

An integrated vision for environmental monitoring and the role of acoustic communication networks

S.M. Jesus sjesus@ualg.pt

LARSys, University of Algarve,
Campus de Gambelas, PT-8005-139 Faro, Portugal.

Comments: download [pdf file](#).

Ref.: invited at SERENADE'12 Conference, Grenoble, France, April 2012.

Abstract

Current pace of ocean resources exploitation have set the alarm for tighter environmental monitoring. Recent European legislation requires very accurate measurements of reference values for all types of ocean pollution, including acoustic noise. For near shore or offshore construction, platforms or infrastructures extensive measurements should be carried out before during and after exploitation activities have taken place. Environmental monitoring requires the deployment of sensors with specific requirements in terms of location, spatial coverage and data access rates. In some cases, monitoring includes accessing real time information regarding detecting intruders, their localization and, eventually, their interception. A key component of any environmental monitoring network is a high performance wireless communication network capable or interconnecting both fixed and moving sensing platforms for retrieving data and transmitting commands. The Underwater Acoustic Network initiative has recently demonstrated with an at sea experiment (Trondheim, May 2011) a full functioning 3 fixed node and 2 mobile node network for collecting data and performing surveillance tasks. A summary of the results are presented and issues discussed.

Acknowledgement: this work was supported under projects SENSEOCEAN and UAN funded by FCT (Portugal) and FP7 (EU), respectively