Versatile Agricultural System

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Abstract-*The paper aims on the design, development and the fabrication of the system which can dig the soil, put the seed, leveler to close the mud and sprayer to spray water, these whole system works with the battery and solar power. In recent years the development of the autonomous vehicles in the agricultural has increased interest. The system is controlled by relay switch through Bluetooth technology using mobile the idea of applying robotics technology in agricultural is very new. In agriculture, the opportunities for the robot enhanced productivity are immense and robot are appearing on farms in various guises and in increasing numbers. We accept that robot performing agricultural operations autonomously.*

Keywords-Embedded system, Wireless communication,

I. INTRODUCTION

This project work described here is quite useful in the agricultural fields. The project aims on design Agricultural system for spraying water, seeding, mulching and cutting operation. More than 42% of the total population in the world has chosen agricultural as their primary occupation. In recent years, the development of autonomous vehicles in agricultural has increased. This development has led many researchers to start developing more rational and adaptable vehicales.in the field of agricultural Autonomous vehicles, a concept is being developed

Autonomous vehicles, a concept is being developed to investigate if multiple small autonomous machine would be more than traditional large tractors and human force. These vehicles should be capable of working 24 hours a day year round, in most weather condition and have intelligence embedded within them to behave sensibly in a semi- natural environmental over a long period of time

There are a number of field operation that can be executed by autonomous vehicle, giving more benefits than conventional machines.

II. LITERATURE SURVRY

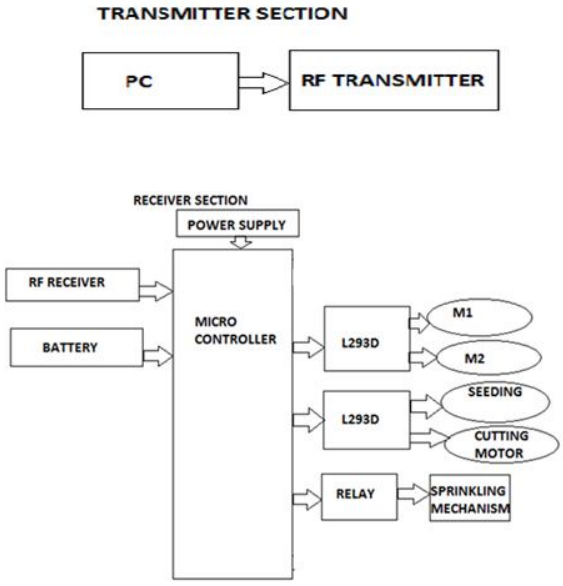
Agriculture is the largest occupation in India. This is our positive side, but it is becoming our week point because of lack of automation and advanced technology.

Farmer are using old technique for farming. They are doing very hard work and not getting profitable income. Now small autonomous vehicle can move through the crop line of agricultural land and perform task that are tedious and hazardous to the farmers.

Leveling of land, planting of crops, spraying water and fertilizer and cutting the crops these all are very costly and take time.

Versatile agricultural system is very advance, system will do all these task in very effective way and will give maximum profit.

III. BLOCK DIAGRAM



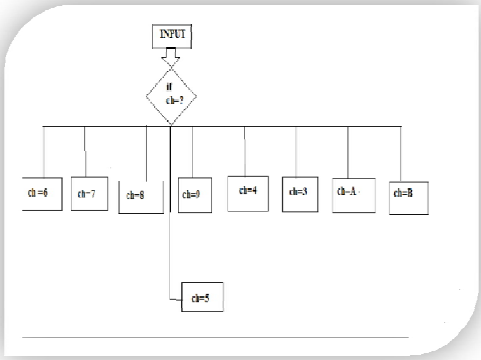
IV. WORKING & DESIGN

1. Seeding Sowing operation: A plastic box used for seed storage. We have made 3 holes to the main wheel shaft, where the storage box is placed above tithe main wheels are powered by dc motor which is regulated by a relay switch.
2. Water spraying operation: A water container is used for water storage. A water pump is used for pumping water to the water sprayer. Water flows to the sprayer through pipe. The power for pump is regulated by a toggle switch

3. Cultivating operation: A Dc motor is coupled with the screw rod is used. The power for motor is regulated by relay switch. The screw rod rotates and the nut welded to the cultivator slides between the screws of the rod. As the cultivator is lowered down, soil is dig up to 1.5inch.
4. Mud closing and leveling operation: A metal sheet plate is used as mud closer and leveler. The sliding mechanism is used for leveler up and down movement.
5. Propulsion system: Two drive axles driven by DC electric motors of 12v 30 rpm.

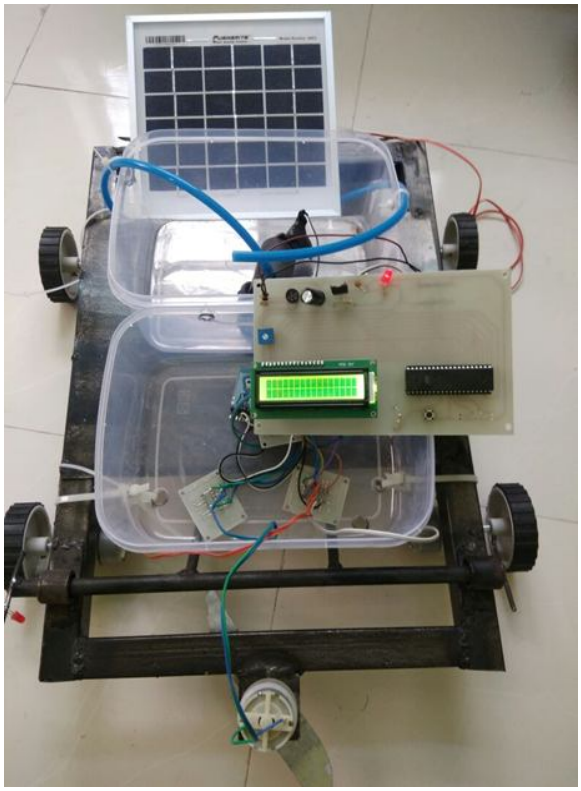
V. SOFTWARE

Flow chart:



1. AVR studio
2. Proteus
3. Bluetooth terminal /RF Module

VI. HARDWARE



VII. CONCLUSION

One single system is performing multiple task.it saves farmers work and time.in minimum time farmer can do multiple task hence productivity is increasing. This system works on battery and solar panel which is more power efficient. The system is easy to operate.

VIII. FUTURE SCOPE

In future we can increase power of the system and Synchronization of all task. Need to work on Range of wireless communication.

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