

AUTOMATIC OVERLOAD TRUCK TRACKING SYSTEM WITH LOCALIZATION WITH REAL TIME LOCATION

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ABSTRACT - Now a day lots of accident happens due to overloading of the vehicles. Every vehicle has some number of seating capacity but most of the time they violate the law and allows more passengers which causes accident some time so that we need to provide auto overload detection system. The types of sensors employed are weight sensors on the vehicles suspension to detect overloaded vehicles. The device will automatically detect the Information from the vehicles' sensors and passenger/goods areas will be gathered, and this information will be sent to an onboard data analyzer, which is often installed at authority stations. The authority station will record the vehicle's location and time at that precise moment. Later on, the entire set of data will be used to thoroughly analyse the car. Authority stations will analyse the overloaded point during a vehicle inspection and generate a fine base on that analysis.

I. INTRODUCTION

With the rapid development of the global economy and the acceleration of urbanization processes, highways play a crucial role in connecting different regions and cities. In the realm of road transportation, trucks serve as vital transportation tools, undertaking the task of transporting a substantial amount of goods. However, the issue of truck overloading has become one of the primary challenges in road traffic safety and road damage. Overloaded trucks exert significant pressure on road infrastructure, increasing the risk of traffic accidents and potentially leading to severe road collapse incidents. Therefore, the development of an accurate and efficient truckload monitoring method holds significant practical significance.

II. METHODOLOGY

This paper aims to propose a truck model recognition method based on highway automatic weighing station camera images, with the objective of accurately identifying truck models. Consequently, the maximum load capacity of the trucks is determined. weighing information, the system can accurately determine if a truck is carrying excessive load then the information is send through the message and information send to the IOT and visible on the blink app. By doing so, it can prevent the occurrence of misjudgments caused by events involving damage to licence plates, which are likely to occur in systems that merely use licence plate recognition to identify vehicle models. By using this technique, accurate truck data may be supplied for highway planning, freight management, and transportation safety, encouraging the growth of the logistics sector and improving traffic safety.

III. BLOCK DIAGRAM

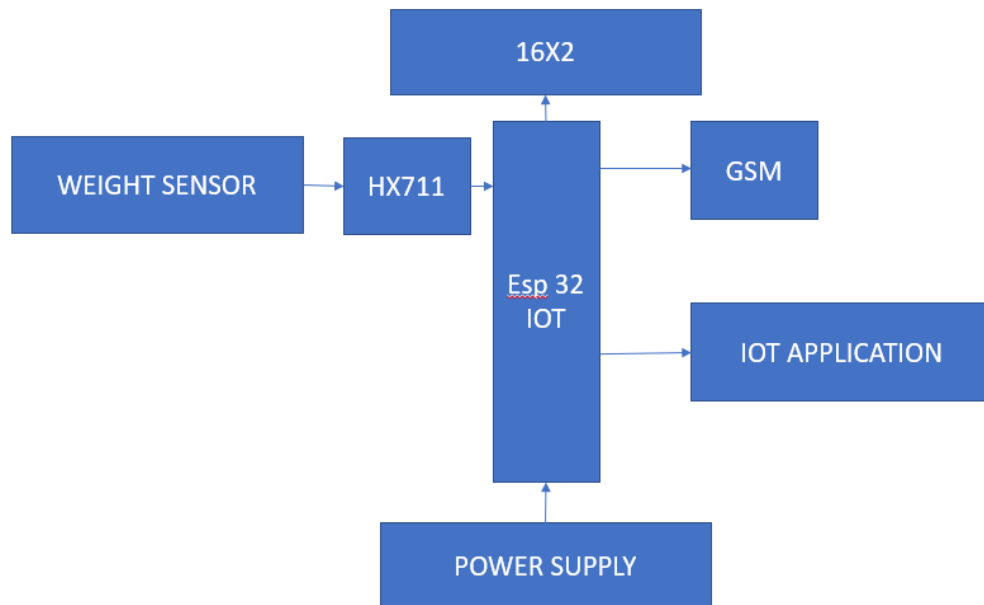


Fig. 1 - Block Diagram for the Automatic Overload Truck

B. Hardware Implementation

MICRO-CONTROLLER UNIT: The heart of the whole project is the Micro-controller unit. For this project the ESP32 Micro-controller was used. It is a low power general purpose micro-controller with good processing speed, small physical dimension, that is durable and cheap.it having in built wifi and Bluetooth.

In above diagram as we see that the all the components is communicate with the esp32 microcontroller it is the heart of our system and hence the all the devices input and output is attached with the controller . We use ir sensor for detecting any faults in railway track..the overall system communicate with the controller which sense the input coming from the sensor and send this output to the relay . *coils uses for power supply which passes.*

2) *weight sensor* : this sensor is used to sense the weight of load it also called as load sensor .

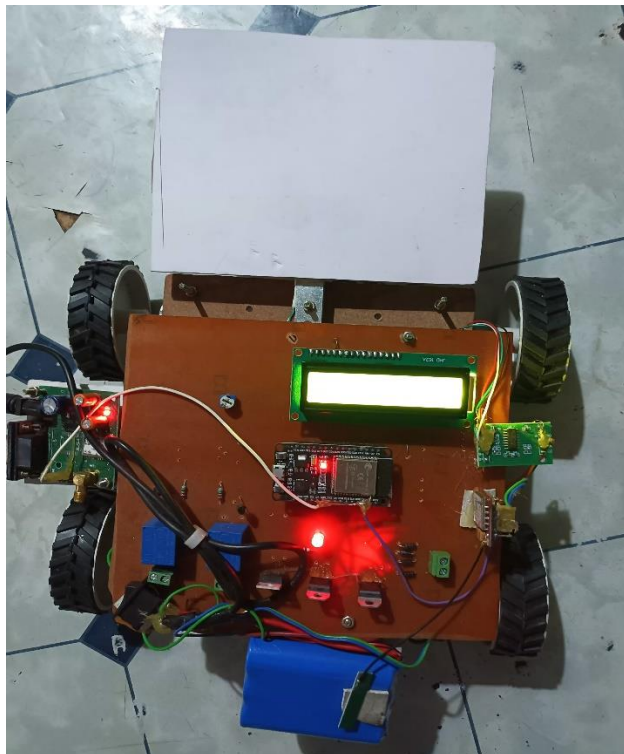
3) *Hx711* :This Is A Load Detector Driver Provide With The Load Sensor .

4) *The power supply unit*: Now days, almost all electronic equipment includes a circuit that converts ac supply into dc supply. The part of equipment that converts ac into dc is called DC power supply. In general at the input of the power supply there is a power transformer. It is followed by a rectifier (a diode circuit) 1a smoothing filter and then by a voltage regulator circuit.Here In our system we were design a 5v and 12v power supply for our electronic device

5) *Gsm module*: we were having a GSM MDULE for the location identification of the vehicle

6) *IOT application*: It shows all the information of vehicle on the website an also can see the all the information though the app.

IV. RESULT



V. CONCLUSIONS

Overload monitoring system is becoming increasingly important and it is more secured than other systems. The current situation for controlling overloading passenger in public buses needs to be improved. As the manual check is difficult during the bad weather such as rain, challenging at night, may lead to more opportunities for bribery, and requires a large workforce. Aside from that, it is inaccurate because not every bus is checked; instead, checks are made at random. It is necessary to design a new system that can get around each of these challenges.

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