

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

Date	16 October 2022
Team ID	PNT2022TMID15011
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 enter into the farm and we are used SD card module that helps to store a specified sound to fear 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 occurs a deforestation this 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 causes human animal conflict but as per nature's rule every living creature on this earth has important role in eco-system.
FR-3	Eliminate man power	This eliminates the man power, it monitor 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 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 woo 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	Usability	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	Security	It helps to prevent from material loss and human injuries
NFR-3	Reliability	IOT Based Crop Protection System against Birds and Wild Animal Attacks Smart crop protection system from wild animals using Arduino Smart Crop Protection System from Animals and Fire using Arduino.
NFR-4	Performance	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	Availability	By developing and deploying resilient hardware And beautiful software we empower business to manage leakaging