

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	16 october 2022
Team ID	PNT2022TMID34698
Project Name	IoT Based Smart Crop Protection System For Agriculture
Maximum Marks	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	Safety of production	The Smart protection system defines that this project help to farmer for the protection of a farm. The IOT device is used to indicate the farmer by a message while someone enters into the farm and we are using an SD card module that helps to store a specified sound to scare the animals.
FR-2	Real time monitoring.	Crops in farms are many times ravaged by local animals like buffaloes, cows, goats, birds etc. This leads to huge losses for the farmer. Due to over population, it causes deforestation, which results in shortage of food, water and shelter in forest areas. So, animal's interference in residential areas is increasing day by day, which affects human life and property, causing human-animal conflict. But as per nature's rule, every living creature on this earth has an important role in the eco-system.
FR-3	Eliminate man power	This eliminates the man power; it monitors the system 24/7 and sends an immediate response by message if there is any problem.
FR-4	Fast communication	This system uses a motion sensor to detect wild animals approaching near the field and a smoke sensor to detect the fire. In such a case, the sensor signals the microcontroller to take action. The microcontroller now sounds an alarm to scare the animals away from the field.

		as well as sends SMS to the farmer and makes call, so that farmer may know about the issue and come to the spot in case the animals don't turn away by the alarm.
FR-5	Performance	Using IOT network the sensor sends an message to the user
FR-6	Scalable Architecture	Justify the scalability of architecture

#### Non-functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	IoT device verifies that usability is a special and important perspective to analyze user requirements, which can further improve the design quality. In the design process with user experience as the core, the analysis of users' product usability can indeed help designers better understand users' potential needs in gas leakage monitoring, behavior and experience.
NFR-2	<b>Security</b>	It helps to prevent from material loss and human injuries
NFR-3	<b>Reliability</b>	IOT Based Crop Protection System against Birds and Wild Animal Attacks Smart crop protection system from wild animals using ArduinoSmart Crop Protection System from Animals and Fire using Arduino.
NFR-4	<b>Performance</b>	This system uses a motion sensor to detect wild animals approaching near the field and smoke sensor to detect the fire. In such a case the sensor signals the microcontroller to take action.
NFR-5	<b>Availability</b>	By developing and deploying resilient hardware And beautiful software we empower business to manage leakaging





