



What are they?

Remotely Operated Vehicles (ROV), are underwater robots that allow us to explore and study the oceans without tripulation. These robots are controlled by a team above water and (the ordinary models) can go down to a depth of 300m.



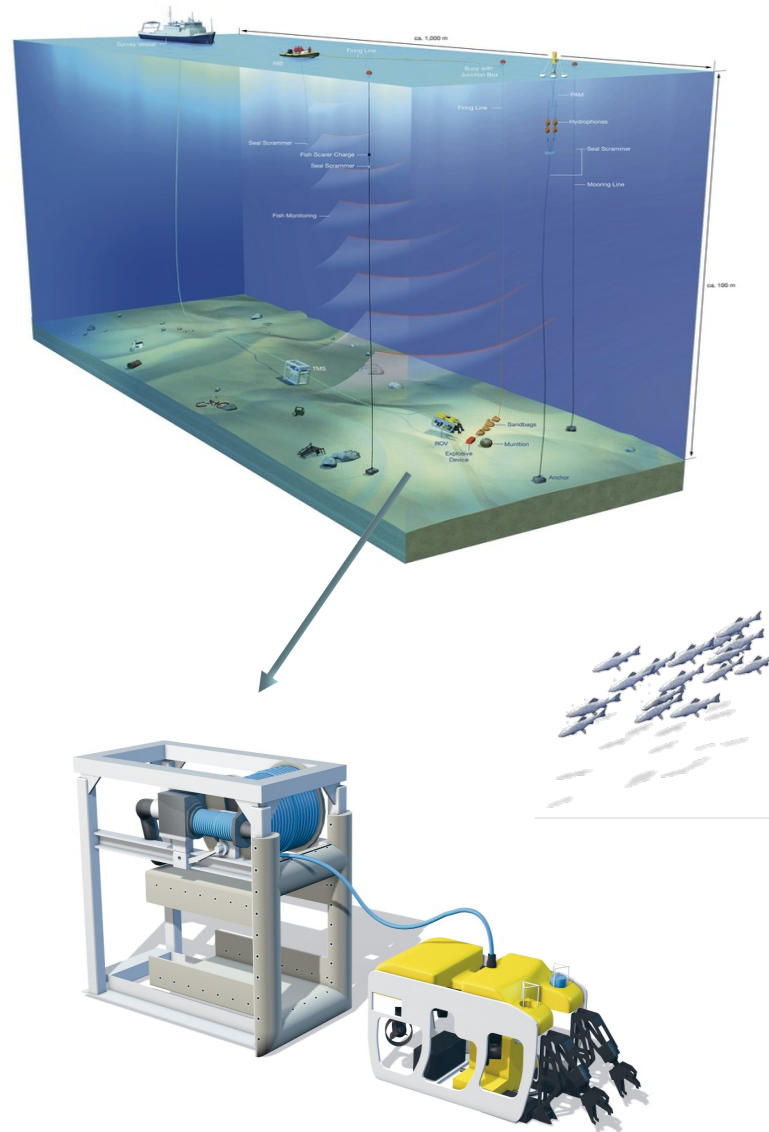
How ROV work?

The unoccupied vehicles are connected to the controlling team (within the ship of support) with a series of cables (the umbilical cable) that allows the communication in both directions. Frequently, they have associated a TMS (Tether Management System), the grey box in the figure. The TMS contributes to the stability of the ROV (eliminating the drag's effect caused by the umbilical cable) and protects the ROV during its launch and recovery. The ROV itself is equipped with cameras, spotlights, a compass, specific tools (like sensors or sonars) and an articulated arm that allows him to make complex tasks.



Why do we need them?

The figure you see represents a removal operation of underwater munitions (naval mines) using ROV. So, aside from making the world safer, it also protects the environment and the marine biology. But, clearly, this is not their only purpose. ROV allow us to explore, monitor and study places and forms of life that we couldn't otherwise. And we are needing them more and more! This kind of technology it's being extensively adopted by oil and gas companies, becoming important tools in drilling and fixing things underwater.



Did you know?

4000m . The average depth of the ocean (approx.).

72% . The percent of Earth's surface covered by water.

11034m . Is the deepest point of the Ocean (on the bottom of Mariana Trench).

ROV:

REMOTELY OPERATED VEHICLES



What else should I know?

Usually, ROV don't go depths higher than 300m but special models can go way more deep. *Robin* and *ABISMO* are famous ROV developed by France and Japan, respectively, and could go to 5000m and 11000m of depth.

A famous campaign of desarming naval mines, under "The Partnership for Peace" (NATO), was the Nord Stream Munitions Clearance, on the Baltic Sea. NSMC had the cooperation of NATO and the Nord Stream itself (a company that plans and builds natural gas pipelines through the Baltic Sea). NATO's program it's responsible for the clearance of more than 1.000 mines since 1996.