

## Literature Survey On The Selected Project and information Gathering

Team ID	PNT2022TMID37599
Project Name	Hazardous Area Monitoring for Industrial Plant Powered by IOT
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REFERENCES	RESEARCH PAPER	AUTHORS	PROJECT DESCRIPTION
1	Implementation of hazardous chemical gas monitoring system using unmanned aerial vehicle (UAV	Fadhil Mochammad; Aditya Rachman Putra; Bambang Riyanto Trilaksono	Unmanned aerial vehicle (UAV) with hexacopter platform is an effective tool to monitor the level of hazardous chemical gas. The ability to fly at low speed autonomously allows this system to map the hazardous chemical gas level and the hazardous chemical gas distribution in each section of an area. To do this task, an on-board data acquisition system is needed on the UAV to measure the hazardous chemical gas level based on the GPS position of the measurement. The user can interact with UAV to specify the

			scanning scenario.
2	Real-Time Design of HMI for Hazardous Gas Control and Monitoring System in Pakistani Mines, Natural Gas Areas and Fertilizer Plants	M. U. Khan, A. Shaheen, M. Zeeshan, Asad-ur-Rehman, M. Adnan and M. T. Rehman	The technique presented in this paper includes the identification and reporting of dangerous gases in a region by designing a Gas control and monitoring system (GCMS) that can automatically detect, alert and control hazardous gas leakage. It is quite easy to handle as users will only have to press buttons at the designed HMI (Human machine interface)
3	Digital Twin for Monitoring Containerized Hazmat Cargo in Port Areas	L. Oliveira, M. Castro, R. Ramos, J. Santos, J. Silva and L. Dias	The complexity of the number of stakeholders, information systems used, and port operations evoke new challenges to port security when it comes to the total knowledge and control of the overall operations of transport and parking of containerized freight, namely hazmat ones. The rising interest and the port authorities' awareness of the relevance of security concerns involved in this complex ecosystem has led to the search for new technological solutions that allow, in an integrated manner, the smart and automatic control of operations of transport and hazardous freight parking in all the

			<p>areas of its jurisdiction, without third-party dependencies. Despite its importance and criticality, port authorities tend to have limited real-time knowledge of the location of hazmat containers, whether moving within the port (entering and leaving), or in its parking, having a direct impact on the port security. This article presents a Digital Twin platform for 3D and real-time georeferenced visualization of container parks and the location of hazardous containerized freight. This tool combines different modules that further allow to visualize information associated to a container, its movement, as well as its surrounding area, including a realistic and dynamic 3D representation of what is the area encircling the port</p>
4	To design and develop LoRa-based system for remote safety monitoring	S. Ingle, S. Salankar and S. Prasad	<p>Hazardous area, such as coal mines, are below the earth's surface. Below a certain level there are dangerous and flammable gases. Unavailability of any mobile Network makes such an area black spot for communication. In this paper, describe the using of LoRa that provide an</p>

			<p>wireless network upto certain range in this range using another LoRa that receive and again retransmit the same data resulting in doubling the range of communication. Adding Lora repeaters multiplies the range of communication. In such a way, routing sensor data till the area where GPRS Packets are available and then upload the data to the cloud. This can turn any black spot for communication reach to cloud storage.</p>
5	<p>Camera systems in hazardous locations to monitor and control the separation of liquid waste products in chemical plants</p>	<p>Ingo Emde ; Wolfgang Berner ; Klaus Mertens</p>	<p>It is essential to have high-quality measuring systems for chemical processes in order to obtain reliable data for the control system. For some process applications it is difficult to find a dependable method to measure important values that are vital for the end product. In the case of a liquid waste product processing facility the difficult measuring task is to monitor the separation of Anilin and water in a vessel. In this application, standard measuring methods cannot monitor the process</p>

			<p>reliably, especially during a start up phase. To avoid cost-intensive and timeconsuming monitoring by staff directly at the vessel, the task can be solved by using cameras to monitor the process. The additional problem is to design such a solution for a facility that is classified as a Zone 1 hazardous location.</p>
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