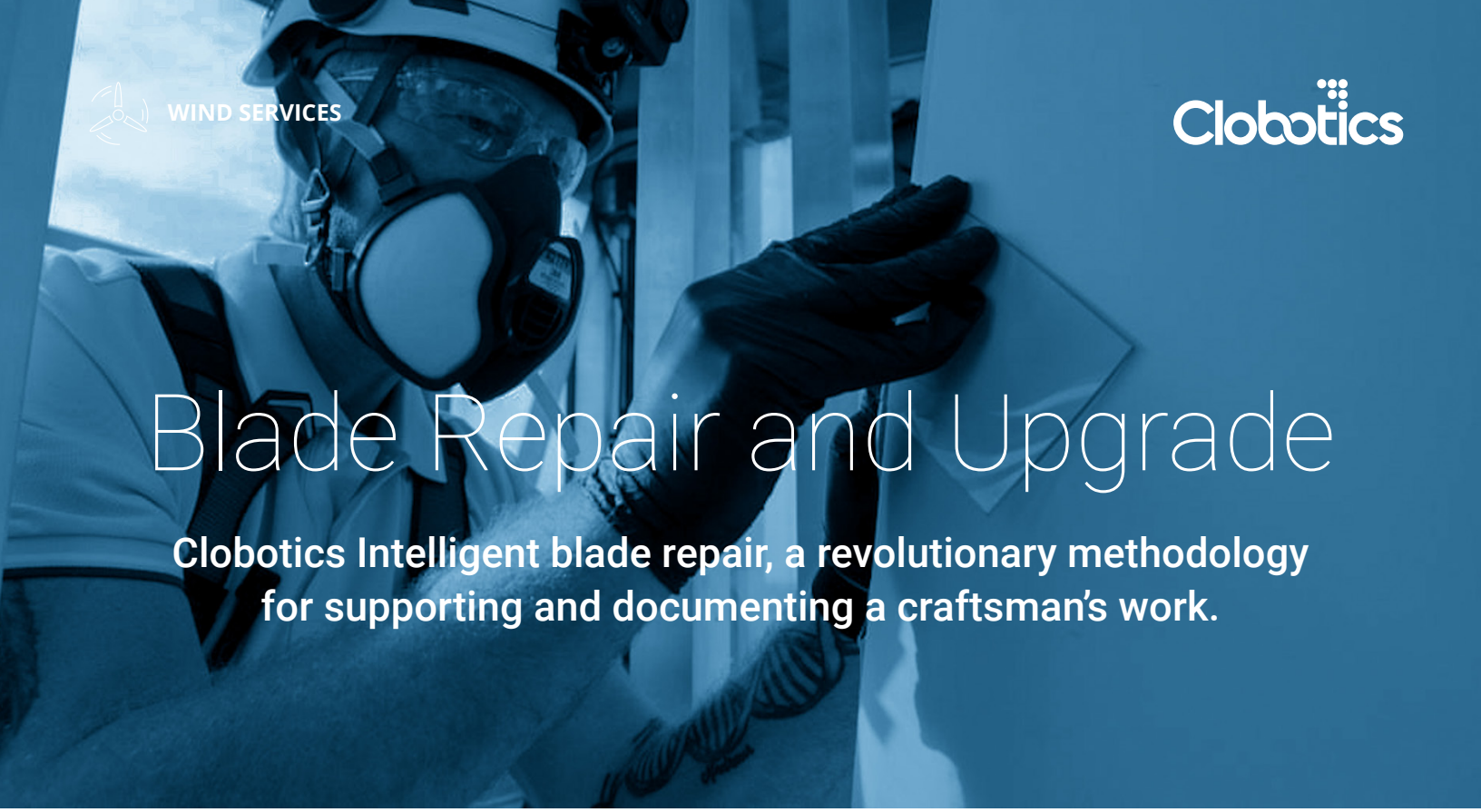

WIND SERVICES

Clobotics

Blade Repair and Upgrade

Clobotics Intelligent blade repair, a revolutionary methodology for supporting and documenting a craftsman's work.

By using state-of-the-art technology for assessing blade condition and electronically documenting the entire blade repair process, Clobotics digitizes the entire workflow and enables the effective use of artificial intelligence (AI) to reduce both the time and the cost of maintaining wind turbines.

The blade repair process is digitized and supports the repair crew with procedures, work instructions and guidelines during the blade repair. Clobotics ensures that all processes are being followed and documented seamlessly.

94%
Achilles HSEQ Certification Score

100+
Years of In-house Blade Experience

14,000+
Wind Turbines Successfully Inspected

Denmark Office • Fiskerihavnsgade 9, 6700 Esbjerg • +45 70 70 76 68

www.clobotics.com

Clobotics A/S – Intelligent Wind Services

Clobotics is a global leader in solutions that combine artificial intelligence and the internet of things (AIoT) for the wind power and retail industries. Clobotics' end-to-end solutions combine computer vision, artificial intelligence/machine learning, and data analytics software with different hardware form factors, including autonomous drones and mobile applications to help companies automate time-intensive operational processes and boost the bottom line through the use of data-driven insights and analysis.

RECENTLY NAMED TO
CNBC Upstart 100 List

Clobotics was named to the CNBC Upstart 100 List in 2018 and was highlighted as an important computer vision solution provider for the industrial sector in the latest Bloomberg NEF report on computer vision. To learn more, visit **www.clobotics.com/wind**

Clobotics, with teams based in Seattle US, Esbjerg Denmark and Shanghai China, has a strong track record in drone-based inspection of wind turbines and AI-based analysis of the resulting images. Constantly developing technology allows faster, safer, and lower-cost inspections as well as high-quality reporting delivered faster than any other alternative on the market. Clobotics has inspected wind turbine blades since 2014 and has successfully inspected over 14,000 wind turbines, towers, jacket foundations and substations.

Our offerings include:

- External wind turbine blade inspection and analysis
- Repair of wind turbine blades by manual and robotic solutions
- Internal blade inspection by robots
- Structural inspection of foundation and offshore structures
- Blade upgrades, including Leading Edge Protection (LEP) and power upgrades
- Long term blade maintenance contracts including IBIS™ inspection, analysis, repairs and optimization
- Asset management software
- Offshore turnkey solution by combining drone/robot inspection services, vessel charter and subsea inspections by ROV

WIND SERVICES

Clobotics

Developing in-house technology, Clobotics ensures a seamless workflow and state-of-the-art documentation.

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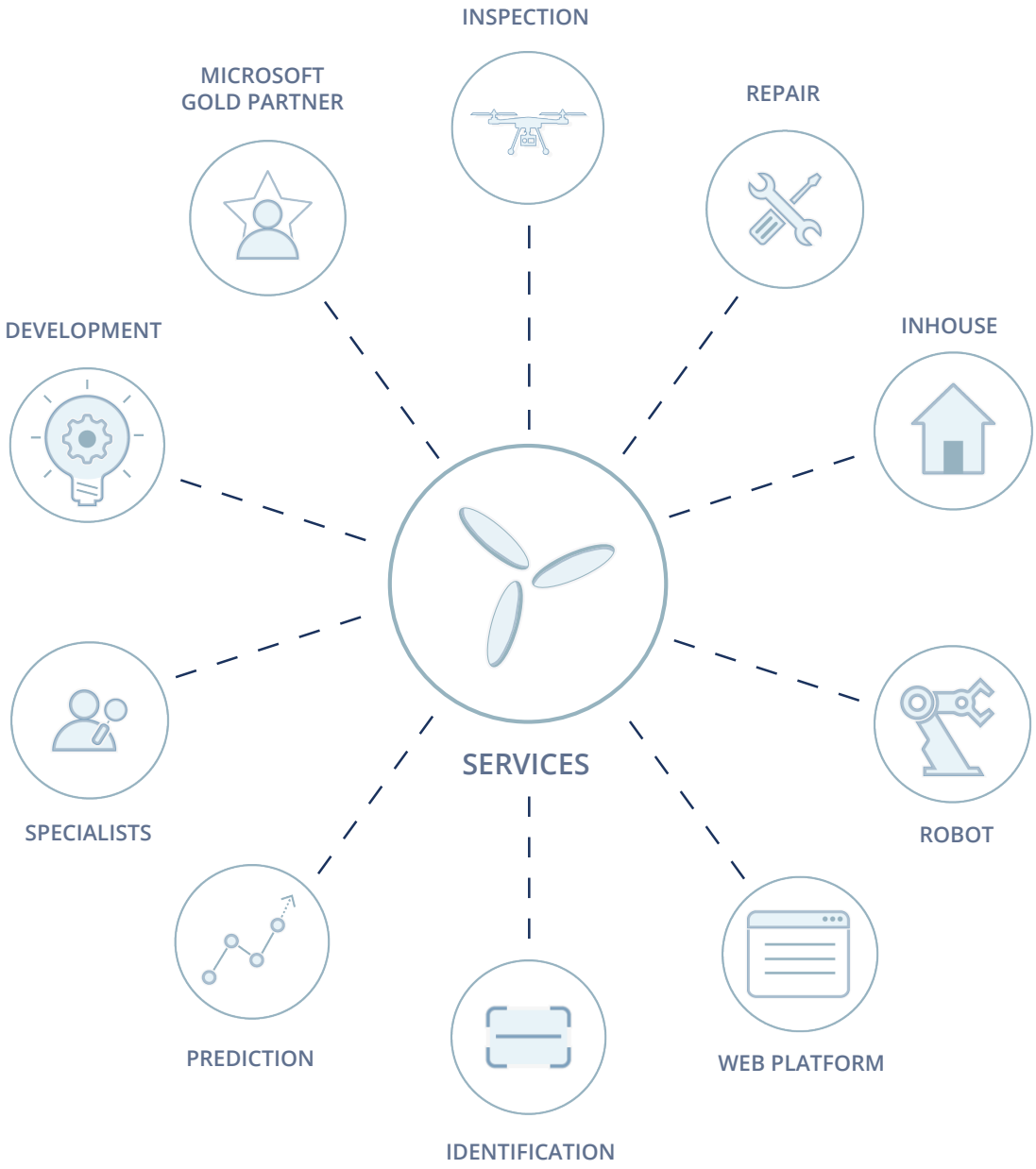
Customized Service Offering

Clobotics intelligent blade repair service is based on our extensive project track record with offshore and onshore wind turbine blades and our market leading machine learning models. By using in-house staffing, equipment, and data processing/analytics, we are able to customize delivery for each client and project.



Work scope is tailored for each client/project

Intelligent Blade Repair

Clobotics intelligent blade repair is based on merging state of the art technology, subject matter experts and quality management. Intelligent blade repair features seamless monitoring and management of the entire workflow and cost of blade repair campaigns.

As part of intelligent blade repair, we deploy an IBIS™ inspection which enables the Clobotics specialist to suggest repairs and upgrades and calculate the associated costs. Plan and price is based on a 360 degree analysis made by our AI models and supported by expert assessment. Plan and priority is based on structural assessment, AEP loss and predictions of defect deterioration. A plan furthermore includes access and repair methods, work instructions and an estimated time to completion.

The use of Clobotics Image Recognition and Insights System (IRIS-TM) portal will ensure that all processes are followed prior to and during repair work.

Intelligent Blade Repair Workflow

Planning
- Framework pricing
- Fleet-wide planning
- Optimized logistics
- Client option to perform inspection

Pre-Repair Inspection
- IBIS™ Autonomous drone inspection
- Processing and analysis by machine learning

Planning and Pricing
- Overall status report
- Defect report in high-definition

Campaign Planning
- Repair budget
- Campaign planning

Repair
- Process documentation
- Support/QA from back office

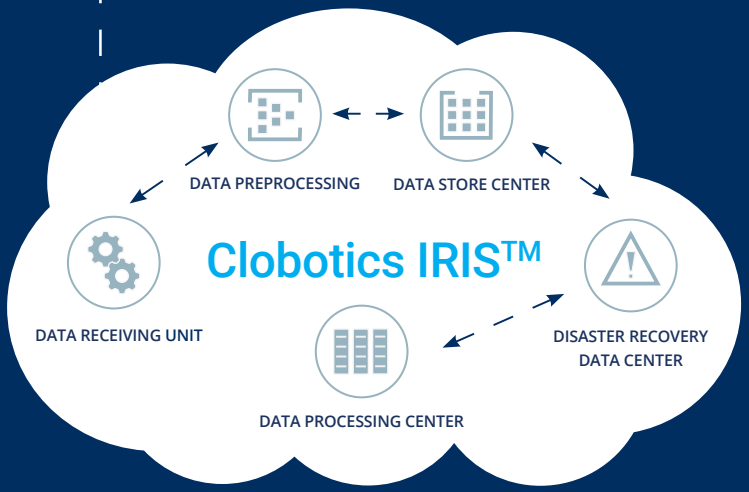
Clobotics

System Philosophy

- IBIS™ drone deployed by technician
- Uploads data for cloud computing
  - » Data is assessed by AI
  - » 2-3 days lead time for WTG report
- Fleet reporting generated by AI within 5 working days after inspections are completed
  - » Precise budget and duration are calculated
  - » Access methods are chosen
  - » Repairs are prioritized and campaigns are suggested
  - » Procedures and work instructions are suggested by AI
- Repair campaign and final budget agreed by client and Clobotics
- System pushes data and instructions to repair teams
- Repairs supported electronically with instructions and check points for documentation
- Documentation is pushed to back office during/after workday
- Review by back-office to ensure documentation is correctly filled in
- Reporting is available daily to client for closing repairs

Client tech deploys IBIS™ drone

INTERNET



INTERACTION CENTER

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Get Started

Denmark Office
+45 70 70 76 68