

Underwater Positioning System for French Research Institute CPPM



iXBlue, France, has provided to the research centre based in Marseille, France, a full positioning system to meet its security and precision requirements during the deployment of underwater field structures. To meet the precision requirements, iXBlue provided CPPM with one low-frequency RAMSES 6000 for the acoustic positioning of the lines and ROV, one HYDRINS (INS) to enhance the vessel position, one MT391 transponder to position the ROV during the operations, four RTA61 releasable transponders to make up the LBL field, two RTA61 releasable transponders to control the deployment of the line, RAMSES REPLAY post-processing software and a remote control. Precise and reliable ROV positioning during the connection of the optical modules to the electro-optical subsea cable is critical as this is how they will be linked to shore to send data.

CPPM is a research centre aimed at observing the cosmos by detecting highly energetic elementary particles called 'neutrinos'. Those particles are the only witness of violent cosmic phenomena and when crossing the earth, they produce a charged particle which emits a flash of bluish light when penetrating into the sea. The centre is deploying subsea telescopes to observe those flashes underwater. Requiring a light pollution-free environment, the deployment is made at a depth of 2,500 metres. The telescopes are made of several optical modules mounted on tens of mooring lines. In order to set them up correctly and calibrate the instruments, a very highly secure and extremely precise subsea positioning system is necessary.

Accurate Position

CPPM first evaluated iXBlue acoustic systems in 2014, for their first deployed telescope 'ANTARES'. Despite poor weather conditions at the time, the results of the tests were very satisfactory. They are now getting ready to deploy the second subsea telescope project named 'MEUST' which is twice as sensitive. Thanks to the iXBlue high-performance positioning system, they are able to get accurate and repeatable acoustic position of their ROV to deploy the mooring lines.

Hubert Pelletier, iXBlue Acoustic Systems business developer, expressed that iXBlue has been involved in space for over 15 years through iXSpace. He considers expanding iXBlue's involvement in the space applications through underwater acoustic solutions as a great challenge.