

AIGC Solutions – Robotics & Drones

Case Study: Gas Leak Scanning at a large O&G Refinery Plant - with Drones

The Opportunity



In a plant to produce the end products, massive combinations of vessels, pipelines, towers, columns, heat exchangers, pumps, compressors, and many additional bulky pieces of equipment need to work in harmony. Even though continuous visual and instrumentation based inspection by humans are always being performed, there are instances where peculiarities in readings and signals occur. These sources of the anomalous readings are often challenging to identify even after thorough inspection performed by inspectors or high-skilled laborers.

Seldom, because of unreachable heights or corners, it is virtually impossible to cover and inspect the whole area from every angle efficiently with human vision. In a very hard-to-reach section of the pipings, a leaking pipe joint could be one of the causes of such peculiarities. This shortcoming, in some cases, has resulted in a catastrophic and costly life-threatening incident.

The Approach

Early detection and vast areas of scan-ability can be equipped with a state-of-the-art Drone-based system. AIGC's drones are implemented with an ultra-sensitive thermal camera to detect methane gases from a distance of up to 100 meters in the air. Hence, starting off with a remote inspection in the early stages itself. With a pilot and an inspector's twosome, real-time monitoring can be done via proprietary software on a laptop, which is connected to the drone wirelessly. This further renders wide-scan ability with excellent coverage and viewing access to the plant operator.

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The Benefits

- Save lives and assets by avoiding any catastrophe or incidents such as an explosion.
- The utilization of human work hours/labor-time for more productive work rather than inspection tasks
- Saving costs from reduced inspection labor-time in many industries.
- Better allocation of man resources and improved productivity across.
- Providing a safer workplace by removing an element of danger for the workforce.
- Preserving the goodwill of the plant and maintaining the company reputation.