

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	16 June 2025
Team ID	LTVIP2025TMID40962
Project Name	<b>TrafficTellgence: Advanced Traffic Volume Estimation with Machine Learning</b>
Maximum Marks	4 Marks

**Functional Requirements:**

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	User-friendly interface for traffic staff and admin
NFR-2	<b>Security</b>	Encrypted video feeds, secure login, role-based access
NFR-3	<b>Reliability</b>	Consistent traffic detection and monitoring without major failures

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	<ul style="list-style-type: none"><li>- Registration through Form</li><li>- Registration via Gmail</li><li>- Registration via LinkedIn</li></ul>
FR-2	User Confirmation	<ul style="list-style-type: none"><li>- Confirmation via Email</li><li>- Confirmation via OTP</li></ul>
FR-3	Real-time Traffic Monitoring	<ul style="list-style-type: none"><li>- Video Feed Input</li><li>- Object Detection (Vehicles)</li><li>- Traffic Density Calculation</li></ul>
FR-4	Intelligent Traffic Alerts	<ul style="list-style-type: none"><li>- Congestion Alert</li><li>- Accident Detection</li><li>- Notifications to Authorities</li></ul>
FR-5	Dashboard for Authorities	<ul style="list-style-type: none"><li>- Area-wise Traffic Status</li><li>- Heatmap View</li><li>- Historical Data Trends</li></ul>

FR-6	User Feedback Collection	<ul style="list-style-type: none"> <li>- Rate Signal Timings</li> <li>- Report Traffic Issues</li> </ul>
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### Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

NFR-4	<b>Performance</b>	Fast response time even during peak traffic hours
NFR-5	<b>Availability</b>	System availability > 99.9% with minimal downtime
NFR-6	<b>Scalability</b>	Expandable to new locations, new data sources, and more users