



AUV Services

CIRS AUVs can operate up to 500 m depth. Our vehicles have been specially designed for high accuracy optical and sonar mapping. They are equipped with advanced navigation sensors able to provide a navigation error below 1% of the trajectory. Absolute georeferencing of the survey is done with the help of USBL navigation systems. Our AUVs can collect side scan sonar imagery, multibeam bathymetry data, high accuracy multibeam imaging sonar data and optical stereo imagery. With these data, and our expertise, we generate sub-meter resolution bathymetric maps and millimetre resolution 2D, 2.5D and 3D photomosaics. We can also produce sonar mosaics of the seafloor in areas where the low visibility makes optical surveys impossible. A payload volume of 35 litres is available to include new sensors for your own application.

Engineering Services

Our more than 15 years of experience in marine robotics engineering is available to companies, technological centers and research institutions to help in their own projects and needs. Our expertise includes design and fabrication of mechatronic systems, pressure housings, electronics and the development of software for custom applications.



CIRS underwater robotics

CIRS is the Underwater Robotics Research Center of the University of Girona located in its Scientific and Technological Park. We are a leader team in the research and development of Autonomous Underwater Vehicles for accurate seafloor mapping and light intervention. With more than 15 years of experience, CIRS offers its research, engineering and field operations experience to companies and institutions.



CIRS

underwater vision and robotics

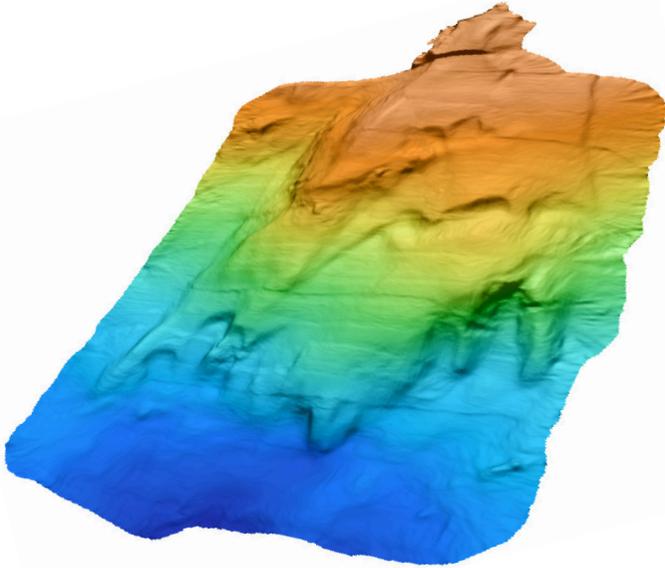
Pic de Peguera, 13
Parc Científic i Tecnològic de
la Universitat de Girona
17003 Girona, Spain

Tel: +34 972 418905
<http://cirs.udg.edu>
email: info@cirs.udg.edu



CIRS Capabilities

High accuracy mapping and autonomous light intervention



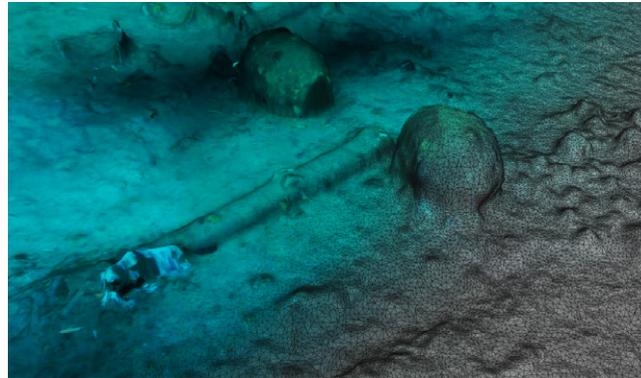
2.5D Bathymetry Mapping

Our AUVs can produce submeter resolution bathymetric maps by surveying at low altitude with respect to the seafloor. This example shows a 1m grid cell bathymetry obtained from a 15 m altitude survey performed at about 320 m depth at the north basin of the underwater caldera in Santorini Island (*Eurofleets 2012 Caldera cruise*).



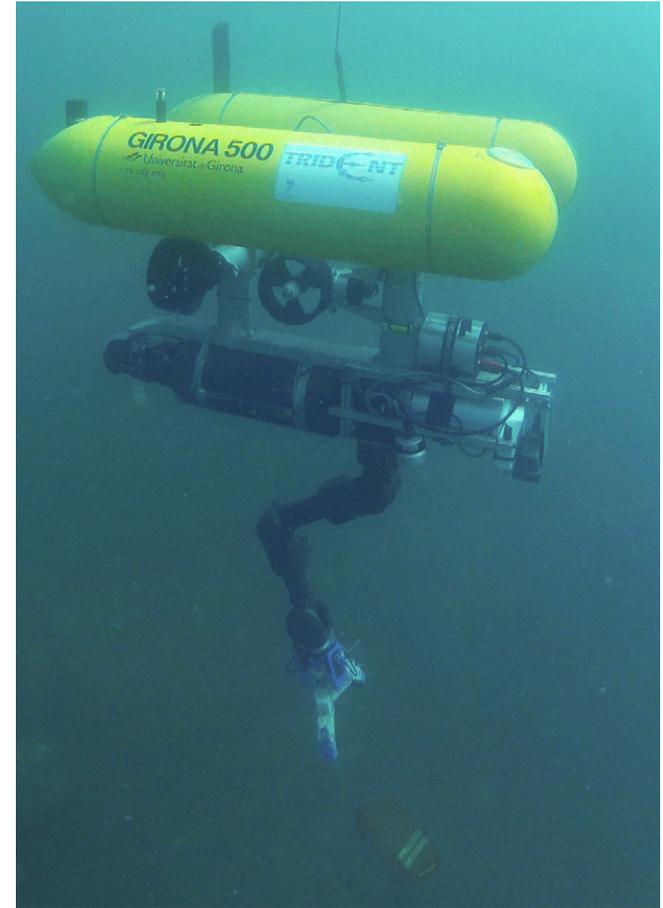
2D Photomosaics

Seafloor orthophotomosaics provide an accurate high resolution view of surveyed areas. See for example this mosaic of the La Lune XVII century shipwreck where cannons and debris are easily identifiable.



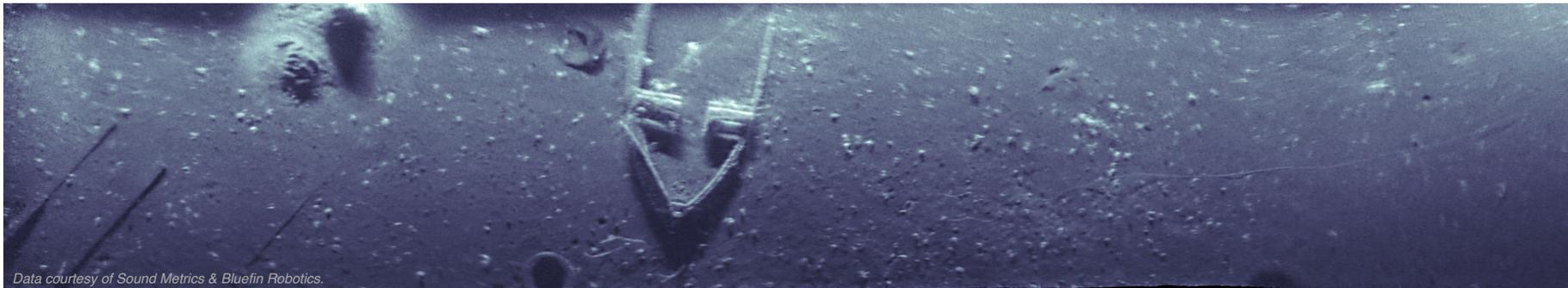
3D Optical Mapping

Using our custom built 2 x 21Mp stereo pair, we can build millimeter resolution 3D mosaics.



Light Intervention

Autonomous intervention is one of the more promising trends in underwater robotics research. As part of the TRIDENT FP7 project, our GIRONA 500, has been configured to be the world's lightest intervention AUV.



Data courtesy of Sound Metrics & Bluefin Robotics.

2D Sonar Mosaicing

No visibility? No problem. Our vehicles are equipped with the most advanced multibeam imaging sonars and our processing software can build seafloor sonar mosaics of outstanding resolution.