

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

Date	06 May 2023
Team ID	NM2023TMID14262
Project Name	Gas Pipeline Monitoring System for Hospitals

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	<ul style="list-style-type: none">➤ Registration through Form➤ Offline Registration
FR-2	User Confirmation	<ul style="list-style-type: none">➤ Confirmation via Email➤ Confirmation via OTP
FR-3	Detection	The said system can be deployed in homes, hotels, factory units, LPG cylinder storage areas, and so on. The main advantage of this Arduino based application is that it can determine the leakage and send the data over to a site.
FR-4	Monitoring	The leakage can be monitored and can be optimized for detecting leakage of gasses.
FR-5	User Alert	The leakage can be monitored and can be optimized for detecting toxic gasses.
FR-6	Communication	The registered user is able to get alert from the system through a SMS and can also be able to get notification in app.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	<ul style="list-style-type: none">➤ Easier Installation process, and Realtime Monitoring Service.
NFR-2	Security	<ul style="list-style-type: none">➤ By identifying the danger of hazardous gas leakage with prior notification people can evacuate in time.➤ Data encryption & Cloud security.
NFR-3	Reliability	<ul style="list-style-type: none">➤ Only authorised personnel have access to the system.➤ Assured Data Security and Information conciseness.➤ Longer Lifetime of Product/Service.

NFR-4	Performance	In this technique the gas sensor sends the signal to the Arduino UNO after detecting the gas leakage. Arduino to other externally connected devices such as buzzer and GSM send vigorous signals. SMS is sent by GSM module to the provided mobile number as a result. In practice, results are noticed by the people surrounding by the area are alerted by buzzer sound indicate the danger to the people by making beep sound.
NFR-5	Availability	<ul style="list-style-type: none"> ➤ The user can access the System 24/7. ➤ Realtime monitoring system.
NFR-6	Scalability	By using this system that detects the gas leakage applicable usefully in the industrial and domestic purpose. In danger situations we are able save lives by using this system.