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A Review Paper on Internet of things based Application Smart Agricultural System

Mohit kumar Navinay
C.E.C Bilaspur

Rahul Gedam
HOD ETNT, C.E.C Bilaspur (Chhattisgarh),
CSVTU Bhilai

Abstract: Agriculture, farming or husbandry is a vital occupation since the history of mankind is maintained. The name agriculture represents all entities that came under the linear sequence of links of food chain for human beings. As humans are the smartest living species on this planet, so their smartness always provokes them to change and to innovate. This provoking has led to invention of wheel, advancements in living standards and styles, languages, life spending methodologies and countless more achievements. As we know in present era there is need of soil and temperature monitoring system which is based on the technology of Internet of things. In current some time farmer don't know the current status of there soil moisture and on that case some time there crops will die. Similar some time due to extra water level those crops are under danger condition so for those type of issue there is need of soil moisture and environmental temperature monitoring system so by using of that system farmer can take decision for their crops . Right now there is some technology are available which is based on GPRS but according to us GPRS is not a good solution because GPRS technology have some connectivity issue.

1. Introduction

Internet of Things

Internet of Things (IOT) term represents a general concept for the ability of network devices to sense and collect data from the world around us, and then share that data across the Internet where it can be processed and utilized for various interesting purposes. The IOT is comprised of smart machines interacting and communicating with other machines, objects, environments and infrastructures. Now a day's every persons are connected with each other using lots of communication way. Where most popular communication way is internet so in another word we can say internet which connect peoples [1].

Today, we are seeing the electrification of the world around us. Almost any manufactured good now includes an embedded processor (typically a microcontroller, or MCU), along with user interfaces, that can add programmability and deterministic "command and control" functionality. The electrification of the world and the pervasiveness of embedded processing are the keys to making objects "smart." Your old toaster that mechanically controlled the color of your toast now has an MCU in it, and the MCU controls the color of your toast. The toaster completes its task more consistently and reliably, and because it is now a smart toaster, it has the ability to communicate with you electronically using its touchpad or switches. After a device becomes smart through the integration of embedded processing, the next logical step is remote communication with the smart device to help make life easier. For example, if I am the office, can I turn on my house lights for security reasons using my laptop or mobile phone?

1.2 Introduction on Smart Agricultural

Agriculture, farming or husbandry is a vital occupation since the history of mankind is maintained. The name agriculture represents all entities that came under the linear sequence of links of food chain for human beings. As humans are the smartest living species on this planet, so their smartness always provokes them to change and to innovate. This provoking has led to invention of wheel, advancements in living standards and styles, languages, life spending methodologies and countless more achievements. The restless attitude of mankind towards innovations has given birth to major inventions.

Which have not only provided the ease to human beings, but also improvements in efficiency which further lead to better productivity on the cost of less skills. The advancements in agriculture are necessary to balance the demand and supply as population is increasing day by day. As compare to the last fifty years and earlier, the demand of food has accelerated. To overcome the requirements, the deployment of modern technology over this vital source for humans is intolerable. With the use of modern and advanced technologies,

efficiency of the agricultural industry can be improved, where it not only includes better productivity, but also lessens intra-field and inter-field losses present in conventional methods. From the beginning, agriculture is crucial part of human society due to the reality that man and agriculture are directly related to each other. This fact leads towards the advancement and enhancement of the typical, inappropriate and time consuming methodologies, used for agriculture.

2. Literature Review

According to the International Assessment of Agricultural Science and Technology for Development (IAASTD) [14]. The widespread realization is that despite significant scientific and technological achievements in our ability to increase agricultural productivity, we have been less attentive to some of the unintended social and environmental consequences of our achievements. We are now in a good position to reflect on these consequences and to outline various policy options to meet the challenges ahead, perhaps best characterized as the need for food and livelihood security under increasingly constrained environmental conditions from within and outside the realm of agriculture and globalized economic systems. The synthesis proposed some of the factors like equitable environment and sustainability which can be used to improve the rural livelihoods and can be useful in reducing hunger and poverty. In compliance with these factors, biological diversity and services for ecosystem rapid changes in climate and availability of water are some of the major concerns which are addressed. To fulfill the diverse needs of human life, there is a need for sustainability which requires the concern of the international collaboration. Apart from the technological advancement making its way towards smart agriculture, in order to benefit this industry which the humans directly associated with, along with its long lasting benefits also has some issues related to the agricultural advancement. Human behavior The main barrier in the development of agriculture is the human behavior towards adapting new technology. It has always been hard for a common man to adopt something different from the traditional method. Most people from the ruler areas are associated with the farming and are not much educated and independent in technological advancement. This factor has widened the gap between the modern and ruler areas.

It is evident that the electronic media can be a great means of reducing the hesitation of adapting new technologies by commercials and on-air campaigns. Agriculture There are many issues directly associated with agriculture like grid, croup and soil monitoring, irrigation, pesticide and fertilization applications, and cattle farming [15]. Information and communication technology can be a practical tool for overcoming these technical issues. Climate Changes The climatic change is biggest issue in agricultural paradigm, which directly affects each and every factor associated with farming. This natural conflict directly influences productivity and quality, leaving lasting and long-term impacts on food security. Quick solutions are needed for this issue. Pre-weather detection, temperature monitoring, climate changes, moisture levels, air flow and pressure, rain and extreme weather prediction are few of the many solutions. Market/Vendors Due to the long geographical distances between the open market and the actual farm the field cost of the production is increased and will directly benefit the brokers or the third person involved, leaving the farmers inadequately paid for their efforts. When it comes to venders of agriculture equipment's equal opportunities should be given to the manufacturing industries. Monopoly should be discouraged. This will improve the quality and cost reduction. Online services and applications can be used to provide direct interaction between farmers and consumers; e-store can be a better option. Standardization in equipment manufacturing can improve the productivity and compatibility between different vendors. Regulations Reforms are needed on national and international level. Government policies and regulations are needed. The formation of regulating authority and its up gradation for technologically advanced agriculture is needed in order to provide an accessible and open market . This will change the patterns and processes in both industry and agriculture towards higher efficiency. Particularly, agriculture is an important foundation of Thai economy. Consequently, we propose an intelligent farming system (IF) to improve the production process in planting. IF composes of two main parts which are a sensor system and a control system. In this paper, we focus on the control part which are watering and roofing systems of an outdoor farm based on the statistical data sensed from the sensor systems (including temperature, humidity, moisture and light intensity sensors) Since the sensed data would not be always accurate due to noises, we apply Kalman filtering to smooth the data before using as an input in our decision making process. For the decision making process, we do not consider only the sensed data, but also the weather information.

A decision tree model is generated to predict the weather condition. Then, a set of decision rules based on both the sensed data and the predicted weather condition is developed to automatically make a decision on whether watering and roofing system should be on or off. Moreover, we also provide functions for users to manually control the watering and roofing systems via our mobile application. [16] These network nodes perform acquisition, collection and analysis of data, such as temperature and soil moisture. Such data can be employed to automate the irrigation process in agriculture while decreasing water consumption, resulting in monetary and environmental benefits. The high storage and processing capabilities, the rapid elasticity and

payper- use characteristics makes Cloud Computing an attractive solution to the large amount of data generated by the WSN. This paper proposes and evaluates on a real deployment a cloud-based Wireless Sensor and Actuator Network (WSAN) communication system. This solution monitors and controls a set of sensors and actuators, respectively, to assess plants water needs.

3. Previous Research Issues:

In Existing system, there is need of GPRS based connectivity. There is no any theft control system for the agricultural system. Due to GPRS system cost of the entire system will increase. Soil moisture level identification is not based on the crop type so its tuff to indentify the exact requirement of water for any specific crop.

4. Future Objective

In this area we can work on IOT based system. Here we can provide mobile app facility which is easy to understand We can work on WiFi based technology so it's very cheap system. May be this system will not face the connectivity issue. Here we can also use theft control system. Here we will try to find water level by crop type.

5. Conclusion

In this paper basically we are focusing on the previous existing approach. As we can see some previous existing technology which is based on GPRS technology. In this paper we try to learn IoT system. As per the existing system, there is need of those type of system, which is real time data analyzer which are able to send data around the world using the concept of IoT. In future we can work on WiFI, Lora based technology.

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