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

Date	03 October 2022
Team ID	PNT2022TMID26608
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 identifies this initiative as aiding farmers in preserving land. The IOT gadget is used to warn the farmer when birds visit the farm and an SD card module is used to store a specific sound to make the animals afraid.
FR-2	Real time monitoring	Farm crops are frequently destroyed by neighbourhood animals including buffalo, cows, goats, birds, etc. The farmer suffers significant losses as a result. Deforestation caused by overpopulation leads to a lack of food, water, and shelter in forested areas. Therefore, animal intrusion into residential areas is growing daily, endangering human life and property and leading to human-animal conflict
FR-3	Eliminate man power	The device can be check the soil whether,it's wet or dry after checking in the device can be sent the message to there respective owner. Alarm system has been set to avoid conflicts
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:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Usability is a unique and significant perspective to examine user requirements, which may further enhance the design quality, according to IOT devices. Analysis of consumer product usability may help designers better understand users' prospective demands in gas leakage monitoring, behaviour, and experience in the design process where user experience is at the centre.
NFR-2	**Security**	It helps to prevent from material loss and human injuries
NFR-3	**Reliability**	Crop Protection System Using IOT to Prevent Bird and Wild Animal Attacks Using Arduino, a smart crop security device against wildlife Using Arduino, a smart crop protection system against fire and animals.
NFR-4	**Performance**	This device employs a motion sensor to find approaching wild animals close to the field and a smoke sensor to find a fire. The sensor instructs the microcontroller to operate in this situation.
NFR-5	**Availability**	This device employs a motion sensor to find approaching wild animals close to the field and a smoke sensor to find a fire. The sensor instructs the microcontroller to operate in this situation
NFR-6	**Scalability**	