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Contact: Alana Alissa Yoshiko Anderson ● aanderson@sname.org ● +1 703-997-6705

The International Robotic Sailing Regatta 2014, Featuring Aberystwyth University, U.S. Naval Academy, Virginia Polytechnic Institute and State University, Memorial University of Newfoundland, and University of British Columbia

Student engineering teams designed, built and programmed autonomous robotic sailboats for the International Robotic Sailing Regatta. In this highly intensive and interdisciplinary project, teams develop not only their technical skills, but also their teamwork and project management.

This year, the regatta took place June 7-13 at California Maritime Academy and was co-hosted by the American Society of Mechanical Engineers. Students had the opportunity to present their projects at OMAE 2014, the annual Ocean Marine and Arctic Engineering Conference.

University of British Columbia's "Thunderbird"

California Maritime Academy, location of the 2014 competition

With a shared desire to learn, competing student teams were happy to teach one another. Memorial University Sailbot team have released their code via their website. The University of British Columbia team, winner of the past two years, happily answered questions from the other teams at the regatta. The U.S. Naval Academy is planning to release documents on the manufacturing methods to help new teams get their feet wet. Interested participants may visit sailbot.org or contact sailbotcompetition@gmail.com

The Society of Naval Architects and Marine Engineers
99 Canal Center Plaza, Suite 310 Alexandria, Virginia 22314
P: +1.703.997.6701   F: +1.703.997.6702

Virginia Tech's "Orca" sailbot

Ahappy Virginia Tech team member with the carbon fiber.

The new student team from Virginia Tech wrote the code for their boat from scratch in C++ and interfaced a microprocessor, microcontroller, sensors and actuators - all within a year. In the summer of 2013, the U.S. Naval Academy team had donated their boat "First Time" as a guide to help get Virginia Tech SailBot started. The Virginia team then designed their hull from scratch using Rhino/Orca3D and fabricated the final hull form out of carbon fiber. Nearly all of the boat's components were made by hand, in-house, by the team.

Students at Aberystwth University chose to write most of their code in Java, but their microprocessor and microcontroller think in Python, so they added TCP/IP protocol to translate.
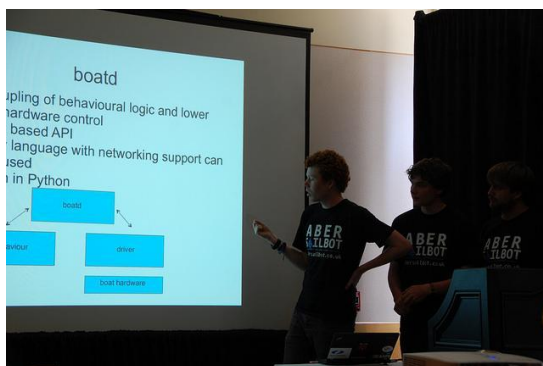
Aberystwyth students explaining their coding logic

A dedicated paint job by Memorial University students. They even built their wind sensor and remote controller from scratch.

Memorial University of Newfoundland built not one but two boats this year: the 2-metre competitive boat "Trixie" and a 1-metre test boat "Little Dragon", whose code can be modified wirelessly.

The Five Challenges of the International Robotic Sailing Regatta consist of a fleet race, a navigation challenge, 5-minute station-keeping in a 40 m x 40 m box, a presentation and a 10 km long-distance race.

All of the IRSR 2014 competitors

Memorial University of Newfoundland: Sam Eisner, Daniel Cook, Justin Royce, Liam Johnston, Emma Williams and Adam Day

University of British Columbia: Serena Ramley, Kurtis Harms, Josh Andrews, Arek Sredzki, Jian Lik Ng, Tu Anh Le, Tobias Kreykenbohm, Jamie Lee, Bryan Luu, Kristoffer Vik Hansen, Daniel Kim, and Youssef Basha.

Virginia Polytechnic Institute and State University: Tom Shea, George Uehling, Marc Rauer, Jeff Witten and Ben Hayes

U.S. Naval Academy: Beatrice Cayaban, Aaron Dougherty and Zach Rafter.

Aberystwyth University: Daniel Clark, Louis Taylor, Ashley Iles, David Capper, Colin Sauze and Claire Sauze

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