Project Design Phase-I
Solution Architecture

Date	19 September 2022
Team ID	PNT2022TMID33446
Project Name	Project - Gas Leakage Monitoring and Alerting System
Maximum Marks	4 Marks

Solution Architecture:

Workers who are engaged with a busy industries packed with gas either harmful or harmless needs a way to monitor their gas pipelines continuously and detect early if there is any leakage of gas in their surroundings so that they can work efficiently on major crises rather than worrying about monitoring or leakage of gas, this will indeed reduce the manpower of that industry and create a peaceful environment.

- The system can be taken as a small attempt in connecting the existing primary gas detection methods to a mobile platform integrated with IOT platforms. The gases are sensed in an area of 1m radius of the rover and the sensor output data are continuously transferred to the local server.The accuracy of MQ sensors are not up to the mark thus stray gases are also detected which creates an amount of error in the outputs of the sensors, especially in case of methane.Further the availability and storage of toxic gases like hydrogen sulphide also creates problems for testing the assembled hardware. As the system operates outside the pipeline, the complication of system maintenance and material selection of the system in case of corrosive gases is reduced. Thus the system at this stage can only be used as a primary indicator of leakage inside a plant.
- Structure denote that there is Sensor actuator which is connected with mobile device and physical entity that is used to detect gas leakage in industry. Sensor actuator and their device are connected with sensor gateway. Using IOT domain, it will alert the user who keeps mobile with internet connection.
- There are three network used in this feature. Service network, Proximity network and Access network. These three network are connected to each other with IOT domain technology, Sensor activities and Alerting devices.
- If gas is leak from any pipeline, it will be detect by Sensor Actuator. Using Sensor gateway, Sensor devices and IOT gateway were connected to peer platform. These connected devices and using IOT technology can alert the user with help of mobile device.

Solution Architecture Diagram: