
ITALY

REMOTE CONTROL SYSTEMS AND VIRTUAL REALITY – CALA GADIR PANTELLERIA AND CALA MINOLA, FAVIGNANA

Today, the remote-control systems constitute an enhancement method and use of non-invasive and at the same time less expensive traditional archaeological diving sites, while allowing continuous monitoring of the interested area.

In Cala Gadir (Pantelleria – island between Sicily and Tunisia), where the largely robbed, remains of at least two wrecks of the Punic-Hellenistic age lay, the **STARS Project** (System Integrated for the Protection of Underwater Archeology) ensures 24h monitoring: underwater cameras send in direct images from the archaeological site, located at 30 meters of depth, to the dedicated website, allowing the user to connect from home. The interactive version also allows the user to scroll the cameras on the tracks and observe the findings from different angles, even with night light.

The STARS project intends to create a dedicated integrated system to the protection of underwater archaeological heritage and the dissemination of images and information of the most interesting sites with the purpose of protecting underwater sites and tourist attraction.

Around the selected sites some are installed and fixed at the bottom equipment: cameras with "motion detection" system, ultrasound transceivers, environmental data sensors.

In addition, a camera is installed on the surface. All the signals are encoded and sent via radio to a Control Centre. The system is therefore able to signal, combining the signals of motion detection and ultrasonic sensors, any intrusions in the site area. The full enjoyment of the finds by distant subjects is ensured by distribution of real-time footage via the web.

A remote-control system is also active in Cala Minnola (Levanzo, Egadi Islands). It consists of four cameras positioned on the homonymous site, which, through a cable, send images of the *in situ* wreck from the 1st century to C., with a load of wine amphorae and anchors, to Favignana, where on the premises of the Municipality a viewing room is set up: this allows both to avoid depredations

and also to offer the possibility of enjoying the beauty of marine landscape and to admire the finds even to those who do not want to dive.

The virtual dive system can be efficiently adopted to enhance the large public's awareness about the underwater cultural heritage and to promote the specific underwater archaeological site by allowing non-diver tourists to live a realistic virtual experience of the exploration of the wreck site. In fact, due to the environmental and physical body limitations, not all archaeological sites are accessible to the large public. These limits are more stringent in the underwater environment where only expert tourists, with diving license, can overcome the difficulties imposed by the environment and depth to enjoy the submerged cultural treasures. Then, thanks to the virtual dive system, the user can experience a realistic diving experience in the underwater wreck site.

Information:

<http://www.parconazionalepantelleria.it/Epun-dettaglio.php?id=2829>

<https://westofsicily.com/en/points-of-interest/cala-minnola-and-underwater-itinerary/>