Project Design Phase-I Proposed Solution

Date	07 October 2022
Team ID	PNT2022TMID23526
Project Name	Project -SMARTFARMER-IOT ENABLED SMART FARMING APPLICATION
Maximum Marks	2 Marks

Proposed Solution:

SNO	Parameter	Description
1.	Problem Statement (Problem to besolved)	In smart farming the communication protocol used for interaction within the smart farms, these protocols were effective for only shortage distance coverage areas and the intelligent devices have been operated using batteries, this has reduced the operational hours of the edge nodes devices since they stop transmitting data once they run out of power
2.	Idea / Solution description	Agricultural practices need to be transformed in order to overcome future food scarcity due to overpopulationacross the globe. By employing emerging, disruptive technologies like IoT in the agricultural sector, it is possible to monitor farm fields using low-cost and low-power consuming devices, to automate irrigation systems for efficient usage of water resources.
3.	Novelty / Uniqueness	Agri-IoT, a semantic framework for IoT based smart farming applications, which supports reasoning over various sensor data streams in real-time.
4.	Social Impact / Customer Satisfaction	FIWARE is present in many different sectors in Europe, for example, healthcare, telecommunications, environmental services, and recently agriculture. The key of FIWARE is to be an open architecture and a reference implementation of a service infrastructure, building upon generic and reusable building blocks, available through Application Program Interfaces (APIs) called Generic Enablers (GEs). 1) Pilot-wise organisation: two-level governance • A governance body at full LSP level, in charge of monitoring the implementation ofthe individual pilots, among other possible responsibilities. • A governance body at the level of each individual pilot, in charge of managing the pilot, able to represent the individual pilot andthe partners involved in it and liable before theLSP governance body. 2) IoT Supply-Demand governance. To facilitate the exchanges between both sides.This body should integrate a representation of the full consortium, and coordinate some of the cross-cutting activities dealt within the LSP, collection of demand- side requirements, training activities, business models, end-user acceptability. This governance body should encompass at least one Project Innovation Manager, in charge of keeping aligned developments internal to the project with external demands.

5.	Business Model (Revenue Model)	The agri-food value chain can be characterized by its: • - Diversity: there are many different foodtypes, with its own distinctive and often fragmented supply chain, • - Complexity: there are many specific actors from input companies, farmers, traders, foodcompanies and retailers to consumers, • - Volatility: which is mainly linked to unpredictable weather and yields, climate change, political actions and social changes, • - Scrutiny: now consumers want to know about the content and safety of their food,where and how it is produced and what the environmental and social impacts are. Despite that, there are many temporal or permanent interdependencies among actors, which are notonly between the functions linked along the chain but can include actors anywhere in the chain. Collaboration becomes decisive regarding food safety and traceability, with a balanced participation of stakeholders representing farmer associations, authorities, SMEs, infrastructures support, food processors and sometimes consumers. The main stakes of thedifferent actors constituting the agri-food value chain are described in the following sections.
6.	Scalability of the Solution	Smart Farming has enabled farmers to reduce waste andenhance productivity with the help of sensors (light, humidity, temperature, soil moisture, etc.) and automation of irrigation systems. Further with the help of these sensors, farmers can monitor the field conditions from anywhere. Internet of Things based Advanced Farming is highly efficient when compared with the conventional approach. The applications of intelligent Agriculture solutions not only targets conventional, large farming. With operations, but couldalso be new levers to uplift other growing or common trends in agricultural like organic farming, family farming (complex or small spaces, particular cattle and/or cultures, preservation of specific or high-quality varieties, etc.), and enhance highly transparent Farming.