

# REVOLUTION IN AGRICULTURE, ENVIRONMENT AND WATER MANAGEMENT SYSTEM THROUGH IoT

K.D. Tamhane<sup>1</sup>, Swami Manmath<sup>2</sup>, Tamboli Karishma<sup>3</sup>, Rote Rohini<sup>4</sup>, Shaikh Karishma<sup>5</sup>

<sup>1</sup> H.O.D., I.T. Engineering, Pravara Rural Engineering College, Maharashtra, India

<sup>2</sup> Student, I.T. Engineering, Pravara Rural Engineering College, Maharashtra, India

<sup>3</sup> Student, I.T. Engineering, Pravara Rural Engineering College, Maharashtra, India

<sup>4</sup> Student, I.T. Engineering, Pravara Rural Engineering College, Maharashtra, India

<sup>5</sup> Student, I.T. Engineering, Pravara Rural Engineering College, Maharashtra, India

## ABSTRACT

*Research study on the Internet of Things and Astute Things has been going on for more than a decade and reaches back to Mark Weisers pristine dream of ubiquitous computing. Bruce Sterling recently popularized the conception of Perspicacious Objects and the IoT.*

*Astute Things is another paradigm shift in IT world. Keenly intellectual Things are the things that are having embedding perspicacity or astuteness, identification, automation, monitoring and controlling caliber. Perspicacious Things are availing human life a lot, nowadays without their applications life is becoming cumbersome. This paper exhibits systematically on Internet, Things, and then explores on Internet of Things and determinately Astute Things from researchers, and corporate perspective. Moreover, this article fixates on the state of Perspicacious Things and its applications. This in turn would avail the incipient researchers, who want to do research in this IoT domain. Keywords-Cloud Net, sensors, Wi-Fi board, Wi-Fi fortified board, Android mobile.*

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## 1. INTRODUCTION

Internet of Things is defined as An open and for the coordination and communication between physical and digital objects comprehensive network of intelligent things that have the capacity to auto organize, share information, data and resources, reacting and acting in face situations and changes in the result [2]. IoT is one of the last advances in Information and Communication Technologies, providing global and local connectivity and management of sensors, devices, users and information. Imagining the IoT being used to track objects like a vehicle running on the road or a box of cereal from sites of production to sites of consumption is perhaps not so much difficult to imagine or take in consideration, objects are increasingly able to not just be characterized by a unique identifier, but also to track and scan location, automate the things, monitor and context-sensitive datum [3]. The concept of the Internet as a set of computing devices is changed to a set of connected a daily things used by human, such as object used to house, machines, transportation, business storage etc.[1]. The number of things in the daily life is greater than the number of people in the world. Research is going on how to make these things to communicate with each other like computing devices like mobile phones, PDAs, laptops communicate through Internet of things [1]. The US National Intelligence council has stated that by 2027 the IoT will connect everything in our life. For this target new tech are developed and more research challenges are formed. Authors in highlight some research challenges [3]. Despite new tech are proposed in the recent years, however, the future vision of internet is still going to develop. Extending the current Internet and providing connection, communication, and networking coordination between devices and physical objects, or "Things," is a growing trend that is often referred

to as the Internet of Things- IoT track, senses and identifies the physical world via sensing tech. and intelligent devices, perform computation, processing and through n/w, realizes interaction between people and things, things and things [4].

## 2. LITERATURE SURVEY

The Internet of Things may is a hot topic in the throughout the world but it's a new concept. In the early 2000s, Kevin Ashton was laying the work for what will become the Internet of Things (IoT) at MIT's AutoID lab. Ashton was one of the scientists who conceived this notion as he searched for ways that Proctor could improve its business by linking RFID identification information to the Internet of things. The concept was simple but powerful and attractive [5]. If all objects in daily life were equipped with RFIDs identifiers and wireless sensor connectivity, these objects could be communicate with each other and managed by computers devices [6]. In a 1999 presented article for the RFID Journal Ashton wrote: If we had computers that knew everything there was to know about the objects using data they have collected without any help from us we would be able to track and count everything, and greatly reduce value, loss and cost [6]. We would know when things needed replacing, repairing or recalling, and whether they were fresh or past their best. We need to empower computers with their own means of collecting information and data, so they can see, hear and smell the things of world for themselves, in all its surrounding. RFID and sensor technology enable computers to observe identify and understand the world without the limitations of human data and information [4]. The concept behind the Internet of Things has been around for almost 25 years now, but wasn't introduced in proposal form until 1999 by Kevin Ashton [6]. It's hard to imagine that back in 1999 there was enough technology for the Internet of Things to be a viable concept, but Ashton had the right idea when looking into the future. Revolution: Iot today's and tomorrows.

## 3. MATHEMATICAL MODEL

$I = I_1, I_2 \dots$  In Where  $I$  is set of inputs.

$I_1 = \text{Command Request}$

$S = S_1, S_2, S_3 \dots S_n$ , Where

$S$  is a set of state.

$S_1 = \text{Initialize Hardware}$

$S_2 = \text{Establish Communication}$

$S_3 = \text{Cloud Connectivity}$

$S_4 = \text{Request Command}$

$S_5 = \text{Parse Request, and}$

$S_6 = \text{Monitoring / Controlling}$

Request  $O = O$  is a set of output  $O = O_1, O_2, O_3$

$O_1 = \text{Controlling / Monitoring Electronic / Electrical Equipment}$

## 4. PROPOSED ARCHITECTURE

Smart Agricultural solutions are the evolving trend in day to day lives. The technology has completed a full circle by giving back to agriculture the latest trends and techniques that have been developed. Connectivity using existing 3G, 4G networks using the available software and hardware is one major advantage for Smart agriculture. This project proposes a The enhancement of the agricultural field and escalation depends on the miscellaneous factors such as the temperature, pH level, humidity, moisture, water impuritl etc. The proposed system is shown in the Fig 1 consists of temperature sensor, water level sensor, humidity sensor and PIR sensor y-11 to monitor the minute to minute status of the field to help the farmer to maintain his field with technology and increase his production. The proposed system is made up of three segments such as sensing devices, network and things. By using these types of different sensors networks we can monitor and control the things. the actual process of this project is, we are going to connect the above mentioned sensors to one the electronic device called Wi-Fi board and this Wi-Fi board is then connected to the user device. here we are going to use the android device as a user device. the Wi-Fi board is connected to device through the network. Here we are using cloud network technology. if user

wants to perform some operation, he/she will have to send a request from the android device to the Wi-Fi board, then after the Wi-Fi board device checks the available scanning device and get the actual task perform. By completing this the Wi-Fi board sends the actual output to the user device.

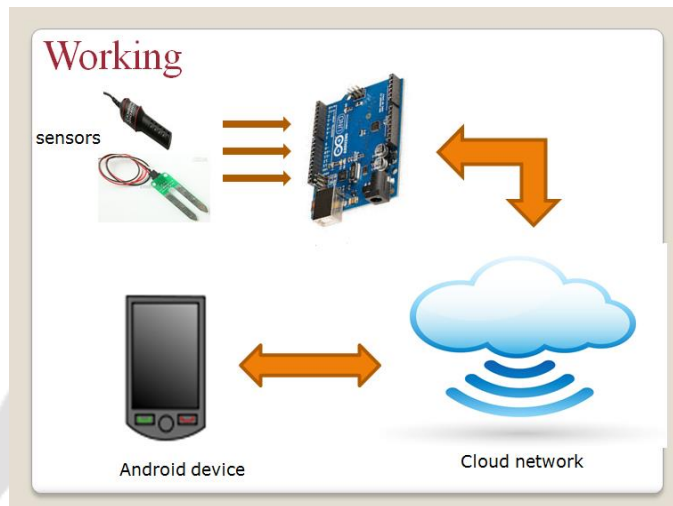


Fig -1: Working of Proposed Architecture

5. ALGORITHM

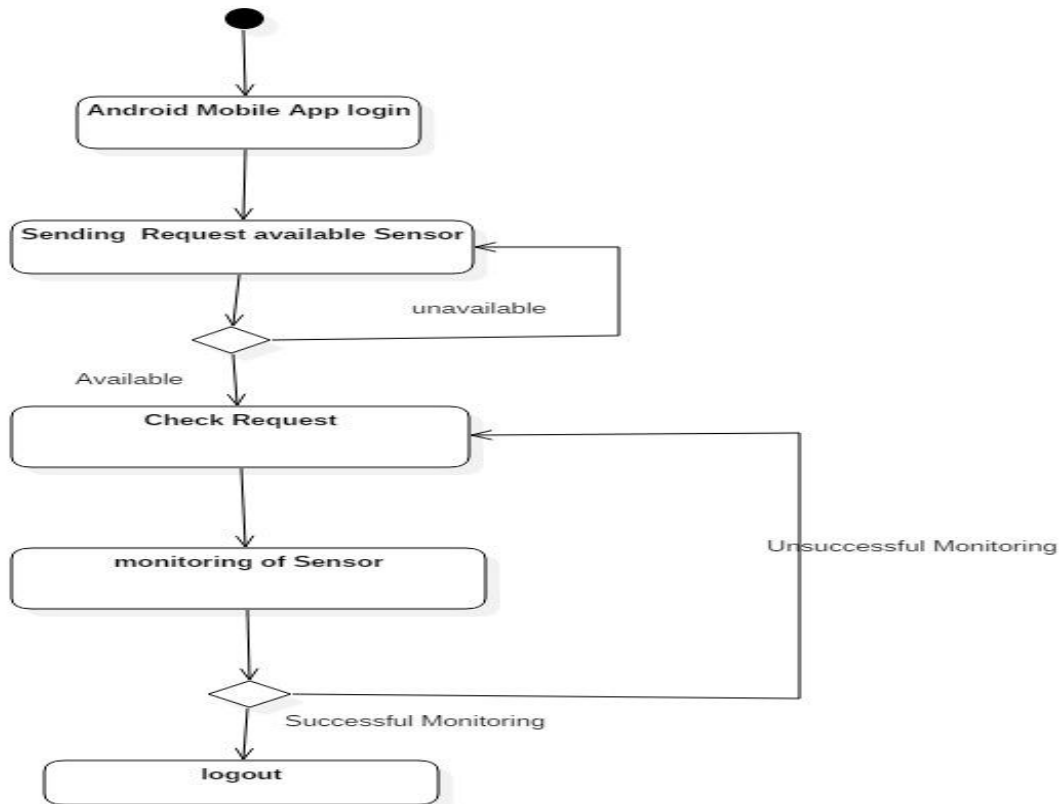


Fig -2: Algorithm of Proposed System

**Step 1:-** If user wants know some value about the soil moisture condition or co value or PH value for the plants. It will send the request for such value through its android device.

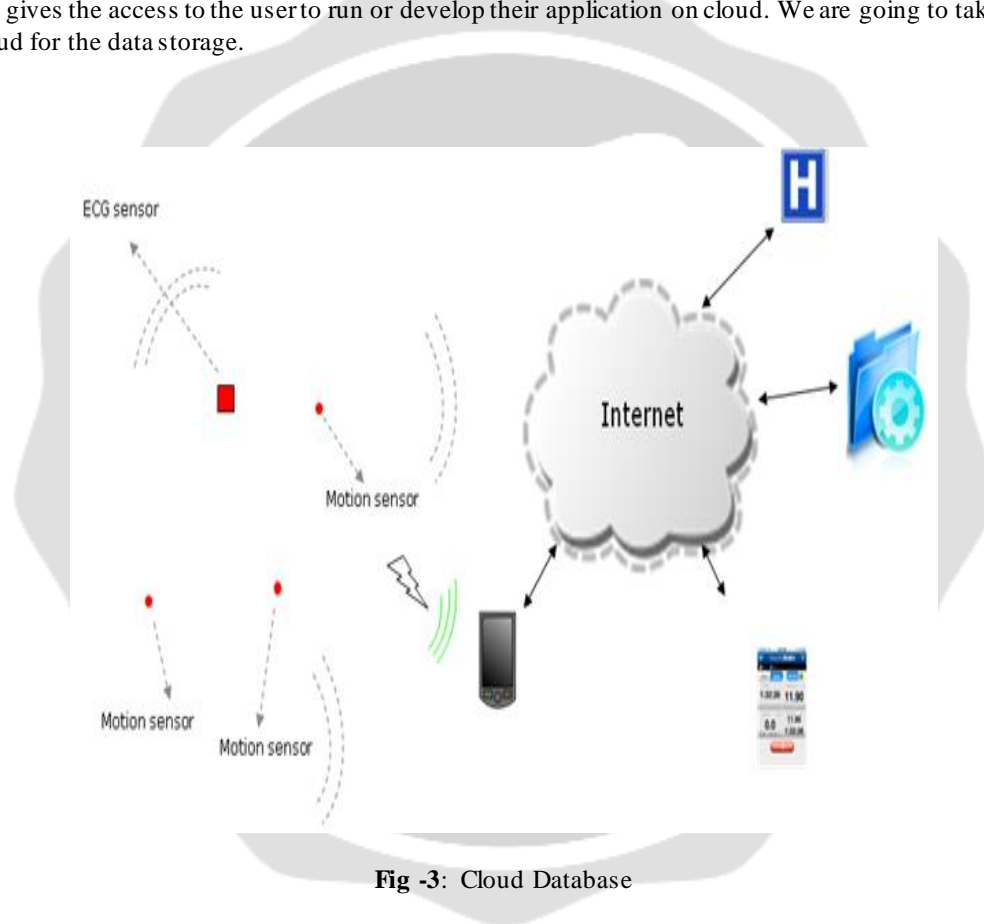
**Step 2:-** the request goes to the cloud where the different readings are taken by the sensors and stored in the cloud data base.

**Step 3:-** after getting the appropriate result.

**Step 4:-** it displays on the users android device.

## 6. CLOUD DATABASE

It is nothing but the computing technology which is used to handle the large amount of data or we can say Big data. It gives the access to the user to run or develop their application on cloud. We are going to take the access of such cloud for the data storage.



**Fig -3:** Cloud Database

## 6. CONCLUSION

This paper thus explained an empirical model of how the Internet of things can be applied to our Indian agriculture. We initially proposed a model outline of how the IoT concept can be illustrated with respect to our Agricultural practices. Later in the construction of sensors we discuss about the various types of sensors and the type of sensors that will be required for our Agricultural purposes. We also discuss about the types of communication that we have for near and far nodes communication. Thus we propose this idea to the son of the soil to benefit at the most.

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