

Real-Time Vehicle Tracking System

User Interface (UI) Design Documentation

1. Introduction

The User Interface (UI) of the Real-Time Vehicle Tracking System provides an interactive and user-friendly way for users to monitor vehicles, view live locations, manage vehicles, and analyze reports in real time.

2. UI Design Objectives

- Simple and intuitive navigation
- Real-time visualization of vehicle locations
- Fast response and minimal loading time
- Secure access based on user roles
- Responsive design for web and mobile devices

3. User Roles

- Admin – System configuration and full access
- Manager – Fleet monitoring and reports
- Driver – View assigned vehicle status only

4. Login & Authentication Screen

The login screen allows users to securely access the system using valid credentials. It includes username, password fields, and error validation messages.

- 1 Username and password input fields
- 2 Forgot password option
- 3 Login button with validation
- 4 Error messages for invalid login

5. Dashboard Screen

The dashboard provides a summarized view of all vehicles and system status immediately after login.

Dashboard Element	Description
Total Vehicles	Shows total registered vehicles
Active Vehicles	Displays currently running vehicles
Inactive Vehicles	Shows stopped or offline vehicles
Alerts Panel	Displays recent alerts and notifications
Map Preview	Mini live map with vehicle markers

6. Live Vehicle Tracking Screen

This screen displays real-time vehicle locations on an interactive map.

- 1 Google Maps / OpenStreetMap integration
- 2 Vehicle markers with color status
- 3 Click marker to view vehicle details
- 4 Auto-refresh location updates
- 5 Zoom, pan, and full-screen map options

7. Vehicle Management Screen

The vehicle management screen allows adding, editing, viewing, and deleting vehicle records.

Function	Description
Add Vehicle	Register new vehicle details
Edit Vehicle	Update vehicle information
Delete Vehicle	Remove vehicle from system
Assign Driver	Link driver to vehicle
Vehicle Status	View engine and connectivity status

8. Reports & History Screen

This screen provides historical tracking data and downloadable reports.

- 1 Trip history by date and vehicle
- 2 Distance and speed analysis
- 3 Export reports in PDF/Excel
- 4 Search and filter options

9. Alerts & Notifications Screen

Alerts notify users about abnormal vehicle behavior.

- 1 Over-speed alerts
- 2 Geofence violation alerts
- 3 Ignition on/off alerts
- 4 Push and email notifications

10. Settings & Profile Screen

Users can manage personal profile and system preferences.

- 1 Update profile information

- 2 Change password
- 3 Notification preferences
- 4 Language and theme settings

11. Conclusion

The user interface of the Real-Time Vehicle Tracking System is designed to provide clear visualization, ease of use, and efficient vehicle monitoring for different user roles.