

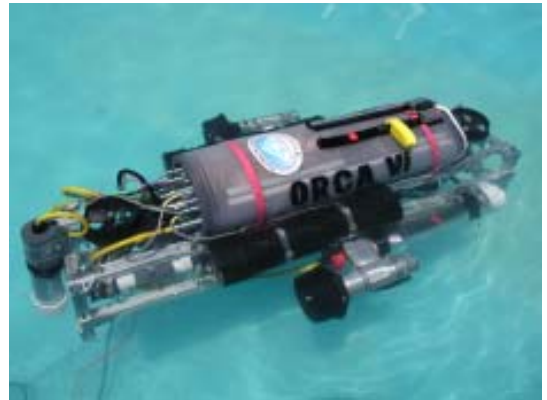
# M.I.T. Project ORCA



The team at the 2003 A.U.V.S.I Competition in San Diego, California



MIT Project ORCA is a MIT student group interested in Autonomous Underwater Vehicle (AUV) technology. Our main activity is constructing entries for the annual AUV competition. The ORCA team took home first place in the 1998, 1999, 2001, and 2002 competitions. For more information, go to: <http://web.mit.edu/orca/www/>



The sixth competition will be held in San Diego, CA. Student teams will build computer-controlled robotic submarines to autonomously navigate to and mark a target platform. The submarines then surface in a recovery zone. The vehicles will need to utilize computer vision techniques to place markers precisely on the targets and sonar localization to find the recovery zone.



ORCA teaches students hands on engineering in an environment that requires a working system to be produced in a short amount of time. Students often find ORCA to be a career changing experience, because it allows junior members to tackle difficult problems, under the guidance of more experienced members, but with the freedom to try their own ideas.

A student describes his experience working on ORCA to spectators at the competition.



ORCA's sensors include an Acoustic Direction Finder to localize a pinging source, a Doppler Velocity Log for ground truth positioning, and a camera for image processing. ORCA's payload also includes a magnetic dropper mechanism that releases its ball bearing markers.



Over the last 6 competitions, ORCA has placed first in 1998, 1999, 2000, 2001, second in 2002, and fourth in 2003. In 2004, ORCA hopes to build on the lessons learned at the competition in 2003 to place first yet again. With progress on continuing projects looking promising, and the potential of new projects just starting, we at ORCA believe that this will be our most successful year ever.



ORCA would like to say thanks to our sponsors, who helped make ORCA VI a reality. Our academic sponsors include the following MIT departments and groups:

- Edgerton Center**
- Mechanical Engineering**
- Ocean Engineering**
- Sea Grant**
- Elec. Eng. and Comp. Sci**

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