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

Date	10 October 2022
Team ID	PNT2022TMID21596
Project Name	Gas Leakage Monitoring and Alerting System
Maximum Marks	4 Marks
Team Members	1)VIGNESHWARAN S (Team leader) 2)SAMBATH N 3)SANJAI P 4)SURESH KUMAR M

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 Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Hardware Requirement	Optical Soil Ultra-Sonic Flow Meter
FR-4	Software Requirement	Flow change Pressure point Statistic
FR-5	User Welfare	Calibration No Poisoning of the Sensor Reliable in All Environmental ConditionsEasy to Use

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) may be 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 in-built 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 it sense