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Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID38491
Project Name	Predicting the energy output of wind turbine based on weather condition
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

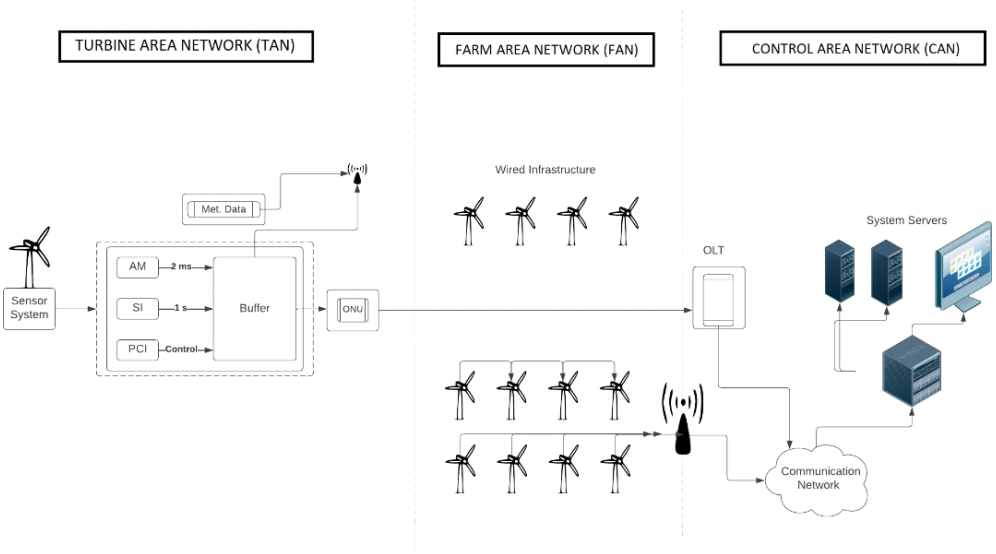

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application to know aboutthe services provided	HTML, CSS
2.	Weather Data Collector	Collects real time weather data in the environment	Sensors and networks
3.	ML Model	Symbolic Regression Logic to deal with different parameters	Genetic programming data modeler
4.	File Storage	To store the data files for future reference	IBM Cloud storage
5.	Database	Used to store collected weather data and energy outputs	MySQL
6.	External API	Application programming interface used to know about energy output based on weather conditions	Weather conditions and energy output
7.	Infrastructure(Server/cloud)	Whole system is stored in server for easy access	IBM Block Storage or IBM Cloud storage

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask	Python
2.	Security Implementations	Data is encrypted when shared with industries sothird parties cannot access it.	SHA-256, Encryptions, IAM Controls,OWASP etc.
3.	Scalable Architecture	Middleware is used for communication betweenclient and server	3 tier architecture
4.	Availability	Handles traffic so the system is available for users at all times (e.g. use of load balancers, distributedservers etc.)	Network traffic analysis tools