

Offshore Wind: New Solution Solves Radar Clutter Issue

The surge for net-zero emission has come to its critical phase. And with the demand for energy constantly on the rise, the need for offshore wind power intensifies.

However, national defenses need full radar coverage to maintain national security, but the large offshore turbines clutter their radar images and create blind spots. Until now.



1 New Terma Solution Successfully Tested to Mitigate Radar Clutter Caused by Offshore Windfarms

In a joint venture exercise between windfarm developer, Ørsted and the Danish tech-company, Terma, an offshore radar solution has successfully been tested to eliminate the radar clutter caused by the turbine blades.

The test was conducted over six months at the British Hornsea One windfarm – the largest offshore windfarm in the world – with analyses performed by NATS (UK National Air Traffic Services).

While many attempts have been made to mitigate the radar clutter of windfarms, Terma's mitigation radar has finally solved this issue and can now deliver a clear and undisturbed radar image while detecting small aircraft passing through wind farm locations.

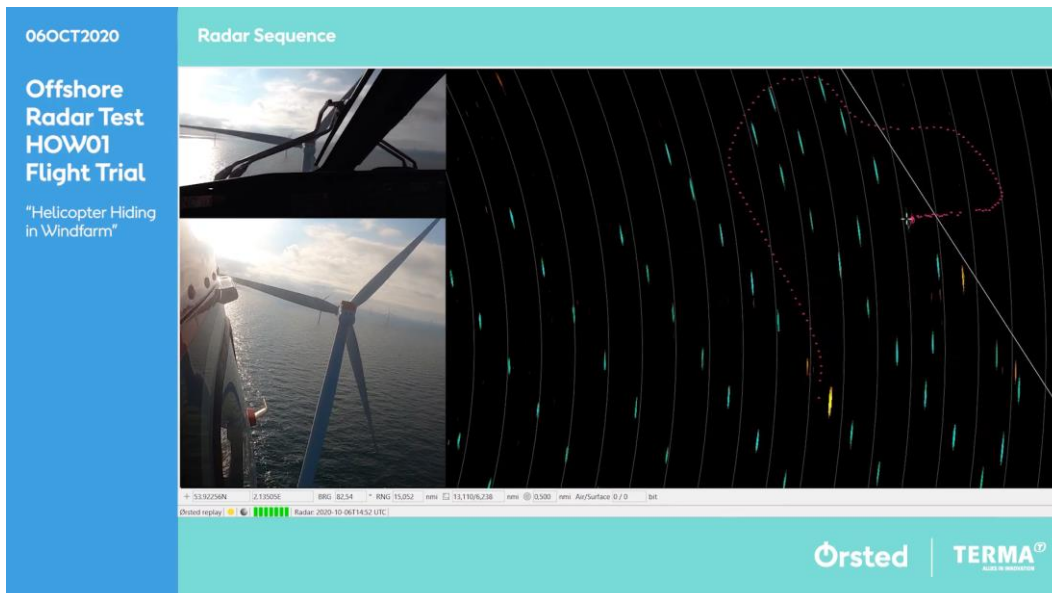
“We tested a large variety of airborne platforms flying within and over the windfarm. Our tests included both light weight and larger aircraft as well as helicopters trying to hide behind the turbines. We even tested the solution with fighter jets flying in

the windfarm, but all aircraft types were easily detected and tracked by the radar system,” Business Developer at Terma, Michael Agergaard Riis explains. In all instances, the test proved very successful, and the radar system was able to detect and track all aircraft movement in the wind farm area while meeting Eurocontrol targets.

Windfarm Radar Clutter Solved with Off-the-Shelf Technology

Although the solution has only now been trialed offshore, Terma’s mitigation technology is not new.

For nearly a decade, Terma has delivered market leading radar solutions to several airports in need of mitigating windfarm interference on their radar screens. In the UK alone, the system is currently in function in seven international airports, including Glasgow Airport, Newcastle Airport, and Southampton Airport.



While Terma’s mitigation technology has solved the clutter problem for onshore wind turbines, only now have the appropriate tests been conducted for the solution to be implemented for offshore windfarms.

The offshore radar solution is similar to the well proven ground-based mitigation system. The system consists of Terma’s high-resolution radars – the SCANTER 4002 radar – and works as an infill radar that covers the cluttered area of the main radar.

By merging the two radar images into one, operators get a clear and clutter-free visual representation of the surrounding land- and seascape, with no aircraft passing undetected.

In other words, offshore windfarms and air surveillance with full situational awareness is no longer a contradiction. With Terma's mitigation technology, windfarms can coexist painlessly with airports' and air defense's need for clear and thorough radar coverage.

With Terma's solution the opportunities within wind power multiplies and takes us a big leap closer to the net-zero targets needed to keep climate change in check.

About Terma

The Denmark based high-tech Terma Group develops products and systems for defense and non-defense security applications; including command and control systems, radar systems, self-protection systems for aircraft, space technology, and aerostructures for the aircraft industry.

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