

**Project Design Phase-I**  
**Proposed Solution Template**

Date	25 September 2022
Team ID	PNT2022TMID38910
Project Name	Project – Trip Based Modelling of Fuel Consumption in Modern Fleet Vehicles
Maximum Marks	2 Marks

**Proposed Solution Template:**

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	<p>A new asymmetric twin-scroll turbocharged engine with two EGR circuits is first presented.</p> <p>Experiment and simulation are combined on the diesel engine with asymmetric turbocharger.</p> <p>Effect laws of turbine critical parameters and EGR valves control strategy are explored.</p>
2.	Idea / Solution description	<p>Capture and prevent fuel theft and leakage. Fuel monitoring and anti-siphoning devices can update you on fuel amounts in trucks and on-site tanks and send alerts about fuel levels.</p> <p><b>Calculate and report fuel taxes.</b></p> <p>Integrated with your vehicle's GPS, a</p>

		<p>fuel management system can automatically calculate travelled distance and purchased fuel to help file your IFTA tax reports.</p> <p>The ultimate benefit of fuel management systems is automation operations that used to be done manually in spreadsheets can happen automatically in the background, providing analytics for you to base your decisions on. Now, let's cover the main opportunities and how they work.</p>
3.	Novelty / Uniqueness	<p>Use the intuitive charts and reports provided on the Onboard Cloud to analyse safety trends for your fleet.</p> <p>Deep dive into vehicle and driver-level analytics to pinpoint safety issues and identify actions.</p> <p>Onboard Cloud also combines collision avoidance alerts with other telemetric parameters to provide a powerful picture of how your fleet safety is improving.</p>

4.	Social Impact / Customer Satisfaction	<p>Use these driver state alerts to enable fleet management interventions.</p> <p>Driver Monitoring alerts can also be combined with Safety Analytics to give a complete safety view of the fleet and driver.</p> <p>With distraction, drowsiness, and compliance alert data metrics, you'll have up-to-date metrics on driver behaviour and corrective actions to help improve driver and vehicle safety.</p> <p>Our unified driver scoring system also combines driver state alerts along with collision alerts to assign a driver score and rating to each driver.</p>
5.	Business Model	<p><b>Vehicle specifications and experimental approach:</b></p> <p>The fuel consumption test data for the five types of gasoline and diesel passenger vehicles (total 10 vehicles) was implemented to validate the prediction accuracy of the simulation results. In this study, it is appropriate to select diverse vehicles which have different weights and engine displacements because the wider range of comparative analysis was enabled and it can increase the</p>

		<p>reliability of the calculation result.</p> <p>Therefore, each test vehicle has a gap in vehicle weight and engine</p>
6.	Scalability of the Solution	<p>Look at fuel efficiency metrics to identify and implement optimizations to improve mileage and improve vehicle health.</p> <p>Keep a tab on your daily fuel burn against distance travelled. Fuel consumption shown is the actual diesel burnt in the combustion cylinder and not dependent on tank level-based top-up.</p> <p>The gear utilization graph gives you a fair understanding regarding the wear and tear of two major mechanical components (gear box and clutch plate) which ensures the uptime of the vehicle when on route.</p> <p>Understand fuel pilferage situations along with details on quantity and location. Take preventive steps to save on fuel.</p>