ProjectDesignPhase-II

SolutionRequirements(Functional&Non-functional)

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

# FunctionalRequirements:

Followingarethefunctionalrequirementsoftheproposedsolution.

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| **FRNo.** | **FunctionalRequirement(Epic)** | **SubRequirement(Story/Sub-Task)** |
| FR-1 | UserRegistration | Registration through FormRegistration through GmailRegistrationthroughLinkedIN |
| FR-2 | UserConfirmation | Confirmationvia Email  Confirmationvia OTP |
| FR-3 | HardwareRequirement | Opticals  oil  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:

Followingarethenon-functionalrequirementsoftheproposedsolution.

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| **FRNo.** | **Non-FunctionalRequirement** | **Description** |
| NFR-1 | **Usability** | The sensor-enabled solution helps prevent the high risk of gas explosions and affectig any casualties with in and outside the premises |
| NFR-2 | **Security** | 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 | **Reliability** | Gas Leakage Detection System(GLDS) candetect leakage athomes,commercial premises or factories GLDS detects the leakage soon after ithappened and send susersan immediate  alarmontheincident. |

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| NFR-4 | **Performance** | The Gas Leakage Detector is a wall mounted device fitted close to the floor level with an alarm setting at20% of lower explosive limit. Whenever there is a leak,the in-built sensor detects and alerts the user in less than 5minutes, much before it can causeany accidents |
| NFR-5 | **Availability** | The circuit for an LPG leakage detector is readily available in the market, but it is extremelyexpensive).Presented here is alow-cost circuit for a Gas Leakage Detection that you can build easily. |
| NFR-6 | **Scalability** | The system proves the need for gas detection alarm system stob 100%reliable.A backup power supply can be included in the system design to arugment for power failure condition. Also,calibration of the gas sensor can be done in otherfor a specific gas to be sensed instead of the LPG numerous gases  itsense |