

Project Design Phase-II Technology Stack (Architecture & Stack)

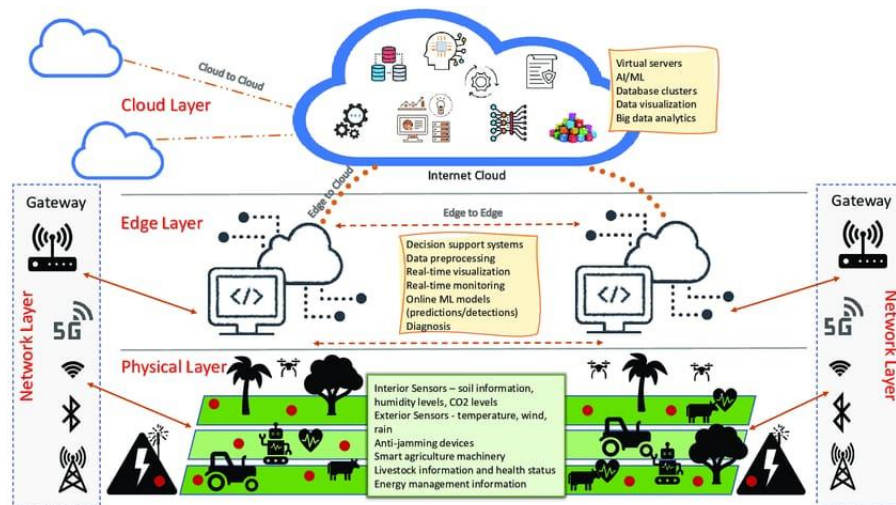
Date	03 October 2022
Team ID	PNT2022TMID50828
Project Name	Project – Smart Farming Applications
Maximum Marks	4 Marks

Technical Architecture:

Smart Farming applications table 1

Example:- Smart Farming Application

Reference: [processing-during-pand](#)



Guidelines:

1. Ploughing.
2. Sowing.
3. Adding nutrients.
4. Irrigation.
5. Protecting plants.
6. Harvesting.storage.

/ Stages of the data chain	State of the art	Key issues
Data capture	Sensors, Open data, data captured by UAVs (Faulkner and Cebul, 2014) Biometric sensing, Genotype information (Cole et al., 2012) Reciprocal data (Van 't Spijker, 2014)	Availability, quality, formats (Tien, 2013)
Data storage	Cloud-based platform, Hadoop Distributed File System (HDFS), hybrid storage systems, cloud-based data warehouse (Zong et al., 2014)	Quick and safe access to data, costs (Zong et al., 2014)
Data transfer	Wireless, cloud-based platform (Karim et al., 2014 ; Zhu et al., 2012), Linked Open Data (Ritaban et al., 2014)	Safety, agreements on responsibilities and liabilities (Haire, 2014)
Data transformation	Machine learning algorithms, normalize, visualize, anonymize (Ishii, 2014 ; Van Rijmenam, 2015)	Heterogeneity of data sources, automation of data cleansing and preparation (Li et al., 2014)
Data analytics	Yield models, Planting instructions, Benchmarking, Decision ontologies, Cognitive computing (Van Rijmenam, 2015)	Semantic heterogeneity, real-time analytics, scalability (Li et al., 2014 ; Semantic Community, 2015)
Data marketing	Data visualization (Van 't Spijker, 2014)	Ownership, privacy, new business models (Orts and Spigonardo, 2014)