



Development and Pilot Testing of u-ArchaeoRoV

The research project u-ArchaeoRoV has developed a semi-autonomous underwater ROV with a robotic arm, customized to assist in the underwater archaeological field research, within the context of either an excavation or a survey test case scenario. u-ArchaeoRoV aims to contribute to safety during scientific diving and increase cost effectiveness and efficiency of underwater research in various scientific fields.



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www.uarchaerov.eu



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The pilot testing of the RoV "HYDRIA" was conducted during the underwater excavation of a Mycenaean shipwreck (13th/12th c. B.C.), held by H.I.M.A., off the rocky islet of Modi, southeast of Poros Island in the Argosaronic Gulf.



Photo Spyros Pappas / © IENAE

u-ArchaeoRoV Capabilities

- Takes a series of overlapping photos of the survey area to produce a photogrammetric model.
- Renders high-resolution material for the photographic documentation of the archaeological finds recovered in situ.
- Indicates the orientation and size of objects at the moment of their recovery, by placing automatically the north and scale indicator on the camera.
- Identifies, marks & records, in real-time, the precise and georeferenced location of possible targets of archaeological interest, such as pottery and stone anchors.
- Creates a 3D model of the sea bottom and the finds.

u-ArchaeoRoV Advantages

- Due to its small size and weight, it is particularly easy to launch and recover from the support vessel, while it can be deployed by only 3 people.
- The robotic arm with a tactile sensor can be controlled remotely and perform automatically.
- It can grab and raise to the surface objects, as well as remove sediment with the airlift nozzle during excavation.
- The mobile phone installed in a waterproof case allows the diver to communicate in real-time with the operator on the surface and the research team, through a specially developed text messaging application.

