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

Date	03 October 2022
Team ID	PNT2022TMID44629
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	Problem Statement (Problem to be solved)	Gas leakage leads to various accidents resulting into both financial loss as well as humaninjuries. In human's daily life, environmentgives the most significant impact to theirhealth issues.The poisioness gas in the theatmosphere will cause the human and I will beburnt.
FR-2	Idea / Solution description	IOT gas leakage detector, device will getconnected to WIFI, the minimum and maximumparameter can be set accordingly. Such IOT aswell as Arduino based gas leakage detectorsystems can be installed in homes, hotels LPGgas storage areas. In this LPG gas detectorsystem senses the LPG gas using gas sensor This device will continuously monitor the level of LPG gas present in the air. Whilemonitoring, if the value of LPG gas in air iswithin the set limit then the LED on thecircuit will glow green giving a safe sign. Andwhenever the gas exceeds above the predefinedlimit than the LED will glow red andsimultaneously solenoid value will turn off andupdate it over IOT. This Arduino and IOTproject will help in detecting gas leakage the surrounding.
FR-3	Novelty / Uniqueness	1.Get real-time alerts about the gaseouspresence in the atmosphere 2.Prevent fire hazards and explosions Supervise gas concentration levels

		3.Ensure worker's health
		4.Real-time updates about leakages
		5.Cost-effective installation
		6.Data analytics for improved decisions
		7.Measure oxygen level accuracy
		8.Get immediate gas leak alerts
FR-4	Social Impact / Customer Satisfaction	The Internet of Things is increasingly finding a place at the heart of many business automation strategies. Companies are using sensors in the logistics chain to help themB track where delivery is with incredible accuracy.
FR-5	Business Model (Revenue Model)	The GSM is Remote Management,Speed, Super-Fast Deployment.
FR-6	Scalability of the Solution	The advantage of this simple gas leakdetector is its simplicity and its ability to warnabout the leakage of the LPG gas . This system uses GSM technique to send alert massage to respective person if no one is there in the house and then gas leaks occurs, GSM module is there to send immediate messages to the respective person regarding the gas leak . The main advantage of this system is that it off the regulator knob of the cylinder automatically when gas leakage detected.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Human factors, aesthetics, consistency, documentation.
NFR-2	Security	The security requirement is particularly important when the system involves handling sensitive data, such as personal or financial information. To define these NFRs, it's important to fully understand regulatory and compliance requirements from the very start of the project and clearly communicate them to developers.

NFR-3	Reliability	Frequency/severity of failure, recoverability, predictability, accuracy, mean time to failure.
NFR-4	Performance	Speed, efficiency, resource consumption, throughput, response time.
NFR-5	Availability	this type of non functional is concerned with characteristics such as maintainability, scalability of the solution.This includes considerations for the ability of the solution to be easily modified to accommodate enhancements and repairs.
NFR-6	Scalability	The limit of maximum attendance of the website must be scalable enough to support 300.000 visits at the same time while maintaining optimal performance.