SEANATIC

NETWORKED SHIP FOR SMART PREVENTATIVE MAINTENANCE

The SEANATIC project aims to develop and test innovative solutions to consolidate and modernise maritime maintenance activities. These technologies will allow data about vessels to be acquired and used both at sea and on land.

The aim is to provide ship owners, builders and maintenance operators with more relevant information on the behaviour of ships in order to improve safety, predict wear in individual components and more generally anticipate maintenance requirements. This innovation will also aid navigation in real time. The data, once gathered, can be used to feed into future ship design, helping in particular to optimise environmental aspects such as the consumption of energy and materials, waste and useful life.

Machines and sensors on board ships currently generate very large quantities of data. Unfortunately, these data are not always categorised, nor are they accessible to all parties. Hence being able to specify what information is useful, pre-process it within a smart system, then feed it back in a suitable format, is currently a major challenge for stakeholders in the maritime sector.

SEANATIC's innovative solution will be made up of three parts: an onboard data processing system (Edge Computing); an adaptive communications system (the 'Smart Antenna' including a 'Smart Antenna Box' dashboard and a central 'Smart Antenna Hub' server on the bridge) to optimise data transfer between onboard maritime communication systems (SATCOM, Wi-Fi, 4G) and the cloud; and an adaptive interface to feed back relevant information.

In order for the interfaces to meet maintenance needs, the information they present must be compatible with the scope of job roles both onboard (maintenance officers) and onshore (ship owners and builders).

Consideration will be given to individual situations (profiles, levels of expertise) and cognitive factors such as fatigue and mental load. This work on human-computer interaction must underpin professional activity and enhance the courses of action open to the parties involved, from the time a vessel is built and throughout its lifetime.

For testing purposes, the system will be deployed on vessels around 40 metres long built by Piriou.

Seanatic on LinkedIn

Video explaining the project (in French)

Partners

Companies

IoT.bzh, Lorient [Project Developer]
Azimut, Lorient
Chantiers navals Piriou, Concarneau
Thalos, Ploemeur

Research center

Université de Bretagne Sud, Lab-STICC - Lorient

Funder

Ademe

Labelisation

06/09/2019

Overall budget

2 400 K€