

Acquisition of autonomous surface vehicle

C&C Technologies is in the final stages of preparing for its first demonstration of the Autonomous Surface Vehicle (ASV). As autonomy is growing in popularity in the aerial survey industry, it is just a few more months before the hype starts to grow in autonomous hydrographic surveying. As part of the project the company



will be mobilising a full multibeam system on-board and showing the full solution off at Hydro2015. Soon thereafter the company will be inviting customers to spend some time at Zeekoeivlei to test out this solution for themselves. The use of this ASV will mainly be focussed on harbours, rivers, lakes and dams. One of the main benefits of the system is its mobility, allowing users to access areas that have not yet been surveyed due to natural or safety reasons. Another important benefit is the reduction in operation costs as the need for a boat and crew are removed. The company's ASV will be used for demonstrations for potential purchases and customer rentals for short-term projects. C&C is also open to discussing various mobilisation options to meet user project requirements.

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Lightweight lidar for UAVs

SBG Systems joined YellowScan to present a light lidar solution at the InterGEO trade show in Stuttgart, Germany. YellowScan is a lightweight lidar solution for fixed or rotary wings UAVs that is efficient and easy-to-use. The company embedded an Ellipse-E, a miniature inertial navigation system, from SBG Systems, which helps users obtain a clear and accurate point cloud. The YellowScan ready-to-use lidar is operational at up to 75 m, and delivers a dense point cloud accurate to 10 to 15 cm. The lidar has a $\pm 50^\circ$ angle that measures 40 000 points per second, an inertial navigation system coupled with a cm-level RTK GPS, an on-board computer, and an integrated battery. The UAV market is continuously growing, especially for professional applications like 3D surveying. Developed for this application, it can be mounted on rotor or fixed-wings UAVs. To finely adjust the lidar, the research and development team has been working closely with researcher and professionals in several industries such as construction, surveying, mining, and the study of forest and rivers. This has led to the comprehensive, high performance, and easy-to-use lidar.



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3D grade control attachment

Trimble has introduced a 3D grade control solution for Bobcat all-wheel steer loaders, compact track loaders and skid-steer loaders. The GCS900 grade control system for Bobcat grader attachments allows small contractors to work faster and more effectively on complex projects that require digital designs and 3D machine control. Large contractors can also benefit by using 3D machine control to complete the finish phase of projects more affordably and accurately with their Bobcat



machines. Using digital 3D models prepared in Trimble's Business Center – HCE office software, the grade control system is well-suited for footpaths, parking lots and sidewalks. Part of the portfolio of Trimble Connected Site solutions, the system includes the ability to wirelessly sync files to the machine, track assets and site productivity, and receive remote support or training. The 3D system is available as an upgrade from the 2D laser-guided and sonic/slope systems already offered by Bobcat, so customers can leverage their initial investment in grade control.

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High-accuracy data collection with mobile devices

Trimble introduced the R2 GNSS receiver, a receiver that works with the company's handheld devices and iOS, Android or Window mobile handhelds, smartphones and tablets using Bluetooth or USB connectivity. When paired with a mobile device, the receiver adds professional-grade Global Navigation Satellite System (GNSS) capabilities to enable high-accuracy data collection. The rugged and simple-to-configure receiver provides GIS and survey professionals with the flexibility to choose the mobile device, workflows and accuracy they need based on their application. The Trimble R2 GNSS receiver is compact and portable, weighing 1,08 kg. With one button operation and field swappable battery, the receiver can be pole or vehicle mounted or carried on a backpack. The multi-constellation receiver supports GPS, GLONASS, Galileo, BeiDou and QZSS satellite signals as well as Satellite Based Augmentation Systems. With a variety of standard and optional correction capabilities, the Trimble R2 can achieve sub-metre to centimetre positioning for a broad range of accuracy requirements.



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