**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**



**(AUTONOMOUS)**

|  |  |
| --- | --- |
| Date | 1st November 2022 |
| Team ID | PNT2022TMID34140 |
| Project Name | IOT 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 | Monitoring | Level of gas is monitored using sensor and if there is any leakage, alert can be sent through messages and with a buzzer sound. |
| FR-2 | User Reception | The data like the level of gas can be send through messages |
| FR-3 | User Understanding | The user can monitor the level of gas with the help of the data. If there is an increase in gas level then the alert will be given by message or buzzer sound. |
| FR-4 | User Performance | When the user gets notified, they could take precaution steps like turning the gas off, turn on the exhaust fan/sprinkler and avoid  serious accidents. |

# NON – FUNCTIONAL REQUIREMENTS:

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

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Non-Functional** | **Requirement Description** |
| FR-1 | Usability | The sensors used to detect the gas leakage which helps to prevent the high risk of gas explosion and also can prevent the causalities within and outside the covering area of the industries. It updates the data regularly as well as protects the workers. |
| FR-2 | Security | As a result of emergency alert, we can be able to protect both the humans and properties. Precaution steps could be taken. |
| FR-3 | Reliability | Gas leakage detecting system detects the gas leakage at industries or factories which detects the small amount of gas leakage as soon and sends the alerting SMS to users. |
| FR-4 | Performance | The Gas leakage detecting system is a device with an alarm setting. Whenever there is a gas leak, which is greater than the threshold level, the in-build sensor detects and alerts the user within a minute much before it can cause any accidents. |
| FR-5 | Availability | The gas leakage detecting system is readily available in the market which is extremely expensive, but here we are providing a low-cost circuit for gas leakage detecting system and also it is user friendly. It can be used for everyday; it includes day and nights. |
| FR-6 | Scalability | The system is very simple and easy to maintain with cost efficient. A backup power supply will be included in the design to prevent from the power failure conditions. It has the capability to works for a period of time without any damage in the system components. Sensors can be replaced every time it fails. |