloud-Based Server
 - Self-Service Visitor Kiosks
 - Rugged Handheld Visitor Scanners
 - Face, RFID, Keypad or QR code Readers
 - Visitor Management Web Portal
 - Mobile Visitor App for Hosts & Residents (Optional)
 - Ethernet, WiFi & 5G Data Infrastructure (By Customer)
 - Visitor System Workstations For Management (By Customer)
 - Pre-Registered Visitor Passes with QR code and/or OTP
 - Access Control System Integrations
 - REST-API For Interfacing to 3rd Party Applications
-

3. Functional Requirements

3.1 Visitor Registration and Approval

- **Vehicle License Disk Scanning**
 - Ability to scan vehicle license disks to capture make, model, VIN, and license details for enhanced vehicle management and tracking.
- **Custom Data Field Capture**
 - System must support custom fields for capturing site-specific data, such as delivery references, contractor company, asset ID, etc.
- **Ad-Hoc or Walk-In Registration:**
 - Registration of walk-in visitors via security officers using a handheld device, self-service kiosks, or a web portal.
 - Real-time remote approval by a host function or **automatic access** based on predefined security policies.
 - The **host approval function** should allow the transmission of a message via email or SMS to the host with a picture of the visitor and his/her details.
- **Pre-Registration Options:**
 - Pre-registration via **EvTrack's web registration link** or via the EvTrack web-based portal interface.
 - **1-step** or **2-step** visitor approval process.
 - For the 2-step approval option, hosts invite or register visitors, with final approval by a compliance officer to ensure compliance with site-specific policies.
 - Secure QR code or OTP-based visitor passes for **contactless check-in**.
 - **Manual registration** by authorised hosts through a web portal.
 - For **VIP visitors**, the solution should have the option of pre-registering these important guests and creating an access control credential, which is sent directly to the access control system. In this scenario, the VIP can arrive and go straight through the access control without having to be processed by a kiosk or handheld.
- Ability to insert custom visit rules and attach documents to invitations.

3.2 Flexible Access and Scanning Options

- **ID Document Scanning**
 - System must support OCR scanning of driver's licenses, passports, and national ID cards for automatic data population during registration.
- **Digital Concierge Kiosk (Self-Service)**
 - Support for self-service digital concierge check-in, with integrated badge printing and face capture.
- **Dynamic vs. Fixed QR Code Credentials**
 - QR codes can be **single-use, time-limited, or permanent** for specific visitor types.
- **License Plate & Vehicle Credentialing**
 - **ANPR support** for registered visitor vehicles, integrating with **IP cameras from Axis, Hikvision, and Tattile.**
- **Configurable Visitor Access Schedules, Reasons & Locations**
 - Define **custom access schedules** for visitors, employees, and contractors.
 - Support to allow access/control points to be mapped between the visitor system and the access control system. The visitor system should feature it's own access control core.
 - Configurable visitor reasons linked to schedules, access control use limits and visit times.
- **Credential Types to Be Supported:**
 - QR Code, RFID Cards, Biometric Facial Recognition, Mobile App-based Passes.
 - Vehicle License Plate Recognition (LPR/ANPR) for automated vehicle access control.
 - Emirates ID Cards
 - Emirates Drivers Licenses
 - European and UK Drivers Licenses
 - International Passports

3.3 Communication and Notifications

- **Mobile Visitor App Notification Integration**

- Visitor hosts should be able to receive push notifications and perform check-in approvals directly through a mobile app.
- **Customizable Notification Templates**
 - Define **custom SMS & email templates** for visitor notifications.
- **Host Notification:**
 - Hosts receive real-time notifications via **email, SMS, or push notifications** for visitor entry and exit.
- **Multi-Platform Visitor Invitations:**
 - Secure visitor invitations sent via **WhatsApp, Email, or SMS**.
- **Automated Credential Sharing:**
 - Google Maps navigation links included in visitor invites.

3.4 Reporting and Logs

- **Graphical Dashboards & Advanced Reports**
 - Support for **Google BigQuery integration** for customer data warehouse **advanced analytics**.
- **Detailed Reports:**
 - Exportable visitor history, access events, and security logs in **PDF or CSV formats**.
- **Audit Logs:**
 - Maintain detailed **audit trails** for compliance and incident tracking.
- **Visitor Data Analytics:**
 - **Graphical analytics** for visitor flow, access trends, and security insights.

3.5 Integration and API Support

- **3rd Party Identity & Authentication Systems**
 - Support integration with cloud-based authentication providers such as Azure AD, Okta, and Google Workspace using industry-standard protocols (OAuth2.0, SAML).
- **REST API & Webhooks:**
 - Support **automated integrations** with third-party applications and security platforms.

- Customer may want to integrate the visitor management system with its own smartphone app and this would require the visitor system to have a suitable REST-API interface.
- **Access Control System Compatibility:**
 - Seamless integration with leading access control hardware and software solutions (Genetec, Gallagher, Suprema, etc.).

3.6 Watchlist Functionality

- **Visitor & Personnel Watchlists:**
 - Flag or block individuals based on **ID number, mobile number, or vehicle license plate.**
 - Prevent banned individuals from being invited or granted access.
 - Generate alerts when flagged individuals attempt to check in.

3.7 Badge Printing & Credentials

- **Custom Badge Templates**
 - Ability to import **custom badge designs via SVG files.**
- **Offline Badge Printing Support**
 - Ability to print **badges even when the system is offline.**
- **Supported Badge Printers:**
 - Compatibility with **Evolis, Zebra, Brother, and Epson** badge printers.
- **Badge Information:**
 - Badges should include **photos, QR codes, visitor names, access permissions, and expiration dates.**
- **Wireless & Bluetooth Printing:**
 - Support for **Ethernet and Bluetooth-enabled** badge printing.

3.8 Web Portal Interface

- **Web-Based Visitor Management:**
 - The system must offer a web-based interface for managing visitor registration, approval, and reporting.
- **Browser Compatibility:**

- Compatible with modern browsers such as **Google Chrome, Microsoft Edge, Mozilla Firefox, and Safari.**
 - **Role-Based Access Control:**
 - Admins, security personnel, and hosts should have **role-based access** to specific visitor management functions.
 - **Real-Time Dashboard:**
 - Display visitor status, expected arrivals, and pending approvals.
 - **Visitor Pre-Registration & Approval:**
 - Ability to create, modify, and approve visitor registrations through the web portal.
 - **Custom Reporting & Data Export:**
 - Generate visitor logs, access events, and reports in **PDF, CSV, or Excel formats.**
-

4. Data Hosting and Scalability

- **Cloud Hosting (Optional):**
 - Where cloud hosting is accepted, the solution should offer deployment via public or private cloud on AWS, Azure, or customer's infrastructure.
 - **Hosting Requirements:**
 - Server software to support Linux or Windows Servers.
 - Server to be **on-premise** and self-hosted by the client.
 - The customer will be responsible for the storage, backup, and security of this server.
 - The customer will be responsible for all server communication, i.e., email, SMS, or Whatsapp.
 - Multi-Site & Multi-Tenant Support Required for the Visitor System.
 - **Scalability:**
 - Software to support large quantities of visitors, hosts, and multi-site deployments.
-

5. Hardware Device Requirements

5.1 Handheld Devices

- **Capabilities:**
 - **All-day operation** with ergonomic design.
 - Integrated QR Code Scanner, NFC/RFID Reader, and Camera with OCR.
- **CPU & Memory:**
 - Octa-Core Processor, **8GB RAM, 128GB Storage.**
- **Durability:**
 - **Rugged, waterproof,** and shock-resistant.
- **Operating System:**
 - Android 14 Minimum.
 - With up to Android version 18 supported.
- **Built-in License Plate Scanning (ANPR OCR)**
 - The handheld visitor scanner should support **capturing of vehicle license plates.**
- **Host Call Functionality**
 - Guards should be able to **call the host** via the device.
- **Connectivity:**
 - WiFi 6, 5G, and Dual SIM (nano-SIM + eSIM).
- **Battery & Power:**
 - Hot-swappable batteries with **USB-C fast charging.**
- **Warranty:**
 - **3-year comprehensive warranty.**

5.2 Self-Service Visitor Kiosks

- **Operating System:**
 - Minimum **Android 13 or 14.**
 - Upgradable and compatible with future Android versions.
- **Design & Construction:**

- Rugged design constructed from **steel and aluminum**.
- Available in **custom colors and branding** to match customer requirements.
- Available as standard as a **desktop kiosk model** or optional **free-standing floor-mounted model**.
- **Display & User Interface:**
 - **12-inch or 13-inch full-HD touchscreen display**.
 - **Front-facing camera** for facial image capture with smart face detection.
 - Facial image capture cropping and insertion of a watermark overlay.
 - The user interface should have options for **scanning a pre-registered QR code, entering an OTP, or scanning Emirates ID cards or international passports**.
 - Option to display customer's Logo.
 - Screensaver to prevent display burn-in.
- **Automatic Visitor Check-Out Feature**
 - Ability to automatically check out visitors after a set time.
 - Strict Face Validation (Optional Mode)

Ensures a suitable image for face recognition is captured.

- **Credential & ID Scanning:**
 - Integrated **Smart card reader for Emirates ID scanning**.
 - OCR optical scanning for reading international passports and/or IDs.
 - Digital QR code reading for pre-registered visitor passes.
- **Visitor Badge Printing:**
 - Integrated **thermal badge printer** for visitor pass printing.
 - Badge with Corporate Logo + QR Code + visitor name.
- **Connectivity & Power:**
 - Function to monitor the connection to the server and/or network with an audible visual notification on the kiosk display when a disconnection is detected.
 - WiFi and Ethernet network connectivity (10/100Mbps).

- 100-230VAC power input.
 - **Access Control Integration:**
 - Compatible with **Genetec, Gallagher, Suprema, Hikvision, 2N, and Axis** for seamless visitor access control.
-

6. Security and Compliance

- **Tamper Detection Alerts (for kiosks/handhelds):**
 - The hardware shall have mechanisms to alert administrators in the event of attempted physical tampering or disconnection.
- **Data Access Auditing:**
 - Maintain a full audit trail of all actions performed by system users, including data exports, record modifications, and role assignments.
- Access Control Event Logbook & System Audits
- Role-Based Administration
 - User Role Management (Administrator, Super User, Resident, Guard)
- **Access Restriction by Tenant/User**
 - Restrict system users to **view only their own visitor data**.
- **Automated User Onboarding & Password Creation**
 - Ability to **onboard users automatically** with a system-generated secure password.
- **Data Retention Policies**
 - Default **365-day event retention** (can be extended).
 - Audit logs stored for **31 days** by default (can be extended).
- **Configurable Health & Safety Questionnaires**
 - Visitors can be required to complete a **health & safety declaration** before access is granted.
- **ISO 27001 Compliance:**
 - Proof of **ISO 27001 certification or ongoing compliance process**.
- **Single Sign-On (SSO):**

- Microsoft Entra Identity Management with **Multi-Factor Authentication (MFA)**.
 - **Encryption Standards:**
 - **SSL/TLS encryption** for data transmission between all system components.
 - **Compliance:**
 - GDPR, POPIA, and regional data protection laws.
-

7. Key Feature Summary

- **One or Two-Step Approval for Visitor Security**
 - **Multi-Platform Access via Kiosk, Handheld, or Mobile App**
 - **Multi-Channel Communication via Email, WhatsApp, and SMS**
 - **Automated QR Code & Biometric Access**
 - **Comprehensive Reporting & Analytics**
 - **Cloud & On-Premise Deployment Options**
 - **Full API & Third-Party Integration Support**
 - **ISO 27001 Compliance & Data Security**
-

This document serves as a guideline for implementing the **EvTrack Visitor & Access Control System**, ensuring security, compliance, and operational efficiency.