



Enhanced control for wave and water testing

In addition to hardware, Van Halteren Technologies also provides innovative software solutions

MARIN is a world leader when it comes to marine research, and in order to maintain this status it is essential to invest in new and improved technology. The Netherlands-based facility has a wide range of technology built to provide accurate testing environments for the marine industry, and wanted to upgrade some of the control systems to improve performance and efficiency, particularly for the Active Reflection Compensation. VHT was able to provide the ideal solution.

VHT and MARIN have cooperated for around 30 years, with VHT providing the marine research facility with state-of-the-art wave generation systems for the offshore basin and the sea keeping and maneuvering

basin. MARIN was also one of the early investors in electric wave generation technology, which VHT engineered and installed.

In addition to hardware, VHT also provides innovative software solutions. MARIN was looking to improve its Active Reflection Compensation, as this important system can detect when there are disturbances in the waves due to reflections, and compensate for the differences. Effective Active Reflection Compensation ensures that the wave quality remains consistent for a longer period, which means that the test duration can be longer and that test results are as accurate as possible. It is also possible to actively stretch the water between two tests which means the next test can be carried out with minimal delay.

Software knowledge

Thanks to the long-established relationship with MARIN, VHT was already aware of the facility and the existing control technology within. This helped make the process of updating and improving the control systems much smoother, as did VHT's extensive knowledge of technical software.

The control system was outdated, so we implemented a new version with improved performance. Since the first installation of the systems with dedicated electronics, computers have improved dramatically so it was time to utilize this additional capability and update the control system and the Active Reflection Compensation system.

The Active Reflection Compensation system essentially detects the difference between the actual water height and the intended water height, and communicates this with the wave generation system. This, in turn, adjusts to ensure that the difference is compensated for.

As VHT provides both the software and the hardware, everything works seamlessly and effectively.

More accurate research

If there are issues with the wave quality, the problems can be huge. Full size ships can't be tested, so they're

scaled down to fit in the facility. Any variance on a smaller scale is multiplied in the real world, so if you want to be able to accurately predict how a ship will behave, the waves in the test facility need to be of the highest possible quality.

The updates to the Active Reflection Compensation have resulted in a number of benefits for the MARIN facility. The software now ensures a higher quality of wave, which means simulations are more realistic and results are more accurate. This is absolutely essential for marine research facilities, so to be able to more accurately replicate real conditions will make a real, positive difference for the users of the systems in place at MARIN. This improved accuracy also means that any tests done on smaller scales will give more relevant results. MARIN is happy with the upgrade and how the system works.

Challenging environment

There were some challenges during the process, as VHT needed to write and develop the software, and then implement it as quickly as possible to ensure the facility was still available for use in research. However, VHT was able to meet these challenges and implement a solution that really benefits MARIN.

