

## **Project Design Phase-II**

### **Solution Requirements (Functional & Non-functional)**

<b>Date</b>	<b>17 October 2022</b>
<b>Team ID</b>	<b>PNT2022TMID02250</b>
<b>Project Name</b>	<b>IoT Based Smart Crop Protection System for Agriculture</b>
<b>Maximum Mark</b>	<b>4 Marks</b>

#### **Functional Requirements:**

Following are the functional requirements of the proposed solution.

<b>FR No</b>	<b>Functional Requirement (Epic)</b>	<b>Sub Requirement (Story / Sub-Task)</b>
<b>FR-1</b>	<b>User Visibility</b>	<b>Sensing animals approaching the crop field, the device sends the farmer an SMS and plays an alarm to scare them away.</b>
<b>FR-2</b>	<b>User Reception</b>	<b>Data such as sensor readings for temperature, humidity, and soil moisture are received by SMS.</b>
<b>FR-3</b>	<b>User Understanding</b>	<b>Information regarding the current state of farmed land is obtained based on sensor data values.</b>
<b>FR-4</b>	<b>User Action</b>	<b>Actions that must be taken by the user include crop residue destruction, deep ploughing, crop rotation, fertilizer application, strip cropping, and scheduled planting operations.</b>

### **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.