

Project Design Phase-I  
Proposed Solution

Team id		PNT2022TMID49412
Project Name		Project – Gas Leakage Monitoring and Alerting System
Maximum Marks		2 Marks
S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	<ul style="list-style-type: none"> <li>• Create an effective system and application that can watch over and notify users (workers).</li> <li>• The industries benefit from this project's assistance in tracking hazardous gas emissions.</li> <li>• The gas sensors will be integrated in a number of locations to track gas leaks.</li> <li>• The administration will be contacted and given the location if a gas leak is found in any region.</li> <li>• Admins can view the sensor parameters on the web application.</li> </ul>
2.	Idea / Solution description	<ul style="list-style-type: none"> <li>• Using an insect-like robot that moves to find gas leaks in pipeline joints.</li> <li>• Visualizing CO2 Gas Using FLIR Gas Detection Cameras.</li> <li>• Calculate the amount of gas used.</li> <li>• Workers at factories are informed of gas leaks via smart bracelets.</li> <li>• Long Wave Gas Detection Thermal cameras that rotate 360 degrees can see gas leaks and find them.</li> <li>• Thermochromic inks or dyes can be used in industrial applications using tubes that change their colour with temperature changes.</li> <li>• By using the offline messaging alert feature, anyone without internet within a 100-meter radius can be warned.</li> </ul>
3.	Novelty / Uniqueness	<ul style="list-style-type: none"> <li>• Using an insect-like robot that moves to find gas leaks in pipeline joints.</li> <li>• Long Wave Gas Detection Thermal cameras that rotate 360 degrees can see gas leaks and find them.</li> </ul>

		<ul style="list-style-type: none"> <li>• Fastest alerts to the workers</li> <li>• User friendly</li> </ul>
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> <li>• Receive instant notifications regarding the presence of gases in the atmosphere</li> <li>• Prevent fire hazards and explosions</li> <li>• Supervise gas concentration levels</li> <li>• Ensure worker's health</li> <li>• Real-time updates about leakages</li> <li>• Cost-effective installation</li> <li>• Data analytics for improved decisions</li> <li>• Measure oxygen level accuracy</li> <li>• Get immediate gas leak alerts</li> <li>• Cost efficient</li> <li>• Easy installation and provide efficient results</li> <li>• Can work with irrespective of fear</li> </ul>
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"> <li>• The industries and the personnel of the industries are satisfied.</li> <li>• The product is heavily promoted across all mediums. Due to its affordability, it even protects small-scale companies against disasters.</li> <li>• As the product usage can be understood by everyone, it is easy for them to use it properly for their safest organization</li> </ul>
6.	Scalability of the Solution	<ul style="list-style-type: none"> <li>• It can detect, warn, and control gas leaks automatically by sucking the gas away with an exhaust fan.</li> <li>• Since the product is cost efficient, it can be placed in many places in the industries.</li> <li>• Even when there is a greater gas leak, the product detects precise readings and successfully warns the workers.</li> </ul>