# VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
# INDIA

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**A Project Synopsis**

On

## PEDESTRIANS SAFETY, ANTI ACCELERATION AND IMAGE INDICATION OF HIGHWAY SIGN BOARD WITH SPEECH ALERT

Submitted by


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Research Guide


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# PEDESTRIANS SAFETY, ANTI ACCELERATION AND IMAGE INDICATION OF HIGHWAY SIGN BOARD WITH SPEECH ALERT

## PROBLEM STATEMENT:

Automatic road sign detection and tracking is an important task in a driver assistance system. Its importance lies mainly on the vast amount of car accidents that happen each year all over the world, caused by the driver's inability to process all the visual information they receive while driving. Road signs characterized by color and shape are primarily for guiding, warning, and regulating car drivers. Each color and shape of the road signs conveys a particular meaning.

## MOTIVATION:

Accidents occur frequently in highways, which will create a heavy loss for the victim's families as well as for the society. Mainly accidents occur due to the unawareness of the driver about the obstacles that may be present on the highway routes.

## OBJECTIVE AND SCOPE:

This project is developed in the vision of preventing accidents in the highways. A prior intimation is given to the driver about the obstacles present in the highways such as steep curve, bends, speed humps etc. to avoid mishaps.

## PROCESS AND DESCRIPTION:

The microcontroller located at the center of the block diagram forms the control unit of the entire project. Embedded within the microcontroller is a program that helps the microcontroller to take action based on the inputs provided by the output of the sensors.

## Block Diagram

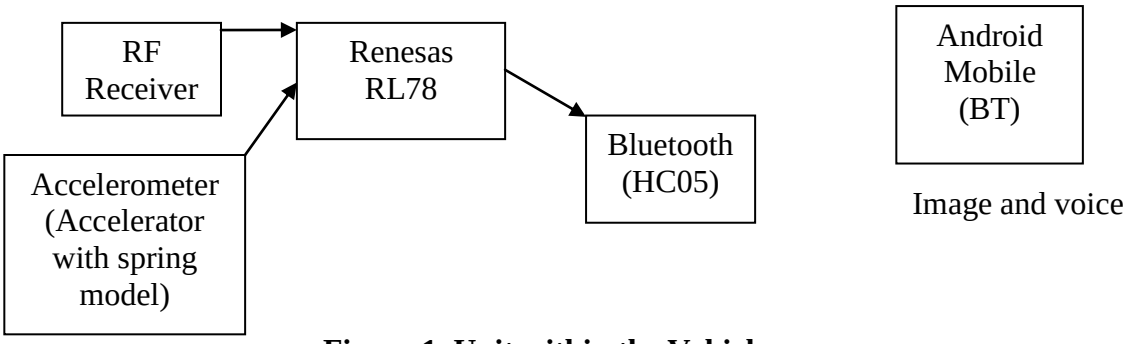


**Figure 1. Unit within the Vehicle**

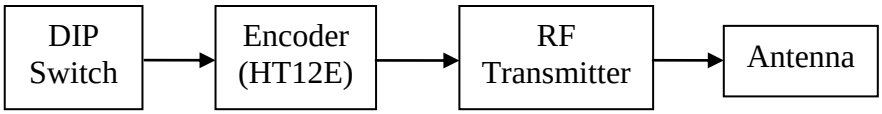


**Figure 2. Digital Signboard**

When an RF signal is received by RF receiver within the vehicle, from a RF transmitter used by digital signboards, the microcontroller, based on the program embedded within it, passes the message to Bluetooth module which further transmits the message to the Android Smartphone of the driver, about the particular signboard.

Through the use of Android application, developed for this particular project demonstration, the driver of the vehicle is informed via voice about the presence of particular signboard along the road taken.

## COMPONENTS LIST:

1. Microcontroller –Renesas RL78 series or Raspberry Pi.
2. RF Transmitter and Receiver module.
3. Accelerometer.
4. DIP switch.
5. Bluetooth ( HC05).
6. Android Mobile.

## SOFTWARE'S USED:

1. Cube Suite+.
2. Renesas Flash Programmer.
3. JAVA.
4. Android.

## CONCLUSION:

This device acts as a friendly and economical device on the highway used to give the information about the spot and situation before hand and avert mishaps.