Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	**17 October 2022**
Team ID	**PNT2022TMID51110**
Project Name	**IoT based smart crop protection system for agriculture**
Maximum Mark	**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	**User Visibility**	**Sensing animals approaching the crop field, the device sends the farmer an SMS and plays an alarm to scare them away.**
FR-2	**User Reception**	**Data such as sensor readings for temperature, humidity, and soil moisture are received by SMS.**
FR-3	**User Understanding**	**Information regarding the current state of farmed land is obtained based on sensor data values.**
FR-4	**User Action**	**Actions that must be taken by the user include crop residue destruction, deep ploughing, crop rotation, fertiliser application, strip cropping, and scheduled planting operations.**

Non-functional Requirements:

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

FR No	Non-Functional Requirement	Description
NFR-1	Usability	Mobile assistance. Given the capabilities of mobile devices, users must be able to interact in the same roles and tasks on PCs and mobile devices when practicable.
NFR-2	Security	Authorized users of the system who share information must be able to register and communicate securely on devices with data that requires secure access.
NFR-3	Reliability	It has the ability to detect disturbances close to the field and doesn't issue an erroneous warning signal.
NFR-4	Performance	regardless of the amount of data that is saved and the background analytics, it must offer users acceptable response speeds. Communications that are bidirectional and nearly real-time must be supported. The necessity to support industrial and device protocols at the edge is connected to this requirement.
NFR-5	Availability	For 24x7 operations, IoT solutions and domains require highly available systems. is not a vital production application, thus if the IoT solution goes down, neither operations nor production are affected.
NFR-6	Scalability	System must manage increasing load and data retention requirements based on the scalability of the solution, such as additional buildings and manufacturing facilities.