



PIAQUO

REDUCING SHIPS' ACOUSTIC FOOTPRINT AND IMPACT ON MARINE ECOSYSTEMS

The average noise level on the busiest shipping routes has risen by almost 20 dB in the past 50 years. The sound waves emanating from both commercial and pleasure craft are a major factor in this increased underwater noise.

Some marine zones housing protected species or which are very important in biological terms, such as breeding, nursery and feeding areas, can be found close to shipping routes. Furthermore many scientific studies have demonstrated that the majority of marine species are highly sensitive to underwater sound.

Recommendations have been drawn up encouraging a reduction in underwater noise generated by human activity, and EU Directives provide strong incentives to take ambitious action in this area. The IMO is also working on this issue, at the insistence of both Canada and France.

Ship owners and shipyards will increasingly need to address noise reduction in their vessels and adapt them to the ecosystems through which they sail. Technological solutions to reduce noise already exist but have never been deployed as part of a consistent overall approach which would demonstrate a capacity to meet this challenge.

Using a life-size model, the PIAQUO project aims to demonstrate:

- The possibility of reducing underwater noise radiating from ships by retrofitting optimised propellers
- The first system to self-estimate both noise radiation and cavitation detection in real time
- The effectiveness of incentives to actively reduce radiated noise from vessels, linked to a database of ship radiated noise measured
- The effectiveness of a system that adapts shipping to the state of its surrounding ecosystems in real time, using passive acoustics to link up to the ships' digital nautical chart systems
- The relevance of decision support systems to both public and private sector stakeholders.

Partners

Companies

Naval Group, France [Project Developer]
Alseamar, France
Bureau Veritas, France
Cetena, Italie
Chorus, France
ESI Group, France
Fincantieri, Italie
Quiet Oceans, France
Rolls-Royce, Suède

Research center

Università degli studi di Genova, Italie

Funder

Commission Européenne

Labelisation

28/06/2019

Overall budget

5 264K€