

## ISE INTERNATIONAL SUBMARINE ENGINEERING Ltd.

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### ISE'S 5TH EXPLORER AUV DELIVERY MARUM, at Bremen University Receives its SEAL

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**Port Coquitlam, BC, Canada;** Following Builder's Trials and operator training in British Columbia, International Submarine Engineering Ltd has delivered its fifth Explorer class AUV to the Centre for Marine Environmental Sciences (MARUM) at the University of Bremen in Germany.



MARUM's new AUV, named SEAL, is rated to a depth of 5000 meters and has an endurance of 24 hours at a speed of 1.5m/s. This and a payload capability of 100kg provide the ability to conduct a wide variety of missions including seabed surveys or in the water column.

MARUM's SEAL is modular in design with easy access to all areas of the vehicle, making it easy to change payloads and battery. An open architecture complements the vehicle's modularity by making it possible for the user to develop interfaces for new equipment.

The vehicle's payload configuration at the time of delivery includes a Reson 7125 400 KHz multibeam echosounder, and a Seabird SBE 49 CTD. The navigation suite consists of an IxSea PHINS 6000 INU-DVL coupled to a ParoScientific 8000 series depth transducer and a Kongsberg Simrad 1007 series bottom avoidance altimeter. Positioning is provided subsea by an ORCA MATS 200 system and on the surface by a Sound Ocean Systems DGPS receiver. A full set of communications and emergency location equipment is also provided.

The MARUM AUV also features the new Mimosa Mission Management software developed by the French research agency IFREMER. Developed specifically for AUVs, MIMOSA integrates the capability to plan and down load missions, track the vehicle during the mission and to upload post mission survey data.

Based in British Columbia, Canada, ISE has been involved in the design and development of autonomous and remotely operated underwater vehicles for over 30 years. Working with North American and International customers, ISE's experience is represented by the over 210 underwater vehicles built and delivered to clients in 20 countries.

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