

Trimble SCS900 Hydrographic extensions

Users of Trimble Construction SCS900 software became able to easily measure water depth and execute accurate small-scale hydrographic surveys using their existing equipment. Ohmex Ltd made use of the SCS900 Software Developers Kit (SDK) to produce a software utility that runs on the controller and supplies depth data to SCS900. This increment in functionality further enhances the use of the SCS900 system on marine construction sites where dams or waterways are present.



The concept of the Sonar extension to SCS900 was to enable the construction user to execute simple Hydrographic surveys using their SCS900 software together with existing positioning equipment, no need to learn another package or convert to new reporting facilities, the sonar effectively behaves as an extension to the existing survey detail pole for measuring water depth. The software is an inter-application package with both the SCS900 and SonarMite applications running concurrently on a TSC, Tablet or PC platform. For evaluation purposes the SonarMite application has a 'Simulation' mode that generates sine wave data without the need for a SonarLite echo sounder to be connected.

Background

Trimble SCS900 Site Controller Software calculates position data in conjunction with Trimble GNSS and Total Station solutions in a construction environment. Developed by Trimble the SCS900 Extension SDK (software developers kit) enabled software engineers to link third party sensors to the existing position data. The first system integrator to apply this link was Ohmex Instruments, a manufacturer of portable shallow water echo sounders for water depth measurement.

The SonarMite complements SCS900 by providing easy-to-use functionality for measuring water depth. Users no longer need to be a trained hydrographic surveyor to carry out this type of work, as the operator would be familiar with SCS900 and would simply add the echo sounder into the process. Users can leverage their existing Trimble SCS900 software and positioning equipment, with no need to learn another software package or convert to new reporting facilities. Since the SCS900 supports both Precision GPS and Robotic Total Stations, this system can be used in both open areas and in GPS-limited areas such as under bridges.



Version History

- 2006 SCS900 v2.5?? The Ohmex software modified to link with the external dll using PDA
- 2007 SCS900 v2.8?? PC/Tablet version created to support the Yuma
- 2008 SCS900 v2.85? Both versions updated to auto detect available com ports
- 2009 SCS900 v2.9?? Both versions updated to include QA selection facilities for turbid water conditions.
- 2010 SCS900 v3.??? Support for external DLL mysteriously dropped in new release
- 2015 SCS900 v3.5?? External DLL link restored, Ohmex software update for Windows Mobile 6.??
- 2015 SCS900 v3.500 Initial testing of updated software by RCI marine
- 2016 SCS900 v3.5?? Ohmex PC/Tablet software updated for Windows 10 and TCP/IP connection.
- 2016 SCS900 v3.52? Trimble Dimensions product release

Beta testing and testimonial

“Hurray, Trimble’s latest release brought back connection to the Ohmex Sonarmite. I’ve been a user of Trimble SCS900 Heavy Civil survey software on our GPS RTK and Robotic Total Station since 2009. In 2011 we purchased a Sonarmite for hydrographic work. These two systems make Hydro work a breeze especially for the smaller contractor or developer such as myself. As soon as I got the new update loaded on my Trimble Yuma tablet, I was able to complete a 20 acre hydrographic survey of our Steelpointe Harbor project in Bridgeport CT, in one day.”



The great thing about this system is that post processing is minimal, I had contours and a surface model ready in less than 1 hour of post processing in Trimble Business Center, to clean up outliers, and since the data from SCS900 can be exported directly to a DXF file I can go directly to Autocad for the same post processing. The Sonarmite advantage is having all topo shots immediately in survey coordinates both Horizontal and Vertical, no longer do we need to set up a tide gauge board and adjust all the sounding data to the “story board”. Set up is simple and once the Sonarmite is connected to tablet everything else is automatic, I just take shots, set boundary lines, etc same as if I was on land.



I have used the Sonarmite at our Steelpointe CT project, a 50 acre mixed use retail, residential, office development including a 200 slip marina, our Miami Beach Marina facility and our Boston Yacht Haven facility. One of the best features of both Ohmex and Trimble is their support. When I had some trouble in Boston with low QA signal due to local grass and bottom silt conditions Ohmex

responded immediately and provided a software update that allowed a wider range of QA (signal strength) to be accepted, so that soundings would be registered by the Trimble system.



The flexibility to use the system from our larger service vessels such as our 26 foot powered barge in photos or my personal 10 foot dinghy makes this a great system for our company. I have even used a borrowed 8 foot pram to get into some areas with pilings too close for the marina's 17 foot utility boat to fit into, and since the Bluetooth connection to the Trimble is so strong I only had to take the Sonarmite with the GPS on top in the pram, my helper recorded the shots on the Tablet when I got into position. That would have been a great 'YouTube' moment as I was paddling and bailing the leaky pram at same time, glad no one thought of that! I have even carried the system by hand to get shots immediately next to bulkheads so much faster then using a sounding lead and adjusting a topo shot from top of bulkhead. I can strongly recommend the Sonarmite and Trimble SCS900 combination as an economical and efficient Hydrographic tool."

***Mark C Summers, Project Manager
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