LITERATURE SURVEY

SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY

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INTRODUCTION:

In present Systems the road signs and the speed limits are Static. But the road signs can be changed in some cases. We can consider some cases when there are some road diversions due to heavy traffic or due to accidents then we can change the road signs accordingly if they are digitalized. This project proposes a system which has digital sign boards

on which the signs can be changed dynamically. If there is rainfall then the roads will be slippery and the speed limit would be decreased. There

is a web app through which you can enter the data of the road diversions, accident prone areas and the information sign boards can be entered through web app. This data is retrieved and displayed on the sign boards accordingly**.**

Software used:

- Arduino IDE
- Embedded C
- KEIL
- FLASH MAGIC

Hardware used:

- Micro controller
- Lin controller
- Lcd 16×2
- Node Mcu ESP8266 **Applications:**
- Vehicle to vehicle communication.
- ATV Control

PAPERS	PARAMETER	DESCRIPTION

1.Base paper	**1.Aim**: Smart Roads for Autonomous Accident Detection and Warnings **2.Abstract:** An increasing number of vehicles on the roads increases the risk of accidents. In bad Weather this risk almost doubles due to bad visibility as well as road conditions. **3.existing system:** All the previous accidentrelated techniques are based on some sort of continuous monitoring in the vehicle of its surroundings through various sensors with the help of a microcontroller-based processing unit. Calibration of these devices from time to time	Although a GPS offers easy and accessible localization, the precision of the GPS still has room for further improvement in providing accuracy. To be more specific, a GPS suffers influences from several factors (e.g. receiver noise; a multipath effect), such that the received GPS coordinates have large errors in the actual Sensors coordinates of the vehicle, thereby posing a threat to the safety of Avs or the precision of ITS applications . Another problem with GPS technology is that not all driving surfaces have satellite visibility. The received

	is necessary for proper function, which becomes costly. Communication between vehicles is carried out by wireless technology. Although a GPS offers easy and accessible localization, the precision of the GPS still has room for further improvement in providing accuracy. **4.proposed system:** In BWC, MVCs can happen where a number of approaching vehicles can lead to another accident. In this case, damage and the number of injured people, and/or fatalities might increase. The common cause for this type of accident is poor visibility whereby drivers cannot see the accident until they come upon it (approximately 10 to 15	GPS data can be influenced in urban areas by building occlusions, making the data less accurate. On the other hand, post-accident techniques use a GPS to detect and find the location of the accident, with GSM and 5G technology for messaging to emergency service centers . These techniques require internet connection. SRs are roads that have some sort of sensing power given with the help of different types of transducers (devices that convert one form of energy to another) as well as control devices with communication capabilities. Several

	m away). At that distance, braking will	

	not stop the vehicles in time and, as a result, they become part of the accident. In modern vehicles, some preventive and protective systems are installed for the safety of the driver and passengers. **5.advantages:** IR Sensor Module Microphone Sensor Module Smoke Detection Module GPS 8M Module HC-12 Wireless Communication Module Breadboard and Jumper Wires Relay Module **6.Disadvantage:** 1. It cannot sense the sound produced by an accident/crash. 2. It cannot sense smoke from a fire.	nodes are installed on the sides of the road to enable sensing at those points. By increasing the number of nodes, sensing power can improve. These nodes hold all the necessary sensing devices and a microcontroller board with a wireless communications system. The distance between nodes is directly proportional to the transmission power of the sensing devices. SRs do not discriminate among vehicle types, and can detect accidents involving Evs as well as EVs.

	3. It cannot sense an obstacle on the road for a period longer than the set	

	threshold. 4. When an accident was not detected by sound or obstacle detection, the alert comprising light and sound was generated on the node. 5. its cannot a message with the location, traffic direction, and fire detection information was sent to the immediately adjacent node.	

2.Reference paper-	**1.Existing system:** There are a unit several existing plans towards safety against road accidents like thanks to advanced technology GSM associated GPS were introduced so they're useful in trailing the vehicles that met with an accident however they're not preventive for avoiding the accidents. Arduino based mostly vehicle accident detection system was planned as associate approach towards avoiding road accidents. During this planned model Arduino, GSM, GPS, LCD, vibration sensors were used. during this system vibration sensing element is employed as associate input supply to system that is analyzed by the Arduino and once	**Advantages:** • Vehicle Accident Prevention System. • using GSM module and send location of accidental place using GPS module. • In case accident happen only when we know the exact location of accidental place. **Disadvantage:** • Vehicle Alert • Accident Alert • This style of observance Protects electrical device And Overall System therefore System dependability And Stability will increase.

	the sensing element reading exceeds the	

	conventional. **2.proposed system** To improve quality of power Remote sensing. To Maintain Continuity of offer • Real time observance. It will ready to notice The Faults thanks to Over Current, Over Voltage, magnified Temperature at Real Time. Monitoring Multiple Transformers Sitting In associate workplace is feasible.Pre fault Condition is well Detected and Cleared at Same Time to Avoid System Failure. Fault observance needs Less Time conjointly Use Of wireless local area network provides Most correct, Fast Response.	

3. Reference :

1. Traffic Accident Happened in the Year 2016–2017 All over Pakistan. Available online: http://www.pbs.gov.pk/sites/default/ files//tables/Traffic%20Accidents_0. pdf (accessed on 22 April 2019).
2. Grossman, P.Z.; Cearley , R.W.; Cole, D.H. Uncertainty, insurance and the Learned Hand formula. Law Probab. Risk **2006**, 5, 1–18.

[CrossRef]

3. Hasan, M.; Mohan, S.; Shimizu, T.; Lu, H. Securing Vehicleto-Everything (V2X) Communication Platforms. IEEE Trans.

Intell. Veh. **2020**, 5, 693–713. [CrossRef]

4. Leu, F.; Chuang, S. Cluster-RLM: Establishing a Routing Path with Cluster-Based Redundant Link Minimization in Wireless Sensor Networks. In Proceedings of the 2015 10th International Conference on Broadband and Wireless Computing, Communication and Applications (BWCCA), Krakow, Poland, 4–6 November 2015; pp. 380–385. [CrossRef]

4.Reference:

[1] Ashutha K., Ankitha K., "Smart Shopping cart using embedded system and wireless module", Recent Patents on Computer Science (CSENG), UAE, Vol. 8, pp. 1-6, January2016.

[2] Ashutha K., Shetty Arpitha., ET. Al "Novel wireless data communication for fisherman", International journal of

computer science and mobile computing (IJCSMC), Vol. 5, Issue 4, pp. 511- 517, April2016.
[3] Ashutha K., Ankitha K., "Error Minimization in BCH Codes", International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering (IJIREEICE), Vol. 4, Issue 5, pp. 402- 405, May2016 [4] Duy Tran, Weihua Sheng., et.al. : A Hidden Markov Model based driver intention prediction system, IEEE Int. Conf. on Cyber Technology in Automation, Control, and Intelligent Systems (CYBER).pp.115- 120(2015).

5.Reference:

[1] WorldHealthOrganization, “Global status report on road safety
2015,” https://www.who.int/violence injury prevention/road safety status/2015/en/.
[2] World Health Organization, “Decade of Action for Road Safety
2011-2020 seeks to save millions of lives,” http://www.who.int/ roadsafety/decade of action/en/.
[3] F. Wegman, “The future of road safety: A worldwide perspective,”
IATSS Research, vol. 40, no. 2, pp. 66–71, 2017.
[4] World Health Organization, “Save LIVES - A road safety technical package,” 2017.

6.Reference:

[1] A. Zanella *et al*., “Internet of things for smart cities,” IEEE Internet of Things Journal, vol. 1, no. 1, pp. 22–32, Feb. 2014.
[2] Y. Mehmood *et al*., “Internet-of-things-based smart cities: recent advances and challenges,” IEEE Communications Magazine, vol. 55,no. 9, pp. 16–24, Sept. 2017.
[3] K. N. Pallavi, V. R. Kumar, and B. M. Chaithra, “Smart waste
management using internet of things: a survey,” in Proc. International
Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)
(I-SMAC), Palladam, India, 2017, pp. 60-64. [4] M. T.
Lazarescu, “Design of a WSN platform for long-term
environmental monitoring for IoT applications,” IEEE J.
Emerging
Sel. Top. Circuits Syst., vol. 3, no. 1, pp. 45–54, 2013.