

**PROJECT DESIGN PHASE
II
FUNCTIONAL
REQUIREMENT**

DATE	27-09-2022
TEAM ID	PNT2022TMID16740
PROJECT NAME	SMART FARMER- IOT
MAXIMUM MARKS	4 MARKS

Smart farming using IOT

"IoT device includes every object that can be controlled through the Internet. IoT devices have become commonplace in consumer markets with wearable IoWT (Internet of Wearable Things), such as smartwatches, and home management products, like Google home. It is estimated over 30 billion devices could be connected to the Internet of Things by 2020.

The applications of the Internet of Things in agriculture target conventional farming operations to meet the increasing demands and decrease production losses. IoT in agriculture uses robots, drones, remote sensors, and computer imaging combined with continuously progressing machine learning and analytical tools for monitoring crops, surveying, and mapping the fields, and providing data to farmers for rational farm management plans to save both time and money."

In IOT-based Smart farming system there are some requirements are needed. In that requirements, some of them mentioned below.

Smart farming refers to managing farms using modern Information and communication technologies to increase the quantity and quality of products while optimizing the human labor required.

Among the technologies available for present-day farmers are:

- **Sensors:** soil, water, light, humidity, temperature management
- **Software:** specialized software solutions that target specific farm types or applications agnostic [IoT platforms](#)
- **Connectivity:** [cellular](#), [LoRa](#)
- **Location:** GPS, Satellite
- **Robotics:** Autonomous tractors, processing facilities
- **Data analytics:** standalone analytics solutions, data pipelines for downstream solutions.

Agricultural Drones:



Agriculture is one of the major verticals to incorporate both ground-based and aerial drones for crop health assessment, irrigation, crop monitoring, crop spraying, planting, soil and field analysis, and other spheres.

Since drones collect multi spectral, thermal, and visual imagery while flying, the data they gather provide farmers with insights into a whole array of metrics: plant health indices, plant counting and yield prediction, plant height measurement, canopy cover mapping, field water pond mapping, scouting reports, stockpile measuring, chlorophyll measurement, nitrogen content in wheat, drainage mapping, weed pressure mapping, and so on.

