**Project Design Phase-II**

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

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| **Date** | **1 November 2022** |
| **Team ID** | **PNT2022TMID22832** |
| **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.**

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| **FR No** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| **FR-1** | **User Visibility** | **Sensen animals nearing the crop field and sounds alarm to woo them away as well as sends SMS to farmer using cloud service.** |
| **FR-2** | **User Reception** | **The Data like values of Temperature, Humidity, Soil moisture sensors are received via SMS** |
| **FR-3** | **User Understanding** | **Based on the sensor data value to get the information about present of 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.**

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| **FR No** | **Non-Functional Requirement** | **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 capacity to recognize the disturbance near the field and doesn't give a false caution signal.** |
| **NFR-4** | **Performance** | **Must provide acceptable response times to users regardless of the volume of data that is stored and the analytics that occurs in 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.** |