Ideation Phase

LITERATURE SURVEY

Date	3 September 2022
Team ID	PNT2022TMID21901
Project Name	Smart Farmer-IoT Enabled Smart Farming Application
Maximum Marks	4 Marks

[1]"Smart Farming System using IoT for Efficient Crop Growth", Abhiram MS, Jyothsnavi Kuppili, N.Alivelu Manga.,2020

Smart agriculture is a farming system which uses IoT technology. This emerging system increases the quantity and quality of agricultural products. IoT devices provide information about nature of farming fields and then take action depending on the farmer input. An IoT based advanced solution for monitoring the soil conditions and atmosphere for efficient crop growth is presented. The developed system is capable of monitoring temperature, humidity, soil moisture level using NodeMCU and several sensors connected to it. Also, a notification in the form of SMS will be sent to farmer's phone using Wi-Fi about environmental condition of the field.

[2] "Smart Agriculture Based on IoT and Cloud Computing", Sriveni Namani ,Bilal Gonen.,2020

The improvement in new technologies in this mod- ern era has resulted to miniaturization of sensors and the attempts to utilize them in various areas are

getting succeeded. Also, adoption of Internet of Things (IoT) and like Smart Health Care systems, Smart Cities, Smart Mobility, Smart Grid, Smart Home and Smart Metering etc. One such area of research that has also seen this adoption is agriculture and thus making it a Smart Agriculture. Agriculture is one of the major source for any of the largest population countries like India, China etc. to earn money and carry out the livelihood. Involvement of IoT and Cloud Computing in the agricultural sector would result in the better production of crops by controlling the cost, monitoring performance and maintenance, thereby benefiting the farmers and the overall nation. It focuses on introduction of a Smart Drone for crop management where the real-time Drone data coupled with IoT and Cloud Computing technologies help in building a sustainable Smart Agriculture.

[3] "IoT-based Measurement for Smart Agriculture", Alexandre Heideker, Dener Ottolini, Iván Zyrianoff, Andre TorreNeto, Tullio Salmon Cinotti ,Carlos Kamienski.,2020

Smart agriculture is increasingly seen as a solution to global sustainability problems such as global warming, waste of water resources, excessive use of pesticides, and low economic activity. The core of this technology is the acquisition of data from the soil, crop, and climate to act in the production. Several solutions exist, but many are proprietary, high cost, hard to install, maintain, and integrate with third-party solutions. This paper presents an IoT technology set applied to the acquisition of agricultural data using open source solutions such as FIWARE and LoRaWAN, which allow extensive customization and integration with advanced weather forecasting, Machine Learning, and realtime dashboard services. The results obtained by the combination of different tools and platforms in pilots located in Brazil and Europe reveal a high versatility of the IoT technology applied to smart agriculture.

[4] “IoT based System for Smart Agriculture”, Ioana M. Marcu, George Suciu, Cristina M. Balaceanu, Alexandru Banaru.,2019

Agriculture is the most traditional activity over time. Since the beginning of it, agriculture has suffered many changes to improve productivity and quality of crops. Some of the first significant improvements have been remarked when machines and new tools such as irrigation systems, harvest machines, farmland clearing machines were introduced in the primitive agriculture, where these activities were performed mainly by humans and animals. Over time, agriculture has been affected by weather disasters (such as storms or extreme temperatures) and by natural disasters (such as pests and plant diseases). Thus, the next step in the development of the agriculture domain was to propose the Internet of Things (IoT) solutions for monitoring of many parameters for better precision agriculture. Such a system would provide useful information on plant growth, crops' diseases, and soil properties that are a benefit for crops. This paper describes a possible solution for a more reliable IoT-based system using Libelium for Smart Agriculture to monitor the parameters that have a direct impact on crops. Moreover, the monitoring system aims to manage agricultural issues related to irrigations and analyses the effect of the measured parameters on agriculture, helping the farmers to have healthy crops.