

THREE EXPERTS – AND A COMMON GOAL

Only one thing counts: the best solution

The two Dutch companies Alewijnse and Van Oord together with Bachmann electronic have a lot in common: All three are progressive, independent family-run companies and are some of the best in their sector. They have been working together successfully for nearly ten years. The experts of the three companies know each other well. They also now have a new joint goal in sight: the control of two ships with trailing suction hopper dredgers.



From 2017 two additional ships will be added to the fleet of the Dutch shipping company Van Oord. These are being built by the LaNaval shipyard in Bilbao, Spain: 158 m long, 36 m wide and with a load capacity of around 17,000 m³, these two giants are designed for coastal land reclamation worldwide and for providing pipe and cable routes for offshore installations such as wind farms.

Many participants

The construction of a ship involves tasks and responsibilities over several stages: These kinds of special ships are often tendered by their future owners mostly years before the order is placed. The contract is then awarded to a shipyard which builds the ship as the project manager and implements the owner's requirements. For this the shipyard selects the relevant system suppliers already while the tender is being drawn up and presents this to the shipping company before the contract is awarded. This requires the coordination of dozens of suppliers while the concept is being developed, for which the shipyard ultimately takes overall responsibility – for implementation in line with specifications and for keeping within the budget and the deadline.

Strategic partners

The shipyard is free in all cases to select the systems and subcontractors to be used. However, for the implementation of special sub-functions, particular suppliers that the ship-

ping company wishes to include are already stated in the specifications. For Van Oord, Bachmann is one of this kind of strategic partner. Bachmann has been implementing system solutions on Van Oord's special ships since 2009. At this time the company had evaluated a new control system and found Bachmann's M1 controller to be a system that meets both the processing speed requirements of the process control specialists as well as the hardware requirements of the automation engineers.

Bachmann implemented Van Oord's key requirements, such as the development of special interface cards with galvanically isolated inputs or the porting of existing VMI-based systems. As Theo Poorter, process control engineer in

the ship management department for process control at Van Oord, recounts, the close cooperation started from the very first moment: »I will always remember our first meetings as part of a training seminar

at Bachmann headquarters in Feldkirch. We bombarded the engineers with questions and they answered every one.« One thing particularly impressed him: »If they didn't know something, they were also honest in saying so. But they always returned to the seminar room a few hours later with the relevant specialists and presented the solution,« a smiling Theo Poorter recalls. »This is how we have repeatedly experienced Bachmann over the years: Talks were not lengthy but always straightforward.«

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Theo Poorter
engineer for process control at
Van Oord

Van Oord 
Marine ingenuity

Van Oord is one of the leading companies in the field of dredging, marine engineering and offshore projects (oil, gas and wind). The familyrun company is headquartered in Rotterdam, Netherlands, and has over 5,000 employees worldwide and a fleet of over 100 special ships.

www.vanoord.com



▲ Extremely helpful function in the HMI: Important system details (such as interactive descriptions of the I/O modules) are stored in the SCADA system. This reduces the time required for commissioning or troubleshooting in the event of a malfunction.



▲ Extensive installation: The control system installation on both special ships consisted of 26 switch cabinets in total. The switch cabinets are assembled in Alewijnse's factory and shipped to the shipyard prewired.

Better, faster and cheaper

With the two ships now built it's always the one thing that matters: How can the work carried out with them be completed better, faster and more economically. It must therefore also be possible to further develop applications on these special ships, since the service life of a ship is around 30 years. The trust placed in the selected suppliers and the future security of the systems used here is like a life insurance for staying competitive with this kind of ship over such a long period. The shipyard found Alewijnse to be a system supplier that has a thorough grasp of this business. The Dutch system integrator responsible for the development and construction of electrical equipment on ships has extensive experience in the field of dredgers – and is well acquainted with the Bachmann M1 system through its experience from other applications. »It was therefore also easy for us to meet the shipyard's requirements in terms of the desired use of the Bachmann components,« explains Johan van Rikxoort, product manager for dredging and offshore at Alewijnse. Alewijnse also thinks it has the security needed with regard to the required future investment security: »Bachmann will soon have been in the business for 50 years, the technologies in use are being continually further developed, are always stateofheart, are provided with the necessary certificates for shipbuilding – and will be available for many years to come,« Johan van Rikxoort confirms.

Joint solution for ambitious plan

From the planning stage to the launch of the ship, many years are spent onshore. The system suppliers were nevertheless faced with an ambitious time schedule. »As always,« explains a smiling Elda KavazbasicMulalic, lead engineer and project manager at Alewijnse. »Of prime importance was naturally how the project could be developed and completed better and faster together.« The three companies and all involved already knew each other from other projects and we soon found that we shared one thing in common: »The simple fact that we all have the same goal. This enabled us to find solutions that would not have been possible on our own,« as Johan van Rikxoort adds.

More together

Alewijnse thus not only added particularly useful functions to the specifications »in passing«, but also created a highly efficient redundancy solution that surpassed what was originally intended. »The dredger controller integrates over 2,500 I/Os – a level of integration that shouldn't be underestimated. Any subsequent maintenance work in severe conditions is thus also accordingly difficult,« Elda KavazbasicMulalic outlines one constraint. Wiring plans and other technical information were consequently stored in the operator system for each Alewijnse module, thus considerably simplifying any troubleshooting during operation. new technical solution Each day that a technical



Alewijnse Marine Systems based in Nijmegen, Netherlands, is a complete system supplier and system integrator supplying control solutions and electrical equipment for ships. The familyowned company was founded over 125 years ago and has around 1,300 employees worldwide.

www.alewijnse.com



◀ In Alewijnse's 'Captain's Cabin': Exchange between project partners (from left: Johan van Rikxoort (Alewijnse), Joeri ten Napel (Bachmann electronic), Theo Poorter (Van Oord), Elda Kavazbasic-Mulalic (Alewijnse))

fault prevents this type of ship from operating is tremendously expensive. No wonder that the client placed particular importance on the redundancy solution proposed by Alewijnse and Bachmann, and the required availability, CPU performance, communication speed and fault tolerance ensured by this design. Although this type of solution implemented was new for shipbuilding, »this was not a problem for us,« says Van Oord's representative, Theo Poorter, adding: »We trusted each other that this solution would work and offer us the highest level of performance. There was no need for a contract. When everyone pulls together, any problems are also shared and solved together.«

Same culture, same objective

Alewijnse's Johan van Rikxoort also had the same view: »The corporate culture of our three companies is similar in so many respects. Communication between us is open, we share each other's knowhow – and ultimately also our daily challenges.« In other words, »each party always brings some added value.« He also notes another important point with regard to trust: Transparency. »We know at all times the current development and production status of the system components supplied by Bachmann, and are thus kept in the picture at every step. Furthermore, whenever a decision has to be taken, decision making channels are short and each party feels committed to the agreement made.«

Trust as the key to success

»Never before was a ship built in this way – and neither will one be built like this again. Each subsystem is an individual solution. As there is no series production there is no routine safety system either.« This is how Johan van Rikxoort describes his work environment and the new and unknown challenges that he has to face together with his automation team each day. Taking the entire risk assessment and choice of possible fallback solutions into consideration, however, one thing counts for him above all: »You must trust your experience – and that of your partners.« Or as he otherwise puts it: »Find someone who is in the same boat as you and everything is possible.«

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Johan van Rikxoort
Product manager for dredging and offshore
at Alewijnse

