

Application Note

KONGSBERG GEOACOUSTICS GeoSwath Plus on Hydroid Remus 100 AUV



KONGSBERG

Surveying Buzzards Bay, Massachusetts, USA

GeoSwath Plus

The *GeoSwath Plus* swath sonar system offers very efficient simultaneous swath bathymetry and side scan seabed mapping with accuracies that exceed the IHO standards for hydrographic surveys. The applied phase measuring bathymetric sonar technology has an insonification angle of 240° , providing seafloor coverage beyond 12 times the water depth or fly height. Its low power consumption and intrinsic technological advantages make it an ideal payload multibeam system for AUV applications.

Remus 100

Hydroid REMUS 100 is a compact, light-weight AUV, designed for operation in coastal environments up to 100 meters in depth. It is the cornerstone of the coastal AUV market, with thousands of missions, and tens of thousands of mission hours to its credit.

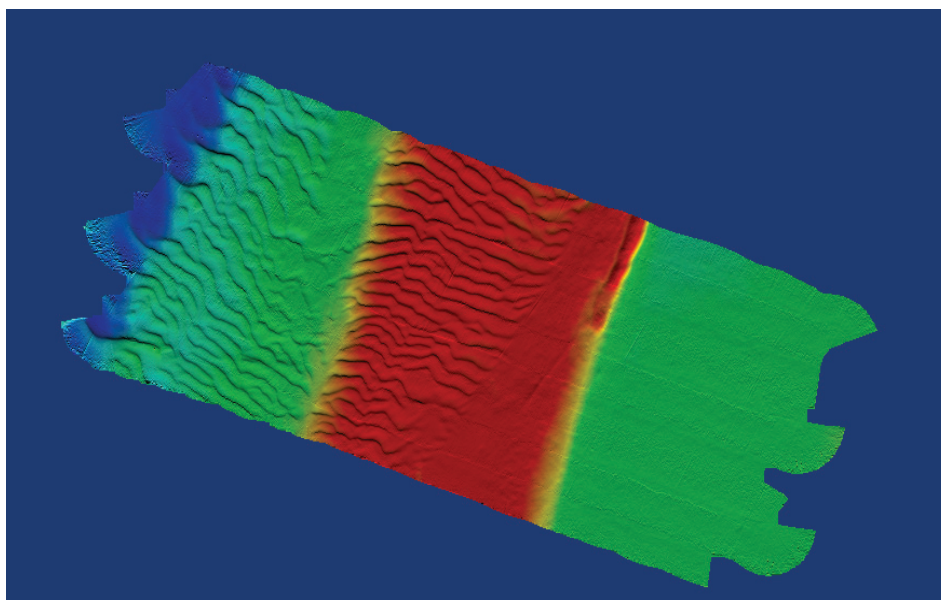


Hydroid Remus 100 with GeoSwath Plus module.

Integration

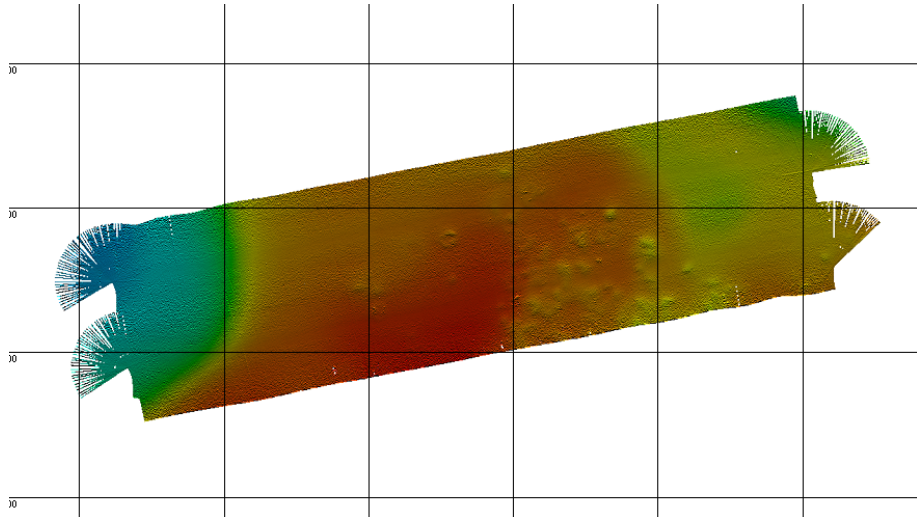
GeoAcoustics Ltd. and Hydroid Inc. have recently joined Kongsberg Maritime. This integration project combines the most successful phase measuring bathymetric sonar with the most successful man portable small AUV.

Through linking these advanced technologies Kongsberg Maritime continues to bring the full subsea picture into sharper focus.



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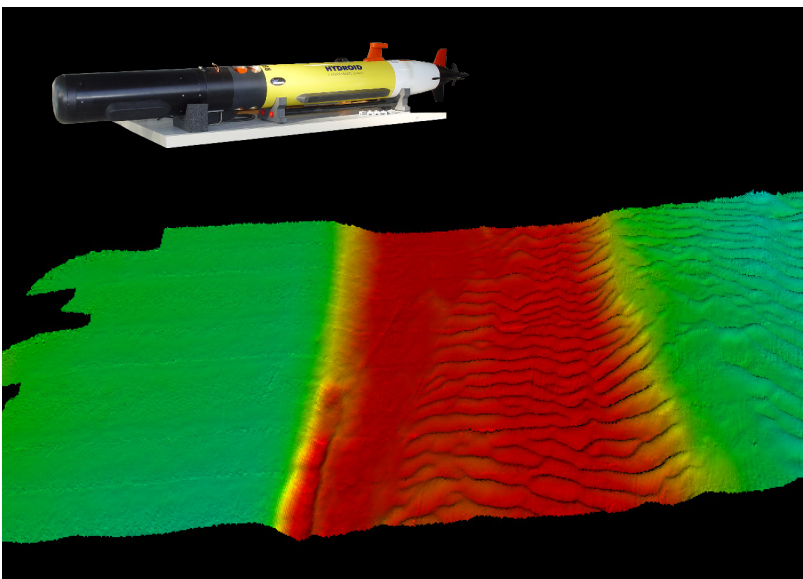
In late 2009 a 500kHz Geowath Plus (GS+) was deployed on a Remus 100 for a survey of Buzzards Bay, Massachusetts, USA. The AUV was also equipped with a full navigation package including a Kearfott T16 Inertial navigation System aided by an RDL Doppler Velocity Log. This configuration allows the man-portable Remus 100 to collect high resolution, high accuracy co-registered bathymetry and side scan survey data. Two surveys were carried out, four lines 500 m long for system calibration in Megansett Harbour and eight lines 700 m long for a survey trial in the bay, with the lines running across the shipping channel leading to Cape Cod Canal. Lines



were run at 3 m constant depth and the bathymetry data was processed in the GS+ software using an 80 m swath width. The excellent quality of the navigation and depth mapping was demonstrated in the survey results, with clear definition of a 40 cm high 10 m period sand wave field in the shipping channel.

Features

- Ultra high resolution swath bathymetry
- Co-registered geo-referenced side scan
- Frequency 500 kHz
- Up to 12 times fly height coverage
- Compact and light weight module
- Low power consumption (50 W full operation, 20 W standby)
- Easy interfacing using Ethernet and Serial communications
- Full software solution included: data acquisition, processing, presentation
- Interfaces to all customary peripheral sensors
- Interfaces to all customary software packages



KONGSBERG GEOACOUSTICS LTD is engaged in continuous development of its products, and reserves the right to alter the specifications without further notice

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