

A SIMPLE AND LOW-COST REMOTELY OPERATED UNDERWATER VEHICLE (ROV) TO STUDY THE DISTRIBUTION OF HABITATS AND ASSEMBLAGES IN COASTAL AREAS

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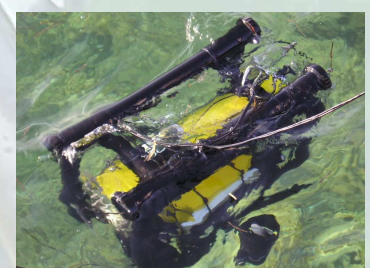
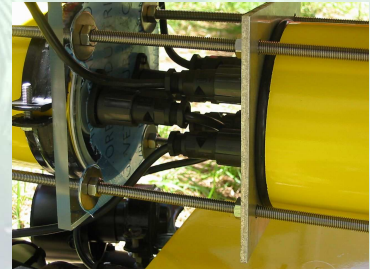
Objectives

Mapping distribution of habitats and assemblages in coastal environments is becoming an area of intense activity both to enhance conservation of marine biodiversity and to contribute to the management of coastal systems.

Our project aims at developing a simple and low cost remotely operated underwater vehicle (ROV) to study habitat distribution in coastal areas.

Vehicle Specifications

- Open frame class ROV
- 50 m maximum operating depth
- Size (l x w x h) 50 x 30 x 30 cm (approx.)
- Low cost (about 3000€)
- Light weight (about 20 Kg)
- Several hours of autonomy
- Auto depth and auto heading control
- 6 DC thrusters (4 in the horizontal plane, 2 in the vertical one) to control the yaw, heave, surge and sway axes
- Power through umbilical or by on board batteries
- Digital camera, a solid state compass and a pressure transducer
- Laptop based cockpit
- RS485 serial link to the vehicle.



Conclusions

The vehicle will be specifically used for assessing the variety of habitat and assemblages through the acquisition of underwater images in the stretch of coast between Otranto and S. Maria di Leuca (between 30 and 50 meter depth), where recently the establishment of a Marine Protected Area has been proposed. Images from ROV will be combined with data collected by snorkeling and diving at shallower depths. Geographic coordinates of each data will be identified by a GPS (Global Position System). Information will be encoded into separate layers (distribution of habitats, assemblages, different sources of human threats) and final maps produced as combination of any of the layers. The use low-cost remotely operated underwater vehicle will greatly enhance our possibility to get an adequate knowledge of habitat and assemblage distribution, which, in association with social and economic criteria, will represent the starting point for the use of new quantitative methods for the development of potential reserve network scenarios.