

# Smart Ration Distributions based on GSM and RFID Technology for the Smart World

Arpita<sup>1</sup> Poornima S. J<sup>2</sup>

<sup>1</sup>UG Student <sup>2</sup>Assistant Professor

<sup>1,2</sup>Department of Computer Science & Engineering

<sup>1,2</sup>RGIT, Bengaluru, India

**Abstract**— Now 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. All the people having a ration card to buy the various materials (sugar, rice, oil, kerosene, etc) from the ration shops. But the existing system is having two drawbacks, 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, remaining will be sold 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.

**Key words:** Hard 080, Friction

## I. INTRODUCTION

India's Public Distribution System (PDS) is one of the largest retailer system in the world. Its motto is to provide food security to the people and this is achieved by providing food grains at subsidized rates. The network of the ration shops is spread all over in India and presently the PDS system supports over 40 crore Indians below the poverty line with monthly supply of subsidized food grains. Under this system a ration card is issued under the authority of state government for the purchase of essential consumer materials like rice, wheat, kerosene, sugar, oil etc.

The Public distribution system is one of the widely controversial offices that involves corruption and illegal smuggling of goods. In the 2008 report, the planning commission quoted that "For every Rs.4 spent on the PDS, only Re.1 reaches the poor and about 54% of the food grains does not reach the intended people." These statistics reflect inefficiency, corruption and theft on a gigantic scale.

Many challenges that plague the existing Public Distribution System are PDS Leverages, Scale and Quality of issue, System transparency and Accountability, Overcrowd and slow processing time. The existence of Bogus cards (ration cards belonging to fictitious families) and Shadow ration cards (genuine ration cards used by someone else) adds up to the existing challenges. This drawback has to be overcome in order to provide a safe, secure and efficient functioning of public distribution system.

The drawbacks in the existing system can be overcome by automation of the system. The word automation means doing the particular task automatically in a sequence with faster operation rate. This requires the use of a processor together with communication network and relevant software programming. Automation of rationing system means distribution of essential commodities to a large number of people through a network on a recurring basis in an automated way. Corruption amount of about 358 crore per/year in the Government and market sector of PDS can be reduced if this system becomes automated. Here all the manual jobs, right from the data entry, weighing to pouring is done by the machines and therefore transparency can be maintained in the system. People are given power to fight back corruption and a better standard of service can be assured.

## II. PROPOSED METHODOLOGY

The main objective of the proposed PDS is to create transparency in the system by automating the process and thereby reducing the human intervention and manual work.

The proposed system have benefits such as prevention of adulteration, hoarding. It is a cost effective and time saving approach. The quantity and the quality of the goods given will be accurate. This increases the reliability and flexibility and thereby brings a sense of faithfulness among the people. This is an Anti-Corruption tool as it reduces corruption to the great extent.

## III. ARCHITECTURAL DESIGN

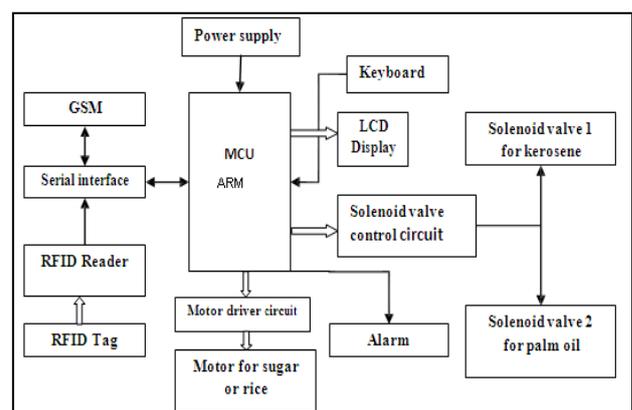


Fig. 1: Architectural Diagram

### A. Description of the Components

#### 1) GSM

GSM stands for Global System for Mobile communication. GSM is a globally accepted standard for digital cellular communication. GSM digitizes and compresses data, then sends it down a channel with two other streams of user data, each in its own time slot.



the “Automatic Rationing System Using Embedded System Technology” [5], in this the ration distribution system is automated by using PLC. This automated ration system replaces the conventional ration card system by smart card. The proposed ration shop system is connected to the government database via GSM modules, which further sends the up-to-date information to the government and the consumer. 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. 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.

- 5) The current PDS having lack of visibility, accessibility, and efficiency in the system so to these factors Mohammad Shafi et.al. Suggested the “e-Ration Shop: An Automation Tool for Fair Price Shop under the Public Distribution System” [6], this paper discusses strategy adapted in using ICT to control diversion and leakage in the delivery mechanism and its successful application in Computerization of food grain supply chain.

#### V. CONCLUSION AND SCOPE FOR FUTURE ENHANCEMENT

57% of the public distribution system (PDS) food grain does not reach the intended people. Many drawbacks of PDS like PDS leakage, scale & quality issue, system transparency and accountability, grievance redressed mechanism are overcome by automation. So it is been decided to develop a system in which ration material distribution through automatic mechanism without any human efforts. So the proposed system creates the transparency in Public Distribution System (PDS) as the work becomes automatic. With the help of proposed system it is possible to make Public Distribution System (PDS) efficient and free from irregularities.

#### A. Scope of Work

- The proposed system with existing components can also be used for keeping Employees record in multi-branch organizations. It is possible by creating common database for multi-branches.
- The proposed system can also carried out for various remote security applications as hardware requirement is same; the difference is that some relay and sensors need to be attached.
- The proposed system can also be implemented using solar panel to provide power requirement.
- The same system can be implemented by using GPRS which is capable to access the data base of customer also outside the home town.

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