Project Design Phase-I

Proposed Solution

Team ID	PNT2022TMID11493
Batch	B11-5A1E
Project Name	Signs with smart connectivity for better road safety

Problem Statement	Instead of using a static sign board here we are going to use a smart sign simulation system .These smart connected sign boards get the speed limitations from a web app using weather API and update automatically. Based on the weather changes and the accidents happening on the road the speed may increase or decrease Based on the traffic the diversion signs are displayed. Traffic signs will be displayed accordingly. Different modes of operations can be selected with the help of buttons.

Idea / Solution Description	The weather and temperature details are obtained from API services.by these details, the speed limit will be updated automatically in accordance with the weather. Also, the details regarding any accidents and traffic congestion faced on the particular road are obtained from previous records.Based on 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 warning 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. Also, the pedestrians are given an option to change the traffic signs if they want to cross the road. If the pedestrian presses the button that is present on the post at the end of the road, then the traffic will be analyzed immediately.According to the sign signals will get changed.

Novelty/Uniqueness	Generic Sign board for all applications that uses both buttons and web service for updation Pedestrians are given the access to request the sign change of the signal to cross the road
Social impact / Customer Satisfaction	Diversion reasons will be displayed If there is no traffic, pedestrians can cross the street without waiting. Customers can reach the destination before the expected time.
Business model(Financial Benefits)	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. The public will also gain all the information about the road, even if they are checking for an alternate path because of some mishaps that happen on the roads and these functionalities will increase the value of the product in the global market.
Scalability of 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. In addition, a separate circuit will be kept along with the hardware to detect any problem which informs the web application. Also a notification will be sent to the product service department.