Project Design Phase-I Proposed Solution Template

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| Date | 19 October 2022 |
| Team ID | PNT2022TMID09801 |
| Project Name | Smartfarming-IOT based application |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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

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| **S.No.** | **Parameter** | **Description** |
| 1. | Problem Statement (Problem to be solved) | The traditional agriculture and allied sector cannot meet the requirements of modern agriculture which requires high-yield, high quality and efficient output. Thus, it is very important to turn towards modernization of existing methods and using the information technology and data over a certain period to predict the best possible productivity and crop suitable on the very particular land. The adoptions of access to high-speed internet, mobile devices, and reliable, low-cost satellites (for imagery and positioning) are few key technologies characterizing the precision agriculture trend. Precision agriculture is one of the most famous applications of IoT in the agricultural sector and numerous organizations are leveraging this technique around the world. |
| 2. | Idea / Solution description | in attaining profitability. One such sector is agriculture. Internet of Things (IoT) implementation in this field has resulted in the term smart farming. IoT in smart farming is the future of precision farming and results in high quality produce and healthy cattle. With the use of many smart farming sensors, and wearables, one can get real-time update with a touch of the screen.The advent of technology has helped multiple sectors |
| 3. | Novelty / Uniqueness | The survey results indicate that IoT components for the smart agriculture sector, including hardware and software, have been focused on research and achieved many breakthrough results. Several IoT solutions have been deployed on large-scale farms/fields. However, the widespread deployment of IoT in the agricultural sector still presents some challenges. We have present two main problems: economic efficiency and technical problems. We consider these issues coupled with policies that will drive the integration of IoT technologies in agriculture. |

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| 4. | Social Impact / Customer Satisfaction | Agribusiness required the devotion of numerous regular asset including, land, water, and ecological condition, The quality and amount of characteristic asset has debased throughout the years because of monetary issues related with expanded cost of info and diminishing ranch salary always declining land, labor, resources, and environmental issue, for example, soil and water contamination putting the suitability without bounds horticulture operation at chance. The solution for this, is to embrace the savvy agribusiness framework in light of IOT with help farming administration and development of products including less utilization of water, compost and pesticide. |
| 5. | Business Model (Revenue Model) | In India, mainly in Haryana’s district, already 27 Climate-smart Villages (CSVs) are created, and disseminate key climate-smart agricultural interventions, focusing on water, energy, nutrient, weather and knowledge implemented through innovative partnerships and farmer cooperatives and are having a successful impact on the population’s livelihood and development. These villages promote sustainable intensification and conservation agriculturebased management systems through the adoption of CSA practices |
| 6. | Scalability of the Solution | The emergence of a new breed of smart applications requires middleware platforms that enable the rapid development of IoT-based solutions, which can be hosted partially in fog nodes, as well as in a traditional cloud datacenter. Currently, there is no scalable de facto open IoT platform but the European Commission is pushing FIWARE to fill this gap. We analyzed the performance of FIWARE under different platform configurations comparing fog/cloud and cloud-only scenarios for precision irrigation in smart farming. Our results reveal interesting and non-intuitive findings, such as that fog computing does not always improve the overall system performance and in some cases it even makes it worse. Also, the network between the farm and the cloud datacenter causes some unexpected differences between different scenarios |