				Date	24-Nov-22								
				Team ID	PNT2022TMID37136								
				Project Name	GAS LEAKAGE MONITORING AND ALERTING SYSTEM FOR INDUSTRIES								
				Maximum Marks	4 marks								
Test case ID	**Feature Type**	**Component**	**Test Scenario**	**Pre-Requisite**	**Steps To Execute**	**Test Data**	**Expected Result**	**Actual Result**	**Status**	**Comments**	**TC for Automation(Y/N)**	**BUG ID**	**Executed By**
ID_1	Functional	IoT Device	1.Verify whether gas is detected by sensor and read by the microcontroller. 2.Verify whether the buzzer rings when the sensor detects toxicity level of gas.	1.Gas sensor 2.ESP8266 NodeMCU microcontroller 3.Buzzer 4.Connecting wires 5.Arduino IDE	1.Interfacing gas sensor and buzzer with the microcontroller. 2.Write the code in Arduino IDE, compile and upload to the microcontroller. 3.When the sensor detects a gas, verify the concentration of the gas detected in the serial monitor of Arduino IDE. 4.Check whether buzzer rings, when toxicity level of gas detected.	1. Low Level (Normal) 2. Moderate Level - Escape Stage 3. High Level - Danger (Immediate death)	Gas concentration value must be shown in the serial monitor of IDE and the alarm rings when toxicity level of gas detected.	Working as expected	Pass	Nill	Yes	NA	A Joey Infant Rex E Prakash
ID_2	Functional	IBM Watson IoT Cloud Platform	Configure the IBM Watson cloud platform with the IoT device and verify whether the data received from the device is updated in the cloud.	IBM Watson IoT Platform	1.Send the gas concentration data from the IoT device to the IBM Watson cloud. 2.Verify the received data by logging in to the IBM Watson Platform.	Poor Internet Connectivity	The data sent from IoT device must be received and displayed in the IBM Watson platform	Working as expected	Pass	Nill	Yes	NA	A Joey Infant Rex E Prakash
ID_3	User Interface	Web UI Dashboard	Verfiy whether gas concentration value is displayed in the Node RED Dashboard and Toxicity level is indicated in Web UI	Node RED	1. Create Node RED account using User Credentials. 2. Open Node RED Editor and utilise blocks to interface IBM Watson, Cloudant DB and provide function for user-friendly experience. 3. Copy Node RED URL into search bar with '/ui' and opens Web UI created by Node RED and display gas concentration values and Toxicity level is indicated in UI	1. Three Color - Three Level 2. Display "Alert! Gas Leakage Occurred" - Moderate toxicity Level 3. Display "Danger! High Gas concentration" - High Toxicity level	Data is published instantly on Web UI and Toxicity level is indicated by Notification on Web UI	Working as expected	Pass	Nill	Yes	NA	A Joey Infant Rex E Prakash
ID_4	User Interface	Mobile App	Verify whether user can use the app to view the concentration of the gas and toxicity level & provide unique login credentials	MIT App Inventor	1. Create MIT app Inventor account using google credentials, Open new project and Add necessary front end block in designer Interface. 2. Next, for backend, add necessary URL along with Working / Action blocks to perform front end work with proper configuration. 3. Perform rehersal of App working by using MIT AI2 Companion and verify App working and download Apk file and ready for utilisation.	1. New User Registration with proper Credentials 2. New User Registration with Improper details (without mobile Number) 3. Login with Correct Credentials (Login Sucessful) 4. Login with Improper Credentials (Login Failed) 5. Display Sensor data and Toxicity level of Gas.	The app must be installed properly and Gas Concentration and Toxicity level is published instantly	Working as expected	Pass	Nill	Yes	NA	A Joey Infant Rex E Prakash
ID_5	Web service	SMS Alert	Verify whether the Alert SMS is sent to the user when a high concentration of gas is detected	IFTTT	1.Create an applet on IFTTT for receiving a web request to the user with the alert meassage and generate the url to be triggered. 2.Configure the Arduino IDE to trigger the url when a high concentration of gas is detected. 3.Verify whether the alert sms is sent to the user .	Poor Internet Connectivity	The Alert sms must be sent to the user when a high concentration of gas is detected.	Working as expected	Pass	Nill	Yes	NA	A Joey Infant Rex E Prakash
ID_6	Storage	Cloud storage database	1.Check whether the gas concentration value from the device is stored and updated in the Cloud storage 2.Check whether the login credentials from the app are also stored for authentication	IBM Cloudant DB	1. Create Cloudant DB Account using User Credentials. 2.Create Separate database for Login Credentials and Sensor data. 3. Interface IBM Watson IoT Platform and Cloundant DB to store data using Node RED. 4. Verify whether Login credentials and sensor data is stored properly	1. Improper Cloud configuration 2. Poor Internet connectivity	1.The gas concentration value from the device must be stored in the cloudant database. 2.The login credentials from the app also should be stored	Working as expected	Pass	Nill	Yes	NA	A Joey Infant Rex E Prakash

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