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AUTOMATIC RATION MATERIAL DISTRIBUTIONS BASED ON GSM AND RFID TECHNOLOGY

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ABSTRACT

A day ration card is very important for every home and used for various field such as family members details, to get gas connection, it act as address proof for various purposes etc. if not buy the materials at the end of the month, ration distributor will sale to others without any intimation to the government and customers. proposed an automatic ration materials distribution based on GSM (global system for mobile) and RFID (radio frequency identification) technology instead of ration cards. To get the materials in ration shops need to show the RFID tag into the RFID reader, then controller check the customer codes, scan thumb and details of amount in card. In this system having two draw backs, first one is weight of the material may be inaccurate due to human mistakes and secondly, if not buy the materials at the end of the month, they will sale to others without any intimation to the government and customers. In this paper, proposed an Automatic Ration Materials Distribution Based on GSM (Global System for Mobile) and RFID (Radio Frequency Identification) technology instead of ration cards. To get the materials in ration shops need to show the RFID tag into the RFID reader, then controller check the customer codes and details of amounts in the card. After verification, these systems show the amount details. Then customer need to enter they required materials by using keyboard, after receiving materials controller send the information to government office and customer through GSM technology. In this system provides the materials automatically without help of humans.[1]

Keywords: GSM,smartcard,RFID ,Bio-Metric,ARM7,Dip-Trace.

I. INTRODUCTION

The existing ration distribution system has high level corruption. Weight of the material may be inaccurate due to human mistakes. If not buy the materials at the end of the month, they will sale to others without any intimation to the government and customers. In this project, we have proposed an Automated Smart Ration Card Based on GSM and RFID Technology to avoid the drawbacks.RFID (Radio-frequency Identification) is act as ratio card and other purpose such as RC book.GSM (Global System for Mobile

Communication) used to communicate the information between the two people or more than two personsGlobal system for mobile communication (GSM) is a globally accepted standard for digital cellular communication. GSM is a common European mobile telephone standard for a mobile cellular radio system operating at 900 MHz. In the current work, SIM300 GSM module is used. The SIM300 module is a Triband GSM/GPRS solution in a compact plug in module featuring an industry-standard interface. It delivers voice, data and fax in a small form factor with low power consumption In this paper, we have designed and implemented an Automatic Ration Materials Distribution Based on GSM and RFID Technology. In this system, only authentic person can be recovered ration materials from ration shops based on the amount available in the RFID. The survey of related works provided in section II. The proposed, developed method and circuit diagrams provided in the section III. The Result, discussion and conclusion in section IV & V respectively. [2][3]

II. LITERATURE SURVEY

TejaswiniGaikwad, AnkushPanghanti. Proposed the “Automatic Ration Material Distributions Based on GSM and RFID” Published in International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 4 Issue 6, June 2015 Here each customer is provided with RFID cards. In this system, first user is authenticated, and then system shows the balance of person. User have to enter the amount of Kg he want to withdraw. If the user will have sufficient balance to withdraw the current amount, system will open the valve.

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Through valve grain will come and it will get weighted by weight sensor. Once the count reached the entered amount controller automatically shut down the valve and updates the account of the customer. The updated account information in [4]The RFID (Radio Frequency Identification) emerges as one of the converging technologies and transportation plays a vital role in urbanization. RFID plays major role in auto ID applications like RFID contact less smart cards used by bus riders, in Super market, Textiles and logistics chain management. the RFID Based Embedded System for Vehicle Tracking and Prevention of Road Accidents system is designed and implemented. This system is may be to reduce the road accident in Indian roads.

Related Works:

Today mobile phone is one of the most important devices for every one that is used in communication purpose and used in embedded system to control the devices. In [5], the RFID based Bill Generation and Payment through Mobile system is implemented. In this paper, the bill generating in super market using RFID technology and payment through mobile phone. Mobile payments will become one of the most important mobile services. The most essential consideration is the security of the mobile devices and the applications along with the complexity of imbursement process. Advantages of this system, i) Increased consumer confidence, leading to increased sales. ii) Benefit for both consumers and merchants.[1] The RFID Based Exam Hall Maintenance System presents an efficient method of examination hall exam hall from any other hall, when they swipe RFID card in a card reader located there. This helps them to identify the floor or get directions to their respective halls immediately. The card reader is provided at the entrance of the building, if the students enters wrongly a buzzer alarm sets off, otherwise the room number is displayed on the LCD, connected to controller. RFID technology is emergent technology that can be used in wide range of applications [5]

Block diagram:

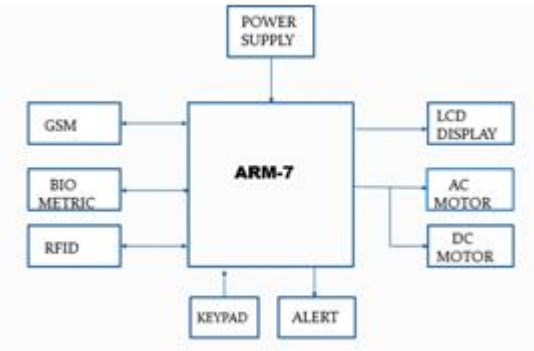

Figure 1:block diagram

3.1Block Diagram

The block diagram of an Automatic Ration Materials Distribution Based on GSM and RFID Technology is shown in the Fig. 1. This system consists of various parts such as RFID, GSM, microcontroller, motor driver, solenoid control circuits and keyboard.The powersupplymost important for electronic circuits, which is provide the required power to microcontroller and other electronics devices. The power supply circuit diagram is shown in the Fig. 1.

other electronics devices. The power supply circuit diagram is shown in the Fig. 1.

3.2 ARM 7 LPC2148

ARM7 is Advanced RISC machine.
It is a 32-bit RISC (reduced instruction set computer) processor.
ARM7 is most successful and widely used processor family in embedded system applications.
It has high code density.
Its speed 1 MHz to 1.25 GHz.

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3.3GSM and RFID Circuit

RFID stands for Radio-Frequency Identifications. The RFID is small electronic device that consist of a small chip and an antenna. The chip typically is capable of carrying 2,000 bytes of data or less. A significant advantage of RFID devices above the others devices, RFID device does not require to positioned precisely relative to the scanner. The RFID devices will work within a few feet (up to 20 feet for high-frequency devices) of the scanner. The RFID tag used to read information about the customer through RFID Reader. The GSM used to send the SMS to the customer as well as government authorized person for the verification.

The circuit diagram of RFID and GSM is shown in the Fig. 2

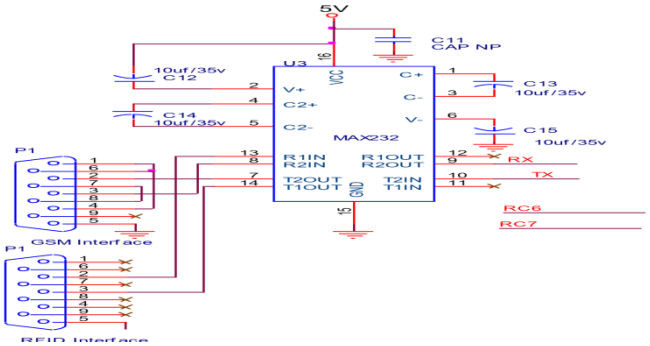

Figure 2: circuit diagram of RFID and GSM

3.4 LCD Display

A liquid-crystal display (LCD) is a flat panel display, electronic visual display, or video display that uses the light modulating properties of liquid crystals. Liquid crystals do not emit light directly.

The LCD is used in a wide range of applications including computer monitors, televisions, instrument, aircraft cockpit displays, and signage. The most common in consumer devices such as video players, gaming devices, clocks, watches, calculators, and telephones, and have replaced cathode ray tube (CRT) displays in most applications. The LCD screen is more energy efficient than a CRT. The power consumption is very low while compare with other devices. The LCD circuit diagram is shown in the Fig.3.

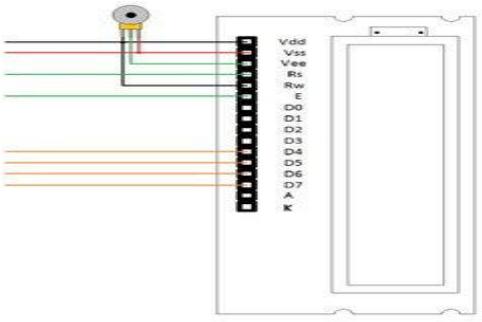

Figure 3: LCD display

3.5 Motor with Driver Circuit

The motor driver circuit is used to provide proper matching between motor and circuits.

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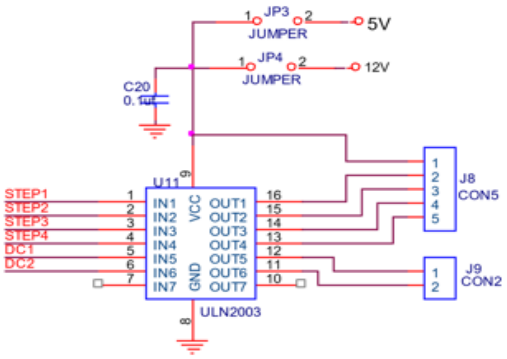

Figure 4:motor with driver circuit

Solenoid Valve

A solenoid value is an electromechanically operated valve. The valve is controlled by an electric current through a solenoid, in the two-port valve the flow is switched on or off, in the three-port valve, the outflow is switched between the two outlet ports. Multiple solenoid valves can be placed together on a manifold. Solenoid valves are the most frequently used control elements in fluidics. Their tasks are to shut off, release, dose, distribute or mix fluids. They are found in many applicationareas. Solenoids offer fast and safe switching, high reliability, long service life, good medium compatibility of the materials used, low control power and compact design

3.6 GSM module

The Global system for mobile communication (GSM) is a globally accepted standard for digital cellular communication. The GSM is a common European mobile telephone standard for a mobile cellular radio system operating at 900 MHz.

The GSM used to send the SMS to the customer as well as government authorized person for verification

3.7: RFID CARDS

The RFID is small electronic device that consist of a small chip and a micro strip antenna.

RFID device does not require position to scanning. It will work within a few feet (up to 20 feet for high frequency devices) of the scanner.

III. WORKING

In this project we are using this arm 7lLPC2148 processor is the advanced RISC machine the operation of the project is as follows first user will have to scan the RFID smart card then the scanned data of the RFID cardis scanned and checked with the data base then user authentication is doneby the data base earlier saved on the network after user will enter his secret password and this password is also verified by the database. Then user can choose the ration as per his requirement we designed some basic menu like 1 for kerosene 2 for rice 3 for grain and then user have select quantity for the ration after that this quantity also compared to the minimum

ration allotted to the user then the function of solenoid valve will dispense the kerosene and motors will Dispense grain and rice then weight of the dispensed

Ration will check then the solenoid valve and motors will stop and another user can continue the uses then through GSM module user government ndraionin charge get sms's updates of the ration given to the user

IV. ADVANTAGES

1. User Friendly.
2. Access to authorized person only.
3. Active contribution step towards digital India.
4. It is more secure.

V. APPLICATION

1. On successful authentication SMS is sent to user, customer and authorized person.
2. Useful in providing transparency to both government and consumers.
3. Useful for identity proof for various purpose

VI. RESULT

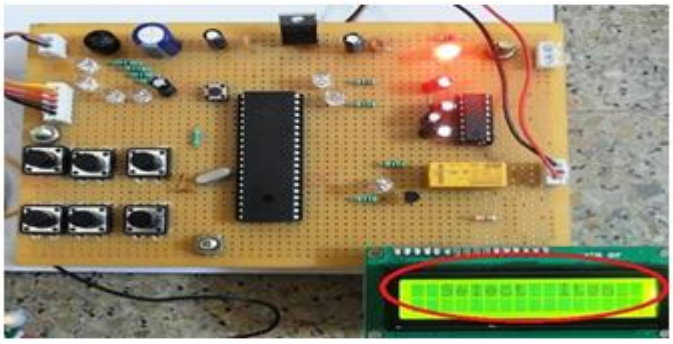

Figure 1 :circiut

Figure 2 : weighted ration

Figure 3 :sms alert

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VII. CONCLUSION

The proposed project aims to minimize the malpractices such as imprecise weighing of the materials due to human mistakes which is more in a conventional ration distribution system. It reduces the processing speed, waiting time and also the material theft. The automatic ration distribution system which is based on GSM and RFID technology replaces the need for conventional ration cards with the RFID tags, which the customers need to scan at the time of details verification. Thus on the basis of literature survey and by analyzing the existing system we have came to conclusion that the proposed system will not only aid the government agencies but will also help to digitize the system and in turn help to deploy resources efficiently to the citizens..

VIII. REFERENCES

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