Project Design Phase-I

Proposed Solution

Date	10 October 2022
Team ID	PNT2022TMID00340
Project Name	Hazardous Area Monitoring for Industrial Plant powered by IoT
Maximum Marks	2 Marks

Proposed Solution Template:

Sl.No.	**Parameters**	**Description**
1.	Problem Statement (Problem to be solved)	To monitor hazardous areas in an industrial plant using IoT and to send alerts to the personnel during time of a hazard.
2.	Idea / Solution description	Real-time monitoring of critical parameters as required by the type of industrial plant like temperature, gas, air quality, etc. and to send alerts to the personnel in conditions of hazards taking place using appropriate communication channels. • SOLUTION-1: REMOTE SENSING The sensors which measure the critical parameters can be deployed in hazardous areas and monitored remotely and alerts are given centrally to all personnel. • SOLUTION-2: WEARABLE DEVICE The sensors which measure the critical parameters can be integrated into one wearable device and alerts are given to the personnel individually.
3.	Novelty / Uniqueness	• SOLUTION-1: REMOTE SENSING I. The deployed sensors send alerts centrally to the mobile application which each personnel might have installed. II. In case of personnel being exposed, depending on the hazardous substance leaked, basic measures to counter the effects of exposure is suggested in the mobile application.

		• SOLUTION-2: WEARABLE DEVICE I. The sensors used to measure the various critical parameters are to be integrated into one wearable device. II. The exposure level of each personnel is deduced based on their vitals. Hence, measures to counter the effects of exposure is suggested.
4.	Social Impact / Customer Satisfaction	• Families of the personnel can be at peace knowing that the best safety measures have been implemented in the plant. • Employees can focus on their job instead of worrying about their safety and thereby increase productivity. • With proper functioning of this system, employees will be motivated to work harder.
5.	Business Model (Revenue Model)	The cost of sensors used to measure critical parameters is affordable. Hence, with appropriate investment this monitoring system can be put together and sold at a profitable rate. Industries will buy this monitoring system as they need to keep the safety of the personnel as a top priority.
6.	Scalability of the Solution	• Depending on the industrial requirements, the critical parameters to be measured changes and hence the sensors needed to fulfil this requirement are chosen carefully. • A large mass can be equipped with this wearable device. • Alerts sent can be specific to the different kinds of hazards.