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Trelleborg Provides Buoyancy to ROV SuBastian

Trelleborg's applied technologies operation has engineered and manufactured a custom syntactic foam buoyancy package for the Schmidt Ocean Institute for use on its new Remotely Operated Vehicle (ROV), SuBastian.

The Schmidt Ocean Institute underwater robotic research program includes the design and development of a 4,500 meter robotic vehicle for use on research vessel *Falkor*. The ROV is outfitted with a suite of sensors and scientific equipment to support data and sample collection, as well as interactive research, experimentation, and technology development. The buoyancy package on SuBastian is made from Trelleborg's Eccofloat TG30, a high performance syntactic foam.

Bob Kelly, Managing Director within Trelleborg's applied technologies operation, says: "We are very proud to be part of this pioneering adventure and to work with Schmidt on developing a syntactic foam that met their requirements. One of the challenges with deep water syntactic foam is producing the lightest possible foam for a given depth which translates into maximum uplift or buoyancy for the vehicle. A high strength to weight ratio means our customers get the industry's maximum uplift or buoyancy per cubic foot, allowing them to design their vehicle with a lower volume buoyancy package, reducing costs and improving vehicle performance and handling.

"We were able to create the precise buoyancy package needed for SuBastian, ensuring success for the future commercialization of this project. The unique customizable design coupled with the selection of Trelleborg's proven Eccofloat material will provide many years of service with the flexibility to adapt to all future equipment and mission requirements."

The SuBastian ROV is designed to go to depths of 4,500 meters / 2.8 miles, which is deeper than the average ocean depth of 3,700 meters / 2.3 miles. Trelleborg's Eccofloat TG30 is designed for a service depth of 5,000 meters / 3.1 miles. The ROV will be suitable to support high resolution seafloor mapping, photomosaicing, video and image gathering, and collections of rocks, animals, and seawater samples. It is equipped with a versatile array of power and data interfaces to enable



integration of a wide range of add-on deep sea instruments and samplers that oceanographers may need to support their deep sea research.

SuBastian recently completed its first expedition on newly discovered hydrothermal vent sites, possibly finding new species in the Mariana Back-Arc, an extreme deep-ocean environment. This is the first series of scientific dives for the ROV. Equipped with numerous cameras, including a high-definition 4K video camera, the dives were live streamed onto YouTube and watched by millions. The multidisciplinary team will continue to analyze the data and samples collected during this expedition to advance research on how life thrives on these extreme deep-sea hydrothermal vents. This research was supported by the NOAA Ocean Exploration and Research Program, the NOAA Pacific Islands Regional Office, and the Schmidt Ocean Institute.

Eccofloat® syntactic foam provides superior uplift for given depths and has a proven track record to provide maximum years of reliable service. The superior performance is achieved through the use of Trelleborg's Eccospheres®, hollow glass microspheres, which are manufactured at the Boston, MA facility. The ability to custom manufacture and test this critical component of syntactic foam allows Trelleborg to produce industry leading strength to weight ratio materials.

For additional information visit www.trelleborg.com/appliedtechnologies and www.schmidtocean.org.

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Notes to Editors:

Trelleborg's applied technologies operation and Trelleborg Group

As part of the Trelleborg Offshore & Construction Business Area of Trelleborg Group, Trelleborg's applied technologies operation manufactures and designs innovative and reliable polymer and syntactic material solutions for a wide range of industries including aerospace, screen printing, rail and motor sport. www.trelleborg.com/applied-technologies

Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way. The Trelleborg Group has annual sales of SEK 31 billion (EUR 3.23 billion, USD 3.60 billion) and operations in about 50 countries. The Group comprises five business areas: Trelleborg Coated Systems, Trelleborg Industrial Solutions, Trelleborg Offshore & Construction, Trelleborg Sealing Solutions and



Trelleborg Wheel Systems, and the operations of Rubena and Savatech. The Trelleborg share has been listed on the Stock Exchange since 1964 and is listed on Nasdaq Stockholm, Large Cap. www.trelleborg.com.

Schmidt Ocean Institute

Schmidt Ocean Institute was created in 2009 to enable research that expands understanding of the world's ocean using advanced technology, intelligent observation, and the open sharing of information. Annually the organization invites select scientific teams from around the world to carry out collaborative oceanographic research and technology development aboard its 272-foot research vessel, *Falkor*, launched in 2012. For more information please visit www.schmidtocean.org.