Project Design Phase-I
Proposed Solution Template

Date	16 October 2022
Team ID	PNT2022TMID44252
Project Name	IOT Based Smart Crop Protection System for Agriculture
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that enabled people to live in cities. But there are many problems occuring during agriculture one of them is animals most of animals near forest and villages depent on farm crops during summer and winter to solve this proble smart agiculture is adopted nowdays. Smart agriculture is a broad term that collects ag and food production practices powered by Internet of Things, big data and advanced analytics technology. When we talk about IoT, we generally refer to adding sensing, automation and analytics technology to modern agricultural processes.
2.	Idea / Solution description	Smart agriculture is one of the best approaches to increase production for competing with the increasing population of our country. Smart Agriculture helps to increase the production of different crops by transforming or reorienting agricultural systems. Since it is also known as precision agriculture which helps to maintain the production of food using minimal resources such as fertilizer, water and seeds irrespective of climate change to protect crops from harm.
3.	Novelty / Uniqueness	With the presence of high-quality sensors in the system which supports Real-time monitoring of agricultural systems even in isolated locations which in turn in controlling or monitoring the use of resources in large proportions, also helps in reducing impacts on the environmental system.
4.	Social Impact / Customer Satisfaction	The result from this smart farming process is – high precision and 24/7 control, eventually leading to considerable savings in all key resources used – water, energy, fertilizers, time spent by strategic people, time spent by lower-qualification human resources. Customers using Smart agriculture solution on their farms can save up to 50% in energy consumed. They also report up to 40% increase in crop yield, while reducing the cost of fertilization and chemical treatment, and up to 60% less losses resulting from animals.
5.	Business Model (Revenue Model)	Many farmers have already begun implementing this technique of smart agriculture for improving their efficiency. Sensors installed in the fields can be used to obtain detailed information for the presence of acidity and rapid increase in the temperature of the soil. Farmers with the use of sensors can also get access to know weather patterns or climatic forecasts remotely. Nowadays many farmers are using this technique of smart agriculture in their lands to avoid over-irrigation and to maintain soil erosion to a large extent. Overall the system is cheaper, easy to use, and efficient than other automation system.

		Also, the presence of sensors in the system helps to control the use of essential and expensive resources to a larger extent.
6.	Scalability of the Solution	Smart Crop Protection helps in increasing the income and employment rate by involving more farmers in the agricultural system, increase in agricultural productivity and helps in reducing the harmful eliments for safe crop growth.