Project Title: Trip Based Modeling of Fuel Consumption Project Design Phase-I - Solution Fit Template

**I**

**d e n ti f**

in Modern Fleet Vehicles

**Explore AS, differentiate**

**Define CS, fit into CC**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1. CUSľOMER SEGMENľ(S)** ľíanspoít Vehicles Díiveí/owneí ľíanspoít Companies | | **CS** | **6. CUSľOMER CONSľRAINľS**  **CC**  Experiment and simulation are combined on the diesel engine with asymmetric turbocharger | | **5. AVAILABLE SOLUľIONS**  Ideations  Providing data and research analysis of fuel economy potential by country and region  Creating database with data collected using PEMS devices | | | **AS** | |
| **Focus on J&P, tap into BE, understand RC** | **2. JOBS-ľO-BE-DONE / PROBLEMS** |  | **9. PROBLEM ROOľ CAUSE** | **RC** | |  | **7**i **. BEHAVIOUR**  A new asymmetíic twin-scíoll tuíbochaíged engine with two EGR ciícuits is fiíst píesented  ľhe new system has the maximum EGR íate and fuel economy impíovements of 8.59% and 1.98% | **BE** | **Focus on J&P, tap into BE, understand RC** |
| Models aíe developed to compute | **J&P** | ľhe model is moíe |  | |
| the fuel consumption levels of |  | consistent with |  | |
| vehicles |  | empiíical obseívations |  | |
| ľhe íeseaích collects bus fuel |  | compaíed to the MOVES |  | |
| consumption data foí diesel vehicles |  | and CMEM models |  | |
|  | **3. ľRIGGERS** | | **10. YOUR SOLUľION** | | | | **8. CHANNELS of BEHAVIOUR**  **CH**  **8.1 ONLINE**  Check cuííent ongoing fuel consumption  **8.2 OÏÏLINE** | | |
| **ľR** | | **SL** | | | |
| Performing correlation analysis on | | Developing the neural networks and | | | |
| the input parameters selected to | | identifying the network with best-performing | | | |
| eliminate multi-colinear variables. | | hyper parameters | | | |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **4. EMOľIONS: BEÏORE / AÏľER**  **EM**  **befoíe customeí can only monitoí the fuel consumption**  **afteí developing the model customeí can anti- siphoning devices update on fuel amounts in tíucks**  **ľhey incoípoíate data about fuel tíansactions into analytics** | The hyper parameters include the number of hidden layers learning rate and optimization function.  r. | Customer can view previous fuel monitoring status |