

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

Date	20 October 2022
Team ID	PNT2022TMID35867
Project Name	Project – Gas leakage monitoring and 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	Design of Gas Detector	This function shall provide reliable detection of flammable and toxic leaks before accident which reaches Toxic concentration that cause Industrial risk of losses.
FR-2	Location of Gas Detection System	This shall be positioned in different levels in an area or module. When gas leakage detected, Alert message with Location of Leakage is received by User.
FR-3	Action of Gas Detection and Alert System	The alarm starts ringing when the gas gets leaked, Doors will be opened automatically (Optional) and the data's will be stored in cloud automatically dynamically and alert message will be Delivered to User's Mobile (especially People in Prone Zone) and to App designed by App-Inventor.
FR-4	Calibration/Testing of Gas Detector	Gas detectors shall be individually identifiable with a self-test function. It shall ensure detection of the presence of intended gas concentration and amount of intended gas leakage.
FR-5	User Action & Performance	When the user gets notified in prior, he could performance prevention control and evacuate entire people in Accident Zone unit.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	It updates the data regularly by continuous monitoring thereby protects the workers and ensure protected environment.
NFR-2	Security	As a result of alert by Message to intended user, we can be able to protect both the humans and properties by performing prevention control methods.
NFR-3	Reliability	Can be able to provide accurate values of Gases. It might have a capacity to recognize system malfunction accurately and alerts user/technician to replace Malfunction detection system (Future work).
NFR-4	Performance	This device detects sensitive gases even to minor gas leaks. It performs Speedy operation and it send response faster (Low Latency).
NFR-5	Availability	It can be used for daily; it includes day and nights, because it provides continuous monitoring.
NFR-6	Scalability	Utilization of any Gas Sensors depending upon the Type of Gases utilized in Industries.