

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

Date	03 October 2022
Team ID	PNT2022TMID40473
Project Name	Gas leakage Monitoring & Alerting System for Industries.
Maximum Marks	4 Marks

**Project Description:**

Our product is “Gas leakage detector”. If any gas leak happens, the sensor placed at those point sends notification to the control room along with the location of where the gas leaks take placed and also alert the workers by an emergency alerting system.

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Detection System	Safety related detectors such as gas sensor, Temperature/Heat/Flame sensor, pressure sensor, helps to detect the gas leakage and incipient fire.
FR-2	Alerting System	<p>-Alert the workers using emergency alerts such as buzzer, alarms on those sectors the gas leakage occurred.</p> <p>-Also Alert the User admin via sending notification alerts to the web application “leak D-det”.</p>
FR-3	Cloud connection	The device sends the data to the Cloud (IBM) that is linked with the web application. Thus, an user can receive the data & if any alert notifications, etc.
FR-4	User Registration	<p>Product – Place orders through our Website or Other E-Shopping Apps.</p> <p>APP -Registration through Web application (or) Mobile application.</p>
FR-5	User Confirmation	<p>Confirmation via Email</p> <p>Confirmation via OTP</p>
FR-6	User Authentication	Verification through User ID & Password.
FR-7	User Accessibilities	<ul style="list-style-type: none"> <li>➤ Visualize Data about the sensor parameters and the Emergency Alerts.</li> <li>➤ Import or Export Data reports.</li> <li>➤ Customize View &amp; Profile account.</li> <li>➤ Multi-device synchronization.</li> <li>➤ For finding of Data -Search Tab &amp; Sorting of data is made available.</li> </ul>
FR-8	User Permissions	<p>To Turn ON the fire suppression Tools.</p> <p>Storage space permission for Data reports &amp; others.</p>

### Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	Our product helps to monitor their environmental performance, Ensures better occupational health and also helps the workers to feel secured.
NFR-2	<b>Security</b>	Product- Our Product is designed & protected in a way to withstand the environmental conditions.
		App- Authorized user can only able to login on the app using the valid user ID and password. (Also we had planned to add other verifications like 2-steps verification in future to ensure better safety.)
NFR-3	<b>Reliability</b>	Our products has the capability of receiving multiple Data without delayed response time and it helps the safety in charge to take timely corrective actions.
NFR-4	<b>Performance</b>	It provides a range of single parameters from the safety detectors. By setting appropriate threshold values, it triggers the notification and the alarms. It provides the exact location of where the gas leakage occurred.
NFR-5	<b>Availability</b>	It constantly monitors the data from the sensors. Our products available at the E-commerce apps.
NFR-6	<b>Scalability</b>	<ul style="list-style-type: none"><li>✧ Cost-Effective installation.</li><li>✧ Data analytics for improved decisions</li><li>✧ Get immediate gas leak alerts</li><li>✧ Multiple sensors can be placed strategically across the industries, helps to detect the leakage more easily.</li></ul>