

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

Date	03October 2022
Team ID	PNT2022TMID4963
Project Name	Project - Gas Leakage monitoring & Alerting system for Industries
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	User Registration	Registration through Form Registration through Gmail / Industry mail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Login	Login as Industry Workers Login as Disaster Management Login as Industry Admin Department
FR-4	Industry Map	Map of the Industry displaying the prominent feature of the industry (available for Industry Workers and Admin Department)
FR-5	Zone Safety	Alert message is provided in this story if gas leakage occurs
FR-6	Sensor Parameters	Only Admin Department can view the sensor parameters which shows the recorded values of particular sensor.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The sensor-enabled solution helps prevent the high risk of gas explosions and affecting any casualties within and outside the premises.
NFR-2	Security	The device is intended for use in household safety where appliances and heaters that use natural gas and liquid petroleum gas (LPG) maybe a source of risk.
NFR-3	Reliability	Gas Leakage Detection system(GLDS) can detect leakage at homes, commercial premises or factories. GLDS detects the leakage soon after it happened and sends users an immediate alarm on the incident.

NFR-4	Performance	The gas leakage detector is a wall mounted device fitted close to the floor level with an alarm setting at 20% of lower explosive limit. Whenever there is a leak, the built-in sensor detects and alerts the user in less than 5 minutes, much before it can cause any accidents.
NFR-5	Availability	The circuit for an LPG leakage detector is readily available in the market, but it is extremely expensive. Presented here is a low cost circuit for a Gas leakage Detection that you can build easily.
NFR-6	Scalability	The system proves the need for gas detection alarm systems to be 100% reliable. A backup power supply can be included in the system design to augment for power failure condition. Also, calibration of the gas sensor can be done in other for a specific gas to be sensed instead of the LPG numerous gases.