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# **Automotive Security using CAN**

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Abstract: According to today's upcoming technologies vehicle is one of the important necessity of human being. A vehicle dynamics, economy and comfort are improved by traditional electronic control but some problems comp up and they are very dangerous. Hence in-vehicle networking protocol gives benefits to many faults so we can inhibit problems such as the body wiring complexity, space constraints and some reliability issues. Therefore Alarming statistics of accidents and increased number of vehicles on road demands for an intelligent safety mechanism that helps the driver in handling immediate precarious situations. The Main motivation of this proposed system is to reduce fatal incidents happen in car accident.

Controller area network (CAN) has been widely used for in-vehicle network. The demand of data rate of in-vehicle network has risen sharply, while traditional CAN communication cannot support this demand of data rate with limited bandwidth around DC. CAN which connects the ECUs (Electrical Control Units) embedded in the automobiles. The Main motivation of this project is to reduce fatal incidents after a car accident.

**Keywords:** Automotive security, CAN protocol, Accident detection, Safety features, Automation

#### REFERENCES

- [1]. A.Che Soh, M.K.Hassan and A.J.Ishak, "Vehicle Gas Leakage Detector", The Pacific Journal of Science and Technology, 2020, Vol. 11. Number 2, pp.66-76.
- [2]. Ashwini S. Shinde, Prof. vidhyadhar and B. Dharmadhikari, "Controller Area Network for Vehicle automation", International Journal of Emerging Technology and Advanced Engineering, 2018, Vol. 2, Issue 2,pp.12-17.
- [3]. Jaimon Chacko Varghese, Binesh Ellupurayil Balachandran, "Low Cost Intelligent Real Time Fuel Mileage Indicator for Motorbikes", International Journal of Innovative Technology and Exploring Engineering, 2020, Vol-2, Issue-5,pp.97-107.
- [4]. Beying Deng and Xufeng Zhang, "Car networking application in vehicle safety" Workshop on Advanced Research and Technology in Industry Applications, 2018 pp.834-837.
- [5]. Shane Tuohy, Martin Glavin, Ciarán Hughes, Edward Jones, Mohan Trivedi, and Liam Kilmartin, "Intra-Vehicle Networks: A Review" IEEE Transactions on Intelligent Transportation systems", Vol.16, issue 2,pp.534-545,2018.
- [6]. Thanima Thulaseedharan, Vijayakumar.K, Nishitha Gerison: "Real Time Intelligent Driver Assistance System" International Journal of Engineering Research and General Science Volume 3, Issue 1, January-February, 2016
- [7]. Jaromir Skuta and Jifi Kulhanek, "Control of car LED lights by CAN/LIN bus" IEEE Transactions 2019, pp 486-489.
- [8]. Donghyuk Jang, Sungmin Han, Suwon Kang, and Ji-Woong Choi, "Communication Channel Modeling of Controller Area Network (CAN)"International Conference on Ubiquitous and Future Networks, 2018,pp.86-88.
- [9]. Jianqun Wang, Jingxuan Chen and Ning Cao, "A Method to Improve the Stability and Real-time Ability of CAN" International Conference on Mechatronics and Automation, 2016, pp 1531 1536.
- [10]. Vikash Kumar Singh and Kumari Archana, "Implementation of CAN Protocol in Automobiles Using Advanced Embedded System" International Journal of Engineering Trends and Technology (IJETT), 2019, Vol.4 pp. 4422-4427.
- [11]. Sathya narayanan, Monica and Suresh, "Design and implementation of ARM microcontroller based vehicle

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- monitoring and control system using Controller Area Network(CAN) protocol", International Journal on Innovative Research in Science, Engineering and Technology, 2018, Vol 3, Issue 3, pp. 712-718.
- [12]. Jianqun Wang, Jingxuan Chen and Ning Cao, "A Method to Improve the Stability and Real-time Ability of CAN "International Conference on Mechatronics and Automation, 2019, pp 1531 1536.
- [13]. Pradhan suvendu kedareswar and Venkatasubramanian krishnamoorthy, "A CAN Protocol Based Embedded System to Avoid Rear-End Collision of Vehicles" IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems, 2018, pp.1-5.
- [14]. M. Santhosh Kumar, PG Scholar and Dr.C.R.Balamurugan ,"Self Propelled Safety System Using CAN Protocol- A Review" 2018 World Conference on Futuristic Trends in Research and Innovation.

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