

It's not about the sensor, it's about the data

'It is not about the sensor' is a brave statement from a company launching a brand-new wave sensor. So, what's the thinking behind this? Miros, known for its high-accuracy wave sensors, decided to introduce WaveFusion™, its most recent product, with these words.



'Let's not rely on yesterday's technology for tomorrow's innovations and energy solutions.' That's the view of Chief Commercial Officer, Jonas Røstad, as Miros further develops innovative and disruptive technologies for measuring the ocean surface in real-time.

The company has a long history of delivering radar-based sensors and systems for measuring ocean waves, currents, and water levels, helping to describe ocean conditions, and eventually predict them.

Now, it is taking this to the next level through its commitment to the as-a-service business model and an increased focus on providing clients with tailored, digital solutions which grant them live access to their data anywhere, anytime.

Introducing WaveFusion Technology

Originally, Miros' offering for directional measurement was developed with the rough conditions of the North Sea in mind.

However, when measuring waves near shore, the existing sensors were too big, unwieldy, and less suitable for the shorter and smaller waves.

WaveFusion evolved following customer and industry feedback, expressing the wish for a high-quality sensor that reliably measures waves at multiple locations around a wind turbine without compromising accuracy.



WaveFusion, Miros' newest sensor, which combines downward looking measurement with directional measurements approximately 200m away from the turbine to measure all waves between 1 and 30+ seconds. The new sensor is an improvement on the directional wave radar developed with the offshore wind industry in mind and will be launched in June at Global Offshore Wind 2023. Meet Miros at stand H10

'One of the key challenges facing offshore wind operators is accurately measuring directional as well as non-directional waves around a wind turbine,' explains Røstad. 'We are delighted to now offer this great sensor. We think the combination of both measuring at the spot of interest and clearing off the structure to avoid interference and reflections and choosing the best and most relevant samples during processing will give the most reliable data in all sea states.'

It is the company's newest sensor, which combines downward looking measurement with directional measurements taken further, approximately 200m away, from the turbine to measure all waves between 1 and 30+ seconds. The new sensor is an improvement on the directional wave radar developed with the offshore wind industry in mind.

It is built upon Miros' low emitting proprietary radar technology and utilizes up to 13 sample areas which are at different distances from the turbines. The raw data is then merged and processed to provide operators with a clear picture of the information.

The data from WaveFusion can be integrated into the Data Explorer dashboards, providing an intuitive, easy-to-use solution. This supports operations and maintenance teams to significantly reduce energy consumption levels and emissions caused by cancelled

offshore operations due to uncertainties around weather conditions and site access. Ultimately, this helps organizations to reach their environmental and sustainability targets.

Informed decisions to reduce cost and emissions

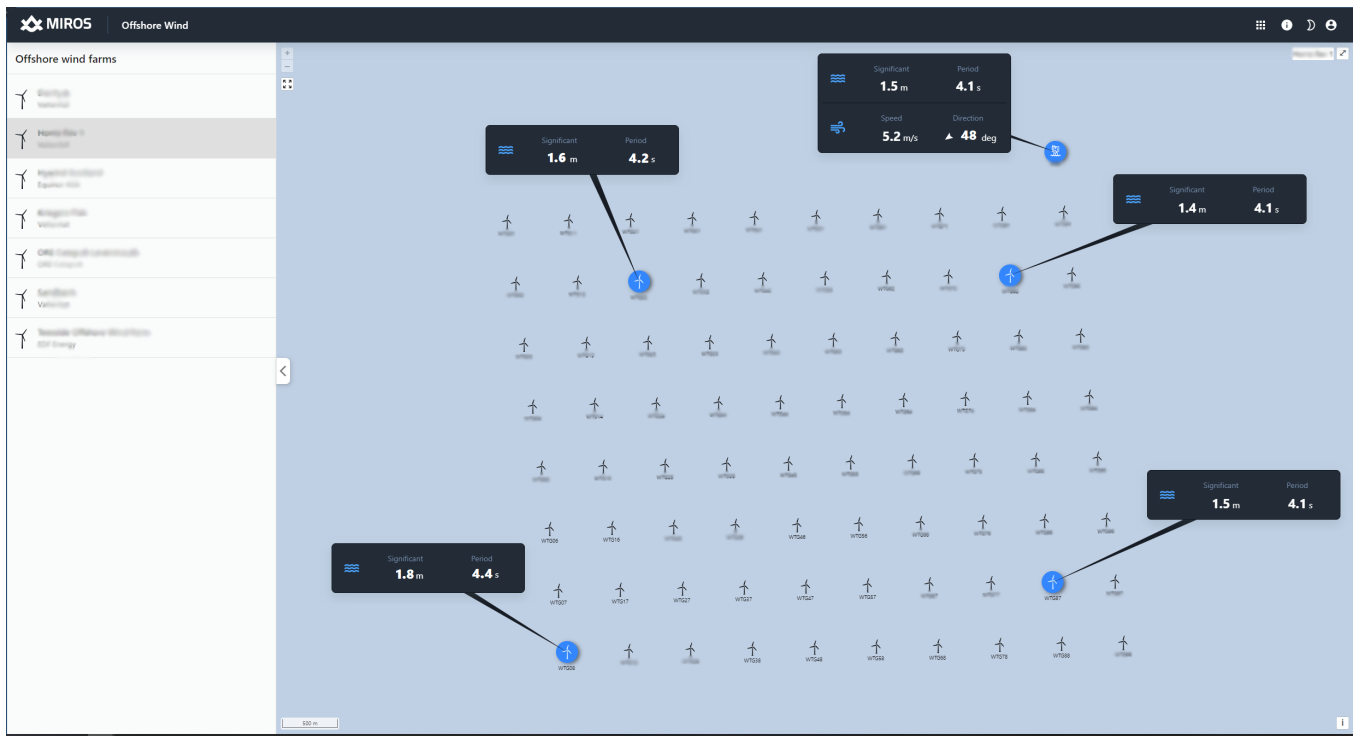
Making operationally critical decisions is a hugely important part of the maritime

industry, and thanks to continuously developed technology and services such as this new sensor, the process for making informed and accurate decisions is becoming increasingly simple.

Key to the success of this process is sorting correctly recorded data and harnessing this to provide valuable insights. Earlier this year, the company launched Data Explorer,



Miros Data Explorer is a data analytics service for data streaming from IoT devices. Interactively explore and build purpose-oriented all-in-one sharable dashboards to preview and analyze real-time and historical data from one or multiple sensors across the sites



Miros Offshore Wind portal to improve visibility of wave conditions at each turbine or substation location for improved operational planning and infield decision-making

another new solution allowing real-time and historical data from one or across multiple offshore wind sites to be monitored using easily created purpose-oriented, all-in-one shareable dashboards.

This removes the need to access and maintain several data sources. Decision-makers get an immediate, complete preview of the most crucial information, empowering them to make the best sense of the data, analyze trends, and easily share historical and real-time sea-state insights with different stakeholders.

'Making data available via the Cloud means that it can be securely accessed anytime, anywhere and on any device with a connection to the Internet,' says Røstad. 'Employees and relevant third parties can log in from land or sea to view the same data at the same time.'

'Data can also be integrated directly into a customer's existing platform or interface. For example, our long-term customer Equinor has done this for many years, and is now taking advantage of this updated offering, future-proofing operations with wave and current data delivered straight to the cloud.'

'Our user-friendly, intuitive tools help operations and maintenance teams significantly reduce energy consumption levels and emissions caused by canceled offshore operations due to uncertainties around weather conditions and site access. Furthermore, we have access to the same data as the customer and, as a result, we usually spot errors ahead of our clients and we can proactively take any necessary measures as quickly as possible.'

The future is subscription-based

Miros has always been a technology leader and is now fully focused on the next step in its journey as it develops its digital service model, Sea-State-as-a-Service, which puts expertise and innovation at the forefront.

It is a cloud-based service that provides easy and secure live access to accurate and reliable data. Under this model, the company owns the equipment and takes on the risk, while customers subscribe to what they are interested in, namely wave and current monitoring.

'With radars and sensors remaining a steadfast solution to measuring offshore conditions, we want to do things differently. We are committed to driving innovation within the business through both our products but, more importantly, the way we deliver our services,' comments Røstad.

'In this age of digital transformation, access to secure, reliable data is becoming more than just important, it's expected. Perhaps equally essential is the freedom to access that data whenever you need to, wherever you are, and to only pay for what you use.'

'When you rent equipment, you contract ownership of it for a given period of time. You use it and then give it back, ideally in the same condition you received it in, or otherwise pay for any damages. With our new model, you don't need to own or rent the equipment to access the data. Miros takes on all the risk of owning, installing, and maintaining the sensors. We do everything and anything that is required to ensure that

you get what you're paying for: secure, reliable, sea state data.'

The reason for this, argues Røstad, is because, ultimately, it is about having confidence in the data quality that customers seek above all else.

'Miros has full control of the quality. From technology, materials, and sensor manufacturing to secure data delivery via the cloud, we manage the full chain and value the highest quality in every aspect. We constantly challenge the technology and materials we use, and the markets we operate in, but the one core area we have never challenged is the definition of quality.'















'Customer satisfaction has always been central to our products and services and sets our internal expectations to correctly interpret customer expectations into requirements and deliver on those. Providing this comprehensive cycle of quality allows us to meet the highest customer expectations.'

The high-performing IoT-enabled sensor technology gathers sea state and weather conditions at the access sites offshore. This critical data allows more informed decision-making on vessel dispatch, reduces safety risks to maintenance crews, and enables improved planning and efficiencies to transfer operations, whilst also supporting the reduction of operational expenditure.

There are several advantages to using the as-a-service model, rather than purchasing the sensors outright. The subscription model offers premium support and guaranteed uptime, meaning that Miros' experts are on

The benefits of

As-a-service delivery vs. Traditional delivery

 Wave Radar	 No risk	 Unlimited warranty	 Uptime guarantee	 Wave Radar	 1 year warranty
 Unparalleled data availability	 Worldclass cybersecurity	 Monitored data quality	 Onboarding and training	 User manual	 Support@miros-group.com
 Future proof	 Co-creation				

The future is subscription-based - There are several advantages to using the as-a-service model, rather than purchasing the sensors outright. The subscription model offers premium support and guaranteed uptime, meaning that Miros' experts are on hand to ensure that everything works smoothly, with the company guaranteeing that the service will be fully operational

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'Considering the current speed of technology and innovation, it is not unusual for digital technology to become outdated by the time they are installed. We are investing heavily in research and development and aim to future-proof our hardware and software to ensure that our clients have access to the latest innovations,' Røstad added.

Buying hardware limits flexibility and scalability

Technology is evolving faster than ever, and will continue to do so. 'Buying hardware limits your flexibility as you are stuck with what you have until you replace it or upgrade, often with a costly service engineer performing the task,' argues Røstad.

'We have always been a technology leader, but in the past year, we have launched more new products for the offshore wind market than ever. However, our new way of working is not focused on the hardware, but rather the solutions we can provide to solve our customers' problems.

'One thing that has changed greatly with the 'as-a-service' way of working is that collaboration with customers is so much closer. We already had a good understanding of customers' challenges and needs as we have been in business for almost 40 years, but we have learned a lot more in the last few years and continue to do so every day.

'Clients that choose Sea-State-as-a-Service want a solution that works and provides them with the most accurate data and insight available. They don't have the time or, quite frankly, the necessity, to know about the technology behind the solution. This is where our experts come in, we can help solve their problems with the least amount of effort on their part.

'The user benefits from an unlimited warranty, guaranteed uptime, consistent data quality, and the freedom of flexibility and scalability.

'In addition to offshore wind, and in the spirit of client collaboration, we are now also rolling out the solution globally across all our business segments like Offshore Operations, Ports & Coastal, Shipping and Oil & Gas. The data gathered through these projects help us to further improve traditional methods and dive into deep learning and artificial intelligence. Customer value-adding technology created during this work continuously improves our Sea-State-as-a-Service model, enabling all users to benefit from access to ever-evolving innovations.

'Although some businesses might still be better off buying hardware, if you want to future-proof your business, and ensure consistent data availability while reducing cost and risk, the subscription model is the way to go. Remember, it's not about the sensor, it's about the data.'

🔗 <https://miros-group.com/products/wavefusion/>



Jonas Røstad

With almost two decades spent working with cutting-edge technologies, Jonas Røstad embraces IoT and digitalization within key maritime industries such as offshore wind and offshore operations.

With his operational experience at the crossroads between sales, service and support, he uses his expertise to enable customers to realize their commitment to the enhanced safety, sustainability and performance of offshore activities.

Being a leader and a front-runner in its industry, Miros' technology helps companies to take informed 360-degree decision-making to make sensitive offshore operations safer, more effective, and less environmentally impacting.