



COMMON SENSE

MARINE SENSORS - MARINE MONITORING

CNR

DEPLOYMENT RESULTS

COMMON SENSE FINAL EVENT

Barcelona, Spain 27 January 2017



Design and plan tests

Underwater noise CEFAS

Microplastics LEITAT

Heavy metals CSI

Eutrophication DCU

Nanosensors for autonomous pH and pCO₂ FTM-UCIM

Innovative piro- and piezo-resistive polymeric temperature and pressure sensor CSIC

Research vessels

CNR: R/V URANIA and R/V MINERVA UNO

CSIC : R/V SARMIENTO DE GAMBOA

IOPAN: R/V OCEANIA and a Motorboat

Oil platform

IOPAN: platform in Gdansk Bay

Smartbuoys

CEFAS

Moorings

CNR: 3 deep mooring lines (Sicily Strait/Corsica Channel)

CSIC: deep moorings at continental slope & canyons of NW Med

Underwater observatory

CSIC: the OBSEA

Ocean racing yachts

FNOB: IMOCA Open with 60 boats

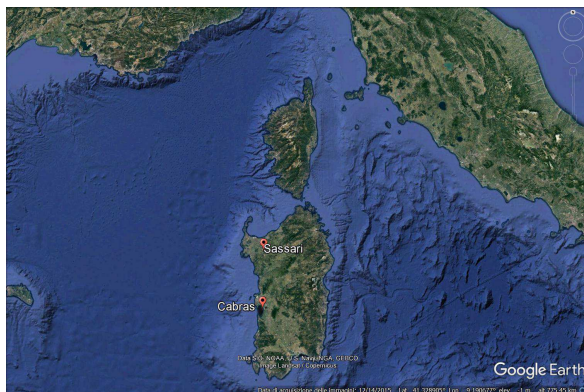
Drifting buoys

CSIC



Stakeholders

The Department of Earth system science and environmental technologies (DTA) of CNR in Rome, has supported Common Sense with the use of the CNR Arctic base “Dirigibile Italia” in Ny-Ålesund (Norway) in the Svalbard archipelago, to test pH and nutrient sensors in extreme cold conditions (water samples from wharf and boat), June 19th-July 4th, 2016

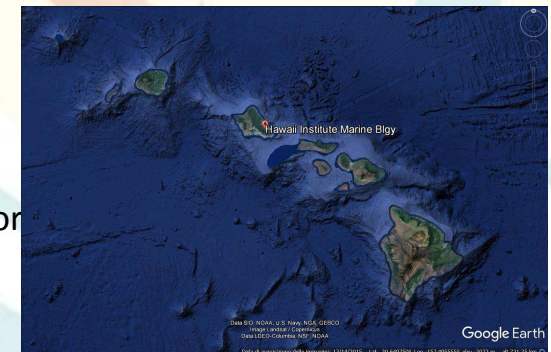


In Sardinia, fishermen in Cabras (Italy) have supported the common tests of all sensors through the use of their facilities at the Mistras lagoon, September 2016 .

The Marine Protected Area (MPA) “penisola del Sinis – isola di Mal di Ventre” in Cabras (Italy), has supported the tests of the noise sensor through the use of their facilities at the local harbour, September 2016.

Sassari University (Italy) was involved in several tests of the pH sensors in 2016, providing water samples and comparative pH measurements made with benchtop instruments.

The tests of the nutrient sensors at the Hawai'i Institute of Marine Biology (USA), through the use of their facilities (wharf and laboratories), has been realized in the framework of the Alliance for Coastal Technologies created with the aim to join the effort to develop affordable, accurate and reliable nutrient sensors, September 2015.



Interest in sensors and availability to support to testing activities was also given by the Marine Systems Institute of the Tallinn University of Technology in Estonia, the Spanish REPSOL, and the European projects SUNRISE, FIXO3 and JERICO.



This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 614155.

www.commonsenseproject.eu

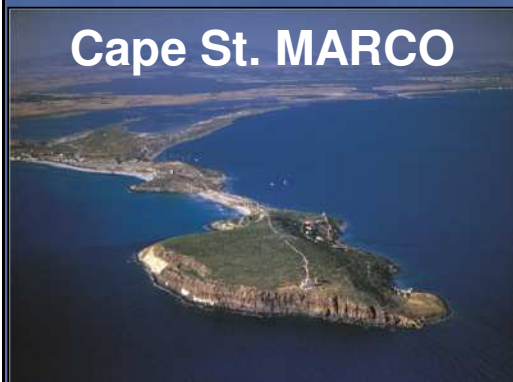
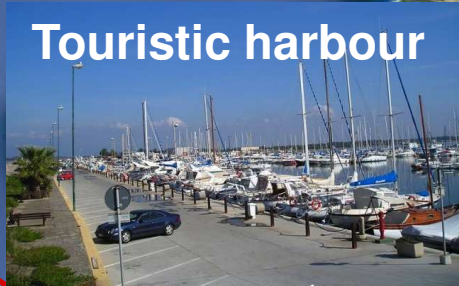
List of tests

¹ Microplastics Integrated Sampling System

Sensor	Platform	Location	Date	Participants
Temperature	Laboratory setup	Barcelona	02/07 + 22/10/15	CSIC
Temperature	Oceania vessel (IOPAN)	Gdańsk (PL)-Tromsø (N)	13-20/06/16	CSIC, IOPAN
pH (Res.)	Laboratory	FTM – Skopje in simulated SW	27-28/10/15+ 29/03/16+20-27/04/16	FTM-UCIM
pH (Res.)	Laboratory	on samples from Oristano lagoons	21 -22/04/16	FTM-UCIM
pCO ₂ (Res.)	Laboratory	on samples from Lucrino (Naples Gulf; Italy)	10/06-15/06/16	FTM-UCIM
pH (Volt.)	Oristano lagoons	Oristano area (I)	21-22/03/16	CNR, DROPSENS
pH (Volt.)	Oristano lagoons	Oristano area (I)	21-22/04/16	CNR, DROPSENS
pH (Volt.)	CNR Arctic base	Svalbard Archipelago (N)	19/06-04/07/16	CNR, DROPSENS
Eutrophication	Floating Pontoon	Hawai'i Institute of Marine Biology (USA)	13/09-23/09/15	DCU, TelLaB
Eutrophication	Minerva Uno vessel	Western Medit. Sea	25/11–14/12/15	DCU, CNR
Eutrophication	CNR Arctic base	Svalbard Archipelago (N)	19/06-04/07/16	DCU, CNR
Microplastics	RV Minerva Uno	Western Medit. Sea	25/11–14/12/15	IDRONAUT, CNR
Microplastics	King fisher yacht	Barcelona (E)	April 16	FNOB, LEITAT
Microplastics: Analyzer	Oceania cruise	Gdansk (PL)-Tromsø (N)	13-20/06/16	IOPAN, LEITAT
Microplastics: MISS ¹ System & Analyzer	CNR lab & I Mistras lagoon (Oristano)	Oristano area (I)	26-28/09/16	IDRONAUT, LEITAT, CNR
Microplastics: Analyzer	Vendée Globe	Worldwide	11/16-02/17	FNOB, LEITAT
Heavy metals	Minerva Uno vessel	Western Medit. Sea	25/11–14/12/15	DCU, CNR, DROPSENS
Heavy metals	CNR Arctic base	Svalbard Archip. (N)	19/06-04/07/16	DCU, CNR, DROPSENS
Underwater noise	Local harbour	Lowestoft (UK)	02-04/09/15	CEFAS
Underwater noise	Motorboat	Gdańsk Bay (PL)	29/10–10/11/15	CEFAS , IOPAN
Underwater Noise	Oceania cruise	Gdansk Bay (PL)	6/11 – 7/11/15	IOPAN



The area





LABORATORY TEST - IAMC-CNR

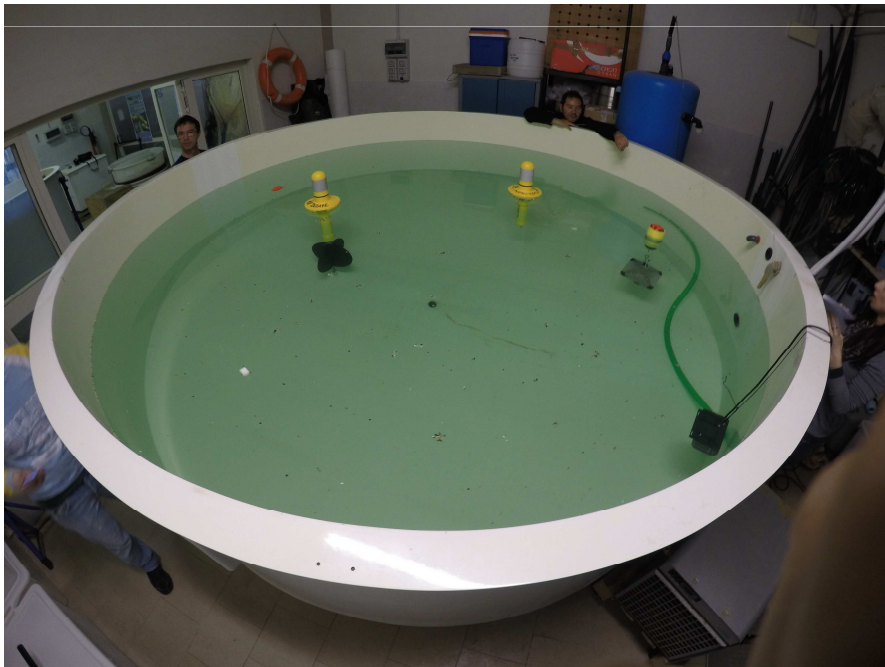
<http://oristano.iamc.cnr.it/IAMC/location-1>

2300 l tanks (n. 2)

9000 l tank (n. 1)

Controlled parameters:

- Temperature
- Salinity
- Current



- High number of field testing activities in [different environmental conditions](#);
- [inter-comparisons with commercial sensors](#);
- involvement or interest of stakeholders in testing activities;
- limits and optimal installations or possible improvements and definition of further possible optimization actions.





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Thank you for your Attention

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