

Project Design Phase-II

Solution Requirements

Date	14th October 2022
Team ID	PNT2022TMID33827
Project Name	Smart Farmer- IOT enabled smart farming application
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR.NO	FUNCTIONAL REQUIREMENTS	SUB REQUIREMENTS
1	External Interfaces	smart farming solutions can provide farmers with the tools to improve their operations, the technologies alone won't be enough; they must be supported by the right network capabilities. Specifically, they need network infrastructure that can deliver data instantly, manage machines in real time and, most importantly, stay on pace with IoT network requirements and advancements

2	Reporting	<p>For some devices and monitoring processes to maintain safety, such as critical systems and robotics, low latency is absolutely key. In this sense, 5G—with its lower latency and edge cloud, and where computation happens closer to the IoT device—can give farmers more authority over their systems, facilitating absolute control and monitoring of autonomous devices and near-instantaneous field intelligence.</p>
3	Authentication	<p>In relocating traffic and services from one central cloud closer to the end user at the edge of the network, MEC enables added security and control.</p> <p>For extra confidence, farmers can opt for private networking, a wireless access point (WAP) solution that segregates traffic when connecting with mobile devices for a secure, scalable foundation for adopting new wireless platforms and technologies.</p>
4	User Interface	<p>Sensor-enabled IoT technologies are already opening up new ways of working. One application is precision farming, a management approach that employs sensors to collect live data on the health of soil, crops and cattle.</p>

5	Software interface	Sensors are key to the concept, with numerous types being relevant for smart farming applications, including weight sensors, biosensors, GPS sensors, pH and electrochemical sensors, temperature sensors, optical sensors to measure soil quality, and airflow sensors to measure soil permeability.
---	--------------------	---

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

NFR.NO	NON FUNCTIONAL REQUIREMENTS	EXPLANATION
1	Usability	The soil moisture,NPK, LDR and electrochemical sensors are fit to be used because of their ability in predicting the correct amount of requirements needed by the plants
2	Security	By the use of these sensors,there will be security while farming.We will be able to tackle problems in contents of nutrients, water and moisture level which makes the soil more fertile ,helps the plants to grow healthy and makes the farmers happy by yielding good production and profit
3	Reliability	The use of these sensors makes the private and public companies to earn a good revenue and to run a good profitable business in future and when the yield goes high, price of the crops goes low which leads to customer satisfaction.
4	Performance	These sensors estimate the correct amount of water content, nutrients available in the soil and senses variation in the intensity of sunlight accurately.
5	Availability	The availability of sensors and their working progress will happen always even in the absence of the farmers.
5	Scalability	Scalability can be done by the use of the above sensors which involve measuring accurate amount of water, soil and nutrient content, moisture level and proper measuring of variation in the intensity of sunlight.