**Project Design Phase-II**

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

| **Date** | **15 October 2022** |
| --- | --- |
| **Team ID** | **PNT2022TMID07522** |
| **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** | **Senses animals entering into the farm and make them move away from the farm with the help of buzzer sounds and also detects fire accidents.** |
| **FR-2** | **User Reception** | **Alert regarding Animal's intrusion and fire accidents from PIR and Smoke sensors are received via SMS** |
| **FR-3** | **User Understanding** | **Based on the sensor data farmers can get to know the protection status of one's land** |
| **FR-4** | **User Action** | **The user needs to take action such as making some basic safety measures for crops and importantly placing heaps of Paddy etc in a well covered manner such that there is no possibility for fire accidents** |

**Non-functional Requirements:**

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

| **FR No** | **Non-Functional**  **Requirements** | **Description** |
| --- | --- | --- |
| **NFR-1** | **Usability** | **Mobile support. Users must be able to interact in the same roles & tasks on computers & mobile devices where practical, given mobile capabilities.** |
| **NFR-2** | **Security** | **Data requires secure access to must register and communicate securely on devices and authorized users of the system who exchange information must be able to do.** |
| **NFR-3** | **Reliability** | **It has a ability to recognize the animals (disturbance) near the field and doesn't give a false caution signal.** |
| **NFR-4** | **Performance** | **Must provide instant response to users regardless of the volume of data that is stored and the analytics that occurs in background. Real-time alert system must be supported. This requirement is to support industrial and device protocols at the edge.** |
| **NFR-5** | **Availability** | **IoT solutions and domains are highly available for 24x7 operations. It is not a critical production application, which means that production remains the same all the time.** |
| **NFR-6** | **Scalability** | **System must handle expanding load and must be able to do effecient monitoring all over the entire farm.It should be implemented such a way that most part of the land is monitored properly.** |