

CASE STUDY

Harnessing the Wind in Remote Waters: Full Circle Wind Services in the Faroe Islands

Image: Full Circle Wind Services

ABOUT US

Perceptual Robotics is a UK based technology company, focused on drone automation and AI services in the field of Wind Turbine Blade Management. Our services cover from field inspection to data processing and repair management.

Our Dhalion system has inspected and processed **thousands of turbines worldwide**.

OVERVIEW

Operating in some of the most demanding wind environments in Europe and the UK, **Full Circle Wind Services (FCWS)** has been redefining efficiency in wind turbine O&M. Using **Dhalion autonomous drone system**, FCWS has conducted drone inspections in the last three years, delivering **faster, safer, and more consistent assessments across the UK and beyond**, in places as challenging as the Faroe Islands.

FIGURES

- **285 Dhalion inspections** in 3y
- **25+ wind farms** inspected
- **3 wind farms** inspected in just **4 days** in the **Faroe Islands**.

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ABOUT THEM

Full Circle Wind Services provides a **360° O&M** solution for multi-brand wind turbines, combining nearly **20 years** of renewable energy expertise with advanced technology. Mission: to keep turbines spinning efficiently through expert maintenance, repair, and inspection services backed by a **24/7/365** control room and highly trained field teams.

Challenges

For island-based wind farms like those in the Faroe Islands, reliable inspection and maintenance present unique hurdles:



Harsh coastal weather and **unpredictable wind conditions**.



Limited logistics and longer response times.



The need for **precise, fast data collection** without external dependencies.



Image: Full Circle Wind Services

SPECIAL DEPLOYMENT

In August 2023, FCWS deployed the Dhalion system to the **Faroe Islands**, to carry out inspections despite **challenging terrain and weather**. Transporting large drone batteries required special courier arrangements, but once on-site, the **fully automated drone flights** enabled fast and consistent inspections, without the need for repeat visits.

Traditional manual inspections struggled under these conditions: prompting FCWS to seek a **more autonomous, reliable alternative**. The success of this mission highlighted Dhalion's capability to deliver **reliable data even in remote, low-access regions**, supporting the islands' transition to greener energy.

RESULTS

- ▲ **Higher inspection accuracy** with crystal-clear imaging.
- ▼ **Reduced downtime** through faster diagnostics and reporting.
- ▲ **Safer operations** thanks to automated flight paths.

#Wind Farms

3

#Days

4



Field Solution

Dhalion over M300
3 blades in 1 flight
Used as Baseline
Assessments



Data Processing

AI Damage Detection
AI Classification
FCW Blade Experts

01

Baseline Assessments at all new sites to tailor O&M contracts.

02

Regular condition monitoring of turbines from brands like Nordex, Enercon, and Senvion.

03

Predictive maintenance, reducing unplanned downtime and improving repair scheduling.

04

Client consultations, using detailed image data for transparent performance reports.

FINAL STEP

- Full Circle Wind Services demonstrates how **innovation can overcome geography**.
- By integrating Dhalion autonomous inspections, they've proven **that high-quality, data-rich maintenance** is achievable even in the most remote locations, **cutting costs, saving time, and improving reliability for their clients**.