Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID16782
Project Name	**Gas Leakage Monitoring and Alerting System**
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Liquefied Petroleum Gas (LPG) is ineluctable one in day-to-day life. LPG is used as a fuel in a wide range of applications including heating and cooking appliances, industrial applications, in vehicles and as a propellant and a refrigerant. Gas leakage is one of the major concerns with commercial premises, residential and gas powered transportation vehicles. Leakage of LPG produces hazardous and environmental unfriendly gases which effect human beings and other living creatures. As safety plays a major role in today's world, it is necessary that good safety systems are to be implemented in places of domestic or industrial. Preventive measure that can be taken to avoid the danger associated with gas leakage is to setup a gas leakage detector at vulnerable locations. The main objective of the proposed Gas Leakage Detection and Automatic Control System (GLDACS) is to provide a solution by designing an automatic system which can detect the leakage of liquefied petroleum gas (LPG) at home and control it by turning off the cylinder knob. At the same time the window of that room gets opened automatically using DC motor and an SMS alert will be sent to the owner of the house using GSM module.
2.	Idea / Solution description	This system can be implemented in residential area, small industries and restaurant. Besides that, this system also exposes to the community about the important of the LPG

		leakage detector to be used because it can help to avoid any dangers gas leakage that not only can give effect to the user but to the other person too. The LPG leakage detection and alert system presented in this session. It is battery operator and hence portable. It is designed in such a way that it can also be operated with ac power supply . The gas sensing layer of this sensor is made of Tin Dioxide (Sno2) and gold (Au) electrodes. The output of the gas sensor is given to LM358 dual operational amplifier where it is compared with the threshold value for gas density which is set using preset potentiometers and amplified. If the sensed voltage is greater than the preset threshold voltage, the operational amplifier output fires the driver circuit for LED and Buzzer. As a results, the LED will glow and the buzzer starts to produce alarm sound.
2.	Novelty / Uniqueness	The novelty of the work is that the Gas Leakage Detection and Automatic Control System (GLDACS) is to provide a solution by designing an automatic system which can detect the leakage of liquefied petroleum gas (LPG) at home and control it by turning off the cylinder knob. At the same time the window of that room gets opened automatically using DC motor and an SMS alert will be sent to the owner of the house using GSM module.
3.	Social Impact / Customer Satisfaction	With this inspiration, The design of a sensor-based automatic gas leakage detector with an alert and control system is developed to the need for ensuring safety in workplaces is expected to be the key driving force for the market over the coming years.
4.	Business Model (Revenue Model)	The proliferation of handheld devices has led to developments in the field of smart gas sensors, which has considerably widened their scope of application.
5.	Scalability of the Solution	Advanced fixed detection technologies combine the strengths of point detectors, networked monitoring, and auto-response functions, and are preferred over conventional alarming systems