

Intelligent Traffic Management System

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Abstract- This project proposes to employ the IoT and android technology to monitor the traffic and to inform the user about the traffic condition. The infrared sensors are planted in the roadside of each and every traffic signals. The information generated by those sensors are collected and stored in the cloud. The cloud will pass the data to the android application to view the data by the user. By using this the user can find the traffic levels at particular signals. This paper brings forward plan for an intelligent management system of the traffic , which is based on RFID.

I. INTRODUCTION

In recent years popularity of private motor vehicles is getting urban traffic more and more crowded. As result traffic monitoring is becoming one of important problems in big smart-city infrastructure all over the world. Some of these concerns are traffic congestion and accidents that usually cause a significant waste of time, property damage and environmental pollution. Any type of congestion on roads ultimately leads to financial losses. Therefore, there is an urgent need to improve traffic management. The appearance of the Internet of Things (IoT) provides a new trend for intelligent traffic development. This research proposes to employ the IoT, traffic conditions. Information generated by traffic IoT and collected on all roads can be presented to travellers and other users. Through collected real-time traffic data, the system can recognize current traffic operation, traffic flow conditions and can predict the future traffic flow.

The system may issue some latest real-time traffic information that helps drivers choosing optimal routes. Constructing an intelligent traffic system based on IoT has a number of benefits such improvement of traffic conditions, reduction the traffic jam and management costs, high reliability, traffic safety and independence of weather conditions [1, 2]. Such traffic.

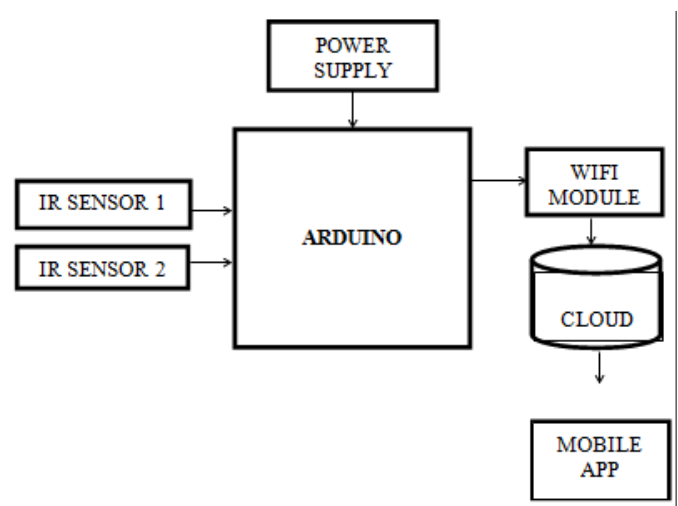
IoT must include every element of traffic such as roads, bridges, tunnels, traffic signals, vehicles, and even drivers. All these items will be connected to the internet for convenient identification and management through sensor devices, such as RFID devices, infrared sensors, global positioning systems, laser scanners, etc. Traffic IoT provides

traffic information collection and integration, supporting processing and analysis of all categories of traffic information on roads in a large area automatically and intelligently.

Thus, modern traffic management is evolving into an intelligent transport system based on IoT. Traffic requires suitable information about services and logistics available on the road and therefore the system can become more self-reliable and intelligent. With a number of WSN and Sensor enabled communications, an IoT of data traffic will be generated. This traffic monitoring applications need to be protected to prevent any security attack frequent in urban cities. Few such prototypes implementations can be found in [3, 4] and the Smart Santander EU project.

The aim of this paper is to present a framework for real time traffic information acquisition and monitoring architecture based on the IoT utilizing wireless communications. The primary characteristic of the proposed traffic information infrastructure is its capability of integrating different technologies with the existing communication infrastructures.

II. BLOCK DIAGRAM: (SIGNAL SECTION)



III. HARDWARE USED

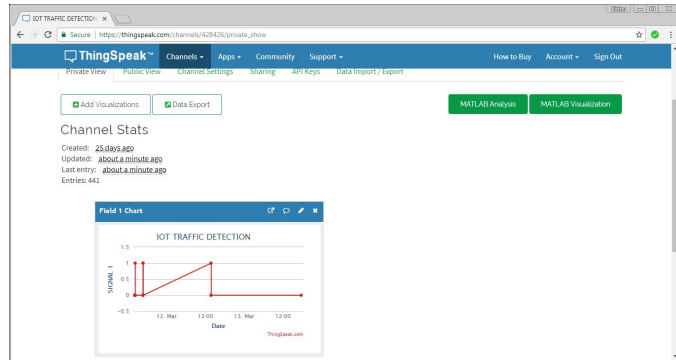
- Arduinouno

- Power supply
- IR sensor
- WI-FI
- Cloud
- Android app

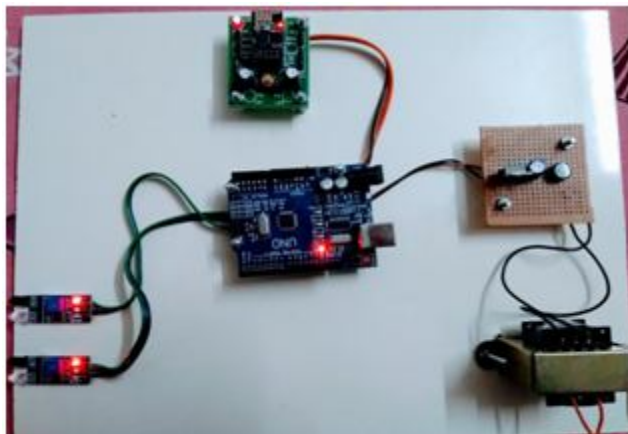
IV. TECHNICAL SPECIFICATION

Microcontroller AT mega	328
Operating Voltage	5V
Input Voltage (recommended)	7-12V
Input Voltage (limits)	6-20V
Digital I/O Pins	14 (of which 6 provide PWM output)
Analog Input Pins	6
DC Current per I/O Pin	40 mA
DC Current for 3.3V Pin	50 mA
Flash Memory	32 KB of which 0.5 KB used by Boot loader
SRAM	2 KB
EEPROM	1 KB
Clock Speed	16 Mhz

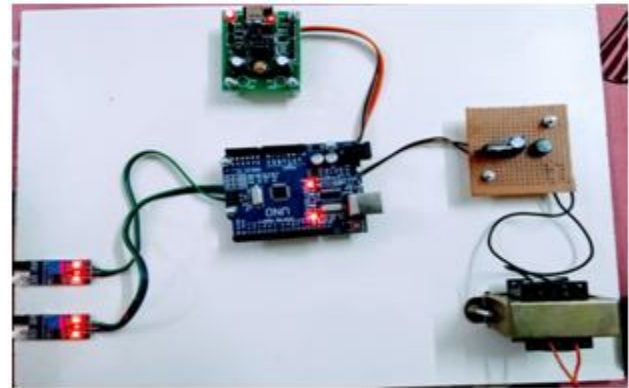
A. No vehicle has detect in the sensor so the value is 0 it displays no traffic



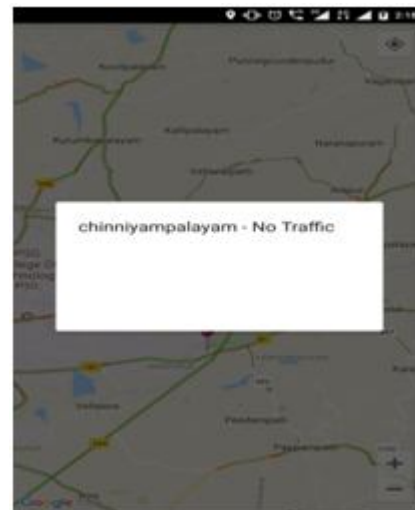
A.No Vehicle Detect



B.Vehicle Detect



B.Traffic detected so the value is 1 it displays traffic



V. CONCLUSION

This paper presents a real-time traffic information collection and monitoring system architecture to solve the problem of real-time monitoring and controlling road vehicles. The proposed architecture employs key technologies: Internet of Things, RFID, wireless sensor network (WSN), GPS, cloud computing, agent and other advanced technologies to collect, store, manage and supervise traffic information.

REFERENCES

[1] Laisheng Xiao, —Internet of Things: a New Application for Intelligent Traffic Monitoring Systeml, Journal of Networks, 2011, vol. 6, No. 6.

- [2] European Lighthouse Integrated Project - 7th Framework, Internet of Things - Architecture. <http://www.iot-a.eu/> , 2012
- [3] Laura Jarvenpaa, et al, —Mobile Agents for the Internet of Things], 17th International Conference on System Theory, Control and Computing (ICSTCC), 2013.
- [4] <http://newsroom.cisco.com/release/1308288>, 2014.