



Newsletter

Edition 3 | 2022



Digitalisation

Reducing cost and managing risk



The situation

Despite the aftermath of COVID-19, 2021 saw 21.1 GW of offshore wind reach grid connections worldwide, three times more than in 2020, [setting a new record in the offshore wind industry](#)¹.

With both mature and emerging markets growing their offshore wind capacities exponentially, our experience shows that significant and fast-paced growth leads to challenges in construction, the maintenance of core components, and the driving of efficiencies into processes.

The biggest driving factor within renewables is the need to drive costs down. Being able to mitigate against the loss of production, replacement costs and reduction against annual offshore inspection costs are all elements where digital solutions can assist.



What's the issue?

Although fantastic to witness such great progress and commitment to achieving net zero targets, a vast array of assets have been unsystematically monitored, managed, and maintained.

The sector needs to be able to reduce costs associated with the maintenance of wind farms, in order to help drive down the Levelized Cost of Energy (LCoE). But how do we do this?

Reactive operations and maintenance (O&M)

The industry's current, immature level of O&M evolution is very much a reactive model; once a failure has occurred, an intervention is implemented. The reactive model is based on the idea that service providers tend to 'fly in to save the day' once something has failed, rather than engaging in any sort of pre-outage failure prediction. The net result is a loss of production and revenue and costs to remediate. This model becomes particularly acute as warranties expire across an asset, also revealing many discrepancies in lifespan expectations based on comparisons with onshore performance or [lab test results](#)².

All the gear, no idea

[An offshore wind farm generates significant volumes of data from assets, people and the environment](#)³. However, the vast volumes collected are generally not used to the best of its potential in improving the performance of the assets. Data science can play a huge part in the effective O&M of offshore wind; knowing how to use your data and analyse it correctly is key.

Everyone is sensitive about making data available – but knowledge is power! So how can we utilise the data sensitively and make it meaningful?

The 'digitalisation' buzzword

In order for the industry to sustain the hefty growth of renewable energy production, it's no secret that digitalisation will inevitably support this transition. However, knowing which technology and areas to digitise is hugely challenging, with somewhat conflicting evidence published across the industry.



Don't mention oil and gas!

Offshore renewables would simply not exist if it wasn't for oil and gas. The technology propelling us towards a green power future exists because of the decades of innovation that has come before.

In a market where we are looking to reduce the LCoE, we need to implement data solutions as quickly as possible. Rather than reinventing the wheel, using the tools and lessons learned from oil and gas will allow us to do this cost effectively. Our roots are in oil and gas, which brings a wealth of experience and expertise.



“Data acquisition and ownership issues vary greatly between offshore wind and oil & gas: offshore wind tends to be a difficult data space to work in due to the tendency to keep data ownership tightly held and data itself proprietary; oil & gas sometimes presents the opposite challenge, with overwhelming amounts of data pouring out of potentially hundreds of legacy systems. However, despite these differences, both industries are challenged by putting their available data to use in a digitally mature way to make beneficial business decisions.”

**Bill Ballew, Head of Innovation at
James Fisher Asset Information Services**

Addressing the challenge

In the burgeoning offshore wind farm sector – as the industry matures, as developments grow in scale and move further offshore, and as projects become more complex – we've harnessed the power of digitalisation.

Moving from reactive to predictive O&M

To effectively reduce costs, we need to move towards predictive maintenance to be able to anticipate – and fix – any potential issues before it causes any downtime.

We've introduced a series of digital solutions, all designed to help monitor, maintain, manage and optimise operational performance.





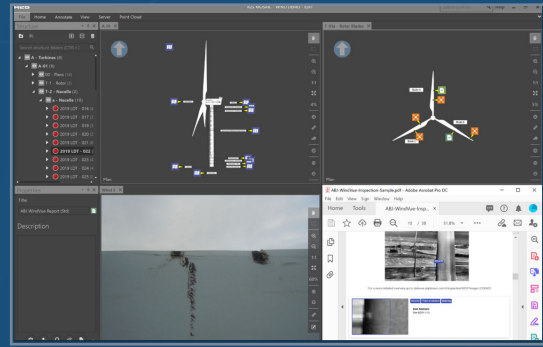
SAMS™

SAMS™ transforms data into actionable intelligence, maximising productivity and significantly reducing costs through the whole life management of your asset.



OWMS®

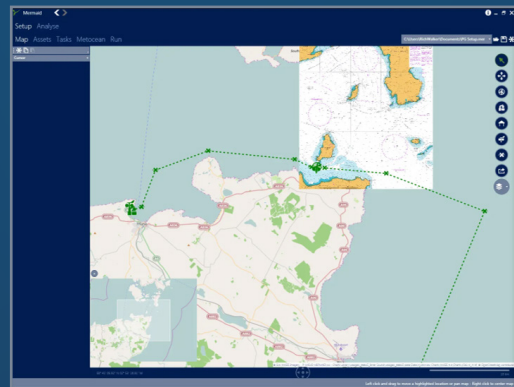
OWMS® provides full operational insight to enable enhanced decision making for offshore activities for greater operational efficiency and cost-reduction. Specifically designed for use during construction and O&M, OWMS® tracks, monitors and reports on the performance of offshore vessels and activities to deliver an all-encompassing overview of a wind farm's status.



Digital Twin (R2S)

Creating 360° virtual models with embedded data, the R2S digital twin platform enables you to see a highly detailed representation of your asset.

[Watch R2S in action.](#)



Mermaid®

Our project execution tool, Mermaid®, yields an in-depth understanding of weather and tidal conditions on your project schedule. Uniquely accurate in its predictions – proven to within 1% of actual weather and tidal conditions.

To find out more:



[JF Renewables digital solutions](#)



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Leading European energy company Vattenfall has benefited from the deployment of some of our key products:

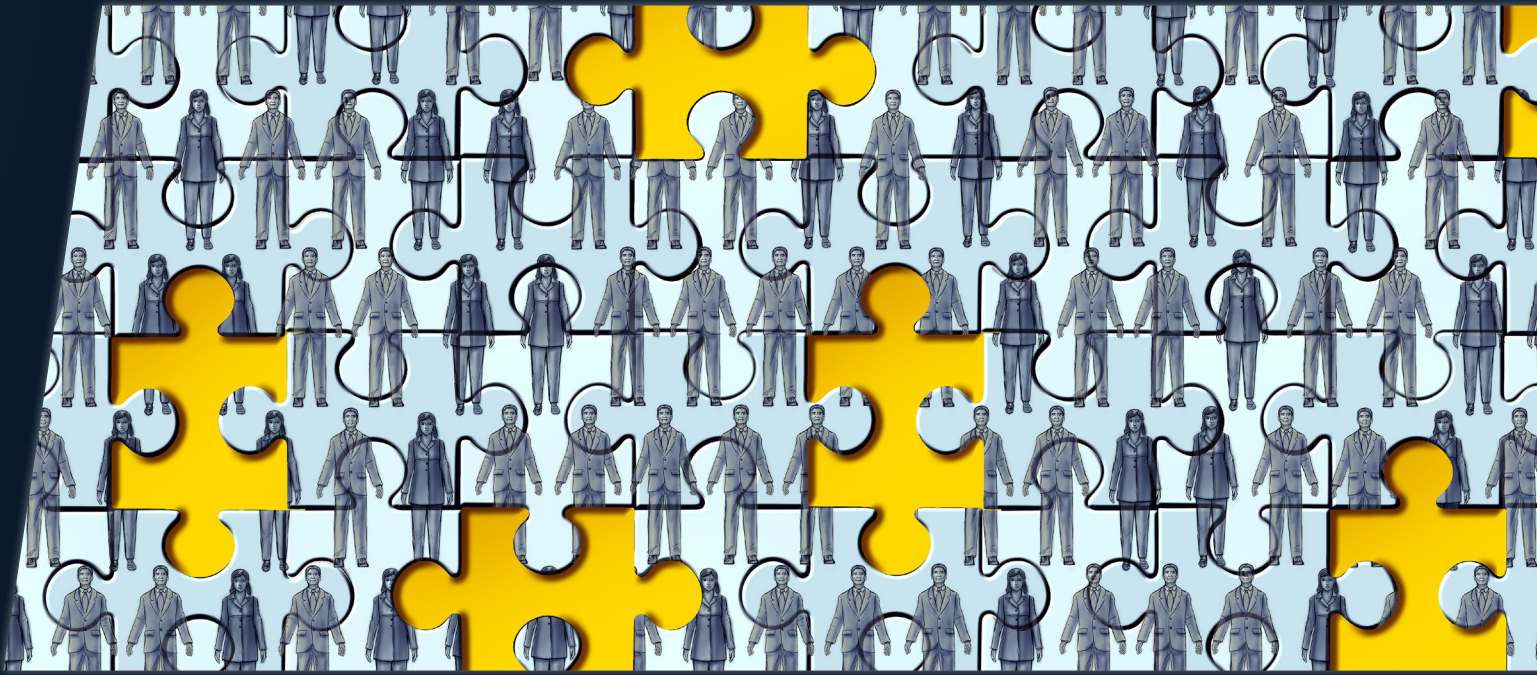
“We see huge value in the R2S software. Its digital twin technology allows us to remotely manage our assets using a like-for-like digital copy. We are excited about future developments and integrations with different data sources, which will help us manage our assets more effectively and efficiently.”

**Michael Herdman,
Project Manager at Vattenfall**



Coming up...

In the next edition, we'll be exploring the **skills shortage**.



Want to know more?

[James Fisher Renewables digital solutions](#)

[James Fisher Renewables track record](#)

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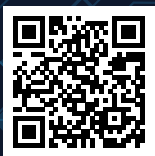
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References

1. [GWEC | Global Offshore Wind Report 2022](#)
2. [Offshore Wind: A Hierarchy of Needs for Symbiotic Innovation](#)
3. [Offshore Wind Innovation Hub | Data and Digitalisation: Cross Sector Lessons for Offshore Wind](#)

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