#### Project Design Phase 1

#### Proposed Solution

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| **Date** | 5 November 2022 |
| **Team ID** | PNT2022TMID29155 |
| **Project Name** | Project- Signs with smart connectivity for better road safety |
| **Maximum Marks** | 2 marks |

#### Proposed solution template

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| **S.NO.** | **Parameter** | **Description** |
| 1 | Problem Statement | To replace the static signboards, smart connected sign boards are used.  These smart connected sign boards get the speed limitations from a web app using weather API and update automatically.  Based on the weather changes the speed may increase or decrease Based on the traffic and fatal situations the diversion signs are  displayed  Guide (Schools), Warming and Service (Hospitals, Restaurant) signs are also displayed accordingly.  Different modes of operations can be selected with the help of  buttons. |
| 2 | Idea description | The weather and temperature details are obtained from the Open Weather Map API. Using these details, the speed limit will be updated automatically in accordance with the weather conditions. Also, the details regarding any accidents and traffic congestion faced on the particular road are obtained. Basedon this, the traffic is diverted followed by a change in map path and the traffic is cleared. So in the traffic sign board, some buttons will be placed which will be used to make it generic; where each button will be given a functionality such as changing the warming signs, which are predefined and separate signs will be present for both school and hospital zones. By activating this button, either through the web application or the physical buttons, sign of the board can be changed accordingly, and the speed limit will also be set depending upon the zones. |
| 3 | Novelty | Generic Sign board for all applications that uses both buttons and web service for updation.  Pedestrians are given the access to request the sign charge of the signal to cross the road |
| 4 | Customer Satisfaction | Diversion reasons will be displayed  If there is no traffic, pedestrians can cross the street without waiting. Customer can reach the destination before the expected time. |
| 5 | Business Model | Since APIs are used to actively monitor the customer's environment, this project employs a business strategy in which revenue will be generated on the basis of the length of time in which the customers actively interact with the product.  This product is aimed to be free of cost to the public, but the revenue will be generated by selling this product to the government at a low cost, so there will be less accidents and the public will be aware of the discrepancies or accidents in the particular road. |
| 6 | Scalability of the solution | In the future, if any update is required either on the hardware or software side, it can be easily implemented. The hardware components can be directly interfaced with the microcontroller and small modifications can be made in the programming of the existing product. In case of the software, the website application has to be updated with the additional functionality by creating a new section for the updated hardware. So this will not affect the existing functionality of the product and new functionality can be easily integrated. |