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LITERATURE SURVEY

TITLE : SMART FARMER - IOT ENABLED SMART FARMING APPLICATION

DOMAIN NAME : INTERNET OF THINGS

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ABSTRACT : The survey proposes smart agriculture using various devices. Related work is the foundation for advancements in agriculture practice. Using smart agriculture a farmer can control the activities of agriculture like irrigation, animal intrusion, etc. The communication between the devices is increased by the use of IoT. Using IoT in agriculture improves the functionalities used in farming. Until now, the only way of handling the agricultural activities is by traditional method. In this survey Using WSN, data acquisition and transfer and monitoring becomes easy. This technique provides a smart solution for crop growth using IoT.

INTRODUCTION : Agriculture is one of the most important aspects in India. Irrigation accounts for 55-70% of water usage in India. Water usage for irrigation is nearly 60%.Most of this water used is wasted.We can use soil moisture sensor as a solution for wastage of water.This is done by Iot devices . The IoT networks reduce human labour requirements in the farm. IoT uses wireless sensor networks for gathering the information to monitor and control the activities. For monitoring the farm remotely, the end devices are equipped with soil moisture sensor, temperature sensor, etc. There are no means for farmers to have complete control over their farms and monitor the activity on the farm remotely. Here we try to provide a system that is cost effective and provides the functionalities that are required by the Indian farmers.

LITERATURE SURVEY : [1] The author says that Improving farm productivity is essential for increasing farm profitability and meeting the rapidly growing demand for food that is fuelled by rapid population growth across the world. Farm productivity can be increased by understanding and forecasting crop performance in a variety of environmental conditions. Crop recommendation is currently based on data collected in field-based agricultural studies that capture crop performance under a variety of conditions (e.g., soil quality and environmental conditions). However, crop performance data collection is currently slow, as

Such crop studies are often undertaken in remote and distributed locations, and such data are typically collected manually. Furthermore, the quality of manually collected crop performance data is very low, because it does not take into account earlier conditions that have not been observed by the human operators but is essential to filter out collected data that will lead to invalid conclusions (e.g., solar radiation readings in the afternoon after even a short rain or overcast in the morning are invalid, and should not be used in assessing crop performance). Emerging Internet of Things (IoT) technologies, such as IoT devices (e.g., wireless sensor networks, network-connected weather stations, cameras, and smartphones) can be used to collate vast amounts of environmental and crop performance data, ranging from time series data from sensors, to spatial data from cameras, to human observations collected and recorded via mobile smart phone applications. Such data can then be analyzed to filter out invalid data and compute personalized crop recommendations for any specific farm. In this paper, they present the design of SmartFarmNet, an IoT-based platform that can automate the collection of environmental, soil, fertilization, and irrigation data; automatically correlate such data and filter-out invalid data from the perspective of assessing crop performance; and compute crop forecasts and personalized crop recommendations for any particular farm. SmartFarmNet can integrate virtually any IoT device, including commercially available sensors, cameras, weather stations, etc., and store their data in the cloud for performance analysis and recommendations. An evaluation of the SmartFarmNet platform and our experiences and lessons learnt in developing this system concludes the paper. SmartFarmNet is the first and currently largest system in the world (in terms of the number of sensors attached, crops assessed, and users it supports) that provides crop performance analysis and recommendations.

[2]The author describes that with the rapid growth of population and the increasing demand for food worldwide, improving productivity in farming procedures is essential. Smart farming is a concept that emphasizes the use of modern technologies such as the Internet of Things (IoT) and artificial intelligence (AI) to enhance productivity in farming practices. In a smart farming scenario, large amounts of data are collected from diverse sources such as wireless sensor networks, network-connected weather stations, monitoring cameras, and smartphones. These data are valuable resources to be used in data-driven services and decision support systems (DSS) in farming applications. However, one of the major challenges with these large amounts of agriculture data is their immense diversity in terms of format and meaning. Moreover, the different services and technologies in a smart farming ecosystem have limited capability to work together due to the lack of standardized practices for data and system integration. These issues create a significant challenge in cooperative service provision, data and technology integration, and data-sharing practices. To address these issues, in this paper, they propose the platform approach, a design approach intended to guide building effective, reliable, and robust smart farming systems. The proposed platform approach considers six requirements for seamless integration, processing, and use of farm data. These requirements in a smart farming platform include interoperability, reliability, scalability, real-time data processing, end-to-end security and privacy, and standardized regulations and policies. A smart farming platform that considers these requirements leads to increased productivity, profitability, and performance of connected smart farms. In this paper,

they aim at introducing the platform approach concept for smart farming and reviewing the requirements for this approach.

[3]The author describes that the agriculture sector in India is facing a lot of problems due to lack of water supply, instability of monsoon primitive farming techniques. But since a few years the farming has undergone tremendous changes, and is becoming more technology driven, by adopting various smart agriculture techniques, farmers have obtained greater control over the process of growing crops. Therefore making agriculture more efficient and predictable. In this research paper, they will explore the IoT techniques that can be employed in agriculture and examine their benefits.

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