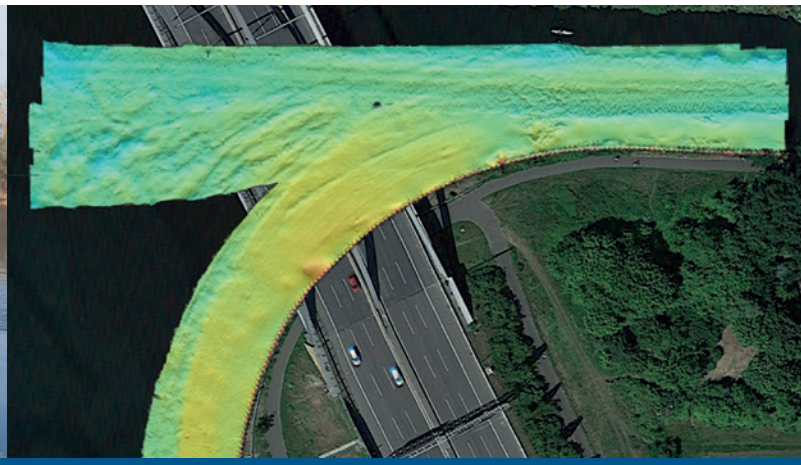
SUCCESS STORY



High Accuracy Survey under Bridges

The vessel «Spreegrund», property of WSA Berlin, has been equipped by MacArtney Germany with state-of-the-art equipment including the Apogee-E, the highest accuracy inertial navigation system from SBG. One of the main goals was to obtain very good results when surveying under bridges.

CLIENT
WSA Berlin

APPLICATION
Hydrography/Charting

PRODUCT
Apogee-E Inertial Navigation System

PROJECT
Multibeam echo sounder stabilization and data georeferencing

The catamaran survey vessel named «Spreegrund» serves as survey vessel on German lakes, adjacent canals, and rivers (Berlin, Brandenburg, Eberswalde, and Lauenburg). It carries out complete surveys at speeds of up to 6 knots and water depths down to 20 meters.

STATE-OF-THE-ART HYDROGRAPHIC EQUIPMENT

The onboard equipment features the first Teledyne RESON T20-P TripleHead multibeam echo sounder providing an excellent swath coverage even in very shallow water environments such as rivers and canals. This set up allows users to survey large areas in a short time. Additional sensors include a Teledyne ODOM CV 100 single beam echo sounder, a Teledyne RDI Navigator DVL and a Valeport SWiFT as well as a Valeport Ultra SV sound velocity sensor. Besides this, the SBG Apogee-E inertial navigation system has been supplied together with two ObeLx-R GNSS heading receivers (Septentrio boards inside) which enable good position acquisition even under poor GNSS environments, e.g. under bridges. The ObeLx-R receivers, manufactured by MacArtney Germany, and the DVL are connected to the inertial navigation system to get stable position data. The data acquisition software QINSy stores and visualises all information.

The onboard control system and software work to ensure optimal data acquisition from the survey sensor suite. It is capable of handling enormous data stream of up to 25,000 soundings per second.

« We needed the highest accuracy INS to maintain the high precision of the rest of the advanced equipment »

Alexander Schmidt, Technical Sales Manager at MacArtney Germany

SBG SYSTEMS

SUCCESS STORY - Charting under bridges

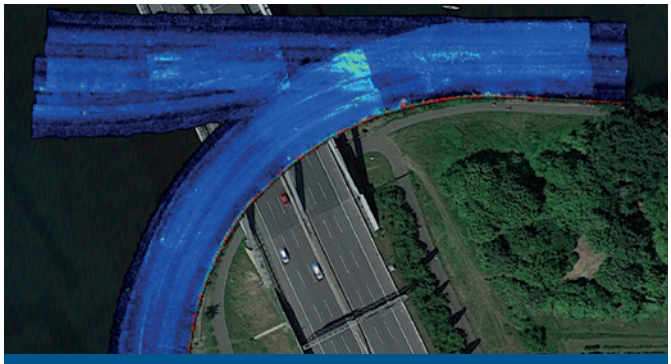
CHARTING UNDER BRIDGES WITH THE APOGEE INS

Surveying under bridges is a challenging application that fully requires the fusion between inertial and GNSS data. Indeed, GNSS receivers are perturbed when vessels are crossing bridges and may cause outages or incorrect data. In the case of WSA Berlin, this is a day-to-day challenge, explaining why MacArtney chose an Apogee-E inertial navigation system connected with their own Dual-antenna GNSS receiver (Septentrio inside). “We needed the highest accuracy INS to maintain the very high precision of the overall equipment,” states Alexander Schmidt from MacArtney Germany.

Google Map

COMBINATION OF INERTIAL, GNSS, AND DVL DATA

The Apogee-E is the highest accuracy inertial navigation system from SBG. It provides outstanding roll, pitch and heave data and is the only INS of its category to fuse in real-time inertial data with an external DVL and two GNSS receivers. Data are fused to generate outputs for motion compensation and georeferencing. “ DVL input in the Apogee-E is a big advantage. It helps for real-time GNSS outages, especially under bridges.” adds Alexander. When GNSS outages occur, the Apogee-E is able to maintain the position in real-time. Its performance is even better when aided by a DVL. The INS integrates velocity data to the internal algorithm to reduce the inner drift of the IMU . “We obtained excellent results with the Apogee-E, the images speak for themselves” to conclude Alexander Schmidt, Technical Sales Manager .

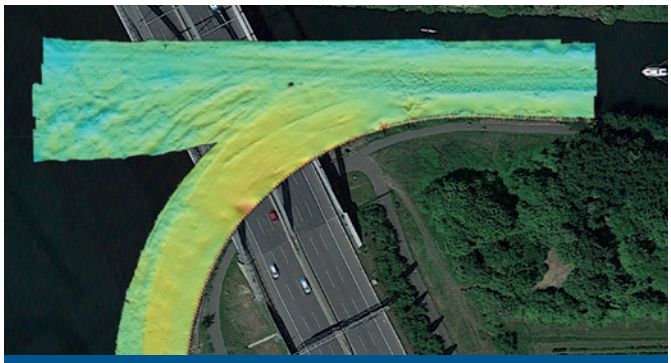


Overlapling: 95% Confidence

AUTHOR
Hélène LEPLOMB from SBG Systems
September 2017

“DVL input in the Apogee-E is a big benefit. It helps for real-time GNSS outages, especially under bridges.”

Alexander Schmidt



Seafloor

APOGEE-E KEY FEATURES

- 0.008° Roll & Pitch
- Up to 0.025° GNSS Heading using two antennas
- 5 cm Heave, 2.5 cm Delayed Heave
- Post-processing
- Compact and cost-effective solution
- GNSS & DVL aided

ABOUT MACARTNEY GERMANY

MacArtney Germany – MacArtney Group is a sales and consulting company for marine and underwater technology. We focus on the sales, integration, training and service of oceanographic, hydrographic and geophysical sensors and systems. Further, MacArtney Germany has its own calibration and maintenance facility for oceanographic instrumentation.

MacArtney Germany is a competent partner for all technical measurements in the deep ocean, the coastal zone, estuaries as well as rivers and lakes.

MORE INFO: https://www.macartney.de

SBG SYSTEMS
www.sbg-systems.com

SBG Systems EMEA (Headquarters)
Phone: +33 1 80 88 45 00
E-mail: sales@sbg-systems.com

SBG Systems North America
Phone: +1 (657) 845-1771
E-mail: sales.usa@sbg-systems.com