

# **RFID COORDINATE REGISTRATION FOR AGRICULTURAL PROCESS SENSING**

## **ABSTRACT**

An embedded system is a computer system with a dedicated function within a larger mechanical or electrical system, often with real-time computing constraints. It is embedded as part of a complete device often including hardware and mechanical parts. By contrast, a general-purpose computer, such as a personal computer (PC), is designed to be flexible and to meet a wide range of end-user needs. Embedded systems control many devices in common use today.

Modern embedded systems are often based on microcontrollers (i.e. CPUs with integrated memory and/or peripheral interfaces) but ordinary microprocessors (using external chips for memory and peripheral interface circuits) are also still common, especially in more complex systems. In either case, the processor(s) used may be types ranging from rather general purpose to very specialized in certain class of computations, or even custom designed for the application at hand. A common standard class of dedicated processors is the digital signal processor (DSP).

A major challenge with RFID tags is to obtain their coordinates in the cost effective manner that makes them so attractive in the first place. For example, adapting well known radar methods for coordinate registration will increase the RFID system complexity and thus cost and maintenance considerably. In this paper we develop a system to determine the location of RFID tags using RSS (Received Signal Strength) measurements between tags and the reader to estimate their position.

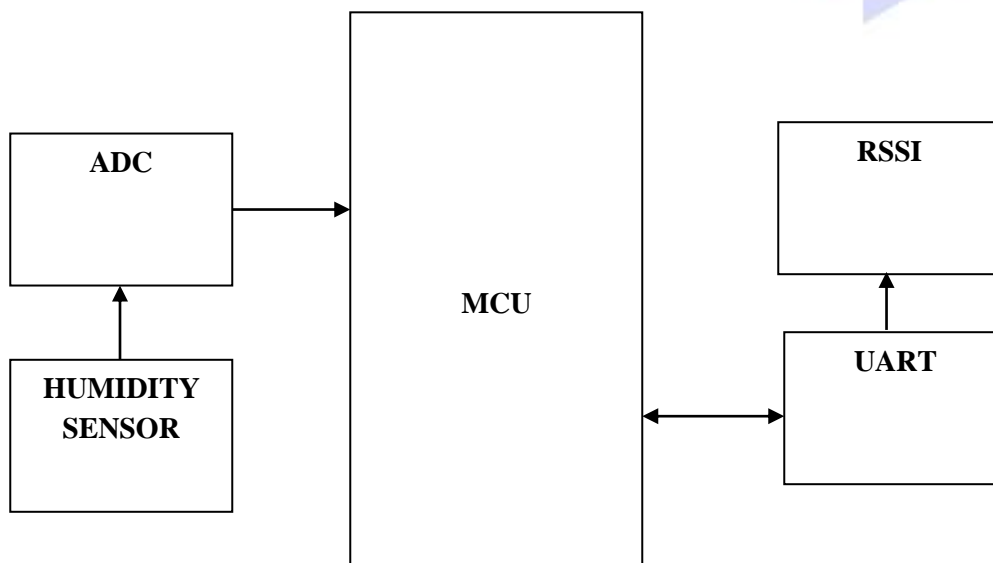
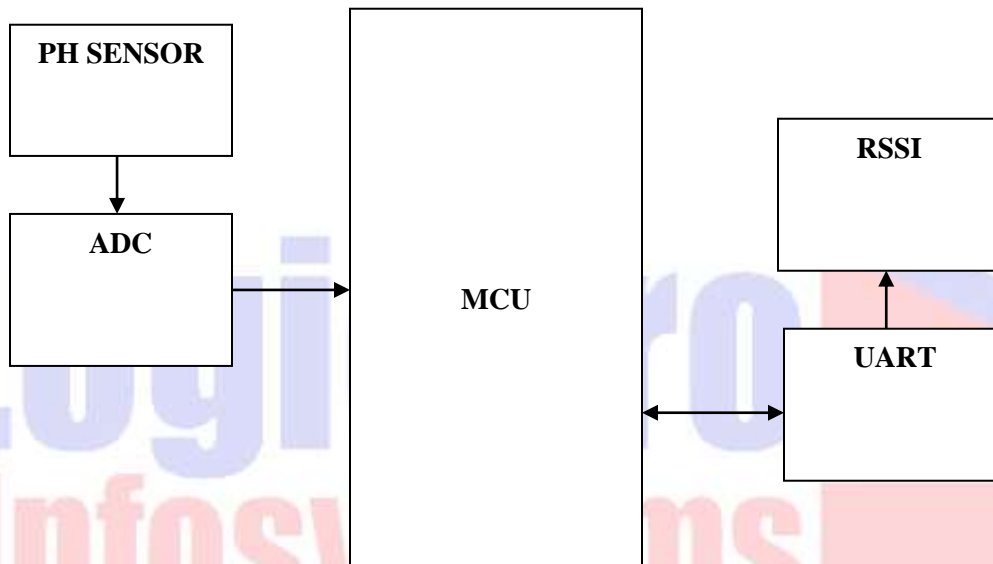
Tag positioning with this system can be made with a single portable reader without the need for triangulation. The WSN (Wireless Sensor Network) is treated as an optimization problem where relative positioning is found using a MCMC (Markov Chain Monte Carlo) technique. Simulations show that using this process it is possible to improve estimates for tag location at long ranges without major modification to currently available systems.

## **PROPOSED SYSTEM**

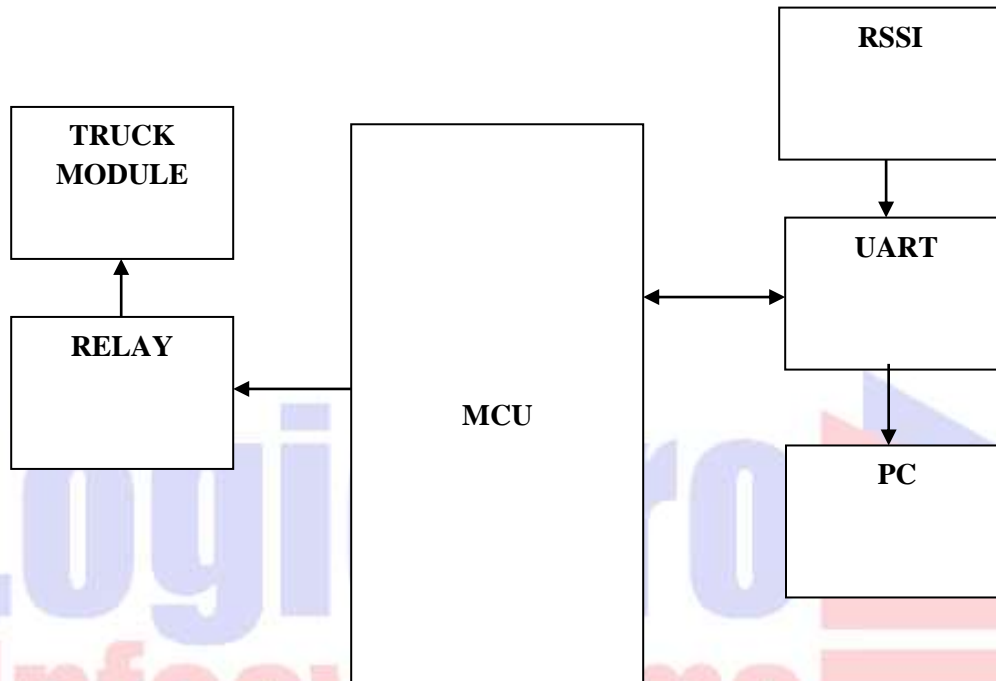
In this project, we are going to implement RFID coordinate registration for agricultural process. Using RSSI(Received Signal Strength Indicator) we can send the signals to PC and monitor the process. With the help of pH sensor and Humidity sensor we can get the readings of that particular field and can be monitored in PC. With help of those signals, Tractor will be moved to the field, which can also be viewed in PC.

**BLOCK DIAGRAM:**

**TRANSMITTING END**



## RECEIVING END



## HARDWARE REQUIREMENTS:

- MICROCONTROLLER
- PC
- UART
- RSSI
- DC MOTOR
- pH SENSOR
- HUMIDITY SENSOR
- ADC

## SOFTWARE REQUIREMENTS

- MCU COMPIERS
- PROTEUS SOFTWARE

MICROCONTROLLER may ATMEGA,8051,PIC OR Arduino

