Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	10 October 2022
Team ID	PNT2022TMID00378
Project Name	Gas Leakage Monitoring and Alerting System
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Leakage	Installation of Gas sensors at specified intervals.
FR-2	Notification	When rule condition is met, notification triggered using MQTT.
FR-3	Geo coordinates of nodes	1. Predefined set of GPS locations of nodes is obtained. 2. When notification is triggered, Geo coordinates of the node is also sent along
FR-4	IoT Platform	IBM Watson IoT Platform
FR-5	Cloud Services	IBM Cloud Database
FR-6	Programming tool	NODE-RED Services

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Easy user interface with alerting notifications and location of the defect gas cylinder.
NFR-2	**Security**	1. Secure Cloud database is used. 2. Notify only the registered and verified users. 3. Multiple deployments across the potential sources can help industries to avoid any industrial accident and protect workplace safely.
NFR-3	**Reliability**	1. Gas exposure will measured with ± 25% of the true concentration of the target analyte with 95% certainty. 2.Robust device that can withstand harsh industrial conditions and provide real-time gas leakage detection.
NFR-4	**Performance**	1. Accurate data monitoring system enables periodic analysis of the air quality.

		2. Provides data on a real-time basis which enables safety managers to take timely corrective actions
NFR-5	**Availability**	1. Through Suppliers. 2. With online shopping platforms.
NFR-6	**Scalability**	1. Can be extended further from industrial application to domestic gas applications. 2. Deployment in petrol banks and vehicle fuel plants for gas leakage detection application.