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Analysis of Railway Track Crack Detection System

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Abstract: In this paper, Analysis of Railway Track Crack Detection System is done. The development board has been interfaced to the stepper, servo & dc motors such that the anthropomorphic like structure can be controlled from the buttons at the base of the structure (robotic arm). When signal come to robotic arm, it will activated and then it searching for the code object in storage area when it get confirmation of availability thus it call rover to collect and dispatch that object to its destination of call at the instant of getting signal inbuilt program in arduino controller activate and check signal status incoming signal on terminal via Node MCU module thus programmed the DC motor with fixed degree which have been place in programming for particular objects , end effecter as a claw made up of servo geared motor and spar gear assembly with L293d motor driver.

Keywords: Railway Track; Crack Detection System; Robotic Arm; MPU; Automatic

I. INTRODUCTION

Track Your Truck vehicle tracking solutions combine sophisticated GPS tracking technology with flexible, advanced mapping and reporting software. A Vehicle Location Manager is installed on your vehicle which collects and transmits tracking data via a cellular or satellite network, whichever works best for your operations. The device then delivers the data to the Track Your Truck hosted application, NetTrack, which you can access through the Web at any time. It will receive real-time vehicle tracking updates, including location, direction, speed, idle time, start/stop and more, allowing you to manage a tighter schedule and more efficient fleet.

- Track Your Truck's Coyote unit updates the vehicle's internal position every second and transmits a new GPS message every 60 sec.
- Track Your Truck's SkyRunner II unit transmits the GPS message via the Iridium satellite network, which covers North America, to the Track Your Truck 24/7 Network Operations Center.
- Track Your Truck's SkyHawk II unit transmits the GPS message via Globalstar's LEO Satellite network to the Track Your Truck NOC.
- Track Your Truck vehicle tracking features include real-time mapping with automatic refresh, live tracking from your mobile phone, and detailed truck activity reports.

II. PROPOSED ARCHITECTURE

This work is able to successfully accomplish the defined functionality of of Railway Track Crack Detection System. A sample robot which can rotate, magnetize an object, lower and raise its arm, by being controlled by the microcontroller is built successfully. The development board is soldered and it used the required procedure for the correct operation of the controller.

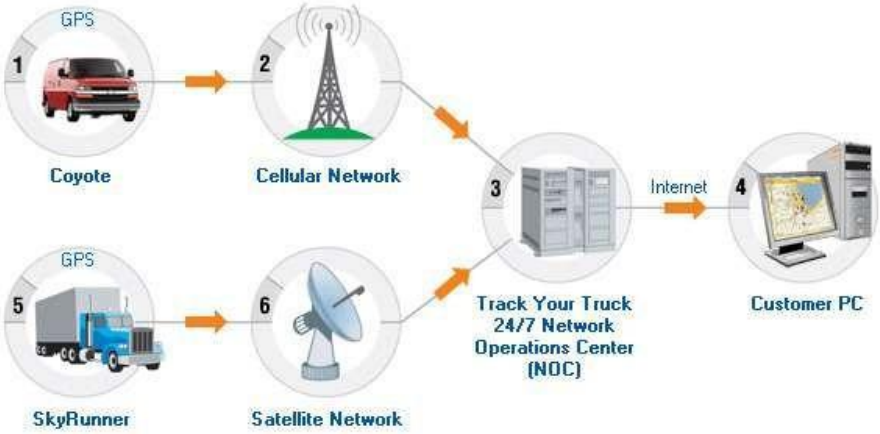

Fig 1: GSM Interface

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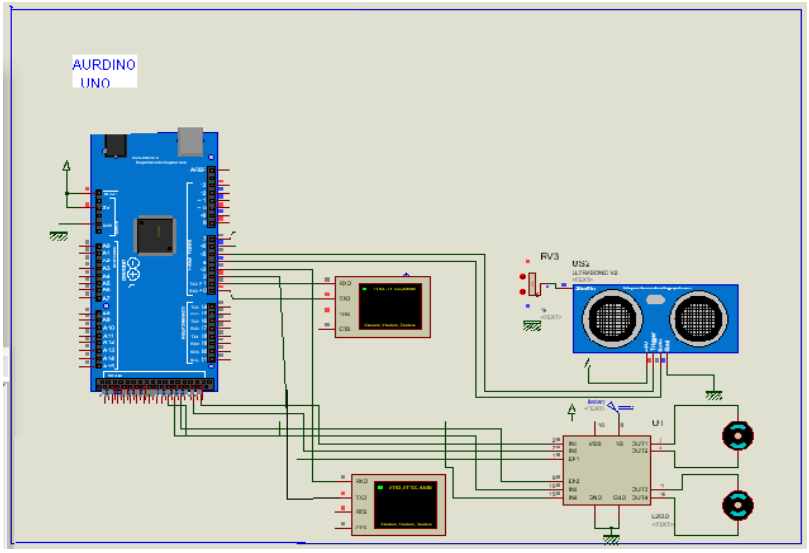

Fig 2: Proposed methodology for the working of Rover or vehicle used

Fig 3: Arduino uno R3

III. CONCLUSION

In this work, Analysis of Railway Track Crack Detection System is done. The proposed system is suitable for railways transportation to identify the cracks in the railway tracks earlier and prevent the accidents. To use crack detection sensor, this will be placed in the train engine. By this, if some crack is detected on the track the train starts to slow and stop at respective point automatically and exact place of crack would be given to control room.

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