



PERCEPTO

ICL Dead Sea Case Study

How ICL Dead Sea
boosts productivity and
streamlines inspection

Israel Chemicals Ltd. (ICL) Dead Sea is a global manufacturing company that develops, produces and markets fertilizers, metals and other special-purpose chemical products. The Dead Sea Works site is one of the world's largest manufacturers of potash - an essential component of plant fertilizers, and also produces chemicals such as chlorine, bromine, and magnesium.

THE CHALLENGE

Located at the lowest place on earth, ICL Dead Sea wanted to incorporate innovative solutions to improve productivity, mainly by decreasing the time and cost of inspecting critical infrastructure.

Location, Location, Location

The Dead Sea is one of the harshest climates on earth - with record summer temperatures hitting 49°C (121°F) - manual inspections and security patrols are challenging.

Inspections

The mining site runs on a private electric grid thus in addition to operating and ensuring productivity, a functioning electric grid must be privately maintained. Lengthy and infrequent manual inspections require employees to respond to failures as they happen, while operation may halt until repairs are made.

Material Management

Pile inspections are performed by some combination of piloted drones and manual inspections, which are both limited in frequency and availability.

The Solution

ICL Dead Sea chose Percepto's autonomous drone-in-a-box solution to improve productivity and safety at their site, working with Percepto to develop several scalable new features supporting key use cases.

Percepto's solution performs persistent and consistent visual asset monitoring without any human intervention, and completely automates several on-site inspections delivering actionable insights to relevant stakeholders. Located permanently on-site, the AI-powered Percepto drone is autonomously deployed day or night to predefined or on-demand security patrols and inspection missions of critical site assets, such as electric poles, piles and pipes. Furthermore, with a first ever beyond visual line of sight (BVLOS) approval, ICL Dead Sea no longer needs to visually observe the drone.



BOOST
PRODUCTIVITY



ENHANCE
SAFETY



REDUCE
COSTS



OPTIMIZE
SECURITY



THE PERCEPTO SYSTEM In Action at ICL Dead Sea Works

With an autonomous drone solution available 24/7, ICL Dead Sea automates multiple on-site tasks.

Percepto's drone-in-a-box solution operates BVLOS and collects high quality data to deliver actionable insights and reports to relevant stakeholders without any human intervention.

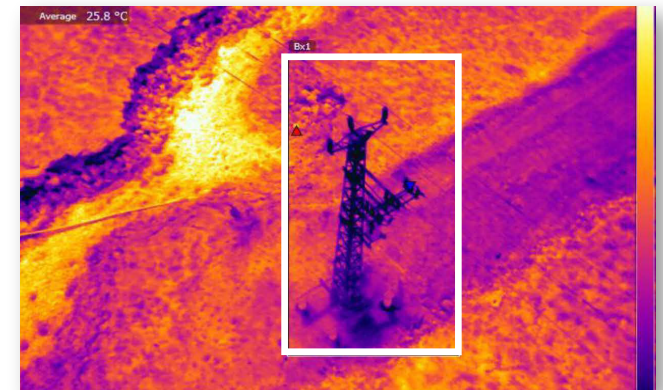
Power Grid Inspection

The Percepto Drone fully automates routine inspections of the site's private power grid, inspecting electric poles with its dual payload. Assets or parts out of a specified temperature range are identified, and visibly identifiable faults are detected with Percepto's AI-powered anomaly detection.



Thermal Inspection of Electric Failure at Night

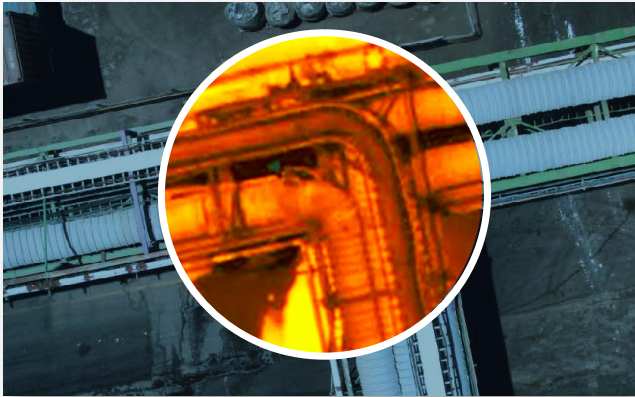
Operating BVLOS, the Percepto Drone performs inspections 24/7, providing immediate insights into failures and guiding maintenance teams directly to electric failures as they happen.



Pile Inspection

The Percepto Drone is capable of performing 3D pile inspections multiple times a day, supporting logistics teams and allowing for precise planning of materials transport. Reports are sent directly to relevant stakeholders with accurate, up to date volumetric measurements.





Pipe Inspection

Using its radiometric camera, the Percepto Drone performs routine inspections of pipes, detecting thin insulation layers, leaks and any temperature discrepancies suggesting an error. Relevant stakeholders including safety and maintenance teams are notified in real time, minimizing reaction time and boosting efficiency.



Security Patrol

The Percepto Drone performs routine security patrols without any human involvement. Located permanently on-site, the drone is always ready for takeoff, responding to any security event using its AI-powered human and object detection and tracking capabilities. Security teams are immediately notified of any security breaches, and security asset (i.e. fences, cameras, etc.) failures.



Emergency Response

Percepto's drone responds quickly to events such as fires and leaks, safely providing real-time aerial footage of any event. Without any personnel on the ground, emergencies can be tracked and monitored without putting site employees in harm's way. Percepto's solution easily integrates with existing site sensors for automated dispatch upon detected hazards, and can be dispatched manually to investigate any event.



Benefits of Persistent and Consistent Visual Data Collection & Analysis

Site managers know exactly what is going on at ICL Dead Sea, with Percepto's drone-in-a-box solution collecting and analyzing data on a consistent and persistent basis. With no human involvement, inspection quality and frequency are increased at a fraction of the time and cost, detecting failures early and preventing potential disasters.

ICL Dead Sea reduces downtime while boosting safety and efficiency with Percepto autonomous drones.



Streamlined Inspections for Enhanced Productivity

Controlled by an operator in the control room, site inspections are fully automated. With increased visual data collected, equipment faults are caught early on, preventing larger, costly failures. When failures do occur, the Percepto drone is sent to discover the root cause, directing repair teams safely and quickly.

Preventive Maintenance Strategies and Reduced Downtime

The powerful Percepto Core Software Suite analyzes data collected and organizes and stores it on the cloud. Site operators then gather valuable insights and site trends from automated reports, allowing for preventive maintenance strategies, data-driven business decisions, and ultimately reduced downtime.

Increased Site Awareness

With live streaming of all missions, site managers don't have to be physically present on site to receive live updates regarding asset maintenance, shipments and delivery, and contracted workers. Any authorized user with secured internet access can view live missions, and review all past missions, reports and maps stored on the cloud.

Thermal Inspections for Optimized Maintenance

Equipped with both a 4K HD day camera and a radiometric camera, the Percepto Drone measures temperatures of critical assets, detecting and alerting maintenance personnel to leaks, faulty electric equipment, and above normal temperatures. With its dual payload the Percepto Drone is available 24/7 - safely directing maintenance teams directly to failures at all hours of the night.

Enhanced Safety & Emergency Response

The Percepto System enhances safety on various fronts- performing often risky inspections and security patrols, guiding maintenance and security teams, providing crucial intel into failures, safety events and security breaches, preventing equipment failures by detecting failures before they happen, and detecting fires and leaks.

Optimized Security

The Percepto Drone's multi-mission platform allows it to perform security patrols, detecting and tracking moving people and objects and alerting security to potential threats. At the site's remote and often very hot location, performing security patrols 24/7 allows for security personnel to remain safely indoors while the drone scans for intruders.





About Percepto

Percepto is a leading provider of autonomous drone-in-a-box solutions for monitoring and securing critical infrastructure and industrial sites. Our advanced, AI-based software provides real-time insights, aiding our customers to assess risk, minimize downtime, drive efficiency and reduce operational costs without human intervention. Tested in all weather conditions, it is the most rugged platform available today.

Percepto is the most deployed drone-in-a-box solution in the market with Fortune 500 customers in more than 10 countries.

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ICL Dead Sea is proud to be the first Israeli company to benefit from autonomous drone technology which enables us to monitor and secure our site in the most efficient and safe way possible. It is part of our commitment to integrate the latest technologies into our business for the most streamlined and cost efficient business practices.

Shay Hen | **ICL Dead Sea Drone Program Manager**