

RFID-Based Vehicle Noise and Air Pollution and Overspeed Monitoring and Enforcement System

Prof. Rukyabano M Sayyad, Saurabh Patil, Tushar Sarwade, Rumana Shikalgar

Department of E&TC

Al-Ameen Educational and Medical Foundations College of Engineering and Management Studies, Pune

Abstract: *These days, mass-produced vehicles benefit from research on Intelligent Transportation System (ITS). One prime example of ITS is vehicle Cruise Control (CC), which allows it to maintain a pre-defined reference speed, to economize on fuel or energy consumption, to avoid speeding fines, or to focus all of the driver's attention on the steering of the vehicle. However, achieving efficient Cruise Control is not easy in roads or urban streets where sudden changes of the speed limit can happen, due to the presence of unexpected obstacles or maintenance work, causing, in inattentive drivers, traffic accidents. In this communication we present a new Infrastructure to Vehicles (I2V) communication and control system for intelligent speed control, which is based upon Radio Frequency Identification (RFID) technology for identification of traffic signals on the road, and high accuracy vehicle speed measurement with a Hall effect-based sensor. A fuzzy logic controller, based on sensor fusion of the information provided by the I2V infrastructure, allows the efficient adaptation of the speed of the vehicle to the circumstances of the road. The performance of the system is checked empirically, with promising results.*

Noise and air pollution violation is one of the factors that contribute to car crashes in India. In this project, a vehicle noise and air pollution monitoring and enforcement system which using RFID technology is proposed in order to reduce the noise and air pollution ing violation. In India, AES cameras are installed at fixed locations to capture the vehicles which violating noise and air pollution limits. After certain time, the drivers will come in mind the locations of the AES cameras. This may lead to a very dangerous situation. For example, when the drivers approaching the enforcement zone, they will suddenly decelerate the vehicle noise and air pollution and only to accelerate again after passed through the enforcement zone. RFID reader which uses ultra-high frequency (UHF) can easily to scan the tag for maximum 100 meter.

Therefore, the RFID reader can install far away from the roadside and make the drivers hard to aware the enforcement zone. This is the reason why preferring RFID technology over others after discussed and studied. In this project, method on how to collect data from the RFID reader every time the vehicle pass through the RFID reader will be shown. The time count will start when the vehicle pass through the start RFID reader and stop when the vehicle pass through the stop RFID reader. The noise and air pollution of the vehicle will calculate based on the time difference. If the calculated noise and air pollution exceeds the noise and air pollution limit, a buzzer will sound up and a message will send to the driver.

Keywords: Intelligent Transportation System

