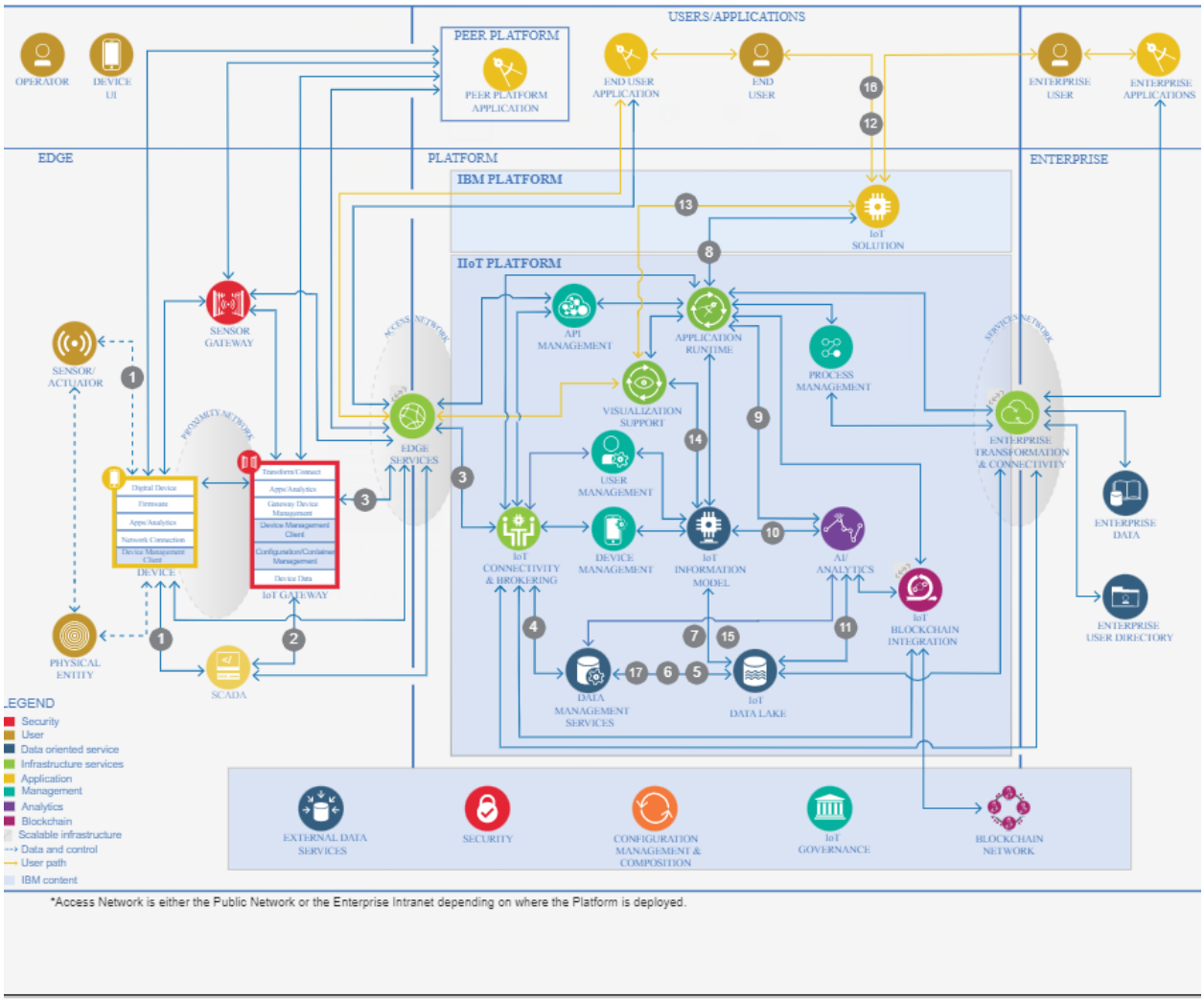
PROJECT DESIGN PHASE-II

TECHNOLOGY STACK (ARCHITECTURE & STACK)

DATE	**15 OCTOBER 2022**
TEAM ID	**PNT2022TMIT47454**
PROJECT NAME	**SMART FARMER -IOT ENABLED SMART FARMING APPLICATION**
MARKS	**4 MARKS**

Technical Architecture :

The deliverable shall include the architecture diagram as below and the information as per the table 1 & table 2



1. the different soil parameters temperature ,soil moistures and then humidity are sensed using different sensor and obtained value is stored in the IBM cloud
2. Arduino UNO is used as a processing unit that process the data obtained from the sensors and whether data from the weather API
3. NODE-RED is used as a programming tool to write the hardware , software and APIs. The MQTT protocol is following for the communication
4. All the collected data are provided to the user through a mobile application that was developed using the MIT app inventor .The user cloud make a decision through an app, weather to water the crop or not depending upon the sensor values .by using the app they can remotely operator the motor switch .

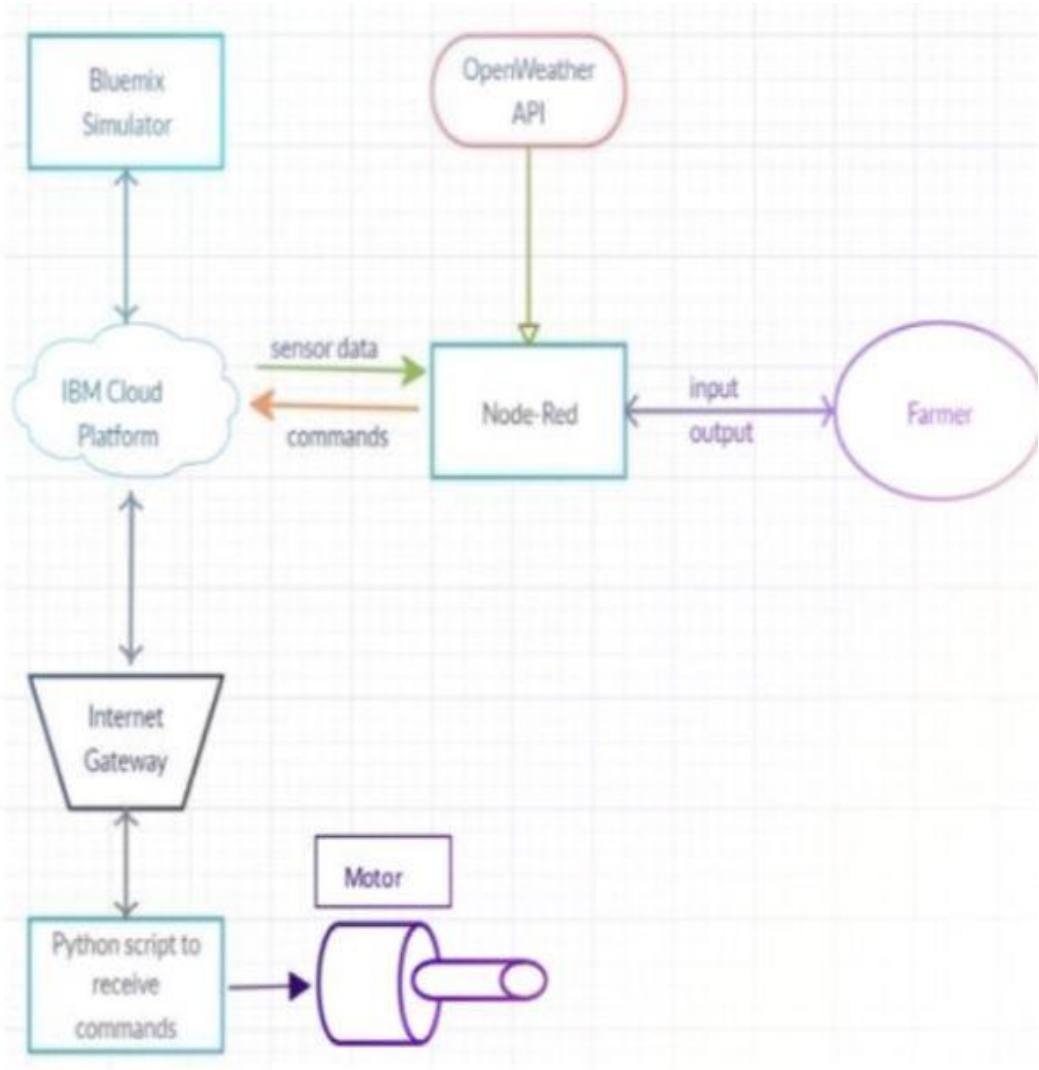


TABLE -1: **COMPONENTS** & **TECHNOLOGY** :

S.NO	COMPONENTS	DESCRIPTION	TECHNOLOGY
1.	user interface	How user interacts with the Web UI	App development
2.	Application logic	Logic for a process in the application	App inventor .mit.edu
3.	Database	Data Type, Configuration etc.	Cloud database
4.	Cloud Database	Database Service on Cloud	IBM Cloudant
5.	File Storage	File Storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
6.	Infrastructure (Server/Cloud)	Application Development on local system /cloud Local Server Configuration: Cloud Server Configuration :	Cloud Foundry
7.	Protocol	How Data exchange on Web	HTTP

TABLE -2 : **APPLICATION CHARACTERISTICS** :

S.No	CHARACTERISTICS	DESCRIPTION	TECHNOLOGY
1.	Security Implementations	List all the security / access controls implemented	As we are using IBM cloud, there is continuous edge-to-cloud protection for data and applications with regulatory compliance .
2.	Scalable Architecture	justify the scalability of architecture (3-tier,Micro services)	As we are using IBM cloud ,there will be seamless and automatic scaling up of instances when more resources are required due to demand.
3.	Availability	justify the scalability of application (e . g. use of load balancers , distributed services etc.)	This system had end-user experience monitoring , analytics and log monitoring
4.	Performance	Design consideration for the performance of the application	As we using HTTP for every second the data about temperature , level of gas content , flame detection is received .