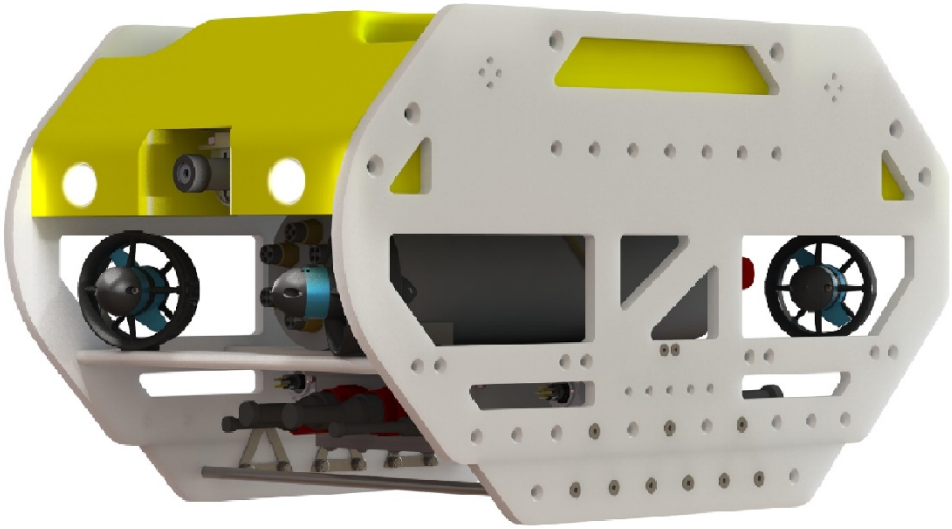
"NPROVER" Underwater Remotely Operated Vehicle



Technology Overview

The NPROVER is an affordable high-performance Remotely Operated Vehicle robot that can be used in applications such as ship hull inspections, mine countermeasure operations, search & recovery and underwater surveys in lieu of drydocking. The vehicle is capable of diving up to 100 meters, surpassing the depth of recreational SCUBA diving, while streaming live video back to the surface. The underwater robot is controlled via a tether connected to a surface computer and is equipped with two LED spot lights and an SD color camera. With an 8-thruster configuration, as well as custom electronics and software, it provides an expandable solution for a variety of industries.

Technology Features & Specifications

The NPROVER is capable of diving up to 100 meters, surpassing the depth of recreational SCUBA diving, while streaming live video back to the surface. The underwater robot is controlled via a tether connected to a surface computer and is equipped with two LED spot lights and an SD color camera.
Nprover is equipped with an 8-thruster configuration (4 vectored and 4 vertical thrusters), thus enabling 360 degrees of maneuverability. The ROV's electronics and software is customisable to cater for specific roles require by various industries. The vehicle has a maximum operating depth of 150 meters, with a maximum forward speed of 3 knots and a launch weight of only 40kg.
The AUV-ready design allows for low drag, high power to weight ratio. It features a durable and firm HDPE/ SS316 platform for mounting/ attaching payload and comes with a portable surface control system, an SD color camera, and 2200 lumens LED lighting.

Potential Applications

This technology is applicable in the following industries:

Marine and offshore

- Cleaning of underwater hulls and structures by removing marine growth and other underwater obstacles
- Underwater hull survey and inspections
- Underwater welding
- Underwater installations
- Underwater survey for dry docking of ships and vessels
- Mine countermeasure operations
- Underwater search and rescue operations

Able to perform surveys, inspections, surveillance, and light intervention work under water in areas such as:
Wind parks, oil & gas industry, salvage, recovery and rescue, chemical industries, cooling water intakes and outlets, fish farms, power stations: hydroelectric, nuclear, corrosion and cathodic measurements, criminal investigations, detection of objects (anti-collision / imaging sonar and side scan sonar), sample taking, ships hulls, propellers and steering gears, sluice gates, reservoirs / dams, enclosures, pipes, cable, diver observation and support, environmental investigations, investigating sunken objects (ships, wrecks, cars, motorbikes, aeroplanes etc), destruction of mines.

Customer Benefits

- Increase operational time, cost and reduce requirements compared to man-diving operations
- Ease of handling/ maintenance/ assembly
- Does not require waiting period after a dive before flying off to other locations
- Able to perform penetrations and operatable around HAZMAT environment such as oil and sewage, etc.
- Not subject to stringent OSHA rules
- Able to operate from a variety of platform

OVERVIEW

- Technology Category Electronics - Embedded Systems
- Technology Status Available
- Technology Readiness Level TRL5

NGEE ANN POLYTECHNIC

CONTACT:

Technology Development and Innovation Office
Website : www.np.edu.sg/tdi
Email: dept-tdi@np.edu.sg