

THE BRIEF

MiChec Engineering is a two-person consultancy team with expertise in practical engineering and mechanical design, offering their customers a varied and high-quality service from concept to management from multiple sectors including aerospace and defence.

MiChec Engineering are providing design, analysis and test consultancy supporting the development of an offshore wind platform mooring system.

The multi-bladder system adapts to the changing sea state whilst remotely collecting valuable data from the tethered platform for the purpose of changing the performance and damping of the system in addition to health monitoring.



THE APPROACH

The industrial digitalisation team at the Virtual Engineering Centre suggested using Internet of Things (IoT) technology, paired with pressure sensors to control and remotely collect data throughout the desired platform.

The VEC's IoT Specialist designed a solution for a demonstrator in the form of a smart digital device which will boast a dashboard to highlight specific data collected from the sensors to carefully and accurately control and monitor. This is ideal for when management teams are working remotely as they can easily access and monitor this data in real-time, reducing delays and preventing any losses of data collection.

The VEC team gave MiChec Engineering the full detailed specifications and details for the proposed demonstrator, enabling them to create and develop a proof of concept in-house which will reduce costs and dependence on external suppliers and companies.

The VEC also made recommendations for how the design and functionality of the device could be further improved in addition to identifying accessible and low-cost off-the-shelf materials and tools for the development stage which could be used for testing and validating prior to expanding and making further investments.

THE BENEFITS

Following the success of the demonstrator roll-out, MiChec Engineering are looking to see how this tool can be introduced and implemented into other environments and remote areas across multiple industries, including maritime which will help them in expanding their offer more widely and across industries and sectors. The MiChec Engineering teams are

interested in exploring UAV's and are now looking to engage with the academic teams within the Digital Innovation Facility at the University of Liverpool, and more specifically engage with the Extreme Environments Lab which hosts a digital testbed for drones and other autonomous systems.



“The collaboration with the VEC provided invaluable expertise and controlled and repeatable development capability. The project successfully developed a control system which could be used for the testing of an intelligent mooring system.

The structure of the work package offered by the VEC allowed us to understand and contribute as the design progressed. We have gained knowledge and support in an area outside of our normal skills set whilst also gaining valuable contacts and potential collaborators for future projects”

- Michael Checkley CEng, Design Engineer, Michec Engineering, www.michec.co.uk