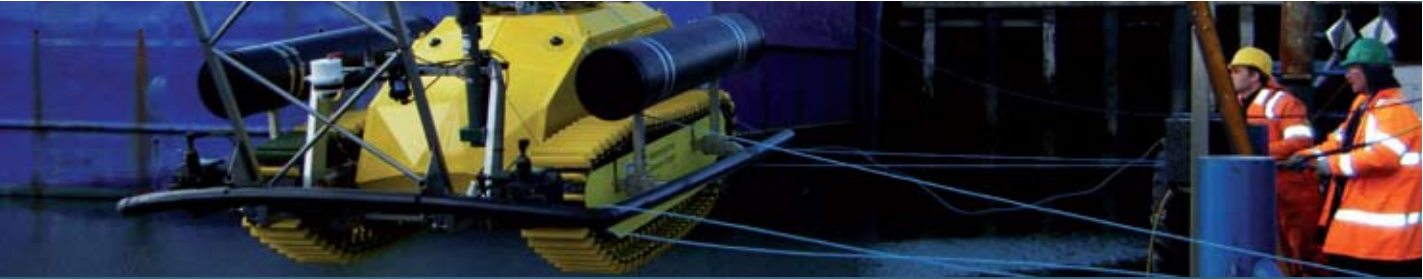




Power Cable Monitoring Services



The perfect device for all shallow water operations where typical ROV operations are either difficult or impossible

Fugro's ROC.si - Remotely Operated Crawler for subsea inspection or Crawler - is a unique vehicle designed to locate, track and perform inspections of submarine cables, pipelines and other structures - whether exposed or buried. The ROC.si operates on both dry land and underwater, and can work in water depths to 200 metres. This versatility makes the ROC.si the perfect vehicle for all shallow water operations where conventional ROV deployment is at its limits.

A dynamic remote sensing platform, the ROC.si (pronounced "rock-see") is equipped with, but not limited to, a sonar, cameras for visual inspection and video recording, and a cable tracking system that can detect cables buried to several metres. The Crawler can follow cables automatically, constantly collecting depth-data, burial status and video imagery. This automatic tracking of buried cables by the ROC.si has been carried out in numerous shallow-water locations where the use of a conventional ROV was impossible due to the strong currents.



Deployment ROC.si

The Crawler in the Irish Sea

The one of a kind, custom-built Crawler successfully carried out two wind farm connector cable inspections in the Irish Sea during the summer of 2010. The positioning and burial-depth data of the power connector cables extending from the shoreline to the Burbo Bank and Barrow Offshore wind farms, each extending about 25 kilometers offshore, was collected and evaluated in each case.

Electrical connector cable inspections are essential for the safe and continuous operation of wind farms. The difficulty with many such inspections is that waters can be very shallow for several kilometers, and in effect require an amphibious robot like the ROC.si to conduct the work. In addition, with cable burial up to four metres, special sensors are required for tracking the cable, determining its burial depth, and recording its position and water depth.



The Meridian is the ideal vessel for the Crawler

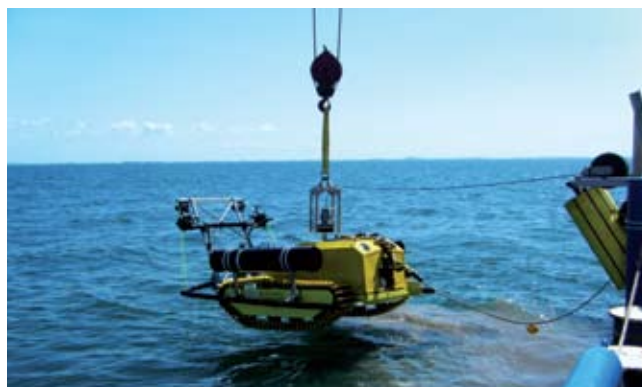


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In all, 53 kilometers of cable were inspected, about half of which would have been virtually impossible with any other vehicle. The ROC.si was equipped with a passive cable tracking system, a profiler, an altimeter / bathymetric recording system, an obstacle avoidance sonar, and three cameras. The vehicle was also fitted with either a GPS receiver for positioning during surface and shallow water operations or a USBL beacon when fully submerged.

Strong currents and tidal influences pose very few problems for the ROC.si but are prohibitive elements for the standard ROV suspended in the water. This fact is confirmed by the following comment from the Client: *“The project would have taken months and months if we had used a conventional ROV, but with the Crawler it was fairly straightforward. We look forward to using it again on our next project.”*

For more details and photos on this project, please visit our website or contact us at info@fosae.de.



Technical Specifications

Vehicle			
Total weight in air	1300 kg	Outer diameter	17.9 mm
Weight in water	800 kg	Weight	439 g / m
Max. operational depth	200 m	Overcoat material	Polyurethane
Max. operational speed	3 knots	Tensile force	min. 12000 N
Tracks Footprint	1m ²	Min. bend radius	200 mm
Length	3.3 m	Ethernet comm.	100Base-FX Single Mode
Width	2.3 m		
Height	1.5 m	Sensors	
		Obstacle Avoidance Sonar	Tritech SeaKing DST
		Cameras	Panasonic HCM-381w/pan-tilt
		Compass	TCM-2
		Cable Tracking System	TSS350 or TSS440
		<i>Other sensors can also be accommodated</i>	
Umbilical			
Type	Leoni Hybrid Cable		
Length	320 m		

Specifications are subject to change without notice

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