

Insurance Telematics and Automotive Cyber Monitoring

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Abstract- Now-a-days as we open the newspaper, we find at least one news of a road accident. With vehicles becoming increasingly affordable, there has been a surge in the number of vehicles on roads on an average all over the world. Accidents bring devastation upon victims, causing loss of precious time and money. It has been established, after extensive research, that a majority of accidents become fatalities because of lack of communication to the concerned medical authorities and the consequent lack of immediate medical support. This application helps sense the possible occurrence of an accident on the road, with the help of sensors attached to the vehicle. This occurrence will be immediately communicated to the concerned people so that further action can be taken without any further delay.

Index Terms- Sensors, Ultrasonic Sensors, IOT, Obstacle Detection

I. INTRODUCTION

A typical economic transaction involves a known and quantifiable service or product being provided for a particular selling price. When purchasing insurance cover, a policyholder pays an insurer a premium to purchase a policy, which is an agreement that stipulates conditions under which the insurer would pay for own or third party damages within a stipulated timeframe. Conventional automotive insurance differs from a typical economic transaction with respect to two key aspects. Firstly there is no knowledge of the magnitude of the service provided since the amount of claims paid (if any) is unknown. Secondly, by paying a lump sum premium depending on demographic and judgmental factors, drivers pay the same premium independent of usage. Boardoff and Noel (2008) compare this to a buffet restaurant that encourages more eating and explain that current conventional pricing encourages more driving which in turn increases claims and therefore premiums.

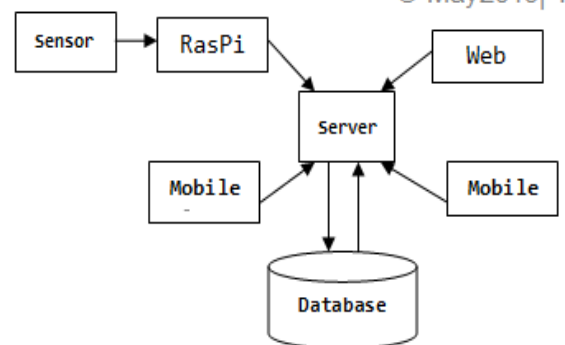
II. LITERATURE SURVEY

While the collaboration of sensors and smartphone for sensing purpose is suggested by Dragan Peraković et al [1]. The basic platform needed for insurance telematics is data collection, the architecture of data collection is explained by this paper [2]. After data processing data transferring and data analysis are important factors. Jiangqin Peng et al represents the layers required for data transferring and analysis. Client- clouded-carrier type of architecture is explained in proposed work. Daub Yoon et al proposed the data acquisition system for telematics [3]. The research papers by Manisha J Prasad et al. and Kaseem et al are the overview of black boxes required for vehicle monitoring [4]. Use of accelerometer sensor in accident detection and GPS for location is explained by N. Watthanawisuth et al [5]. The patent document by Steven J. Fernandes et al gives the overall insurance telematic outline. It also explains the calculation process of telematics [6]. Various research papers by IBM and Vodafone explain the importance of telematics and future trends of this technology [7].

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III. PROPOSED SYSTEM

BLOCK DIAGRAM:



The sensors as shown in block diagram will take the data as input from the car & its parts. Speed and location is obtained from GPS of smartphone. For this API to get the location from android.location.LocationListener is used. This data will be processed inside the Raspberry Pi controller & tallied with the data stored in the server i.e. threshold values. A threshold level or value of each sensor will be decided on the trial and error basis which is programmed in Java. This data will be sent to the server via the internet (HTTP). Processed over there to charge the user with the appropriate premium fees. This premium along with all parameters will be visible on the web page for the user as well as for Insurance Company. Web page is complete Graphical user interface, where user can access all his driving history

IV. CONCLUSION

Here in proposed work, system is designed with sensors, in order to detect the speed violation, braking response, seat -belt awareness, alcohol consumption and fall detection to analyse the vehicle accidents and driver's driving behaviour, to calculate the telematics based premium. Pay as per your use is innovation focused by insurance telematics. Use of sensors and smartphone for measurement makes the system more feasible and trustworthy for the user as well as for insurers. Differential insurance premium i.e. premium is different for each user according to their driving habits, is the key feature of insurance telematics. It is sustainable because, it gives more benefits to the driver, who will follow the safer driving habits. Graphical analysis makes the proposed system different from other models. System analyse the three parameters i.e. ultrasonic distance, speed and breaking to investigate the pre-accident scenario

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