Project Design Phase-II

Solution Requirements

Date	**16 October 2022**
Team ID	**PNT2022TMID22196**
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**	As animals approach the crop field, it sounds alarms to woo them away and sends SMS messages to the farmer.
FR-2	**User Reception**	It is collected data such as sensor values for temperature, humidity, and soil moisture by SMS
FR-3	**User Understanding**	The sensor data value is used to determine the present state of the farming land
FR-4	**User Action**	The user needs take action like destruction of crop residues, deep plowing, crop rotation, fertilizers, strip cropping, 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**	Support for mobile devices. In light of mobile capabilities, users must be able to interact in the same roles & tasks on computers and mobile devices.
NFR-2	**Security**	Devices and authorized users of the system who exchange information must be able to register data that requires secure access and communicate securely.
NFR-3	**Reliability**	The device will not produce a false caution signal if it detects a disturbance in the field.
NFR-4	**Performance**	Users must receive an acceptable response time regardless of the amount of data that is stored and the analytics that are happening in the background. Bidirectional, near real-time communications must be supported. This requirement is related to the requirement to support industrial and device protocols at the edge.
NFR-5	**Availability**	IOT solutions and domains demand highly available systems for 24x7 operations. Isn't a *critical production* application, which means that operations or production don't go down if the IOT solution is down.
NFR-6	**Scalability**	System must handle expanding load and data retention needs that are based on the upscaling of the solution scope, such as extra manufacturing facilities and extra buildings.