



Automated drone launch in Australia takes off

SINCE UNMANNED AERIAL VEHICLES (UAVs) became a reality in the global market, they have transformed many industries including mining, oil and gas and energy. Regrettably, the biggest impediment was that they could only operate when there was a human at the controls.

However, thanks to autonomous drone systems that not only flies but also maintains itself, this is about to change.

Using drones that follow automated flight paths without the need for a human pilot allows mining, oil and gas and energy project teams to inspect their site more efficiently, boosting productivity on site.

Founded in Israel in 2014, Airobotics developed an end-to-end drone technology for collecting and analysing aerial data. The fully

automated, industrial grade multi-purpose drone platform system is capable of operating with practically no human intervention.

Airobotics recently established its first overseas entity in Western Australia, to service clients in Australia's mining and resources sector.

Australia is home to an innovative mining equipment, technology and services sector and hosts some of the world's leading mining, oil and gas conglomerates. Significant exploration opportunities in oil, gas and minerals, and a healthy pipeline of committed projects have generated a high level of demand for operations and maintenance solutions and advanced technologies. This was one of the reasons why Airobotics saw Australia as the perfect market to delve into.

Yahel Nov, Airobotics' Business Development Vice President, says

Australia was chosen as the first international location because the country's resources and mining companies are looking for "real solutions to reduce costs and improve safety".

"Our technology delivers on both, which has ignited interest from a number of major players in the Australian mining community," says Nov.

South32, a globally diversified metals and mining company with headquarters in Perth, is the first Australia-based company to deploy Airobotics' automated drone platform at its Worsley Alumina operations in Western Australia.

According to a South32 spokesperson, while they have been using drones at their operations for more than three years, this is the first trial using fully-automated, multi-purpose drone technology.

THE DRONE APPLICATION

The Airobotics platform is the first of its kind in the global market. The industrial grade platform comprises a high capacity drone, an automated base station and cloud based software. It is fully automatic, unmanned, and doesn't require a pilot for operation.

The drone automatically launches from a freestanding base station called the Airbase, and is sent on a pre-programmed or on-demand mission to collect aerial data, such as inspecting equipment or machinery, surveying and mapping stockpiles, or monitoring for emergencies or security breaches.

Once a mission is complete the drone returns to the Airbase, where a robotic arm replaces its battery and payload before deploying the next mission.

South32 is using the drone technology at its Worsley Alumina site to inspect equipment, conduct aerial surveys and develop 3D maps to help improve the site's efficiency and yield.

Some of South32's other current day-to-day drone applications include stockpile and pit scans, communicating plans using 3D models with point and photography data, inspecting confined

spaces and infrastructure, incident investigations and environmental (fauna and flora) monitoring.

"The autonomous drone has the benefit of being able to fly more regularly than drones that need operator intervention to take off and land. It will provide continuous capture and feed of data in real time, and can also change its own battery pack and sensors," said a South32 spokesperson.

SAFETY AND COST REDUCTIONS ON SITE

One of the major benefits of this technology is that automated drones have the potential to provide significant cost reductions for mining organisations compared to other traditional methods.

"Our technology can save a mining operator hundreds of thousands of dollars each year across a range of applications – inspection, surveying and mapping, security and emergency response," Nov says.

Safety is another significant advantage of the automated system and South32 are currently identifying further opportunities where this technology can help drive productivity and enhance safety. The Airobotics automated drone platform can deliver on that by gaining insight into hazardous or hard to reach areas of the operation.



"Safety improvements include operators conducting inspections in confined spaces without physically having to enter, or not having to work at height to scan stock piles," said a South32 spokesperson.

Airobotics has obtained a Civil Aviation Safety Authority (CASA) Remote Operator's Certificate (ReOC), a Federal Aviation Administration (FAA) waiver authorisation under Part 107 in the US, as well as a commercial licence from the Civil Aviation Authority (CAAI) in Israel.

