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RESEARCH ARTICLE

Smartphone Based Controlling and Pit Detection System

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Abstract*—In this work pits, obstacles and navigation of the module is developed for the effective driver control and safety navigation scheme is approached. The system consists of Bluetooth module, IR sensor, Ultrasonic sensor and microcontroller unit. Ultrasonic sensor is used to detect pits and uneven surfaces, IR sensors is used to detect obstacles on left and right sides of the system and using Bluetooth module the navigation path is controlled through Smartphone. At the event of the pit detection (using Ultrasonic Sensor) or obstacle detection (using IR Sensors) the display provided near will be displaying the information and the system has to reduce the speed to buy time for the driver to take decision. An android application is first to be installed in the Smartphone which consists of the facility to pair and with the navigational control keys. At the event of navigation control the application will pass the address and this address has to be matched with controlling of forward, reverse, right and left for navigation. Bluetooth module in the system is paired with Smartphone and further using of relay to have switching of controlling either using Smartphone or in vehicle guidance control. The available existing system is hand gesture navigation and obstacle detection. There is no detection of uneven approaches and navigational controlling of hand gestures use sensors in hands. Instead of using sensor the approach of Smartphone based navigation control and the detection of pits and obstacles are developed.

***Keywords*— Smartphone; Ultrasonic sensor; IR sensors; Bluetooth; Pit**

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