

Press release

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The University of Cambridge wins SAUC-Europe '13 at CMRE, the Autonomous Underwater Vehicles challenge for university students

The University of Cambridge triumphed over 7 other teams to win the SAUC-E '13, the 8th Student Autonomous Underwater Vehicle Challenge - Europe. The team's AUV named "Barracuda" obtained the highest score performing a number of mission tasks. The 2nd prize went to the University of the West England with its AUV "Phoenix", while the "FeelHippo" team from the University of Florence took home the 3rd prize, both awarded for the overall effort and the high quality performance even out of the water.

The other prizes were awarded to the University Polytechnic of Marche team that won the "Rookie of the Year Award", the University of Las Palmas de Gran Canaria that won the "Persistence Award", the Heriot Watt University that won the "Navigator Award". ENSTA Bretagne, finalist with two teams, won the "Gambler Award" and the "1st Qualifier Award".

The competition was held 28 June to 5 July 2013 was hosted for the 4th time in a row by the NATO Centre for Maritime Research and Experimentation (CMRE), formerly known as the NATO Undersea Research Centre (NURC) at its waterfront, in La Spezia, Italy.

Each year SAUC-E challenges multidisciplinary University teams (consisting at least of 75% students members) to design and build Autonomous Underwater Vehicles (AUVs) capable of performing realistic missions. The student AUVs must perform a series of tasks autonomously in a sheltered sea harbour, with no control, guidance or communication from a person or from any off-board computer including GPS systems. The new twist for SAUC-E '13 was to fully include a second autonomous underwater or surface robot as collaborator for complex tasks. Teams were fostered to test multi-vehicle collaboration to improve precise sonar based navigation, data processing and mission reporting in real time, during the contest's missions. Collaboration could be between two AUVs of the same team, one AUV and one ASV belonging to the same team or even two AUVs of two different teams.

The competition encourages students to think about underwater technology and related applications while fostering innovation and technology within the NATO countries. In eight years, the competition has produced a set of valuable outputs, including ruggedized vehicles currently operative for industrial and scientific applications. In addition, numerous SAUC-E Alumni are employed in the field in world class companies and laboratories, including CMRE, and scientific papers on their achievements have been published.

The successful CMRE experience with SAUC-E will contribute to the organization of the euRathlon project (<http://eurathlon.eu>), a three-year effort, funded by the European Commission, which will create an exciting new Grand Challenge for intelligent search and rescue robots collaborating on land, sea and air.

Dr. Dirk Tielbuerger, Director of CMRE, underlined the value of the SAUC-E competition to the Centre, NATO and the Nations. "These young people will always value the lessons learned, the excitement of testing their ideas in a real world ocean environment, and the professional contacts they made. Many of these students will decide to make ocean robotics a career back in their nations. CMRE has hired alumni of past competitions and they are making contributions now to NATO maritime capabilities."

The first three winners' prizes for the main competition are 3000, 2000, 1000 Euros to be used by the team to improve their equipment for future competitions. In addition, the winners will receive three registration vouchers (1000, 700 and 350 Euros) to participate in the 5th BTS Croatia, the interdisciplinary field training of marine robotics and applications, supported by ONR Global, to be held in September 2013. All the other teams received 500 Euros each to encourage their work.

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About CMRE. The STO-CMRE (Science and Technology Organization – Centre for Maritime Research and Experimentation) is located in La Spezia, Italy. Formerly NATO Undersea Research Centre (NURC), the Centre focuses on research, innovation and technology in areas such as defence of maritime forces and installations against terrorism and piracy, secure networks, development of the common operational picture, the maritime component of expeditionary operations, mine countermeasures systems, non-lethal protection for ports and harbours, anti-submarine warfare, modelling and simulation, and marine mammal risk mitigation. CMRE operates two ships, NATO Research Vessel *Alliance*, a 93-meter 3,180-ton open ocean research vessel, and Coastal Research Vessel *Leonardo*, a smaller ship designed for coastal operations. In addition to its laboratories the Centre is equipped with a fleet of autonomous underwater and surface vehicles and a world-class inventory of seagoing sensors.