Drones Take Off In Utility Inspections

Concerns over worker safety are helping to drive the adoption of drones in utility inspections to new heights. “The Wall Street Journal wrote about this trend well over two years ago and now it’s finally making its way to South African shores,” says Philip Smerkovitz, Managing Director of enterprise-class UAV consultants, TeleEye SA.

The issue of employee safety is historically a thorny one in South Africa where large mining and agricultural corporations were often admonished for caring little for the welfare of workers engaged in potentially hazardous occupations.

“Technology in the form of drones is helping to enhance the safety of employees inspecting power lines, mobile base stations and solar installations while boosting productivity at the same time. So much more can be achieved when maintenance workers don’t have to physically climb onto structures to inspect them,” explains Smerkovitz.

By advising clients on the most appropriate professional UAV hardware and aerial photogrammetry software for their particular application, TeleEye SA is helping to disrupt the local utility inspection sector for the better.

Smerkovitz says power line inspection, for example, is often carried out using a telescope. This outdated manual inspection method means only severe defects can be reliably detected. A properly-outfitted drone, on the other hand, can identify fine defects at high altitude. It can also eliminate the need for personnel to physically operate at high altitude in rough terrain with many potential hazards threatening life and limb.

Mobile firms, too, can benefit from UAVs safety checking if base station components are missing, birds have nested on sensitive equipment and antennas remain at the correct tilt angle. Renewable energy inspections, for their part, would focus on drones checking for leading edge damage, thermal cracks, stress fractures and hydraulic fluid leaks.

However, there are several requirements for an effective inspection drone, according to Smerkovitz. The first is real-time kinematic (RTK) technology to enable precision flying, the second is dual camera configuration for both optical and thermal viewing, the third is an upwards-facing camera for inspection under objects and finally, an IP43 rating which certifies the drone for flight in adverse weather conditions.

In addition, UAV-mounted cameras should be equipped with a minimum 30X optical zoom, stabilisation technology, as well as being positioned on a three-axis gimbal for secure mounting. This allows the UAV to maintain a safe distance of 50 metres from structures while ensuring that the camera remains on target at full zoom.

TeleEye SA can advise utility inspection and maintenance professionals on UAV survey solution bundles with sector-specific capabilities. These include DJI's new enterprise-class drones, Datumate's Photogrammetry apps for Quantity Surveying and software solutions tailored to their professional needs. However, it's a challenge

to source quality UAV equipment that also carries local warranties.

“We recently launched South Africa's first online portal dedicated to the disruptive application of DJI UAVs, aerial application software and accessories across key economic sectors that include utilities. GoUAV.co.za provides the most appropriate DJI drone hardware and software solutions from leading developers that go beyond the amateur hobbyist's requirements,” concludes Mr Smerkovitz.

DJI (Dà-Jiāng Innovations Science and Technology Co., Ltd) is a Chinese company and world leading drone manufacturer producing UAVs, gimbals, flight platforms, cameras, propulsion systems, camera stabilisers and flight controllers.