**Project Design Phase-II**

**Data Flow Diagram & User Stories**

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| Date | 24 June 2025 |
| Team ID | LTVIP2025TMID35493 |
| Project Name | TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning |
| Maximum Marks | 4 Marks |

**Data Flow Diagrams:**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

**Level 0 DFD – Context Level**

**Traffictelligence**

**System**

**User**

**(Analyst/Admin)**

Upload Data

Processed Results

**Data Stores:**

- Historical Traffic Dataset

- Uploaded Files

- Trained Models

**External Systems (optional):**

- Weather API (OpenWeatherMap)

- Live Traffic Feed API (Google Traffic)

**User Stories**

| **User Type** | **Functional Requirement (Epic)** | **User Story Number** | **User Story / Task** | **Acceptance criteria** | **Priority** | **Release** |
| --- | --- | --- | --- | --- | --- | --- |
| Analyst (Web) | Data Upload | |  | | --- | |  |  |  | | --- | | USN-1 | | As an analyst, I can upload traffic CSV files for analysis. | I receive confirmation of successful upload. | High | Sprint-1 |
| Analyst (Web) | Visualization | USN-2 | As an analyst, I can view traffic trends in graphs and charts. | I can interpret trends through visual insights. | High | Sprint-1 |
| Analyst (Web) | Download Report | USN-3 | As an analyst, I can download a PDF report of the results. | I can receive a well-formatted, complete traffic analysis report. | Medium | Sprint-2 |
| Analyst (Web) | Compare Trends | USN-4 | |  | | --- | |  |  |  | | --- | | As an analyst, I can compare traffic patterns across different time periods. | | I see comparative insights across dates/locations. | Medium | Sprint-3 |
| Admin (Web) | Model Upload | USN-5 | As an admin, I can upload/update the ML model used for traffic prediction. | The latest model is used after upload. | High | Sprint-1 |
| Admin (Web) | History | USN-6 | As an admin, I can monitor upload activity and analytics usage.. | I can view logs of data uploads and predictions. | Medium | Sprint-3 |
| System | Model Management | USN-7 | As a system, I validate uploaded files and reject incorrect formats. | Only valid CSV/XLSX files are accepted. | High | Sprint-1 |
| ML Service | Prediction | USN-8 | As a model, I analyze the uploaded data and return traffic predictions. | I return congestion level, trend type, and anomaly detection within 5 sec. | High | Sprint-2 |
| Support Executive | Query Handling | USN-9 | As a support executive, I can answer analyst queries through a support portal. | I can read the query and reply within the platform. | Medium | Sprint-3 |
| System | External Data Integration | USN-10 | As a system, I fetch weather data via API to improve prediction accuracy. | External data is merged into prediction pipeline for enhanced output. | Medium | Sprint-3 |