â€˜Silentâ€™ Research Vessel Delivered

Damen Shipyards Group, The Netherlands, has delivered the Research Vessel (RV 3609) Simon Stevin to its Belgian client DAB Vloot, the Flemish governmental fleet operator. The RV 3609 was jointly designed by Damen Shipyards Gorinchem and VLIZ, the Flemish Institute for the Sea.

The *Simon Stevin* will be used offshore for scientific research on climate change, sustainable fishing, energy production at sea and for educational purposes. While hull and hot works were built at Damen Shipyards Galati (Romania), the outfitting was done by Maaskant Shipyards Stellendam (The Netherlands). This Damen yard installed all high-tech research and fishing equipment.

The Flemish multidisciplinary research programmes that are undertaken by VLIZ, Belgian universities and other scientific institutions all needed a modern research platform in the North Sea for studies in oceanography, fishing, marine biology, microbiology, chemistry and archaeology. With the *Simon Stevin,* this platform has now been realised. Its name refers to the influential Flemish mathematician and engineer Simon Stevin (1548-1620) who designed and executed many civil works related to water technology and marine engineering.

The ship had to comply with extensive and rigorous requirements both in terms of its footprint and fishing gear. Therefore, the design and layout of the vessel is optimised to have very low underwater noise levels and be able to sail in ‘silent mode’. The silent mode complies to the ICES Standard 209 (International Council for Exploration of the Seas), a standard that limits Underwater Radiated Noise. The Damen RV 3609 is the smallest vessel in the world that complies with these strict requirements.

The scientists and researchers have both a ‘dry’ and a ‘wet’ laboratory at their disposal on the main deck. On the forecastle deck there’s a survey room (containing the servers and most computers) for data analysis. When the net drum is dismantled, the aft deck offers room for additional containerised laboratories.

Its basic characteristics are a tiltable A-frame on the aft deck, a number of winches for hydrographical survey work, soil sampling and fishing, two laboratories, a 200kW bow thruster, a Dynamic Positioning (DP) system, and a free deck space of 45m² allowing space for two containers. Underneath the vessel (and integrated in its keel) a ‘blister’ is installed, i.e. a pod containing a multi-beam echo sounder and other equipment for 3D-imaging of the sea bed.

A set of purpose-built fishing winches, uniquely installed below-deck, allow the RV 3609 to apply several fishing methods. For pelagic fishing, a Maaskant low-noise and dismountable electrical net drum has been designed and installed for the 8-metre-wide beam trawler. The layout of the top deck enables (visual) research on and counting of birds and aquatic mammals.

The two fishing winches, the net drum and the double anchor mooring winch are designed and built by Maaskant Stellendam. In addition, the vessel contains an auxiliary winch to support the second A-frame on starboard side and a double-drum electrical, oceanographic CTD-winch (Conductivity, Temperature, Depth). These are used for lowering research equipment, e.g. a computer-guided CTD-carousel for taking water samples.

The *Simon Stevin* has (sleeping) accommodation, incl. a separate mess room, for 10 crew and 10 scientists when going on multi-day missions. For day-trips the vessels can take up to 30 persons onboard.

The Damen RV 3609 is propelled by two 520kW electric motors, which are flexibly mounted to reduce subsea noise levels. Three generator sets supply the electricity for the propulsion system, the winches and other electrical equipment. Up to 9.5 knots the *Simon Stevin* is able to sail in ‘silent mode’; her maximum speed is 12 knots. The bowthruster, part of the vessel’s DP-arrangement, ensures good manoeuvrability in ports and when performing diving operations.