Hazardous Area Monitoring for Industrial Plant Powered by IoT

Proposed Solution

S.No	Parameter	Description
1	Problem Statement	• Workers in Industrial Plants that deal with hazardous materials are subject to a large number of occupational hazards. • Effective early warning systems are essential to their safety as they allow for timely location, containment and evacuation. • Such details as nature of hazard, location, environmental conditions in unsafe location are required to take informed actions. • This system aims to create a solution which satisfies these criteria.
2	Idea/Solution	This solution aims to provide the following: • Localization of hazard using BLE beacons. • Environmental conditions (temperature, toxicity, etc) of the contaminated area. • Location of employed personnel using wearables. • Remote monitoring using a mobile app.
3	Novelty/Uniqueness	• The main highlight of this system is its modularity and unobtrusiveness. • The hardware used is small, silent, cheap and has a low power draw. It will not interfere with daily operations. • Integrating new units and removing existing ones is easy. • All information can be accessed remotely.
4	Social Impact / Customer Satisfaction	• The system implements IoT concepts and technologies effectively to save lives. • It could prevent another Bhopal Gas Tragedy by alerting people as early as possible to hazardous containment breaches. • It could help workers evacuate on time or perform the necessary actions to mitigate the dangers of the situation. • It could provide information about areas that

		humans cannot safely enter. ● The low cost, ease of use will also definitely improve customer satisfaction.
5	Business (Revenue) Model	● Selling different types of sensors - cameras, location, geotracking, temperature… ● Charging for installation and maintenance. ● Custom GUI for monitoring and performing other actions. ● Offer a subscription based remote monitoring service where we will monitor the sensors ourselves.
6	Scalability of Solution	● Scalability and Modularity are two of this system's strengths. ● Each sensor is discrete and can be installed or removed with minimal effect to other ones present in the area. ● They only need to be added to the network and map of the area. ● Sensors can be installed anywhere with access to power.