Product Requirements and Specification Document

Project Name

MoveFlow - Transportation Fleet Dashboard

Description

Develop a Tableau dashboard for a transportation company to visualize fleet utilization, trip frequency, and maintenance schedules. Incorporate calculated fields for cost analysis. The dashboard will support business decision-making and operational efficiency.

---

1. Objectives

Objective	Description
Fleet Utilization Visualization	Display real-time and historical usage of fleet vehicles
Trip Frequency Analysis	Show number and frequency of trips per vehicle/route/time period
Maintenance Schedule Tracking	Visualize upcoming and past maintenance events
Cost Analysis	Calculate and display cost metrics using Tableau calculated fields

---

2. Stakeholders

Role	Responsibility
Product Owner	Requirements, acceptance, prioritization
Data Analyst	Data preparation, validation
Tableau Developer	Dashboard implementation
Operations Team	End users, feedback

---

3. Functional Requirements

ID	Requirement
FR1	Import fleet, trip, and maintenance data into Tableau
FR2	Visualize fleet utilization (e.g., % active, idle, under maintenance)
FR3	Display trip frequency by vehicle, route, and time period
FR4	Show maintenance schedules (upcoming, overdue, completed)
FR5	Implement cost analysis using calculated fields (e.g., cost per trip, maintenance cost)
FR6	Enable filtering by date range, vehicle, route, and status

FR7	Provide export options (PDF, image) for dashboard views

---

4. Non-Functional Requirements

ID	Requirement
NFR1	Dashboard loads within 5 seconds
NFR2	Data refreshes daily or on-demand
NFR3	Responsive design for desktop and tablet
NFR4	Use open-source data connectors where possible
NFR5	Adhere to company data privacy standards

---

5. Data Sources & Structure

Data Entity	Key Fields
Fleet	Vehicle ID, Type, Status, Acquisition Date
Trips	Trip ID, Vehicle ID, Route, Start/End Time, Distance, Cost
Maintenance	Event ID, Vehicle ID, Date, Type, Cost, Status

---

6. Calculated Fields (Tableau)

```
// Example Calculated Fields
Fleet Utilization (%) = (Active Vehicles / Total Vehicles) * 100
Cost per Trip = SUM([Trip Cost]) / COUNT([Trip ID])
Maintenance Overdue = IF [Next Maintenance Date] < TODAY() THEN 'Overdue' ELSE '
```

---

7. Dashboard Components

Component	Description
Fleet Utilization Chart	Bar/Donut chart showing active/idle/maintenance
Trip Frequency Heatmap	Heatmap by vehicle, route, and time period
Maintenance Timeline	Gantt or calendar view of maintenance events
Cost Analysis Panel	KPIs: total cost, cost per trip, maintenance cost
Filters	Date, vehicle, route, status
Export Button	Export dashboard views to PDF/image

---

8. User Stories

ID	As a…	I want to…	So that…
US1	Operations Lead	View fleet utilization trends	Optimize vehicle deployment
US2	Analyst	Analyze trip frequency by route	Identify high/low demand routes
US3	Maintenance Mgr	Track upcoming and overdue maintenance	Reduce downtime
US4	Finance	Review cost metrics per trip and maintenance	Control operational expenses

---

9. Acceptance Criteria

- Dashboard displays all required visualizations and calculated fields
- Data can be filtered by date, vehicle, route, and status
- Cost analysis is accurate and updates with filters
- Maintenance schedule is clear and actionable
- Dashboard exports function correctly
- Performance and data refresh meet requirements

---

10. Timeline & Milestones

Milestone	Target Date
Data Preparation	Week 1
Initial Dashboard Draft	Week 2
Stakeholder Review	Week 3
Final Dashboard Delivery	Week 4

---

11. Risks & Mitigations

Risk	Mitigation
Data quality issues	Data validation and cleansing
Tableau licensing limits	Use Tableau Public if feasible
Incomplete requirements	Regular stakeholder check-ins

---

12. Out of Scope

- Real-time vehicle tracking
- Mobile app development
- Integration with external maintenance systems

---

13. Appendix

- Data sample files (to be provided separately)
- Tableau dashboard template (to be provided separately)
