

**ProjectDesignPhase-II**  
**SolutionRequirements(Functional&Non-functional)**

Date	16October 2022
TeamID	PNT2022TMID49056
ProjectName	Gas Leakage Monitoring and Alerting System
MaximumMarks	4Marks
TeamMembers	1 R.ABINAYA - <b>(TEAM LEADER)</b> 2 A.AJITHA 3 A.ANU 4 S.ARCHANADEVI

**FunctionalRequirements:**

Followingarethefunctionalrequirementsoftheproposedsolution.

FRNo.	FunctionalRequirement(Epic)	SubRequirement(Story/Sub-Task)
FR-1	UserRegistration	Registration through FormRegistration through GmailRegistrationthroughLink edIN
FR-2	UserConfirmation	Confirmationvia Email Confirmationvia OTP
FR-3	HardwareRequirement	Optical Soil Ultra-Sonic Flow Meter
FR-4	SoftwareRequirement	Flow change Pressurepoint Statistic
FR-5	UserWelfare	Calibration No Poisoning of the Sensor Reliable in All Environmental Conditions Easy to Use

**Non-functionalRequirements:**

Followingarethennon-functionalrequirementsoftheproposedsolution.

FRNo.	Non-FunctionalRequirement	Description
NFR-1	<b>Usability</b>	The sensor-enabled solution helps prevent the high risk of gas explosions and affectig any casualties with in and outside the premises
NFR-2	<b>Security</b>	The device is intended for use in household safetywhere appliances and heaters that use natural gas and liquid petroleum gas(LPG)maybeasource of risk.
NFR-3	<b>Reliability</b>	Gas Leakage Detection System(GLDS) candetect leakage athomes,commercial premises or factories GLDS detects the leakage soon after ithappened and send susersan immediate alarmontheincident.

NFR-4	<b>Performance</b>	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	<b>Availability</b>	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	<b>Scalability</b>	The system proves the need for gas detection alarm system to be 100% reliable. A backup power supply can be included in the system design to argue for power failure condition. Also, calibration of the gas sensor can be done in order for a specific gas to be sensed instead of the LPG numerous gases it senses