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AUTOMATIC RATION MATERIAL DISTRIBUTION BASED ON GSM & RFID TECHNOLOGY

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ABSTRACT

Now a day ration card is very essential for every home and used for various field . Huge amount of Govt. money get wasted due to corruption in the traditional Ration Distribution System. The main motto of the designed this system is the automation of ration shop to provide transparency [1]. All the people having a ration card to buy the various materials (sugar, rice, kerosene, etc) from the ration shop. But in this system having some draw backs, first one is weight of the material may be incorrect due to human mistakes and secondly, the ration shop owner improperly uses consumer materials (Sugar, Rice, , Kerosene, etc) without previously knowledge of ration card holders.[2] In this paper, proposed an Automatic Ration Materials Distribution Based on GSM (Global System for Mobile) and RFID (Radio Frequency Identification) technology preferably of ration card.[3] Customer needs to scan tag to RFID reader, then microcontroller check the customer identity no. and all details in the smart card. After successful verification, customer needs to enter type of material as well as quantity of material using keypad after receiving materials to customer , the microcontroller send the information to government office and customer through GSM technology. Efforts are put together from our side to avoid corruption and to have better management of public distribution system.. [2]

Keyword— GSM, Mechanical Part, Microcontroller, Motor, RFID, Solenoid Control Circuits.

I. INTRODUCTION

Now a day this process is online which comes as benefit for the customer who hate standing for apart time in lines for filling the application request form and then go to the office control again to know the status. In this each user will be having RFID based ration card which include user information as well as Bank account details. These cards having unique numbers. Whenever user wants to purchase some material he must show his RFID based ration card to shopkeeper. Each ration shop contain RFID reader which reads RFID ration card, RFID reader used to check user authentic(valid) or not.[6]

Automatic Ration Materials Distribution Based on GSM and RFID Technology to desert the drawbacks. Today we are facing a number of transportable related problems RFID technology effectively used to solve some of them. RFID is act as ration card and use other purpose such as insurance policy details, service details etc. GSM

used to correlative information between the two people or more than two people. Radio-frequency identification (RFID) based access-control system allows only authorized or identifies persons to obtain the materials from ration shops.[5]

An RFID system consists of an antenna or coil, a trans receiver (with decoder) and a transponder (RF tag) electronically programmed with unique information. GSM is a common mobile cellular radio system operating at 900 MHz .SIM300 GSM module is used. It transfer voice, data and fax in a small form factor with low power consumption.[2]

II.LITRATURE SERVEY

Kashinath Wakade*, Pankaj Chidrawar, Dinesh Aitwade**,"Smart Ration Distribution and Controlling" International Journal of Scientific and Research Publications, Volume 5, Issue 4, April 2015 ISSN 2250-3153 et al** This paper proposes the advanced Ration Distribution System. This paper implements a simple PDA device (personal data assistant) with RFID tag used as an e-ration card in place of a conventional ration card.

S.Valarmathy1, R.Ramani1, Fahim Akhtar2, S.Selvaraju2, G.Ramachandran2, "Automatic Rationing System Using Embedded System Technology" International Journal of Innovative Research In Electrical, Electronic, Instrumentation and control Engineering Vol. 1, Issue 8, November 2013 et al In this research paper, the proposed concept is to replace the manual work in public distribution system named as "Automatic Rationing System Using Embedded System Technology". The ration distribution system is automated by using PLC, which is similar to the ATM. This automated ration system replaces the conventional ration card system by smart card. In addition, the finger print detector is placed in the machine in order to check the correct user access the material.

Pranjal Pedwal1, Ms. Shubhangi Borkar "Real Time Automatic Ration Material Distribution System" International Journal of Computer Science and Mobile Computing. IJCSMC, Vol. 5, Issue. 3, March 2016, pg.734 – 739 et al In this paper, Overcome the transport related problems. RFID technology effectively used to solve some of them. RFID is act as ration card and other purpose such as RC book, insurance details, service details etc. GSM used to converse the information between the two people or more than two persons to update the evidence depends on the supplies.

Vinayak T. Shelar, Mahadev S. Patil, "RFID and GSM based Automatic Rationing System using LPC2148" International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 4 Issue 6, June 2015 et al The proposed automatic ration shop for public distribution system is based on Radio Frequency Identification (RFID) technology named as "RFID and GSM based Automatic Rationing System using LPC2148" that replaces conventional ration cards. The RFID

tags are provided instead of conventional ration cards. Customer's database is stored in microcontroller which is provided by Government Authority.

S.Sukhumar1, K.Gopinathan2, S.Kalpanadevi3, P.Naveenkumar4, N.Suthanthira Vanitha5, "Automatic Rationing System Using Embedded System Technology" International Journal of Innovative Research In Electrical, Electronic, Instrumentation and control Engineering Vol. 1, Issue 8, November 2013 et al In this research paper, the proposed concept is to replace the manual work in public distribution system. The ration distribution system is automated by using PLC, which is similar to the ATM.

Smita Khot1, Diksha Kamble2, Bharti Lokhande3, Prachiti Sardar4, Tushar Khose5, "A Survey on Smart Ration card system using RFID and Biometrics" International Journal Of Engineering And Computer Science ISSN: 2319-7242 Volume 5 Issue 12 Dec. 2016, Page No. 19516-19519 et al The proposed system aids to power control malpractices named as "A Survey on Smart Ration card system using RFID and Biometrics" which are present in ration shop by superseding manual work with automatic system based on RFID.

III.DESIGN & DEVELOPMENT

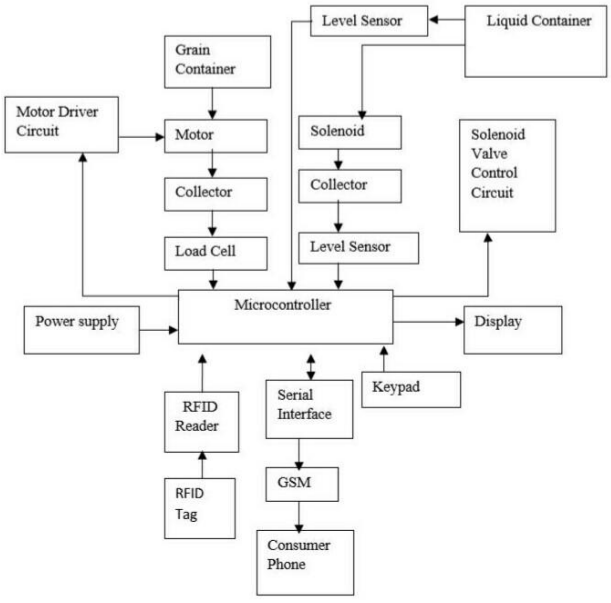

Fig: Automatic Ration Material Distribution Based On GSM and RIFD Technology

The block diagram of an Automatic Ration Materials Distribution Based on GSM and RFID Technology is shown in the Fig. This system consists of various parts such as RFID, GSM, microcontroller, motor driver, solenoid control circuits and keypad. The proposed system demonstrates distribution of solid as well as liquid consumer materials that is grains (Sugar, rice and kerosene). RFID reader, IR sensor, load cell and keypad acts as inputs to system and 16X2 LCD display is used for displaying information about ration stock and related activities which are done by customers. The microcontroller outputs are used to motor driver circuit and solenoid valve control circuit.

Every customer has provided a RFID card which is enrollment by the Government authority. Customer scans that RFID card, at the time of ration distribution at ration shop then he enters his password.

User ID confirmed with the database provided by the Government authority which is stored in the microcontroller. Once verification is successful, customer is demand for a select type of material and quantity necessary through press key on the keypad. Based on type of material selected, the motor or solenoid valve is activated. The load cell or level indicator is checked for appropriate quantity. After collecting correct quantity material motor or solenoid is deactivated Current stock of materials in the ration shop is displayed using LCD.

After all process cash will automatically deposited from customers bank account and that cash transfer to government. GSM module will send the information in form of SMS to the customer as well as government.

IV.RESULT

Fig1:final working circuit

fig2:oil and grain distribution setup

Fig3:oil distribution process

V. CONCLUSION

The conventional Ration Materials Distribution system has drawbacks like weight of the material may be incorrect due to human mistakes, low processing speed, long waiting time at ration shop to get material on the origin of which fake ration cards can be made. Using this proposed modern system we can have Better organization of the ration distribution system. The proposed system is more secure, certain and transparent than the normal existing system. Influence of fraud falsity data entry intake in the ration database can be maintained simply with the use of this smart ration card system. The automatic ration shop involved RFID as well as GSM technology to distribute the kerosene or grain material. Ration card is replaced by RFID and information is sent to consumer using GSM module. The proposed system has advantages like it is helpful to prevent malpractices at ration shop, maintain data properly, reduces paper work, time saving approach and cost effective.

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