Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	18 October 2022
Team ID	PNT2022TMID05241
Project Name	Gas leakage monitoring and alerting system for industries
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	User Visibility	Level of gas can be monitored by users if there is any leakage, alerts can be sent through messages.
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 ofthe data. If there is an increase in gas level then the alert will be given. They also get notified by the alert
FR-4	User Convenience	Through message we can easily get data of gas level and in case of gas leakage, it can directly send notifications to nearby police station and hospital.
FR-5	User Performance	When the user gets notified, he could turn on the exhaust fan/sprinkler

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	It updates the data regularly as well as protects the workers.
NFR-2	**Security**	As a result of emergency alert, we can be able to protect both the humans and properties.
NFR-3	**Reliability**	Can be able to provide accurate values. It might have a capacity to recognize the smoke accurately and does not give a false
NFR-4	**Performance**	Sprinklers and exhaust fans are used in case of emergency.
NFR-5	**Availability**	It can be used for everyday; it includes day and nights.
NFR-6	**Scalability**	Sensors can be replaced every time it fails.

Solution Requirements

Business Requirements	User Requirements	Product Requirements
The said system can be deployed in homes, hotels, factory units, LPG cylinder storage areas, and so on. The main advantage of this IoT and Arduino-based application is that it can determine the leakage and send the data over to a site. It can be monitored, and preventive measures can be taken to avoid any disaster.	The gas leakage detection system can be optimized for detecting toxic gasses along with upgrading them with smoke and fire detectors to identify the presence of smoke and fire. Ensuring worker safety is important but making using of the right technology is even more vital.	Detecting gasses is necessary regardless of your business role or individual purpose. Certain technologies at play make such IoT devices what they are, and if you want to indulge in IoT application development, you must know what they are and what purpose they can fulfill.