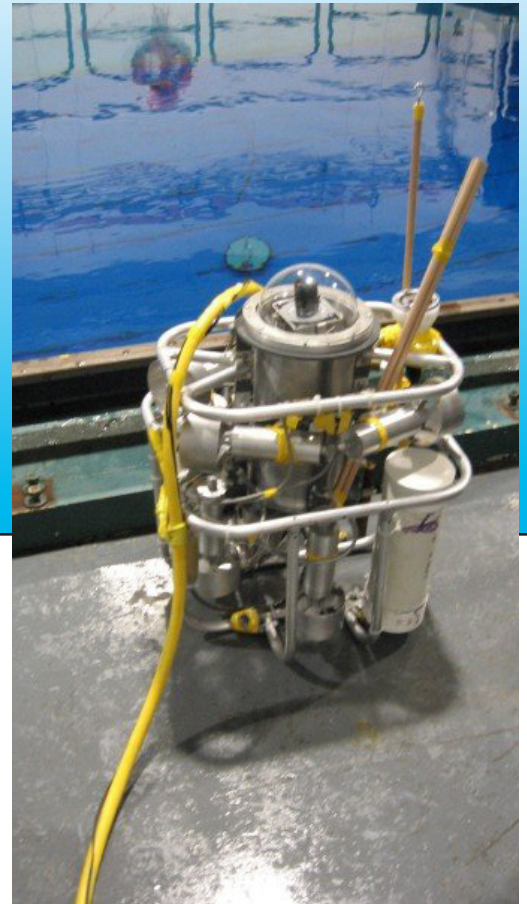


University of Waterloo Underwater Technology Team

ADVANCING UNDERWATER TECHNOLOGY AND DESIGNING
SUBMERSIBLE REMOTELY OPERATED VEHICLES FOR THE FUTURE

Neo I Travels to Indal Technologies Inc.



Also, (UW)²TT would like to thank James McCallum for his generous contribution to the Underwater Robotics Team and for his coordination of the event.



This October, three team members from (UW)²TT traveled to Indal Technologies Inc. in Mississauga to display the Neo I, the underwater remotely operated vehicle that competed at this year's MATE ROV Competition.

Indal Technologies Inc. is part of Curtiss-Wright Controls, Engineering Systems

- a company that specializes in a variety of products for marine defense. The company invited the members of the Underwater Technology team to show off Neo I at their monthly "Lunch and Learn" Presentation. While there, Jason Gillham, Brandon DeHart, and Andrew Wen explained how the robot worked, how the competition went, and what would be done in the future to improve the robot.

"I would like to congratulate Jason, Brandon, and Andrew on their presentation and (UW)²TT members who have worked to develop Neo I," said James McCallum, IndalTech employee and event coordinator. IndalTech employees have offered their technical expertise in the future for designing Neo II.

Changes in (UW)²TT

For the past two years, Jason Gillham has been heavily involved in leading (UW)²TT, designing Neo I, teach new and old members about robotics, electronics, machining, and more. However, Jason has now graduated and will be moving on to pursue a masters degree in submersible robotics. Jason will continue to be involved in the underwater robotics as a mentor to the University of Waterloo Underwater Technology Team.

(UW)²TT would like to sincerely thank Jason for leading the team to the 2007 MATE ROV Competition and for continuing to aid and teach members of the team.

Taking over for Jason will be Julianne Kline, a mechatronics student who is looking forward to the challenging task of leading the team to the 2008 MATE ROV Competition.





New School Year, New People

The University of Waterloo Underwater Technology Team is excited to welcome all new recruits to the team. We look forward to new experiences, memories, and knowledge.

September in Waterloo always brings new faces to (UW)2TT, and this year is no exception. At this term's kick-off meeting, the team saw over a dozen new people, all looking forward to an exciting term of learning, designing and building.

The new members to the Underwater Technology come from a variety of backgrounds and programs. This year saw a record number of

first year software engineering who will be aiding in high and low level programming, of the pan and tilt control software, graphical user interface, and more.

There are also mechatronics, nanotechnology, electrical and even math students who all have unique knowledge and perspectives to bring to the team. Some have gained experience from FIRST Robotics, whereas others come

to the University as a clean slate, ready to learn anything we have to show them.

(UW)2TT is also glad to see the same faces that helped to put Neo I underwater back again this term. There is a lot to do this term, including finished Neo I, testing Neo I underwater, and beginning the design of Neo II for the 2009 MATE ROV Competition.

Coming Soon: Brand New Pan and Tilt Mechanism

One of the exciting features of the Neo I ROV is the pan and tilt camera capabilities, which allows for (UW)2TT Team members to see more of the environment surrounding the robot than a conventional, static camera. The current pan and tilt system is being completely revamped to work out old issues and to build on the last version's upsides.

The new pan and tilt system will be equipped with new SMT technology and a better processor. Also, in order to make the board more

robust, the new one will have a solder mask. This also improves the appearance of the board for a cleaner overall look to the electronics. The board will be more accurately designed for what is intended to do, with more accurate specs than before.

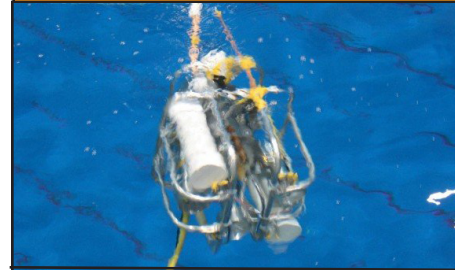
Why do we need to update the pan and tilt system? There were several drawbacks to the previous version, the largest being the lack of available memory for the microcontroller to run the pan and tilt board. Also, the oscillator and board

size contributed to the issues that were experienced. However, the members of the team who worked on the pan and tilt system should be commended on their successes. The programming was implemented successfully and the system was somewhat functional.

There are several dedicated members working on this section of the robot, including Cam who is working on schematic design, board layout and programming. Kevin, a new member to the team who will be involved in programming, Nick, the team's electrical head who will be advising and assisting in all aspects of the system design, programming and construction, and a multitude of new members who will be involved in board construction and programming.



NEW AND UPCOMING ADDITIONS TO NEO I



Updated Pan and Tilt Mechanism, Software and Control Board

New camera

Master Current Meter

Updated GUI

Underwater Lighting

Two Additional Thrusters

Propeller Redesign



On September 29, (UW)2TT attended Impact Expo 2007 and were one of only several student teams selected to demo 'innovative technologies and the entrepreneurial minds driving them'.

The Neo I ROV was displayed to numerous industry leaders and students alike.

Impact Expo is an annual event hosted by the University of Waterloo that showcases new and innovative products, allows vendors and students to communicate on a personal level, and expands students' knowledge of innovation, career skills and entrepreneurship.

Our Thanks to the Following Supporters of the 2007 (UW)2TT ROV

