REQUEST FOR PROPOSAL

PROJECT: RFP-VN120-202301 PROTOTYPE DESIGNS FOR AN AUTONOMOUS UNDERWATER SENSOR-CLEANING ROBOT

The University of Victoria's Ocean Networks Canada (ONC) operates VENUS and NEPTUNE, world-leading ocean observatories that are enabling researchers around the globe to conduct vital ocean research using new and innovative technologies. As part of the observatories, ONC operates a variety of underwater instruments, sensors, and cameras that record data and provide live video feeds of conditions related to the ocean floor, water quality, seismology, and biology.

Occasionally, falling debris, sedimentation, and biofouling can cover and obscure the cameras' feeds or interfere with other sensors' data collection. For this reason, ONC requires a solution to remedy these situations when they occur.

Therefore, ONC is inviting external proposals for the research, design, construction, and testing of **prototype designs** of an autonomous underwater robot able to position an object on top of the underwater camera. Initial proposals should describe small-scale model prototypes able to simulate this activity in a dry lab environment.

The prototype robot will have to find an object representing the underwater camera (a target emitting a specific IR signal) within a constrained search area and be able to place an object simulating a "cleaning device" on top of the target. The prototype robot should then exit the area and signal completion of task. Due to the sensitive ecology of the underwater environment, prototype robots should be able to maneuver without causing undue damage to the environment or the objects with which it interacts.[1]

For more information on our installations, see ONC's website:
http://www.oceannetworks.ca/about-us

ONC would like proposals to offer a range of design choices, with a comparison of different features. Final recommended designs should be submitted, up to the closing date, to:

Dr. Dave Riddell
Oceans Network Canada
University of Victoria
Queenswood Campus
2474 Arbutus Road
Victoria, BC V8N 1V8

[1] See **ENGR 120 Design Project** document for specific details on design objectives and constraint.