Automated Ration Distribution System With Rfid Technology And SMS Notification

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Abstract- *Automated ration distribution system is useful for more efficient,accurate, and automated technique of ration distribution. The present ration distribution system has drawbacks like inaccurate quantity of goods, low processing speed, large waiting time, material theft in ration shop.The main objective of the designed system is the automation of ration shop to provide corruption free rationing.The proposed system is based on Radio Frequency Identification (RFID) technology .The RFID tags are provided instead of conventional ration cards. Customer's database is stored in microcontroller which is provided by Government . Customer needs to scan tag to RFID reader, and then microcontroller checks customer's details with stored to distribute material in ration shop. After successful verification, customer needs to enter type of material and also quantity of material using keypad. After delivering proper material to consumer, the microcontroller sends the information to consumer as well as government using Global System for Mobile (GSM) technology.*

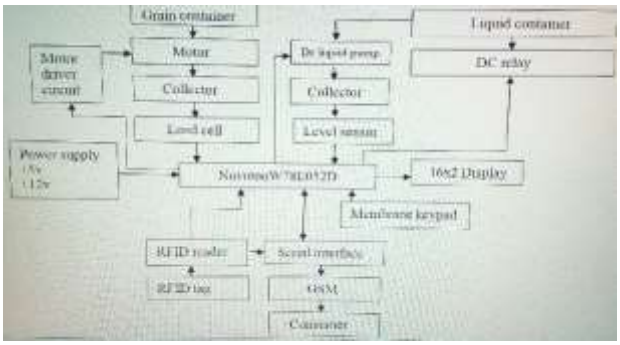
I. INTRODUCTION

A India's Public Distribution System (PDS) is the largest retail system in the world and is an Indian food security system. Established by the government of India under Ministry of Consumer Affairs, Food, and Public Distribution and managed jointly with state governments in India, it distributes subsidized food and non-food items to India's poor. The targeted PDS is costly and gives rise to much corruption in the process of extricating the poor from those who are less needy. Public distribution system provides a ration card issued under an order or authority of the State Government for the purchase of essential consumer materials like rice, wheat, kerosene and oil. State Government issues distinctive ration cards like yellow ration card, saffron ration card, and white ration card depending on family annual income. The consumer material is supplied to ration card holders in the first week of every month by ration shopkeeper. Public Distribution System is one of the widely controversial issues that involve malpractice. The manual intervention in weighing of the materials leads to inaccurate measurements and/or it may happen, the ration shop owner illegally uses consumer materials without prior knowledge of ration card holders. The proposed system aids to control malpractices which are present in ration shop by replacing manual work with automatic system based on RFID and GSM.

II. WORKING

The smart ration distribution based on RFID technology. Instead of ration card everyone will be provided with an RFID card. If the customer has to buy any ration material, he has to show the ration RFID tag card to the RFID reader kit. The user will be having a unique number & the reader will recognize it. The recognized RFID number will be given to the microcontroller, which compares the input number with the database. Name, address details, date of expire of card etc. are programmed in the controller will recognize the data coming from RFID by comparing it with the database. Once the user is identified, the microcontroller will check whether the user had already bought the ration item of to that month. If not, then the ration item to be dispensed will be displayed on the LCD screen. The user has to enter the details of the item he wants to purchase. If the user selects the ration item for purchasing purpose, then the controller will calculate the price of the items & check with the available cash balance in the card. If the person has sufficient balance, then microcontroller will start the solenoid & motor mechanism to dispense the items. The solid items are measured by load cell and the liquid items are measured by solenoid valve mechanism.

III. BLOCK DIAGRAM



IV. ADVANTAGES

1. A communication environment can be shaped simply and at low cost.
2. Reduces heavy antennas and receiver like devices to carry.
3. Reduces many terms like illegal usage hijacking of ration cards, over crowd, using bogus cards etc.
4. Easy to operate because processing speed is slow.
5. Reduces material theft at Ration shop.

V. CONCLUSION

The present system has drawbacks like malpractices, low processing speed, long waiting time at ration shop to get material and material theft in ration shop without any acknowledgement to Government and consumer. To overcome above problems, automatic ration shop plays important role. The automatic ration shop involves RFID technology to distribute the kerosene or grain material. The proposed system has advantages like it is helpful to maintain data properly, reduces paper work, time saving approach and cost effective. It is also possible to use GSM to send the details of purchasing to the customer's mobiles. Like this proposed system creates transparency in ration shops. This method can provide safe, secure and efficient way of public distribution system. Using this modern system we can have Better management of the ration distribution.

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