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ICNS Based Water Management System

Sonal Aware[1], Vishakha Raut[2], Ankeet Gugale[3], Prof. Amruta Chore [4]

BE Students, Department of Electronic and Telecommunication, DYPIEMR, Akurdi, Pune, India[1, 2, 3]

Professor, Department of Electronic and Telecommunication, DYPIEMR, Akurdi, Pune, India[4]

Abstract: WATER IS NOT SOMETHING WE CAN COMPROMISE ON. Nowadays rise in water crises have increased due to drought, tanker mafias and excess water wastage. The private water tankers or the 'tanker mafia', which have filled a large portion of the gap between demand and supply. This paper explores the mechanism of their operation, and the illegalities involved in this business. This paper also attempts to look into the results of legalization of this market. One of the key findings of this paper is that the efficiency of operation and water being an essential utility has garnered acceptance to these operators. Furthermore, legalization will ensure accountability, both towards the government and towards the customers.

Keywords: RF Trans-receiver, RF Reader, Flow sensor, GPS (Global Positioning System), LCD display, Keypad.

I. INTRODUCTION

Shortage of water has led to a number of small scale private players getting involved in the water sector. These illegal private players provide an alternative means to bridge the gap between demand and supply, and have thus created a black-market for water. Private water tanker owners or the 'Tanker Mafias' as the media puts it, the ones which do not operate under the purview of the Delhi Jal Board, command a strong hold over this black-market. From the consumer point of view, the legal status of these tankers is not as big a concern as their daily need for water. For them water is not something they can compromise on, and this is why these tanker owners have gained acceptance among people.

To overcome this problem we developed" **Intelligent Control and Security based Water Distribution System with tanker Navigator**". In this system we provide security in tanker filling station & also navigate tanker of water from filling /main station.

Tanker owner does not take water over paid amount & quantity. In our project we have provided total security against tanker mafia.

The system will consist of two units:
1) Main Station
2) Tanker Station

II. LITERATURE SURVEY

Radio Frequency Identification (RFID) technology has been attracting considerable attention with its promise of improved supply chain visibility for both suppliers and retailers. It will also improve the consumer shopping experience by making it more likely that the products they want to purchase are available.

While the potential benefits of adopting the technology have been known for some time, a lack of standards, system costs, and required infrastructure changes have resulted in a slow adoption of the technology.

RFID (Radio Frequency Identification) is a method of identifying unique items using radio waves.

Typical RFID systems are made up of three components: readers (interrogators), antennas and tags (transponders) that carry the data on a microchip.

RFID technology is used today in many applications, including security and access control, transportation and supply chain tracking. It is a technology that works well for collecting multiple pieces of data on items for tracking and counting purposes in a cooperative environment.

RFID and barcodes are similar in that they are both data collection technologies, meaning they automate the process of collecting data. However, they also differ significantly in many areas. Although this comparison primarily focuses on the advantages of RFID over barcodes.

Will RFID replace bar codes?

Bar codes and RFID technologies are NOT mutually exclusive, nor will one replace the other. They are both enabling technologies with different physical attributes. Bar codes utilize one-way, serialized, and periodic data. RFID utilizes two-way, parallel, and real-time data.

III. METHODOLOGY

RFID TECHNOLOGY:-

RFID is data collection technology. It consists of an antenna and a transceiver, which read the radio frequency and transfer the information to a processing device, and a transponder, or tag, which is an integrated circuit containing the RF circuitry and information to be transmitted. RFID systems can be used from clothing tags to missiles to pet tags to food wherever a unique identification system is needed. Its applications that promise to increase efficiency and productivity.

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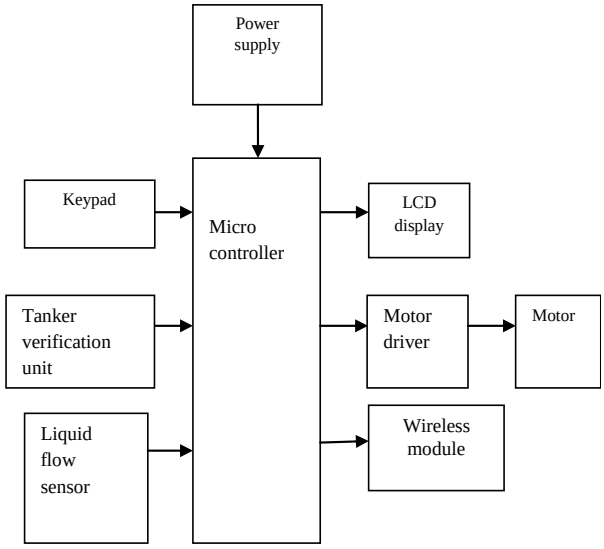
IV. BLOCK DIAGRAM:

MAIN STATION**:-**



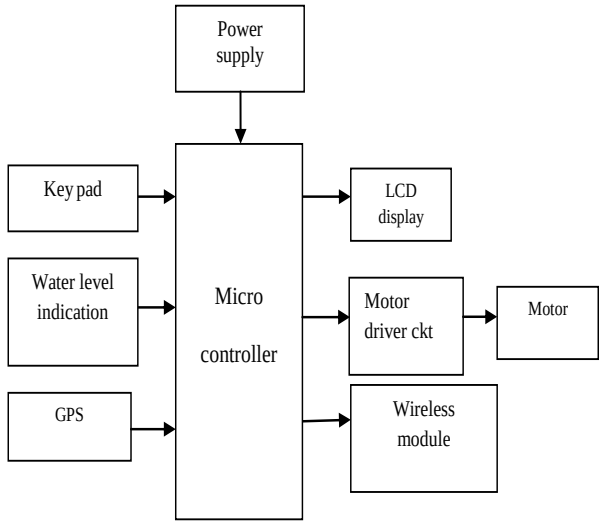
BLOCK DIAGRAM DESCRIPTION:

1) MICROCONTROLLER
The signals from sensor are given to the Microcontroller. Microcontroller processes all these signals and gives data to LCD display.PIC16F87X series is used for processing.

2) EM READER
When RFID transponders come in the range of EM reader it will read the unique id number. The readers consist of a build-in anti-collision schemes and a single reader can operate on multiple frequencies. As a result, these readers are expected to collect data from tag. For this purpose readers can be connected using RS-232, RS-485 and USB cable as a wired options.

3) RFID TRANSPONDER
RFID transponders are used for unique identification. It is combination of RF receiver and transmitter.

TANKER UNIT:



4) LCD DISPLAY
It is used for the displaying the information and making product user friendly. The count of units and the balance amount is displayed on LCD

5) MOTOR DRIVER IC
This circuit is used to drive dc motor to control the flow of the water at both station.

6) DIGITAL FLOW SENSOR
It is used to calculating amount of liquid passing. Digital flow sensor consists of a plastic valve body, a water rotor, and a hall-effect sensor.

7) NAVIGATION SYSTEM
The space-based navigation system that provides location and time information in all weather conditions, anywhere on or near the earth. It is used to navigate the water tanker.

V. CONCLUSION

The project is all about controlling theft of water. The system is about making water theft more secure by the use of GPS. Thus we invented water mafia control system for avoiding corruption of water and for proper distribution. The significant advantages of RFID have encouraged the trending demands due to its features.

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