

Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	27 th June 2025
Team ID	LTVIP2025TMID41765
Project Name	TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning
Maximum Marks	4 Marks

Functional Requirement:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Upload Traffic Sensor Data	Upload traffic volume data (e.g., from cameras, sensors, or CSV files)
FR-2	Model Training	Train models using ML algorithms (e.g., Random Forest, XGBoost, LSTM)
FR-3	Traffic Volume Prediction Output	Predict traffic volume based on historical and real-time data
FR-4	Model Evaluation	Display evaluation metrics like MAE, RMSE, R ² Score for each model

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	User-friendly interface via Streamlit or Flask; usable by traffic authorities
NFR-2	Security	Local or cloud-secure data handling; no public data leaks
NFR-3	Reliability	Cross-validated predictions with multiple model comparisons
NFR-4	Performance	Capable of handling large sensor datasets (e.g., 1000+ entries per hour)

NFR-5	Availability	Deployable via Colab or hosted platforms (e.g., Heroku, AWS, or GCP)
NFR-6	Scalability	Scalable with cloud APIs, real-time data streams, and multiple endpoints