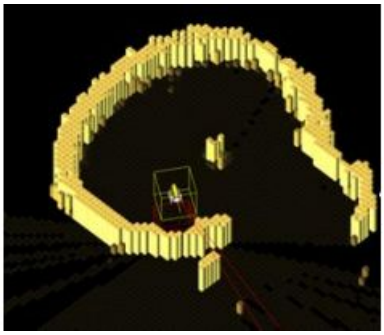
Secrets of Malta's Historic Water Systems



Miniature sonars, engineered by Tritech International, have been invaluable in helping to uncover the deep secrets of Malta's historic fresh water systems. Several reservoir sites in Malta and Gozo have been the focus of collaborative archaeological explorations by AURORA Trust, Marine Resources Development Foundation and California Polytechnic State University. The investigations aim to understand the complexities of underground cisterns and infrastructures and to research their evolution.

Tritech's ultra compact, CHIRP digital sonar was fitted to a small, remotely operated vehicle (ROV) and lowered into the cisterns. The ROV needed to travel between 30ft to 40ft from the access point and as deep as18ft into the chambers to discover previously unknown passageways and inter-connecting rooms believed to date back to third century BC.

Sonar data and video images were collected through a 250ft cable, attached to a control box and computer at the main access points. Project investigator, Christopher Clark, from the California Polytechnic State University, said that the Tritech sonar was ideal for their mapping application for two reasons. Firstly, there were fewer false reflections and much less noise than he expected. Secondly, the compact size of the sonar allowed the ROV to fit through tight passages that were not accessible when using other sensors.

Six of the sites visited were mapped using mosaic and robot Simultaneous Localisation and Mapping (SLAM) algorithms.