

Press Release

Wind energy

December 10, 2024

TÜV SÜD – making WTG testing more efficient with Industrial Drone Inspections IDI^{AI}

Munich. TÜV SÜD is using artificial intelligence and drones to make visual testing (VT) of wind turbine generators (WTGs) more efficient. Wind farm owners will be the main beneficiaries of Industrial Drone Inspections IDI^{AI}.

Periodic inspections of WTGs involve major costs and efforts. While visual testing of the rotor blades and lightning protection system (LPS) measurements are carried out by industrial climbers, testing of the machinery itself, the tower, and the foundations is carried out by other expert teams. By introducing Industrial Drone Inspections IDI^{AI}, TÜV SÜD can now test the entire WTG using a single team and in a significantly shorter time. In



doing so, the testing, inspection, and certification (TIC) company relies on AI-based navigation and analysis software and special sensor and drone hardware developed by software and drone specialist TOPseven. The core and unique selling proposition (USP) of TOPseven's technology is the worldwide patented contactless lightning protection system (LPS) measurement. It features a signal generator which is non-invasively attached to the lightning rod of a rotor blade, and a special sensor fitted to a drone. The system enables potential problems in the lightning protection system to be detected at an early stage.

"The use of IDI^{AI} provides wind farm owners with significant advantages," says Peter Meier, Department Manager Renewable Energy Services at TÜV SÜD Industrie Service GmbH. "Combining the inspections avoids multiple visits to the WTG and significantly reduces its downtime." In addition, the TÜV SÜD expert points out that IDI^{AI} also allows for AI-supported analysis of the rotor blade inspection and LPS measurement. The process facilitates maintenance planning and documentation of tests and inspections in accordance with the relevant standards. Another benefit of drone use is that it considerably reduces safety risks to technicians working at great heights and under changing weather conditions.

Caption: TÜV SÜD uses AI-supported drones to make the inspection of wind turbine generators more efficient.

Note for editorial staff: The press release and the high-resolution photo are available on the Internet at: tuvsud.com/newsroom.

Media Relations:

TÜV SÜD AG Corporate Communications Westendstraße 199 80686 Munich, Germany	Dr Thomas Oberst Phone +49 89 5791-2372 Email thomas.oberst@tuvsud.com Internet tuvsud.com/newsroom
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