Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	27th June 2025
Team ID	LTVIP2025TMID36740
Project Name	TrafficTelliigence: Advanced Volume Estimation Using with Machine Learning
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Image Preprocessing	Convert raw traffic footage into clean frames - Apply object detection filters - Noise removal
FR-2	Vehicle Detection and Classification	Detect vehicles in frame using ML model - Classify by type (car, bus, bike, etc.)
FR-3	Performance and Reporting	Estimate vehicle count per unit time - Generate daily/hourly volume reports
FR-4	Data Handling	Store processed data in a structured format - Enable real-time and historical data access

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The system interface should be user-friendly and easy to interpret for traffic analysts and administrators.
NFR-2	Security	Data collected from surveillance should be securely stored and transmitted using encryption.
NFR-3	Reliability	The system should maintain consistent accuracy in vehicle detection and count under various lighting and weather conditions.

NFR-4	Performance	The ML model should process traffic data in near real-time with minimal latency.
NFR-5	Availability	The system should be accessible 24/7 with minimum downtime, especially during peak traffic hours.