ROVs, AUVs to Make Way for E-Robotics

Electric robotic systems will perform all tasks in the underwater domain, including those now undertaken by hydraulic systems, says Saab SeaEye. They see a future where ROVs and AUVs in their present form will cease to exist and are replaced by transformative e-robotics that can roam, hover, reside and perform all underwater tasks.

It is a future where task resolution is key, not class of vehicle, says the company. Such tasks will include the heaviest in the subsea industry, tasks that electric systems and tools on the market today cannot yet undertake, but where the company sees rapidly advancing technology, innovative design and operational methods opening up an all-electric underwater world.

This will bring further savings, says Director Matt Bates. An all-electric robotic system is up to 50 percent more efficient and typically has double the power density of an electrohydraulic system. Rapid advances in miniaturization are creating electric robotic systems that are smaller, lighter, smarter, more agile and more powerful. Electric actuators and tools have the added benefit of a simplified, reliable interface that, when complemented with an internal processor and suitable microsensors, extracts valuable data, enhances control options and increases total system reliability through continuous internal monitoring. The data can assist with preemptive maintenance planning and allow for more remote long-term deployment underwater.

Bates points to the Leopard work vehicle as an example; compared to a 60-ton hydraulic equivalent, the Leopard’s 30-ton complete package has a much smaller footprint, faster mobilization time, lower maintenance costs, and needs fewer staff at the work site.

Launch of Payloads For exactView RT

exactEarth Ltd. announced the successful launch of four hosted payloads for its next-generation constellation, exactView RT powered by Harris. Launched aboard an Iridium NEXT satellite on SpaceX’s Falcon 9 rocket from Vandenberg Air Force Base in California, these hosted maritime payloads are now being commissioned and are expected to be brought into service within the next few months. The exactView RT system is the result of the agreement signed with Harris Corp. in June 2015 under which Harris deploys and operates the hosted payloads and exactEarth performs the ground-based data processing and has exclusive distribution rights for the data for all markets, except the U.S. government.

exactView RT will offer for the first time a continuous, global real-time ship tracking capability and will consist of more than 60 payloads (including in-orbit spares) aboard the Iridium NEXT constellation, which is scheduled for completion in 2018.

PBES Achieves Cycle Life Milestone

PBES Norway AS achieved a historic milestone of greater than 15,000 discharge cycles in their high-power energy storage system at 80 percent depth of discharge maintaining 80 percent state of health. PBES energy storage systems are designed to power hybrid and full electric industrial applications and are suitable for ferries, offshore supply vessels, wind farm support vessels, tugboats, port equipment and superyachts.

Innovation Garage for IT Solutions for Shipping

Dualog is launching a company that aims to change the way software providers deliver IT solutions to the global shipping industry. Known as Innovation Garage, the new entity will deliver the highly innovative products and solutions that tomorrow’s shipping industry will need. Working alongside Dualog’s existing research and development teams, Innovation Garage will interface with customers and the industry to drive software thinking to new levels. Innovation Garage will follow the HP “rules of the garage”—sharing tools and ideas without politics or bureaucracy, where radical ideas are not bad ideas, the company said.

Shipping is demanding more data and more analysis, and the shipping industry is undergoing a green shift that must be controlled and managed. Dualog wants to help the industry develop ships into integrated sailing offices.

AUV, ROV, Diver Functionality on Fusion

Strategic Robotic Systems’ Fusion underwater vehicle combines AUV and ROV capabilities with diver navigation and propulsion into just one system, using Nortek’s DVL. The higher frequency for increased accuracy aids the Fusion’s automated control and navigation system. The added dedicated altimeter provides more accurate altitude for better terrain following.

The Fusion has an in-line transducer arrangement that Nortek helped design. The vehicle is a hybrid that has extended capability in all modes and is the only system on the market that combines AUV, ROV and diver functionality, Strategic Robotic Systems said. Sensors include a multibeam forward-looking sonar, side scan sonar, USBL and AHRS.

Microwave Radiometer, Floating Lidar Combo

AXYS Technologies Inc. (AXYS) announced that design work with Boulder Environmental Sciences & Technology (BEST) is underway to deploy the world’s first buoy-based microwave profiling radiometer on a floating platform, the FLiDAR WindSentinel.

Funded by the U.S. Department of Energy, the BEST Marine Profiling Radiometer (MPR) is the world’s first microwave profiling radiometer specifically designed for deployment on a buoy. Once completed, the system will enable users to measure vertical profiles of temperature and humidity within the atmospheric boundary layer and up to 10 km above the floating platform, in addition to wind profiles up to 200 m provided by the lidar. A microwave radiometer provides the most economical (with respect to cost, power requirements, instrument size) measurements of temperature and humidity profiles. These measurements will improve weather forecasting and lead to better site evaluation and energy production, while optimizing the efficiency of existing wind farms. The data will lead to an improved understanding of the interaction and physics of the ocean and atmosphere.