Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	16 October 2022
Team ID	PNT2022TMID 34075
Project Name	Project – IOT Based Smart Crop Protection System for Agriculture
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Soil Humidity and moisture monitoring	Tensiometers sensors measure tension between water molecules and soil particles and ECOWITT Soil moisture testers are used.
FR-2	Temperature monitoring	DS18B20 Waterproof Temperature Sensor probe used for monitoring temperature.
FR-3	Entry of Animals or Unknown persons	PIR sensor used to detect animals and ultrasonic signals to interfere with hearing and intrusion sensors are used to detect the presence of unknown persons.
FR-4	Virtual fencing	Provides an unreal fence around the field to prevent the entry of animals.
FR-5	Watering	ESP8266 Node MCU module and DHT Sensor for automatically irrigate the water level based on the moisture level in the soil. The system will consist of water pump which is used to sprinkle water.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	It is easily understandable to the farmers.
NFR-2	**Security**	Security is quite less. Because the sensors can damage rarely.
NFR-3	**Reliability**	It is reliable to environmental conditions but can damage due to environmental disaster.
NFR-4	**Performance**	High performance. It can easily detect the presence of animals or unknown persons.
NFR-5	**Availability**	It is can send details to the farmer when they are far away. Sometimes Internet problem can occur.
NFR-6	**Scalability**	It is scalable in most of the conditions but can damage due to environmental disaster.