Eurofleets

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The project

The EU FP7 funded Eurofleets2 project (2013 – 2017) concerns the European fleet of Research Vessels and aims at developing a common strategy and at establishing a pan-European distributed infrastructure. The European fleet of research vessels can be considered as a unique distributed infrastructure really competitive with its international counterparts as the US fleet. Research vessels represent very expensive assets with high development, investment, operation, maintenance and implementation costs. A continued investment flow is vital to maintain and possibly increase Europe's research capacity. Research vessels are necessary for marine science to maintain observation systems (biogeochemistry, physics…), to monitor oceanographic parameters, to deploy sophisticated equipments in the deep sea, to carry out specific observation missions and to collect rare and sensitive biological samples. Their role is expanding with the development of in-situ operational observation (moorings, floats, gliders, seabed observatories…).

A high availability of oceanographic fleets and associated marine equipment and a coordinated strategy and access to facilities are essential for a high quality of the research at sea.

Innovation promotion and fostering partnerships with industry

This is a major project objective and aims at:

- Establishing a regular dialogue with industrial organizations as providers and users;
- Exploring opportunities for technology transfer and innovation between Eurofleets2 project and industry;
- Implementing and evaluating a number of potential business cases;

Opportunities for technology transfer are provided by 2 RTD work packages:

1. Regional RVs guidelines and generic designs;
2. Software and Tools

1 Regional RVs guidelines and generic designs

Aims to achieve a more efficient and competitive European fleet in the field of RRV (Regional Research Vessels). This requires a modern fleet in terms of its conception and design, able to provide the capability for multipurpose and interoperability of sea operations, taking also into account the great variety of the bathymetric charts of different regions of the Mediterranean Sea. For this reason, design and development of RRVs is a complicated, time consuming and expensive exercise, and it should be done by establishing regular exchanges / contacts between qualified ship design companies, equipment manufacturers, scientific personnel with long experience from marine research cruises and experienced research vessel operators in order to build on "best practice" from existing RRVs together with the latest developments in ship design and scientific equipment. In order to concentrate all experiences, ideas and knowledge regarding the regional research vessels, the purpose of this work package is to develop generic basic designs based on guidelines for ship design for sea operations. Work so far has resulted in specifications and guidelines for Regional Research Vessels concerning:

- Noise and vibration reduction, environmental footprint;
- Bubble sweep down avoidance;
- Work deck installations associated to sea operations procedures and interoperability

Transfer to industry:
Targets: shipyards and ship design companies involved in oceanographic research vessels

Aim: to establish a dialogue and knowledge transfer which will be beneficial both for the industry parties as well as for their clients, operators and managers of research vessels

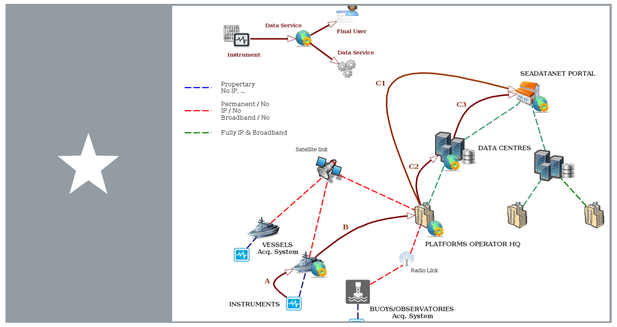
Approach: Started with inventory of shipyards and ship designers in Europe; Next will be a Workshop with project partners and selected industry parties to present and discuss outcomes of the research activities and to explore common grounds.

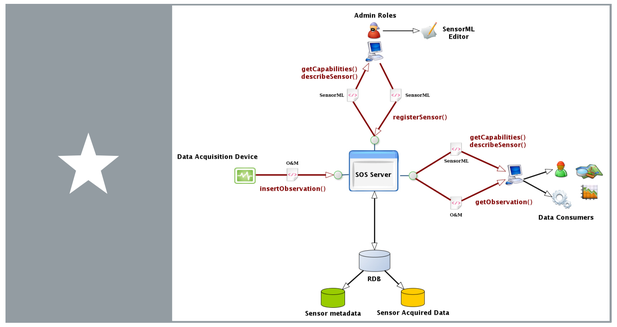
2 Software and Tools

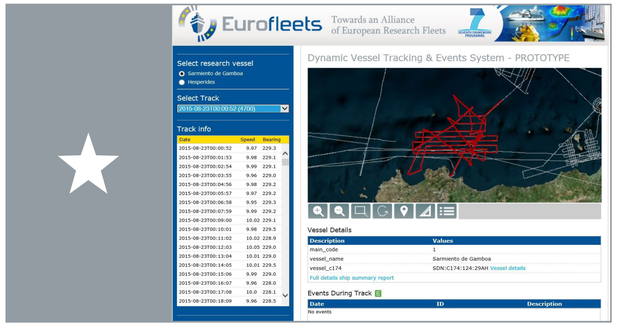
Central topic is the development and implementation of a shipborn data management system to support data acquisition, standard logging of vessel and scientific cruise information, and transfer of acquired data and metadata from the research vessels to onshore data centres, thereby adopting common standards such as from ISO, OGC and SeaDataNet and seeking interoperability with other research vessel initiatives such as R2R in the USA. One of the major activities is upgrading and making the earlier prototype of the EARS system (Eurofleets Automatic Reporting System) for manual and automatic event logging operational.

Sensor Web Enablement (SWE):

A very innovative activity is aimed at standardisation of the data acquisition process by using OGC Sensor Web Enablement (SWE) technologies. This facilitates streamlining the flow of metadata and data from sensors through the shipborn data acquisition and management system to onshore data centres. It includes defining and implementing SensorML and Observation & Measurements (O&M) profiles for specific instruments (including navigation). These profiles are supported by SeaDataNet controlled vocabularies and will provide access to the acquired data by means of the OGC Sensor Observation Service (SOS).







Transfer to industry:
Targets: manufacturers of sensors such as oceanographic and navigation equipment.

Aim: to involve them as sounding board and moreover as partners in development thereby striving for industry adoption of the SWE standards. Adoption for commonly used instruments by manufacturers will pave the way towards delivery of plug-and-play instruments. Observation network and research vessel operators will then be able to plug new instruments into their acquisition systems and to receive standardised and harmonised output.

Approach: Cooperation and tuning with various other EU projects and also in the USA and Australia that are making progress to adopt SWE and develop standards.

Joint SWE Workshop at OI2016: 17 March 2016, from 13.30 to 17.00 hours, Room 6 South Gallery

An overview will be given of the present state of developments by means of a few concise presentations. In addition manufacturers of instruments and platforms will be invited for sharing their views on adoption of SWE standards. Furthermore a panel discussion will be included. This should lead to a fruitful dialogue for finetuning SWE standards in the near future.

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