Design Diagram Description

Level 0:

- The basic overview of the system is that it gets input from vehicle sensors, collects that data at the OBD II connector, and displays that information on the display.

Level 1:

- With the vehicle sensors as the input through the OBD II port, that information is read by the OBD connector device so it can prepare packages to send to the database. The purpose of this is so that the information on the database can be utilized in a variety of ways, such as being displayed on the dashboard, accessed through a web-browser dashboard, and so analytics can be done on the data.

Level 2:

- Vehicle sensor data, as well as power for the OBD II connector, is collected from the vehicle. The selected microcontroller, ATSAMD21 at the moment, is used to get this data and send it through the Bluetooth device to the Raspberry Pi on the display, or through the wired connection. The OBD II connector will also use the microcontroller to display status LEDs for debugging. Once the data is collected on the Raspberry Pi, this data is then formatted to fit the display characteristics of the selected monitor. The Raspberry Pi is also connected to a micro-GPS module that will track the location of the car and supply useful information to the database. This information is also sent to the online database in Losant. Once there, this information can be viewed via the web-browser to see real-time data. This data can only be viewed through the web-browser through an authorized account. An additional viewing format is supplied where the data is converted into an immersive virtual reality dashboard experience.