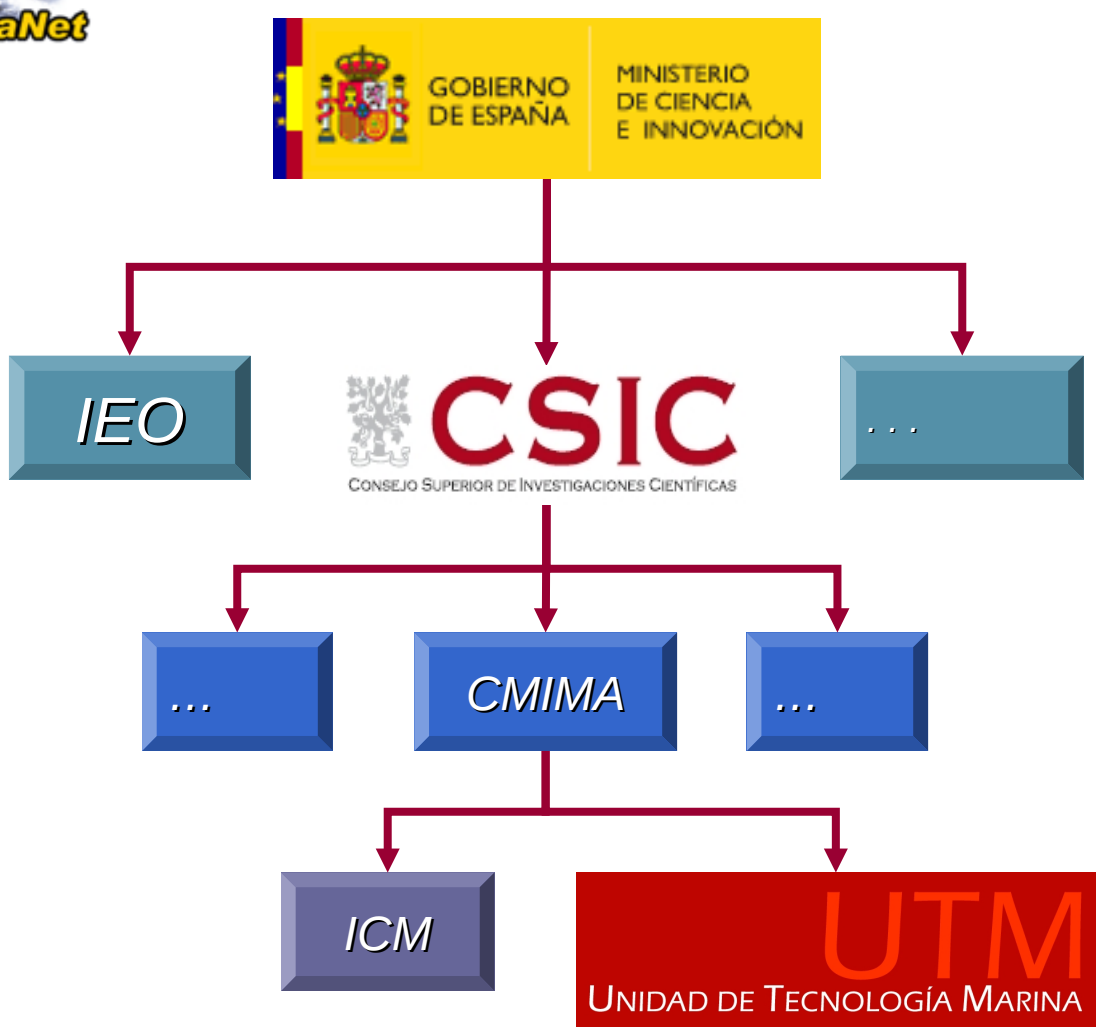
UTM-CSIC
(IEO Subcontractor)

Jordi Sorribas Cervantes

SeaDataNet 2 Kick-off meeting
Athens 19-20 October 2011

UTM - CSIC



CSIC Marine Science Institutes

- ICM - Barcelona
- IIM - Vigo
- ICMAN - Cádiz
- IATS - Castellón
- CEAB - Blanes
- UTM - Barcelona
- IMEDEA - Mallorca
- ICT - Granada
- ICTJA - Barcelona

The **Marine Technology Unit (UTM)** with the **Marine Science Institute (ICM)** belongs to the **Natural Resources Area of the CSIC**, and both are integrated in the **Mediterranean Centre for Marine and Environmental Research**.

Location

Shipyards, Fleet

Workshops, mechanics

Headquarters

Fleet

Shipyards, Fleet

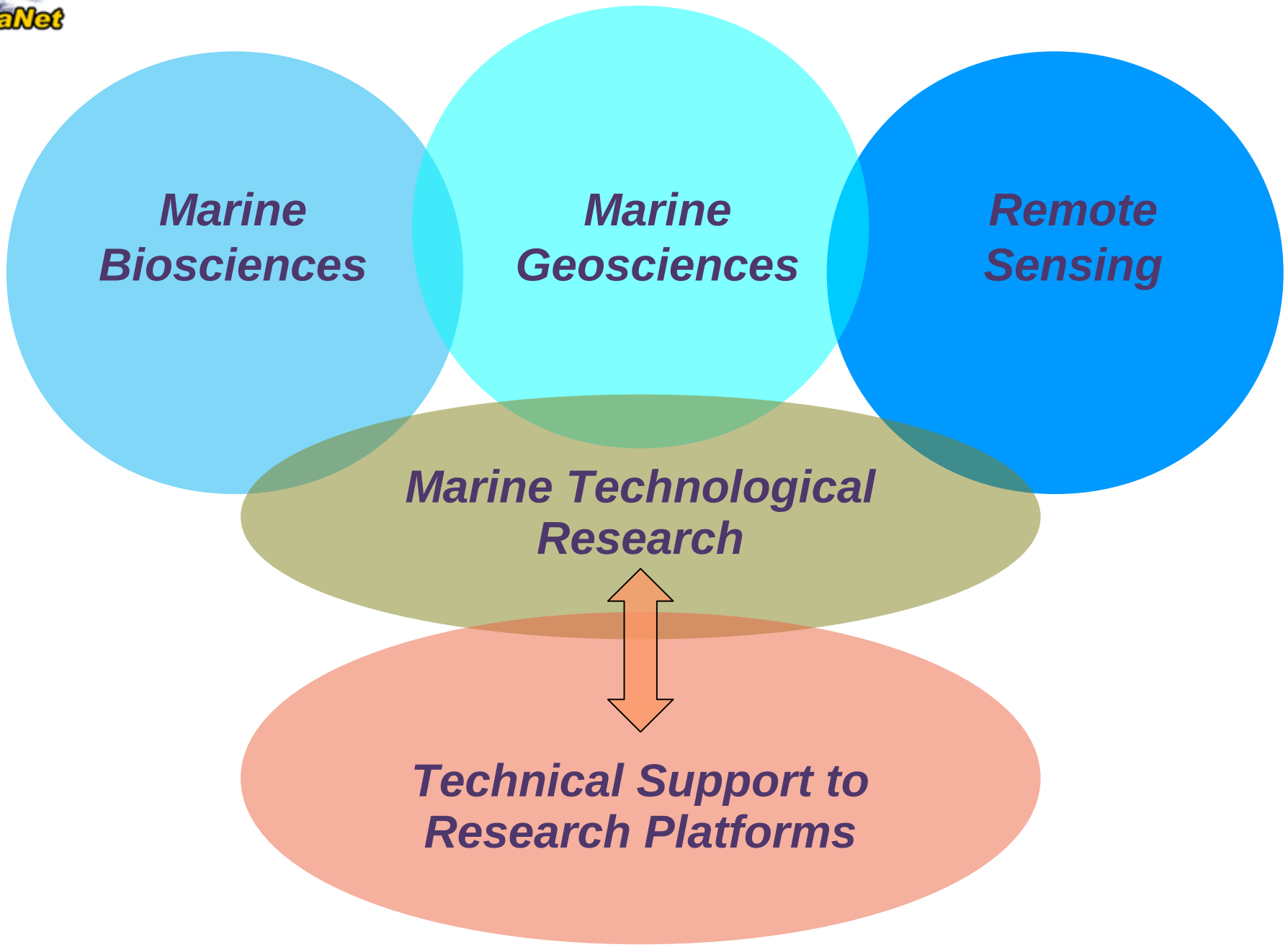
Workshops, mechanics

http://www.utm.csic.es

Responsibilities

- **National Technical Service for Marine and polar Science (from 1992)**
  - CSIC Large Scale Facilities (ICTS)
  - Technical/technological support, maintenance & logistics.
- **Marine Science & Technological Development.**
  - Generate knowledge and formation about the marine environment
  - Technological improvements and new applications

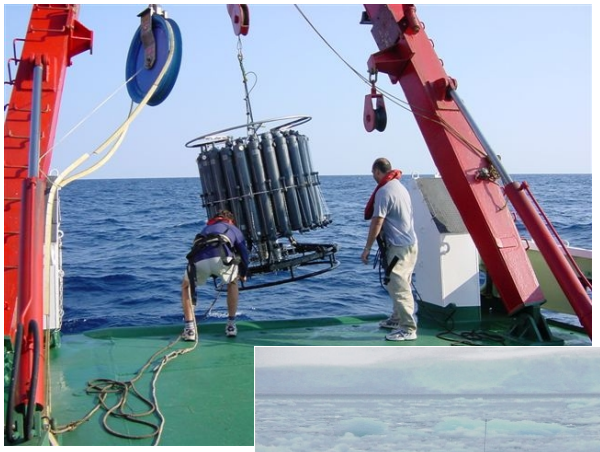
Areas of Activity



Support to Research Platforms

Technical, technological, administrative & logistical support to **Singular Scientific/Technical & Large Facilities (ICTS)** managed by Spanish Research Council (CSIC)

- **Research Vessels**
  - R.V. Sarmiento de Gamboa
  - R.V. Hesperides
  - R.V. Garcia del Cid
- **Antarctic Stations**
  - Juan Carlos I
  - Gabriel de Castilla



"To drive the National Large Scale Marine Infrastructure to the highest standards, delivering outstanding services, incorporating new technologies to improve competitiveness at National and International levels."

CSIC Research Vessels

R.V. Sarmiento de Gamboa

length: 70.50 m Beam: 15.5 m
Displacement: 2.979 GT

R.V. Hesperides

length: 82.50 m Beam: 14.3 m
Displacement: 2.830 GT

R.V. Garcia del Cid

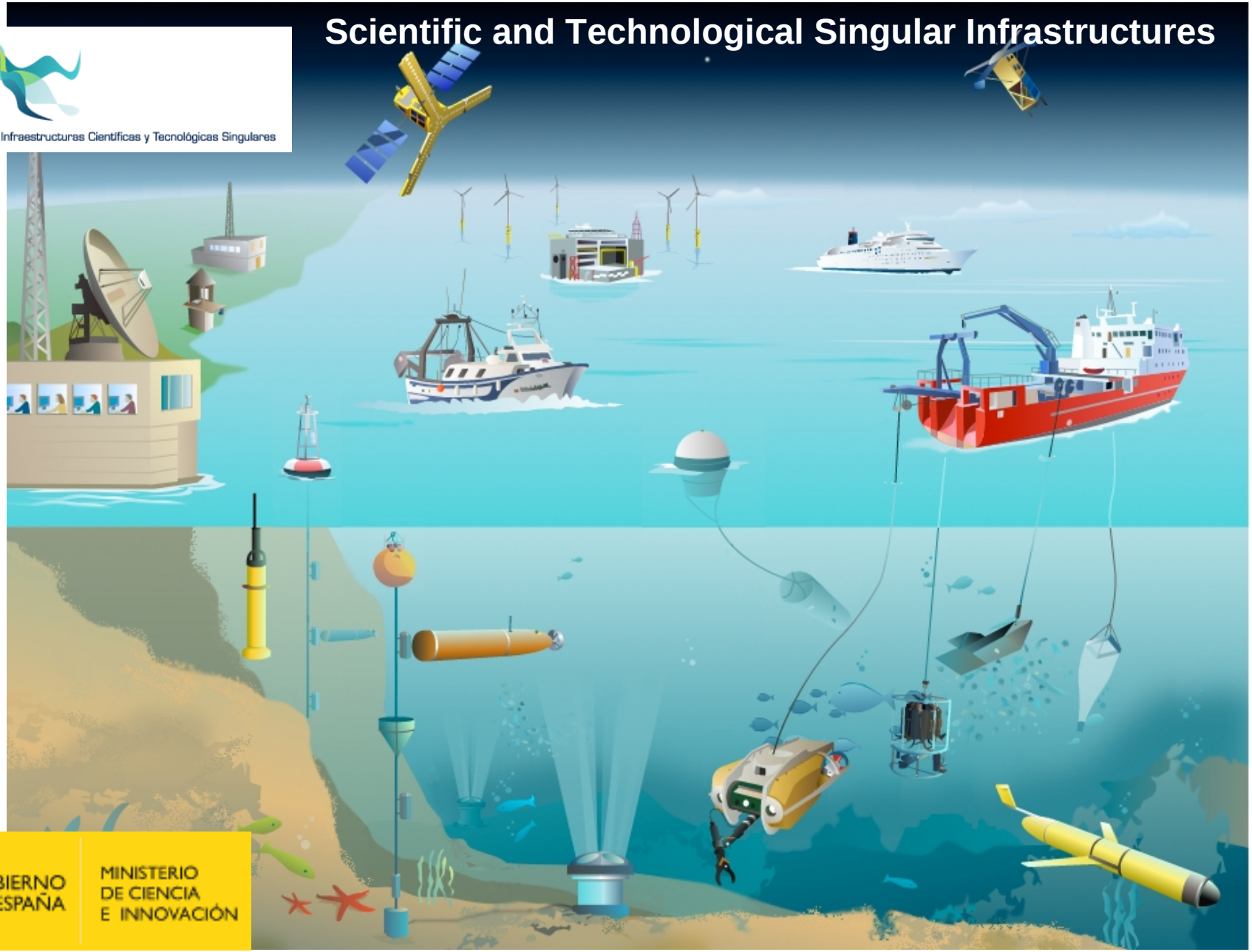
Length: 37.2 m Beam: 8.4 m
Displacement: 285 GT

Up to 900 days at sea per year (4 to 8 technicians by ship)

Spanish Marine ICTS

http://www.redictsmarinas.ieo.es/redICTS

RedICTS MARINAS Infraestructuras Científicas y Tecnológicas Singulares

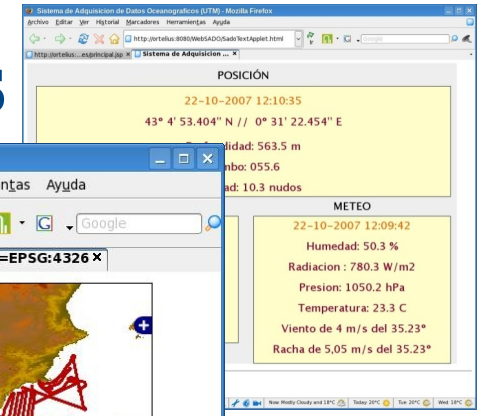


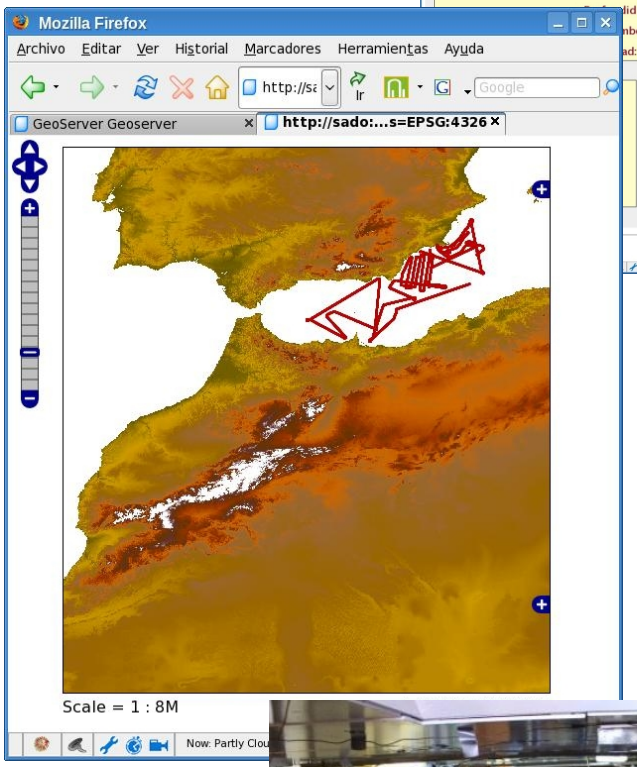
GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN

Data Management Activities

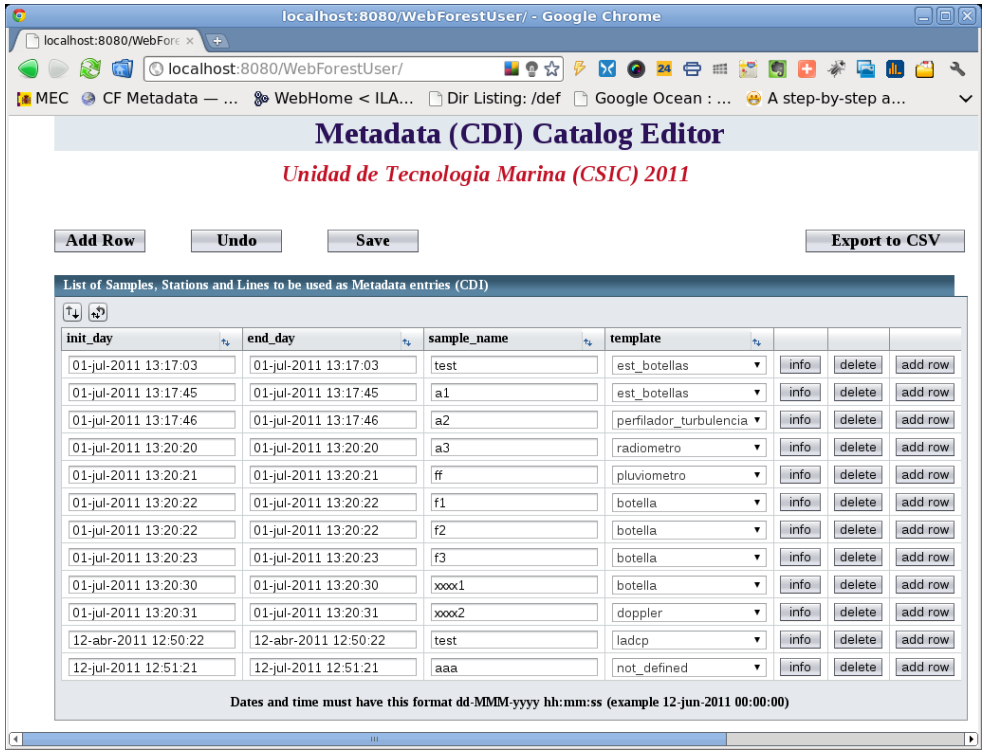
On-board Research Vessels

On-board D.A. Systems





Metadata Production



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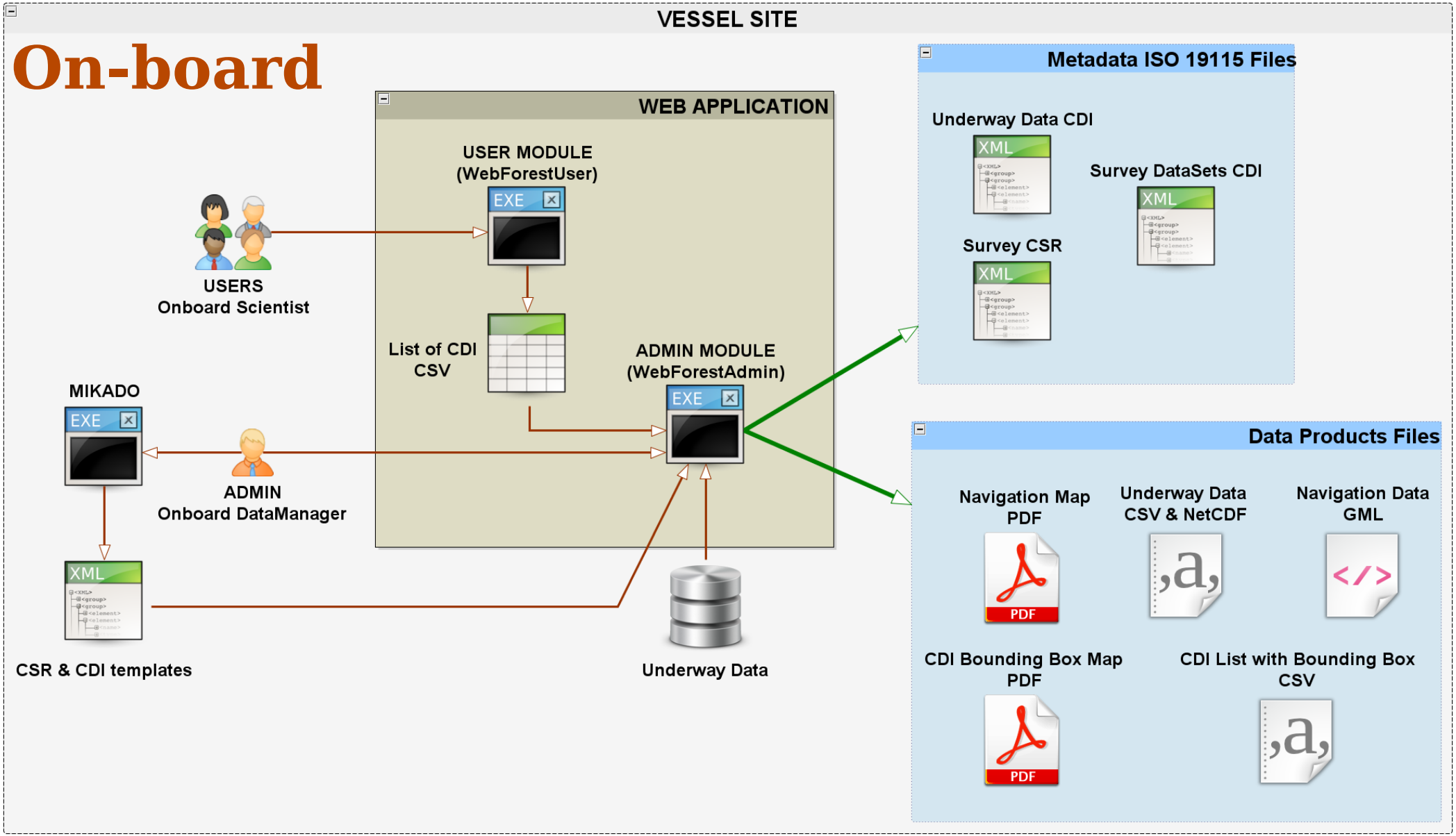
01-jul-2011 13:17:45	01-jul-2011 13:17:45	a1	est_botellas	info	delete	add row
01-jul-2011 13:17:46	01-jul-2011 13:17:46	a2	perfilador_turbulencia	info	delete	add row
01-jul-2011 13:20:20	01-jul-2011 13:20:20	a3	radiometro	info	delete	add row
01-jul-2011 13:20:21	01-jul-2011 13:20:21	ff	pluviometro	info	delete	add row
01-jul-2011 13:20:22	01-jul-2011 13:20:22	f1	botella	info	delete	add row
01-jul-2011 13:20:22	01-jul-2011 13:20:22	f2	botella	info	delete	add row
01-jul-2011 13:20:23	01-jul-2011 13:20:23	f3	botella	info	delete	add row
01-jul-2011 13:20:30	01-jul-2011 13:20:30	xxxx1	botella	info	delete	add row
01-jul-2011 13:20:31	01-jul-2011 13:20:31	xxxx2	doppler	info	delete	add row
12-abr-2011 12:50:22	12-abr-2011 12:50:22	test	ladcp	info	delete	add row
12-jul-2011 12:51:21	12-jul-2011 12:51:21	aaa	not_defined	info	delete	add row

Data Custodian

On-board User Assessment

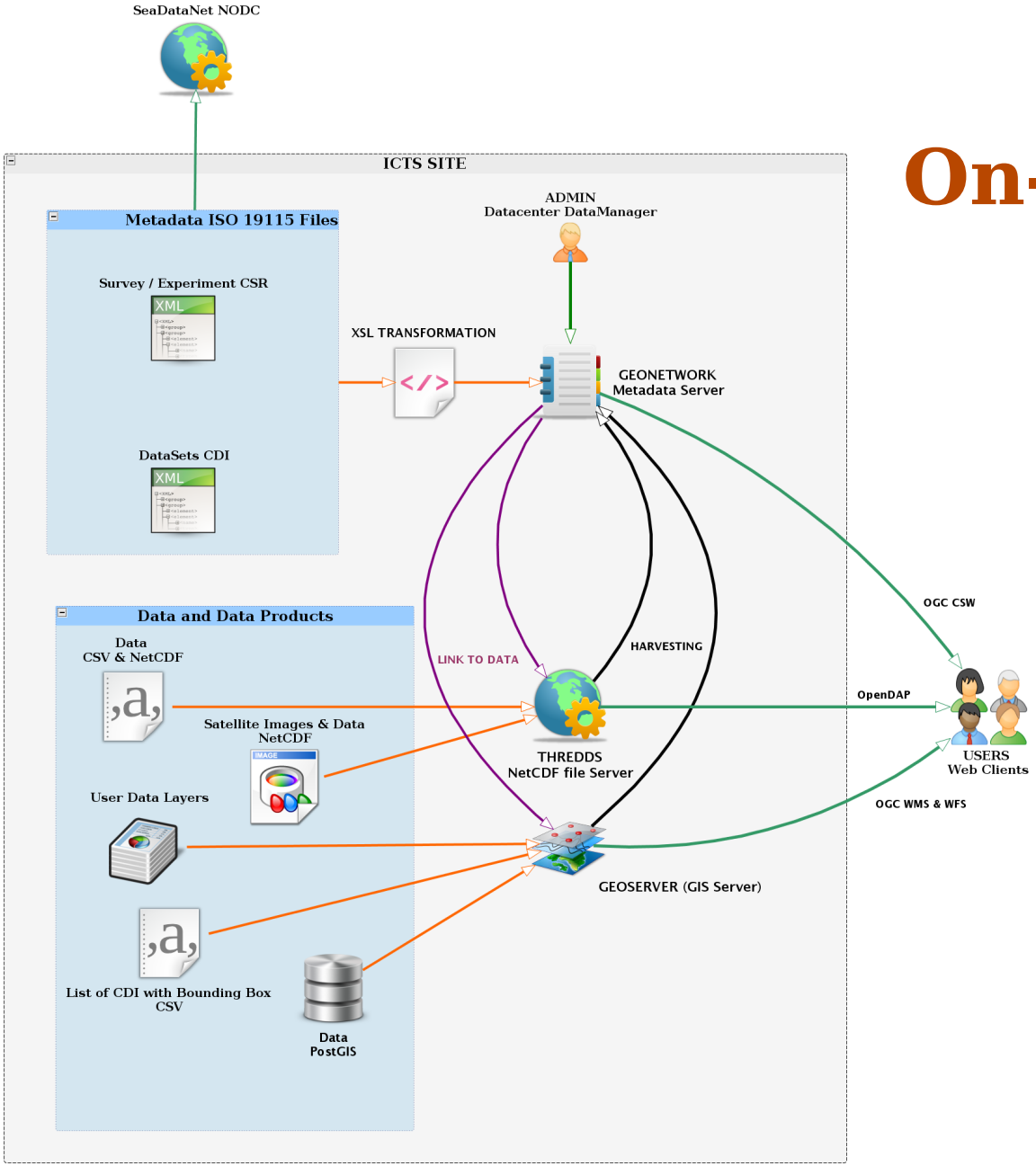
Data Management Activities

Implemented Technologies

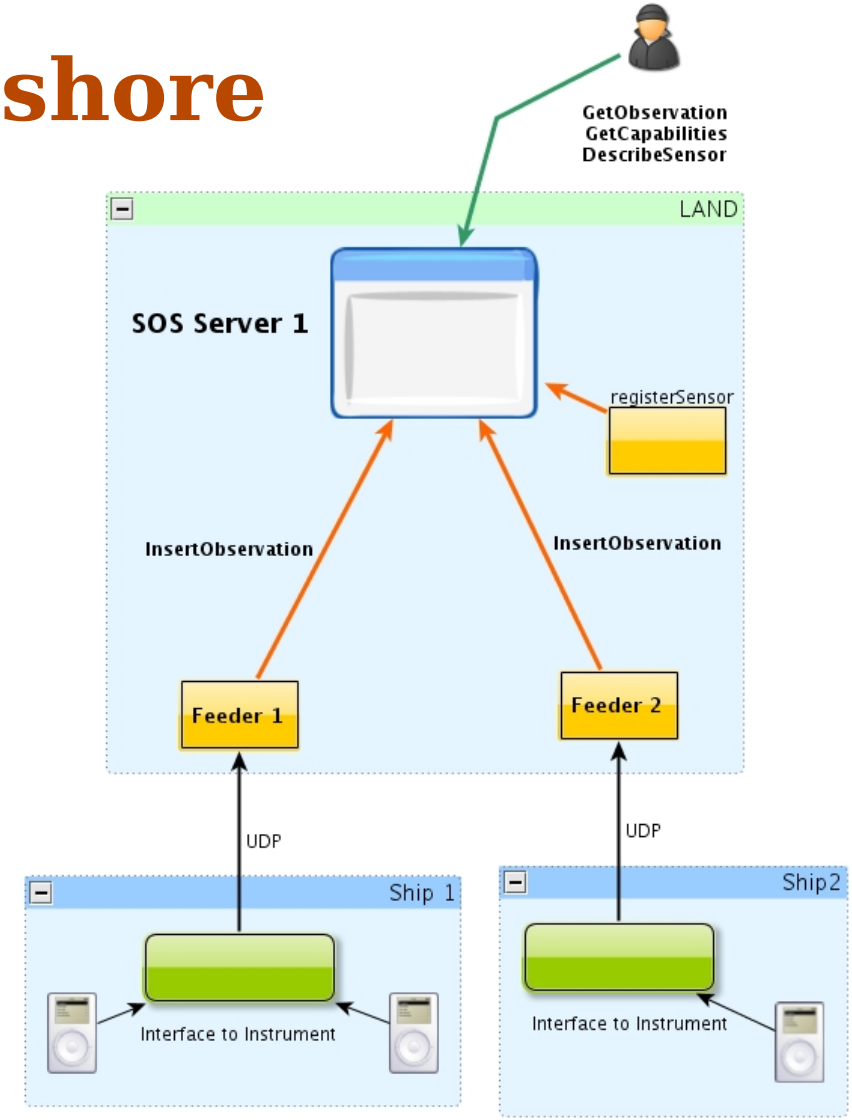


Data Management Activities

Implemented Technologies

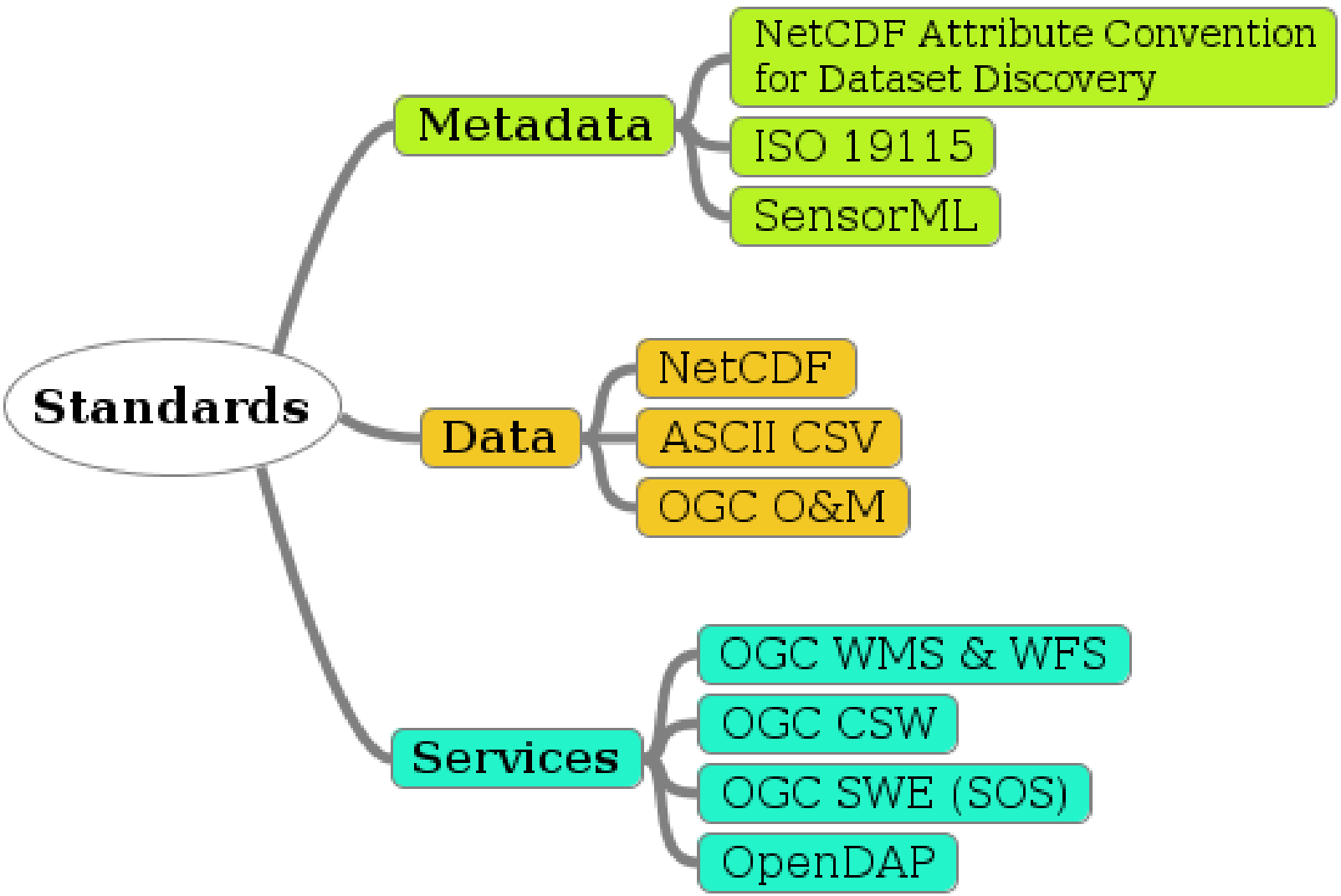


On-shore



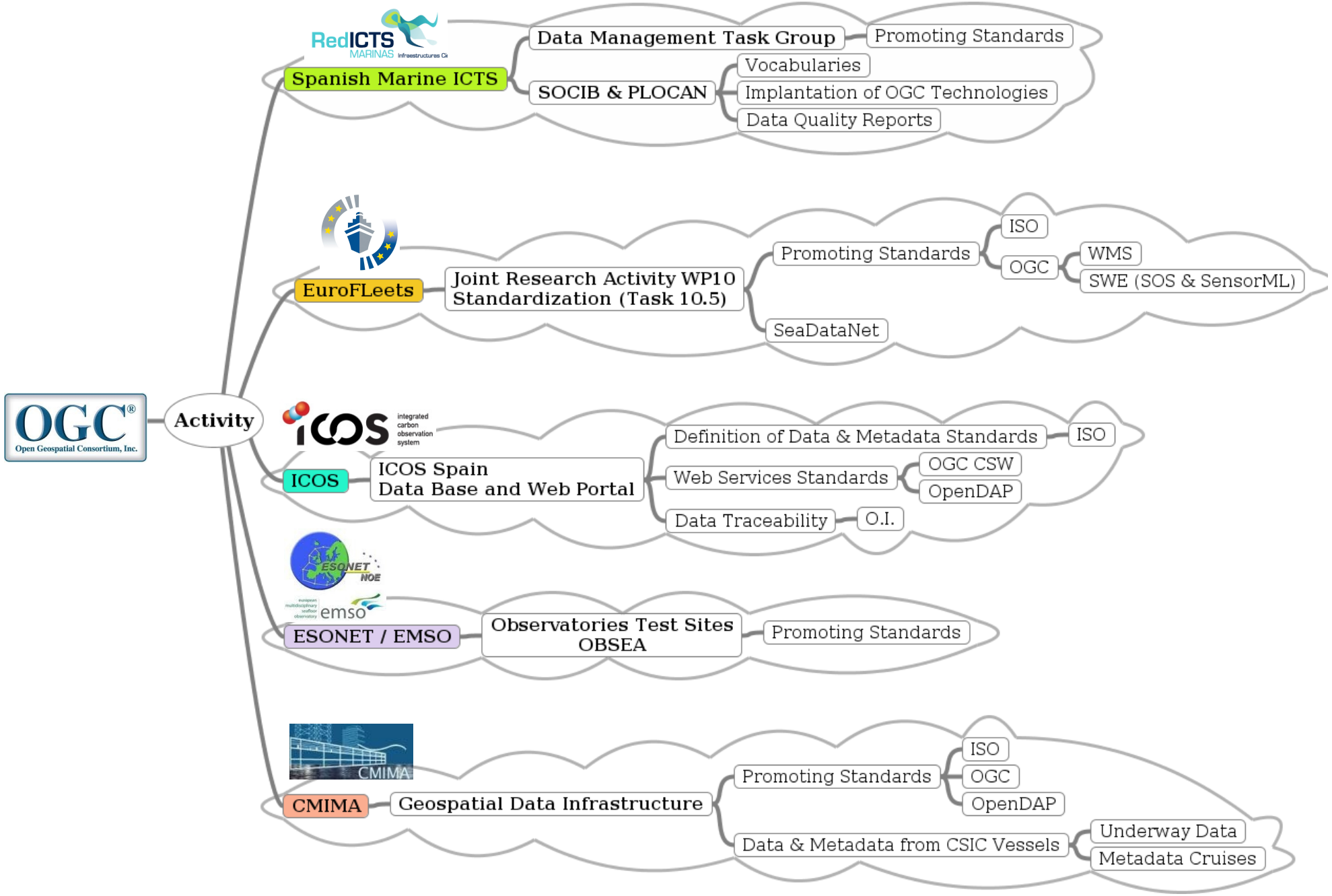
Data Management Activities

Implemented Technologies



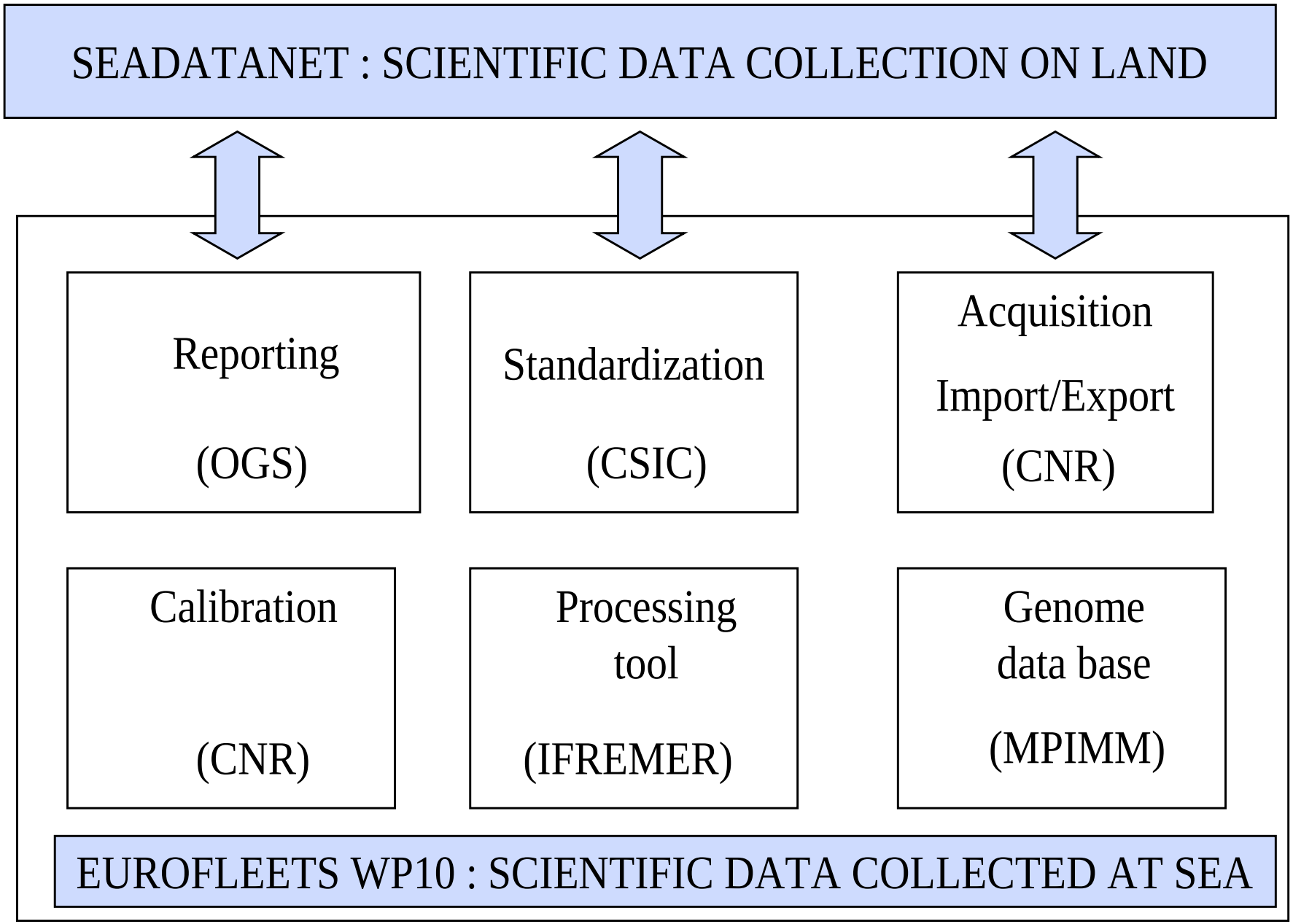
Data Management Activities

Projects and Collaborations



Data Management Activities

Eurofleets / SeaDataNet

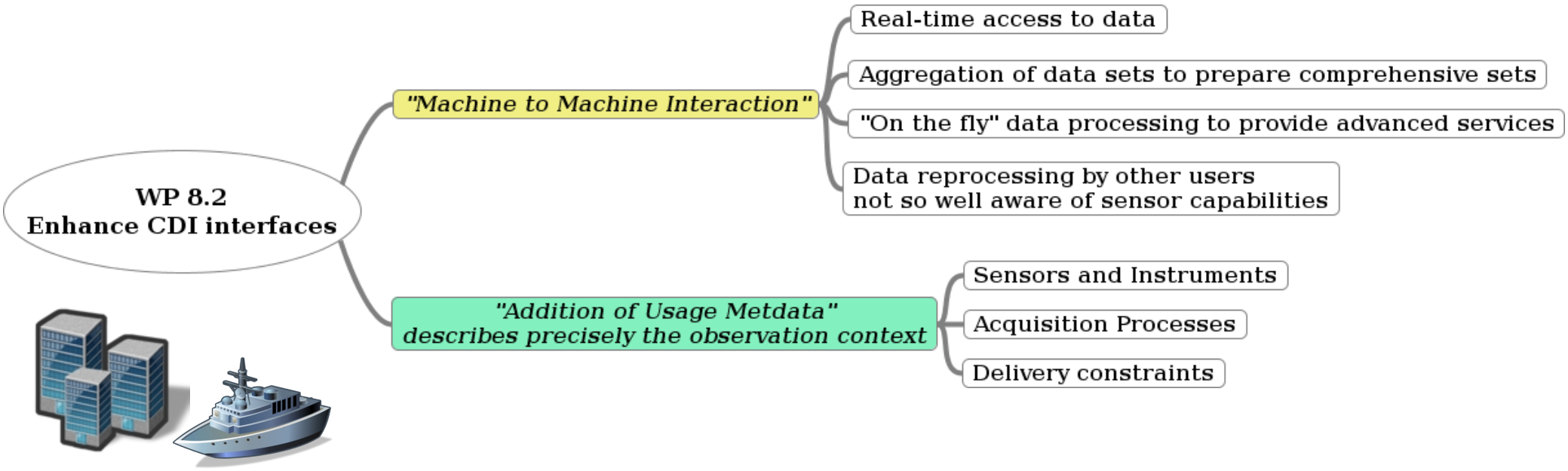


UTM-CSIC in SeaDataNet2

IEO will subcontract **UTM** especially for bringing in its expertise with the SensorML and Observations & Measurements Schemas and its experience with these as part of EuroFleets.

WP 8: Specification and governance of standard metadata, data and data product formats, and qc methods.

- ***WP8.2****: "Defining an extended metadata format for the CDI to support operational oceanography and other specific applications"*



UTM-CSIC in SeaDataNet2

Tasks

- **Define SensorML profiles** to describe instrument and sensors used in the field of marine observation, both for automatic systems such as floats, buoys, sea-floor and coastal observatories, vessel mounted devices and for manual observations
  - ESONET/EMSO, EuroArgo, FerryBox, MyOcean, Geo-Seas, …
  - Implemented in the SeaDataNet CDI discovery service as extensions.
  - The SensorML part may be queried using SOS requests
- **Define O&M data models** adapted to the marine observation data such as water column vertical profiles, time series, and vessel underway data.
  - According to the work already conducted by other groups in related domains
  - Conducted both for the OGC SOS protocol and for OpeNDAP
- Implementation of the 3 **SOS mandatory 'core' operations**
- Install and configure **OpeNDAP** services locally with observations in **NetCDF (CF)** data files, queried via **THREDDS** from the **CDI** portal services

UTM-CSIC in SeaDataNet2

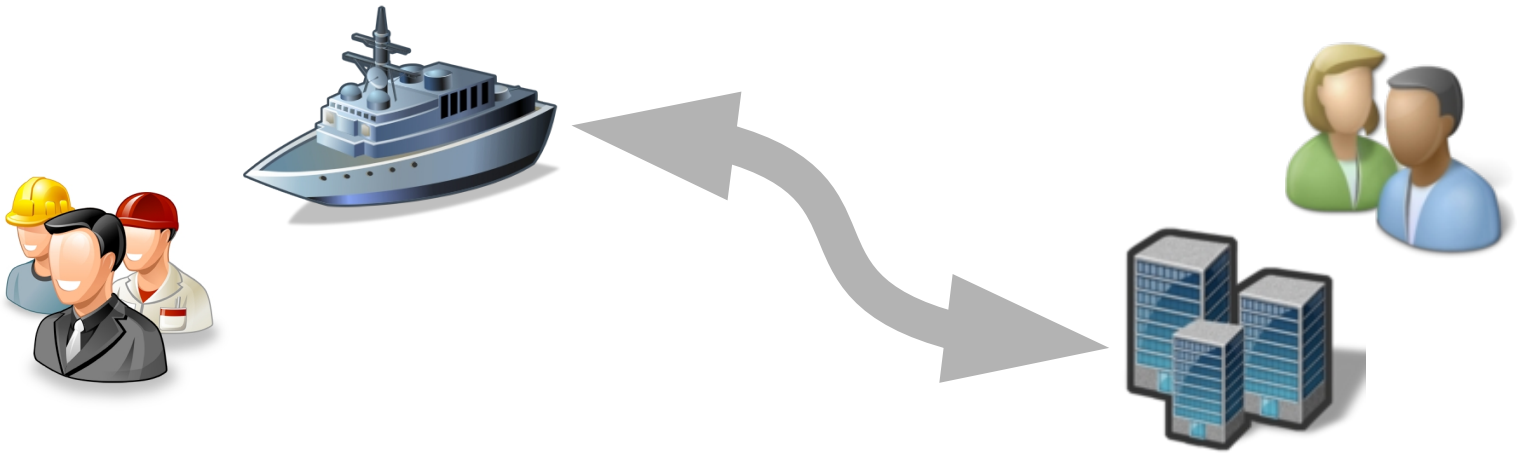
Starting points and References

- **Geo-Seas**
  - Uses SeaDataNet as its underlying infrastructure.
  - First analysis already has taken place how to apply O&M and SensorML as extensions to the core CDI format for describing additional usage metadata about the acquisition of seismic survey data and for giving access to the seismic images.
- **Eurofleets**
  - Pilot experiences to apply SWE technologies on-board
- **Others (IMOS, EMSO)**
  - Other frameworks with successful experiences to apply O&M and SensorML in marine environments
- **OGC Interoperability Program**

UTM-CSIC in SeaDataNet2

Keys for the success

- **Involve "Data Acquisition Users" in the Metadata generation process**
  - **Generate as much information as possible near from the acquisition site (vessels, …)**
  - **Adapt & Adopt metadata tools to be used in this environments**
- **Strong collaboration with similar initiatives**
- **Use as much as possible OGC support**



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