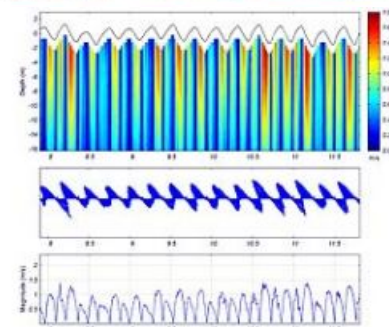


AQUA VISION BV

Preparation, performance and processing



With a background in oceanography, physical geography and electronic engineering, Aqua Vision BV, a small company with its headquarters in Utrecht (the Netherlands), is an all-round player in the fields of hydrography and oceanography. Since its foundation in 1995, the company has grown to become an internationally operating company with customers throughout the world. Among its customers are governmental agencies, research institutes and harbour authorities.

Aqua Vision was founded in 1995 by Peter Meijer and Sicco Kamminga to focus on

current measurements using acoustic Doppler current profilers (ADCPs). In 1996, it became a limited liability company managed and owned by Peter Meijer. Since then, the company has expanded its fields of interest of hydrography and oceanography with project management, software development, product design, and system solutions. The company is constantly searching for technological innovations to fulfil its customer's needs. Over the past years, a team of physical oceanographers, geographers and electronic engineers have joined the company. "Today, the combination of experienced staff, and our ability to timely manage and execute projects with our in-house developed software products guarantees high-quality products and data," explains CEO Peter Meijer.

Project Management

Aqua Vision BV works on challenging projects throughout the world. An example of such a project is 'Strength & Loads Flood Defences' (SBW). This research project, carried out by order of the Dutch Ministry of Transport, Public Works and Water Management (Rijkswaterstaat), assessed trends in wave action on flood defences.

Several bottom frames were equipped with hydrographic instrumentation. The *Coastal Digger* from Acta Marine and the *Terschelling* from Rijkswaterstaat were used to deploy the frames in the Wadden and North Seas. In the storm surge period from November to May, currents and water level were measured. In the meantime, the systems were maintained and batteries replaced. The data were validated, presented and delivered to Rijkswaterstaat.

Co-operation

Aqua Vision works in close co-operation with ADCP manufacturer Teledyne RD Instruments (TRDI) to enlarge the application

range of their ADCPs. In 1999, the ViSea Plume Detection Toolbox (PDT) was introduced on the market, which enables the measurement of real-time suspended sediments during dredge and dump activities and natural sediment behaviour. The company has recently extended its long-term research contract with the German Federal Waterways Engineering and Research Institute (BAW) for the project 'Investigation of sediment dynamics in the Elbe and Weser Rivers'. Part of this contract is yearly returning sediment transport measurements (13 hours) on cross-sections and longitudinal sections in the river Elbe between Hamburg and Cuxhaven. The horizontal (H-)ADCP from TRDI measures the acoustic backscatter on one level across the river. The company's software package ViSea-H Data Acquisition Software (DAS) calculates in real-time the channel discharge by using a 2D flow model. Moreover, the company is currently developing a method to use a H-ADCP in combination with real-time data model assimilation to predict 24/7 sediment fluxes in waterways.

System Integration

Based on many years of experience in the industry, Aqua Vision has gained considerable knowledge on system integration. The in-house developed software and hardware tools secure cost-effective system solutions. Many temporary and permanent hydrographic measuring stations have been composed by Aqua Vision BV. In the Port of Rotterdam, several H-ADCP systems were installed to measure real-time currents. By using general packet radio service, radio modems and/or LAN, the data were transferred to their main office. The ViSea Harbour Control Toolbox handles data acquisition of the different systems. Validation and presentation is performed and the data are made available to the database of the port authorities. These real-time data are used by the pilots and for vessel safety. A similar project will be carried out for the Port of Hamburg. ViSea-H DAS uses a 2D flow model to calculate real-time discharge.

Equipment

Being the representative of several manufacturers of hydrographic and oceanographic equipment, Aqua Vision has managed to establish a large instrument pool, from current profilers, wave systems, single-point instruments such as conductivity-temperature-depth (CTDs) and bottom frames. The company's trailerable survey vessel M/S *Griend* is standard equipped with a high-accuracy differential GPS real-time kinematic system, heading and motion sensors, echosounder, side scan sonar, multi-beam, ADCP, optical backscatter and CTD sensors, and sampling equipment. The vessel is used for inland hydrographic work. A newly built, seaworthy aluminium survey vessel, the M/S *Walrus* will be operational mid-2009. The in-house company service includes repair, training, first line support, maintenance and calibration.

Future Expectations

Aqua Vision has established a strong product portfolio in real-time sediment monitoring worldwide. Nowadays, the majority of European governmental agencies use our Plume Detection Software as their standard software. The company's aim is to make ViSea PDT the gold standard. The investment in in-house software and hardware development is expected to expand the worldwide sale of these products in the future. "Working together with leading manufacturers, such as TRDI, helps us to offer the best, perform the best and to get inspired to use their equipment in such a way no one has ever thought about. Having unique software tools to monitor sediment fluxes will effect the management of waterways and will improve cost-effective dredging", commented Peter Meijer.

Email: j.m...@aquavision.nl