

**Company details Pliant Offshore**  
Established in 2016 as a spin-off of Pliant  
Number of employees: 5

## Vertical piling in one effort

[Pliant Offshore](#) has developed a measurement system to control vertical piling of monopiles. With movement compensation and without interrupting the process or the disturbing influences of small irregularities on the monopile. The system saves offshore wind farm builders from time-consuming and costly stopovers. The secret is in the 3D-scanner software and especially in the processing and visualization of the data. How industrial automation solutions are useful for the offshore wind industry.

Read the full interview with Alex Heurkens of [Pliant Offshore](#).

### For what problem have you found a solution?

“Monopiles must be perpendicular to prevent a wind turbine in operation from getting unbalanced. To achieve that, piling is a step-by-step process: piling - stopping - measuring - correcting - piling ... Each 2-hour piling operation, is interrupted by measurements half of the time. Standard cameras are not very well equipped for accurate measurement, because they are sensitive to changing weather conditions such as fog and rain. Therefore it is common practice to place a levelling device against the tube. However, a bump in the monopile or a skewed weld can make the determination unreliable.”

### WHAT IS THE CORE OF YOUR SOLUTION?

“We carry out laser measurements from a vessel. With the recurring laser beams, the distance can be determined accurately and reliably. The result is a three-dimensional point cloud. Human beings will see the shape immediately: a hammer, a bucket, a monopile. With our software, we analyze, process and visualize these signals. In addition to a 3D-image, you get insight into the features, the angle relative to other objects, and thus in the



position of the monopile. The software filters out all irrelevant data. In addition, all points are corrected for the movements of the ship.”

### WHAT IS SO PIONEERING ABOUT THE INNOVATION?

“We are specialized in integrating different systems. You can buy the laser scanners and sensor technology from the shelf. For example, our sister company Pliant uses these tools to finetune industrial automation systems in automotive, high tech or horticulture. It's groundbreaking to make this measurement system applicable for the offshore industry: the fact that we can perform highly reliable, remote, stable 3D-measurements, and that we can process the data with smart algorithms into useful models.”

### WHAT ARE THE BENEFITS OF YOUR INNOVATION?

“The operator can monitor the piling process real time. If the monopile is likely to deviate, the operator can correct it on time by modifying the pile gripper. The piling process does not have to be interrupted. This saves a tremendous lot of time and operational costs: if you realize that a pile driving vessel costs 2.5 tons a day, the payback time is quite short.





In addition, production faults or irregularities do not present a direct risk of misplacement. The complete three-dimensional image compensates for small deviations. And because all measurement data are stored, you can provide evidence in case of a conflict about a deviating monopile position afterwards.”

**HOW FAR ARE YOU NOW?**

“We have already passed the pilot phase. Our measurement system is placed on two vessels



of a launching customer a half year ago. This customer is very satisfied with the results. We are now talking to multiple potential customers to install the system on their vessels as well.”

**WHAT ARE THE CHALLENGES?**

We are looking for questions from the market. We are a new kid on the block in a solid market. We must acquire brand recognition. That is why the Offshore Wind Innovators community is important to us. By organizing network meetings, for example, or by inviting you to speak to a relevant audience.”

**WHAT ARE YOUR AMBITIONS**

“At this moment, we are concentrating on monopile and cable measurements. However, our system is suitable for various applications, like installing a rotor blade: knowing where the blade exactly is, is necessary to tilt the crane in such a way the blade is positioned properly. We want to improve continuously to solve all kinds of problems in the offshore wind market.”



**Offshore Wind innovators** 

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