Clobotics

Clobotics Blade Inspection Service

The Clobotics Blade Inspection Service offers the best combination of safety, speed and quality on the market today.

How it Works

Everything begins with our Intelligent Blade Inspection System (IBIS™). IBIS is a DJI M300 drone customized with a high-resolution camera and an onboard computer. IBIS is custom programmed to fly very efficiently around the wind turbine generator (WTG) with no human intervention gathering very high-resolution images and super precise location information about where those images are on the blades. IBIS flies four passes over each blade and gathers hundreds of images and associated metadata in roughly 18-22 minutes per WTG inspected.

The data is uploaded to our IRIS™ backend where it is automatically analyzed for defects as well as stitched into single image views of each blade. The results from IRIS are reviewed by our experts who adjust findings as needed and provide those results, along with repair recommendations and all the raw data behind them through our customer web portal.

The IBIS™ customized drone ensures efficient, repeatable and high quality image capture.

Key Benefits

Safe
Clobotics's use of drones eliminates the need to send technicians up on ropes to do visual inspections of turbine blades. The firm has flown over 10,000 inspection missions with a 99.9+% accident-free record.

Top Quality
Clobotics IBIS™ drone features a high-resolution camera–our system can detect blade defects as small as 1MM x 3MM in size. The IBIS on-board computer automatically controls every aspect of the process to ensure high-quality image capture, regardless of daylight conditions or background landscape. Each turbine inspection yields hundreds of images and associated metadata representing 2-4 gigabytes of information.

Fast Turnaround
Clobotics IRIS™ system uses machine learning models to automatically analyze images and identify and categorize defects. The precision of these models has improved over our 9,000+ wind turbine inspections, leaving less and less for our expert reviewers to adjust. Inspection reports and raw data can be delivered in as little as 24-48 hours from the completion of an inspection through our web-based customer portal.
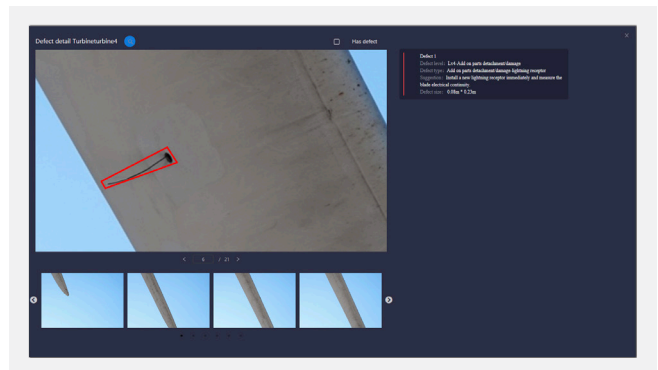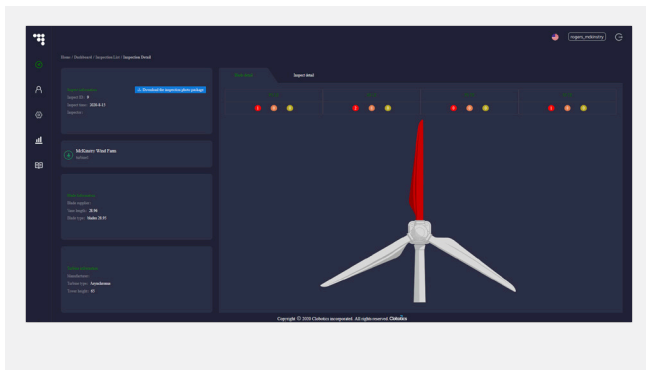
Low Cost
Clobotics uses off-the-shelf commercial drones and components as the base of our IBIS™ system, ensuring economies of scale in our hardware systems. We then custom program the system to inspect the turbines efficiently, saving both turbine downtime and onsite labor expense in the data gathering process. Finally, the system is easy enough to use that customers can choose the "Drone as a Service" offering and train their own technicians to conduct inspections, saving further costs of scheduling Clobotics personnel to the site.

To schedule a briefing or proof of concept inspection, please contact us via **www.clobotics.com.**

Flexible Delivery

Clobotics offers flexibility in inspection delivery to enable customers with larger numbers of WTGs or in-house blade expertise to take more control over the inspection process. This enables potential savings in mobilization and labor costs, allowing customers to reach the lowest possible cost of inspection while still leveraging the Clobotics platform to ensure high quality results.

Scope	DaaS *(Drone as a Service)*	DaaS+ *(Drone as a Service Plus)*	IaaS *(Inspection as a Service)*
IBIS™ delivery *(autonomous drone system)*	✔	✔	✔
IBIS™ maintenance & battery replacement	✔	✔	✔
Software for data handling & processing	✔	✔	✔
IRIS™ backend for data handling & blade management	✔	✔	✔
Expert assessment		✔	✔
Logistics		＋	✔
Permits & certificates		＋	✔
Insurance		＋	✔
Manpower			✔
Vessel charter *(offshore only)*			✔

Images are automatically processed, defects identified and results delivered through the IRIS™ back end.

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