

Usecases

🕒 Created	@June 21, 2025 7:18 PM
🏷️ Tags	

List of Use Cases (Danh sách các Ca sử dụng)

UC-01: Log in to the System (Đăng nhập vào Hệ thống)

- **Actor(s):** Police, Admin, Customer
- **Description:** Cung cấp thông tin xác thực để truy cập vào các chức năng của hệ thống.

UC-02: View Real-time Monitoring Dashboard (Xem Bảng điều khiển Giám sát Thời gian thực)

- **Actor(s):** Police, Admin
- **Description:** Xem các luồng video trực tiếp đã được xử lý bởi AI và nhận các cảnh báo vi phạm mới nhất ngay khi chúng xảy ra.

UC-03: Manage System Configuration (Quản lý Cấu hình Hệ thống)

- **Actor(s):** Admin
- **Description:** Thực hiện các tác vụ cấu hình logic nghiệp vụ, bao gồm việc tạo/sửa/xóa **Violation Rules** (bằng DSL) và vẽ/quản lý các **Zones** trên camera.

UC-04: Assign camera to the police (Gán Camera cho cảnh sát tương ứng)

- **Actor(s):** Admin
- **Description:** Thực hiện tác vụ gán camera cho cảnh sát tương ứng (Ví dụ: Cảnh sát A được xem camera 1, 2, 3; Cảnh sát B được xem camera 4, 5, 6)

UC-05: View and Filter Violation Reports for Police (Xem và Lọc Báo cáo Vi phạm cho Police)

- **Actor(s):** Police
- **Description:** Xem lại lịch sử các vi phạm đã được ghi nhận, với khả năng lọc và tìm kiếm theo ngày tháng, loại vi phạm, hoặc camera.

UC-06: View and Filter Violation Reports for Customer (Xem và Lọc Báo cáo Vi phạm cho Customer)

- **Actor(s):** Customer
- **Description:** Xem lại lịch sử các vi phạm đã được ghi nhận, với khả năng lọc và tìm kiếm theo ngày tháng, loại vi phạm của bản thân **Customer**

UC-07: Manage System Infrastructure (Quản lý Hạ tầng Hệ thống)

- **Actor(s):** Admin
- **Description:** Thực hiện các tác vụ quản trị cấp cao, bao gồm việc thêm/sửa/xóa **Cameras** và quản lý các tài khoản **Polices, Customers** trong hệ thống.

Use Case 1: Đăng nhập vào Hệ thống

Name: Log in to the System

Identifier: UC-01

Inputs:

1. Email/User name
2. Password

Outputs:

1. The Dashboard page with User's authorization [If success]
2. The Login page with an error message [If fail]

Basic Course:

Actor: Police/Admin/Customer	System
1. Open the login page	1.1. Display the login page
2. Enter email and password	
3. Submit	3.1. Check the User's info against the database - If success, return the Dashboard page

- Else return the login page with an error
--

Precondition:

1. User has a registered account that was created earlier (email and password).

Post condition:

1. User is successfully authenticated and a session token (JWT) is established in the client.

User story: As a system user, I want to log in to the system so that I can access the monitoring and configuration features.

Use Case 2: Xem Bảng điều khiển Giám sát Thời gian thực

Name: View Real-time Monitoring Dashboard

Identifier: UC-02

Inputs:

1. None

Outputs:

1. A dashboard displaying live, AI-processed video streams.
2. A real-time feed of violation alerts.

Basic Course:

Actor: Police/Admin	System
1. Navigate to the Dashboard page	1.1. Display the main dashboard layout 1.2. Establish a WebSocket connection to the backend 1.3. Receive and display video frames and violation alerts pushed from the server

Precondition:

1. Police/admin has successfully logged in to the system (UC-01).

Post condition:

1. None

User story: As a traffic operator, I want to view live camera feeds and violation alerts in real-time so that I can monitor the current traffic situation effectively.

Use Case 3: Quản lý Cấu hình Hệ thống (Quy tắc và Vùng)

Name: Manage System Configuration (Rules and Zones)

Identifier: UC-03

Inputs:

1. DSL rule text for creating or updating a rule.
2. Zone name and polygon coordinates for creating or updating a zone.

Outputs:

1. A success message confirming the configuration has been saved.
2. An error message if the input is invalid (e.g., DSL syntax error).
3. The UI is updated to reflect the new or modified configuration.

Basic Course:

Actor: Admin	System
1. Navigate to the "Configuration" page	1.1. Display the interface for managing Rules and Zones
2. Choose to create/edit a Rule or a Zone	2.1. Display the appropriate form (a text editor for a Rule, a drawing interface for a Zone)
3. Enter the required information and submit	3.1. Validate the submitted input (check DSL syntax, validate coordinates) - If valid, save the configuration to the database 3.3. Return a success response and update the UI - If invalid, return an error response with details

Precondition:

1. Admin has successfully logged in to the system (UC-01).

Post condition:

1. A new or updated Rule/Zone is persisted in the database and becomes active for the Rule Engine to use.

User story: As a system admin, I want to define custom violation rules and draw detection zones so that I can tailor the system's logic to my specific monitoring needs.

Use Case 4: Gán Camera cho Cảnh sát

Name: Assign Camera to Police

Identifier: UC-04

Inputs:

1. Police user ID
2. A list of Camera IDs to be assigned

Outputs:

1. A success message confirming the assignment.
2. An error message if the Police user or Camera does not exist.

Basic Course:

Actor: Admin	System
1. Navigate to the "Police Management" or "Camera Assignment" page	1.1. Display lists of Police users and available Cameras
2. Select a Police user	
3. Select one or more cameras to assign	
4. Submit the assignment	4.1. Validate that the user has 'Admin' privileges 4.2. Check if the selected Police user and Cameras exist 4.3. Create/update records in the police_camera_assignments table 4.4. Return a success message

Precondition:

1. User has successfully logged in as an 'Admin' (UC-01).
2. At least one 'Police' user and one 'Camera' exist in the system.

Post condition:

1. The association between the specified Police user and the selected cameras is created or updated in the database.

User story: As an administrator, I want to assign specific cameras to each police officer so that they can only monitor the areas relevant to their duties.

Use Case 5: Xem và Lọc Báo cáo Vi phạm (cho Cảnh sát)

Name: View and Filter Violation Reports for Police

Identifier: UC-05

Inputs:

1. Filter criteria (optional): Date range, rule name.

Outputs:

1. A list of historical violation records that occurred on the cameras assigned to the logged-in Police user.
2. Detailed information and evidence for a selected violation.

Basic Course:

Actor: Police	System
1. Navigate to the "Reports" page	1.1. Identify the logged-in Police user 1.2. Retrieve the list of cameras assigned to this user 1.3. Display an initial list of recent violations from only the assigned cameras
2. Apply filter criteria and submit	2.1. Query the database for violations matching the criteria AND belonging to the assigned cameras 2.2. Display the updated, filtered list of violations

Precondition:

1. User has successfully logged in as a 'Police' user (UC-01).
2. The logged-in Police user has been assigned at least one camera by an Admin (UC-04).

Post condition:

1. None (this is a read-only operation with data authorization).

User story: As a police officer, I want to review and filter violation reports from my assigned cameras so that I can process infringements within my jurisdiction.

Use Case 6: Xem Báo cáo Vi phạm (cho Khách hàng)

Name: View Violation Reports for Customer

Identifier: UC-06

Inputs:

1. Filter criteria (optional): Date range, rule name.

Outputs:

1. A list of historical violation records associated with the customer's registered license plate.
2. Detailed information and evidence for a selected violation.

Basic Course:

Actor: Customer	System
1. Navigate to the "My Violations" page	1.1. Identify the logged-in Customer 1.2. Retrieve the customer's license_plate from their profile 1.3. Query the violations table for records where detected_license_plate matches the customer's plate 1.4. Display the list of their personal violations
2. Apply filter criteria and submit	2.1. Re-query the database with the added filter conditions (date, etc.) 2.2. Display the updated, filtered list of personal violations

Precondition:

1. User has successfully logged in as a 'Customer' (UC-01).
2. The customer's account has a registered license plate.
3. The AI system is capable of performing Automatic Number Plate Recognition (ANPR).

Post condition:

1. None (this is a read-only operation).

User story: As a vehicle owner, I want to view a list of my own traffic violations so that I can be aware of them and handle the fines accordingly.

Use Case 7: Quản lý Hạ tầng Hệ thống

Name: Manage System Infrastructure

Identifier: UC-07

Inputs:

1. Camera details (name, source URL).
2. User account details (email, role: 'Police' or 'Customer', license plate for customers).

Outputs:

1. A new/updated Camera is active in the system.
2. A new/updated User account is created in the system.
3. A confirmation message of the action.

Basic Course:

Actor: Admin	System
1. Navigate to the "Admin Panel"	1.1. Display options to manage Cameras and Users (Police, Customers)
2. Choose to create/edit a Camera or a User	2.1. Display the corresponding form
3. Enter the required details and submit	3.1. Validate user's 'Admin' privileges 3.2. Validate the input data (e.g., unique email, valid URL) 3.3. Create or update the record in the cameras or users table 3.4. Return a success response and refresh the UI

Precondition:

1. User has successfully logged in as an 'Admin' (UC-01).

Post condition:

1. A new Camera is available for assignment and processing.
2. A new Police or Customer account is created and can be used to log in.

User story: As an administrator, I want to manage the system's core assets like cameras and user accounts to maintain and scale the platform.