



# International Journal of Innovative Research in Computer and Communication Engineering

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## Framework for Vehicular Speed Control in IOT

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**ABSTRACT:** Now-a-days accidents happen on highways very frequently. In most of the cases, the reason of accident is over speeding. All highways have certain set speed limits prominently displayed on driver information signs for the enforcement of traffic control and safety, but it is a tendency of drivers to ignore the speed limit signs. Safety of the vehicle and occupants is of prime importance. With increased speed, the chances of accidents also increase as the brakes require adequate stopping distance which increases proportionally with speed. For example, a speed of 100+ km/h will usually require a stopping distance of about ten times the length of the car and such sudden braking can also lead to loss of traction on the tyres, putting the lives of the driver and the occupants, along with other commuters on the road, at risk. Despite traffic patrols, speed guns and roadside infrastructure for monitoring and penalties for over-speeding, drivers still chose to ignore the safety norms. As far as penalties are concerned, the drivers get away by paying a one-time fine. This is a serious matter and amounts to risking one's and the occupants' precious lives. The project '**Framework for vehicular speed control**' has been conceived keeping this problem in mind. The concept focuses on reducing the speed of a vehicle safely if it passes a given threshold; without the loss of control or traction using embedded technologies. Another possibility could be the restriction on the maximum instantaneous speed the vehicle can accelerate to.

**KEYWORDS:** Sensors , Actuator , Intelligent Transport System, GPS , CPS, RSU

### I. INTRODUCTION

In 2014, the figure for accidental deaths stood close to 139,000 for all Indian States [1], out of which over-speeding accounted for 48,654 deaths [2] (a close 36% of all accidents), which is quite a huge segment of the total statistics.

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The sheer volume of road traffic affects the safety and efficiency of traffic environment. Approximately 1.2 million people are killed each year on the road accidents. Road traffic safety has been the challenging issue in traffic management.

### II. LITERATURE SURVEY

B. Devikiruba , The proposed work is an attempt to control the speed of the vehicle designed with computer software to enable the third party or owner to get the location, speed and activity of the driver. To achieve this, the system can transmit the information in real time. The use of GSM/GPRS technologies allows the system to track the objects and provide the up-to-date information. This information is authorized to specific users over the internet as the server gets the information. It is the monitoring system to transmit data to the remote user. Thus the applications are used in real



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time traffic surveillance. This paper proposes a prototype model for location tracking using Geographical Positioning System (GPS) and Global System for Mobile Communication (GSM) technology. As these GPS technologies having greater range of frequencies, the user can get the information as quicker as possible. This system is very useful to control speed at specific traffic roads.

Li Ye-Jing Chen Ming-Cail , Zhang Guang-Quan, Shao Yu-Zhen, Feng Fei, Hou Xing-Hua , Cyber-Physical Systems (CPS) are networks of embedded systems with the integrations of computation and physical processes. Modern cars consist of many ECUs, which form a complex environment of embedded network, a typical vehicular CPS. This paper analyses the features of vehicular CPS software in depth such as heterogeneity and distributed, then we propose a modeling method for vehicular Cyber-Physical System with extended hybrid automata as formal modeling tools from the perspective of service providing, treating the monitor and control device entities as device services respectively. At last, a case of the vehicle speed control system shows the validity of them modeling method.

Eugene Song, David Westbrook, Kang B. Lee This Paper Analog transducers (sensors or actuators) are widely used in industry. The Institute of Electrical and Electronics Engineers (IEEE) 1451.4 standard defines a mixed-mode communication protocol and the Transducer Electronic Data Sheet (TEDS) formats for analog transducers. This standard enables the plug-and-play capability of analog transducers and easy integration of analog transducers with measurement and control systems. This paper describes a prototype of the IEEE 1451.4 one-wire interface for analog transducers. The prototype system developed at the National Institute of Standards and Technology (NIST) consists of an IEEE 1451.4-based transducer, a one-wire interface board, and a single board computer (SBC). An example of reading the IEEE 1451.4 TEDS from an IEEE 1451.4-compatible accelerometer is provided to illustrate system functionality.

Chandan Ratnani, V. B. Vaghela, D. J. Shah In Vehicular ad hoc network (VANET) communication has recently become an increasingly popular research topic in the area of wireless networking as well as the automotive industries. Recent advances in vehicular communications make it possible to realize Vehicular Sensor Networks (VSN) where mobile vehicles are equipped with sensors of different nature which can sense events, process sensed data and route messages to other vehicles. The goal of VANET research is to develop a vehicular communication system to enable quick and cost-efficient distribution of data for the benefit of passengers' safety and comfort. VANETs are not just for fun, their aim is even to avoid accidents using periodic broadcast of messages containing vehicles' status information such as position and speed vector and a safety system aware of its surrounding to detect potential dangerous situations for the driver. Safety applications could avoid injuries, convenience and leisure applications could increase the comfort of the driver and passengers.

### III. PROPOSED SYSTEM

**Sensor:** The sensor is integrated with the vehicle computer controller to judge the speed of the vehicle. The sensor can also be equipped with a trusted platform module (TPM) to enhance security.

**Network Module:** The network module is needed so that VANET can work with efficiency. Also, system errors or road conditions can be monitored with a VANET system in place. The network provides Vehicle-to-Vehicle and Vehicle-to-Infrastructure connectivity.

**On-Board Unit:** The on-board unit carries out the main task of speed control via inputs from the sensor. Working with the vehicle computer, it ensures speed compliance at all times. Also, network communication takes place through the on-board unit.

**Road Side Unit (RSU):** The RSU provides connecting support to all the vehicles connected to the VANET. Acting as a connection medium, it transmits any traffic and accident information to all the connected peers.

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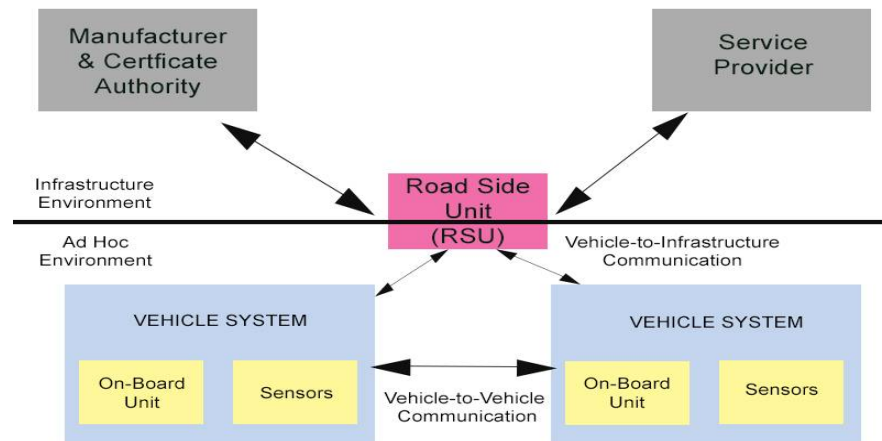


FIG.1 PROPOSED SYSTEM ARCHITECTURE

## IV. CONCLUSION

- [1]. Overall, the conceived system is quite attainable with the current technological developments in IoT. What we are trying to do here is, use the combined power of VANET and IoT to create a robust mechanism [2]. That ensures speed compliance on roadways and hopefully saves many precious lives.
- [3]. we would like to thank our Head of Department and esteemed guide who has constantly supported us with perseverance despite our marginal efforts.
- [4]. the increasing number of accidents due to over speeding , this system has a bright future, going by the saying “prevention is better than cure”.

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