**Project Design Phase-II**

Solution Requirements (Functional & Non-functional)

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| Team ID | PNT2022TMID43975 |
| Project Name | Iot based smart crop protection for agriculture |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **S.no** | **Functional Requirement** | **Sub Requirement** |
| **1.** | User registration | Sensing animals approaching the crop field, the device sends the farmer an SMS and plays an alarm to scare them away. |
| **2.** | User Conformation | Data such as sensor readings for temperature, humidity, and soil moisture are received by SMS. |
| **3.** | User understanding | Information regarding the current state of farmed land is obtained based on sensor data values. |
| **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.

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| **S.no** | **Non-Functional Requirement** | **Description** |
| 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. |
| 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. |
| 3. | Reliability | It has the ability to detect disturbances close to the field and doesn't issue an erroneous warning signal. |
| 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. |
| 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. |
| 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. |