VALMER
PANACHE
Protected Area Network Across
the Channel Ecosystem
THE ENGLISH CHANNEL
one ecosystem two projects
FINAL CONFERENCE -MARCH 17th-18th 2015 - TORQUAY

Integrated data management

Dan Lear & Charly Griffiths (MBA)
Sonia Carrier (AAMP)
Catherine Satra La Bris (Ifremer)

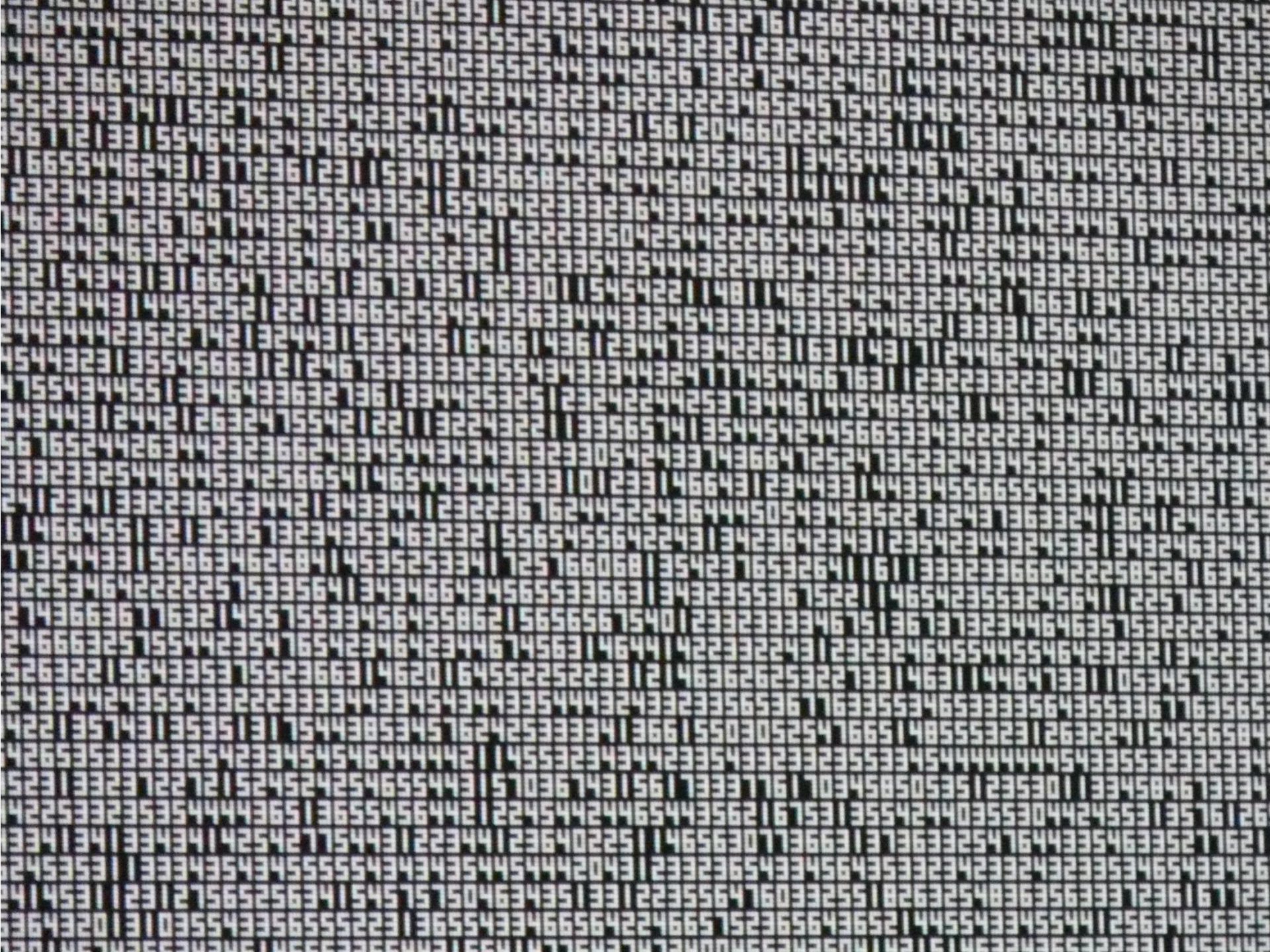
Integrated Data Management

- **History**
- **UK and French approaches**
- **The wider perspective**
- **Challenges & Solutions**
- **The future**

VALMER

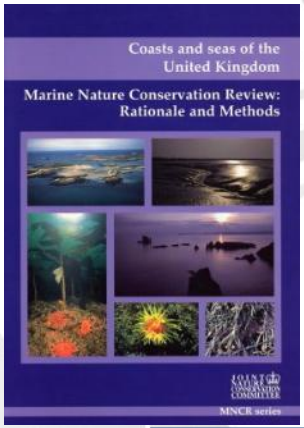
PANACHE

Protected Area Network Across the Channel Ecosystem



A Bit of History - 1997

The need for integrated data management was identified a long time ago…

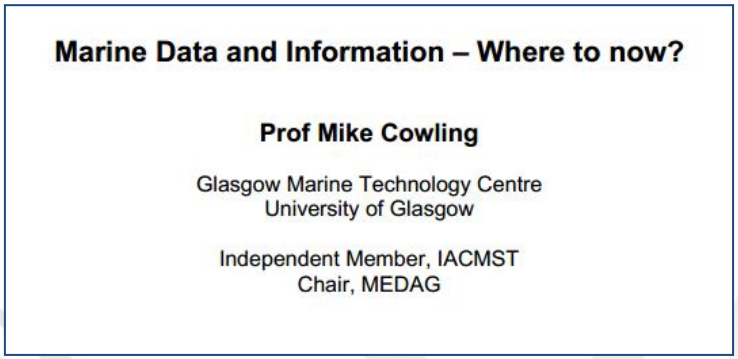


Following the Marine Nature Conservation Review (MNCR) which started in 1987...

Marine Pollution Bulletin, Vol. 34, No. 2, pp. 74-77, 1997
http://dx.doi.org/10.1016/S0025-326X(96)00140-3

“Marine environmental management requires investment to ensure more effective access to available data and information.”

A Bit of History - 2005



Marine Data and Information – Where to now?

Prof Mike Cowling

Glasgow Marine Technology Centre
University of Glasgow

Independent Member, IACMST
Chair, MEDAG

Recommendations included:

- Establishment of Marine Data and Information Partnership (MDIP)
- Identification of thematic Data Archive Centres (DACs)
- Creation of a central “portal” for marine data

A Bit of History - 2005

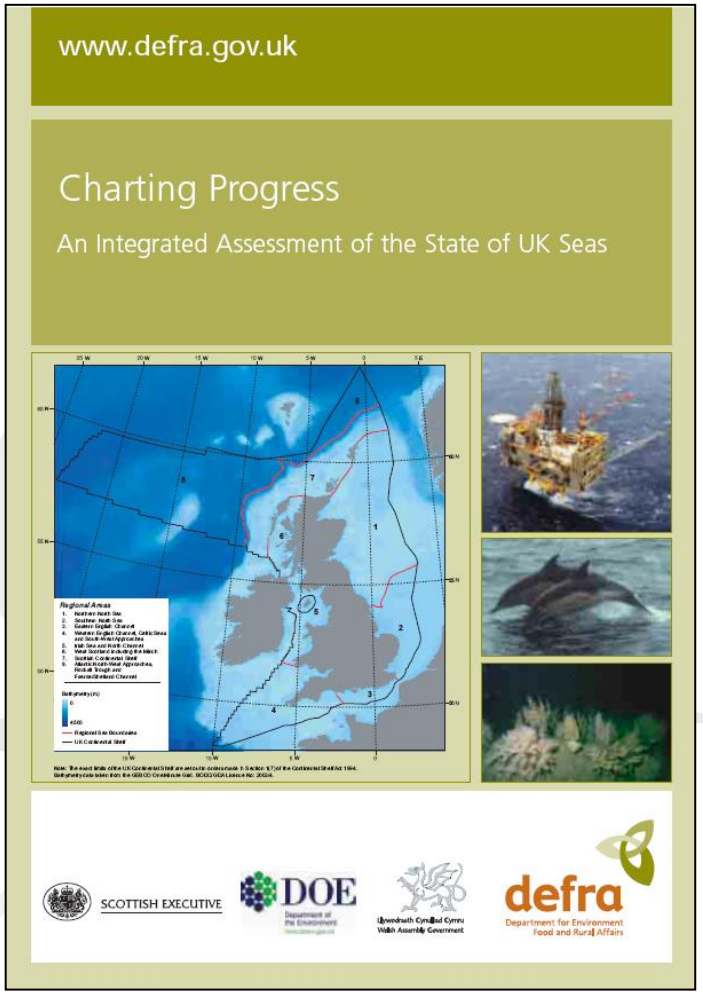
"there is an urgent need to establish a process to gather data together for the wider marine environment, both existing data and new data, to properly assess the status of benthic communities at a UK level."

"Recommended the creation of the Marine Data and Information Partnership (MDIP) to:

•Establish a…framework for managing marine data and information: 'capture once and use many times'

•Establish Data Archiving Centres

•Provide guidance on managing marine data …including the development of standard protocols and procedures."



http://chartingprogress.defra.gov.uk/feeder/chartingprogress.pdf

A Bit of History - 2005

DASSH set up from the successful MarLIN Seabed Data Access Programme to fill a gap in the existing thematic Data Centres

www.dassh.ac.uk

A Bit of History - 2008

MDIP + MEDAG =

MEDIN
marine environmental
data & information network

"Measure once, use many times"

www.oceannet.org

All Photos © Keith Hiscock

MEDIN

- MEDIN is a collaborative and open partnership
- Working to reduce costs in sourcing, evaluating and preparing data
- Sponsors include government departments, research councils, environmental and conservation agencies, trading funds
- Wide public and private sector involvement (>30 active partners)

MEDIN

1. **DAC Network**: Framework of marine **data archive centres**.
   - To provide secure long-term management of priority marine data sets, according to best practice standards.
2. **Standards:** Guidance for data and metadata.
   - An agreed set of common standards for metadata, data format and content maintained and supported through implementation by partners.
3. **Web Portal:** Data search, other services and products
   - Improved access to authoritative marine data held in this network, through a central (discovery) metadata search capability.
4. **Resource and Application Development**
   - Specify user requirements, identify and implement solutions
5. **International Coordination**
   - Links to global databases and initiatives

Data Archive Centres

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

for seabed and sub-seabed geology, geophysics data

British Oceanographic Data Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

for water column oceanographic data

THE UNITED KINGDOM HYDROGRAPHIC OFFICE

for bathymetry data

Met Office

for marine meteorological (metocean) data

DASSH The Archive for Marine Species and Habitats Data

for flora, fauna and habitat data

Cefas

marinescotland science

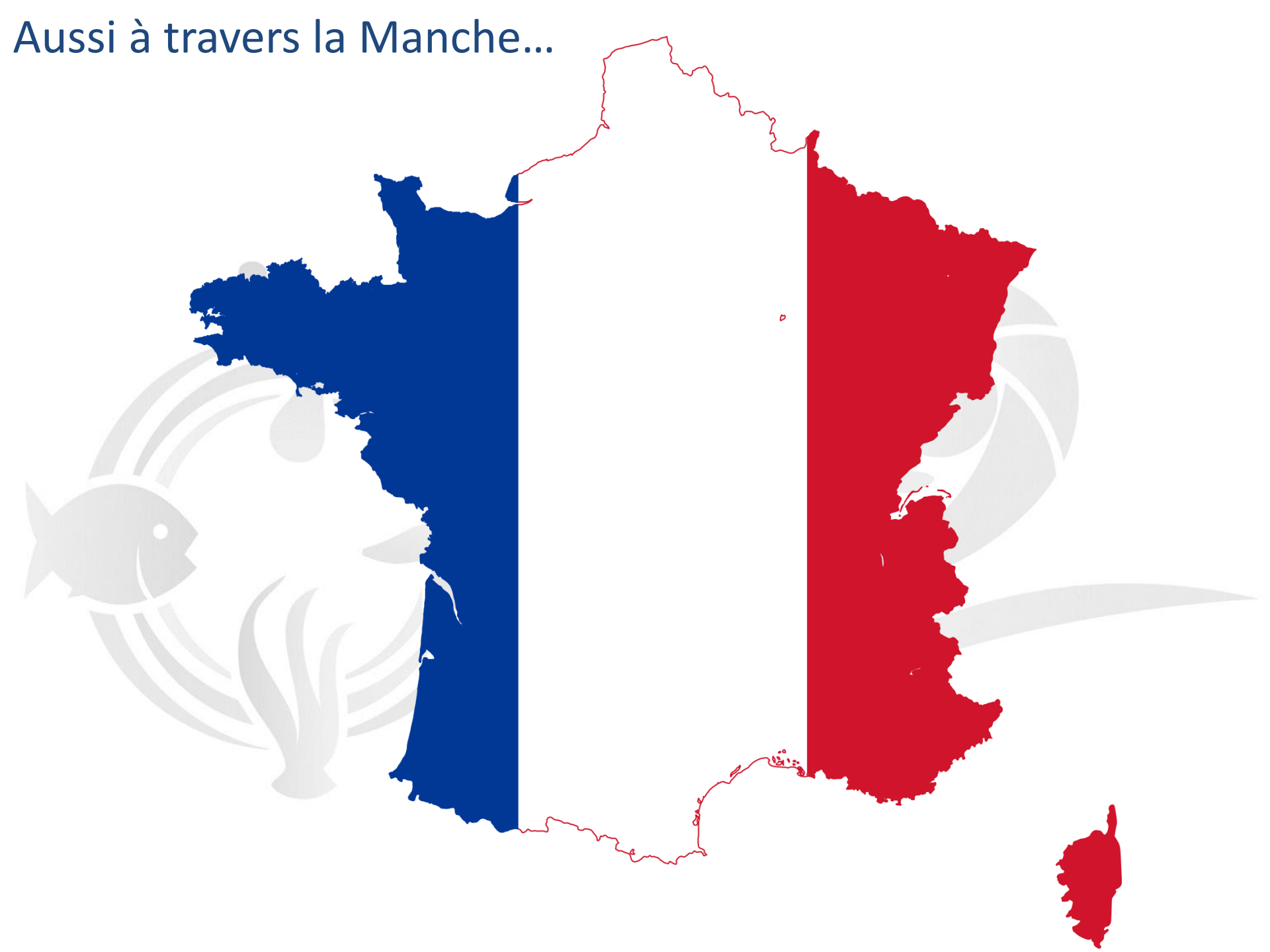
The Scottish Government

for commercial fisheries data

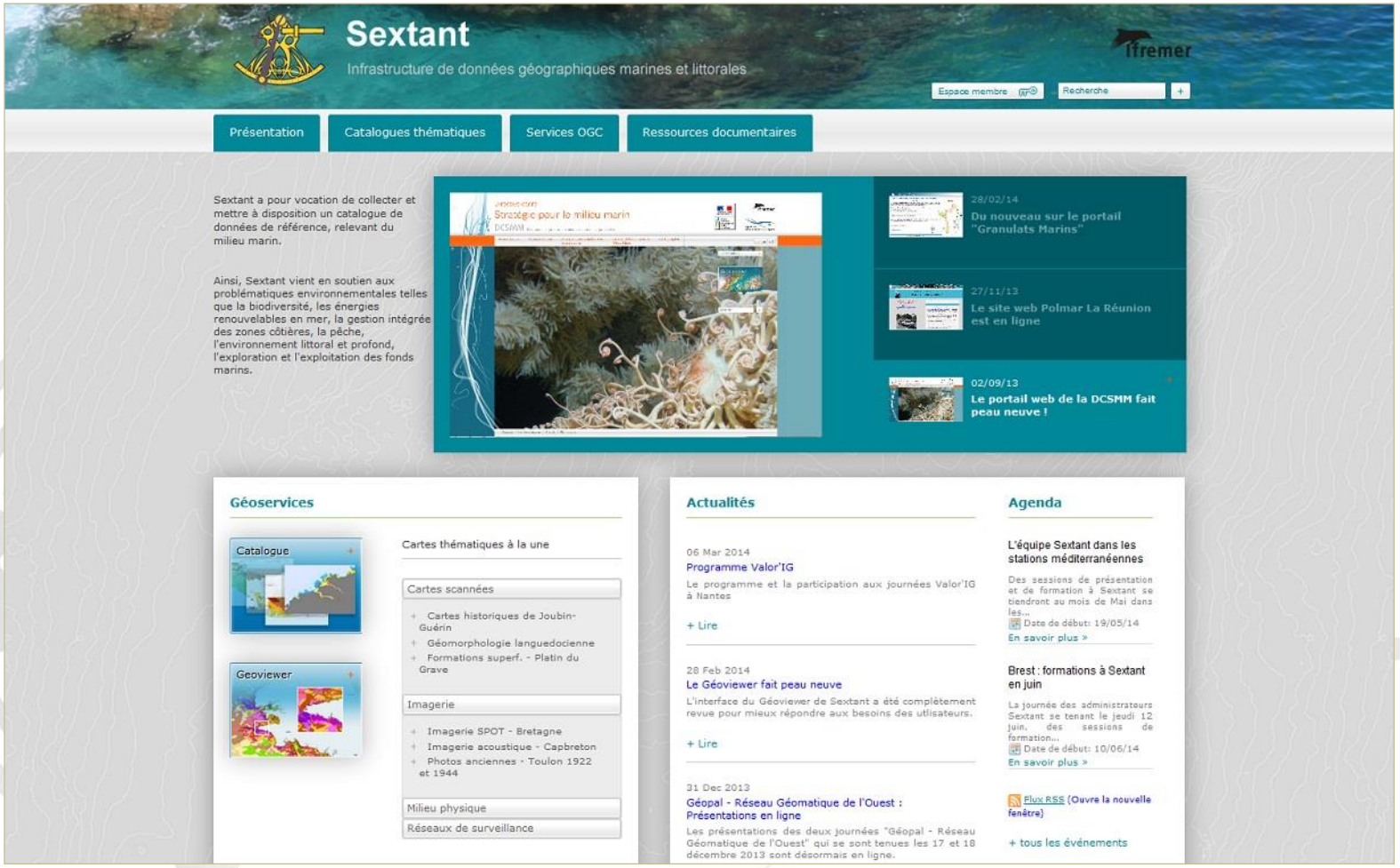
ads ARCHAEOLOGY DATA SERVICE

for marine historic environment data

Aussi à travers la Manche…



2001 – Sextant (intranet)



http://sextant.ifremer.fr

Ifremer

2006 – Sextant (partners & public)

Sextant meets the needs of different projects from the regional level to an international scale, including overseas territories:

European Projects: EMODNet, MyOcean, SeaDataNet, Charm

French national projects: Marine Strategy Framework Directive (MSFD), Marine aggregate, Renewable Marine Energy Planning, Natural Maritime Information Systems (SINP)

Regional Projects: Rebent, Medbenth, Ogive Agil

Projects in Overseas Territories: Indian Ocean, New Caledonia, French West Indies

http://sextant.ifremer.fr

Ifremer

INSPIRE –ing?

EU INSPIRE Directive came into force 15th May 2007 with full implementation by 2019

Data should be

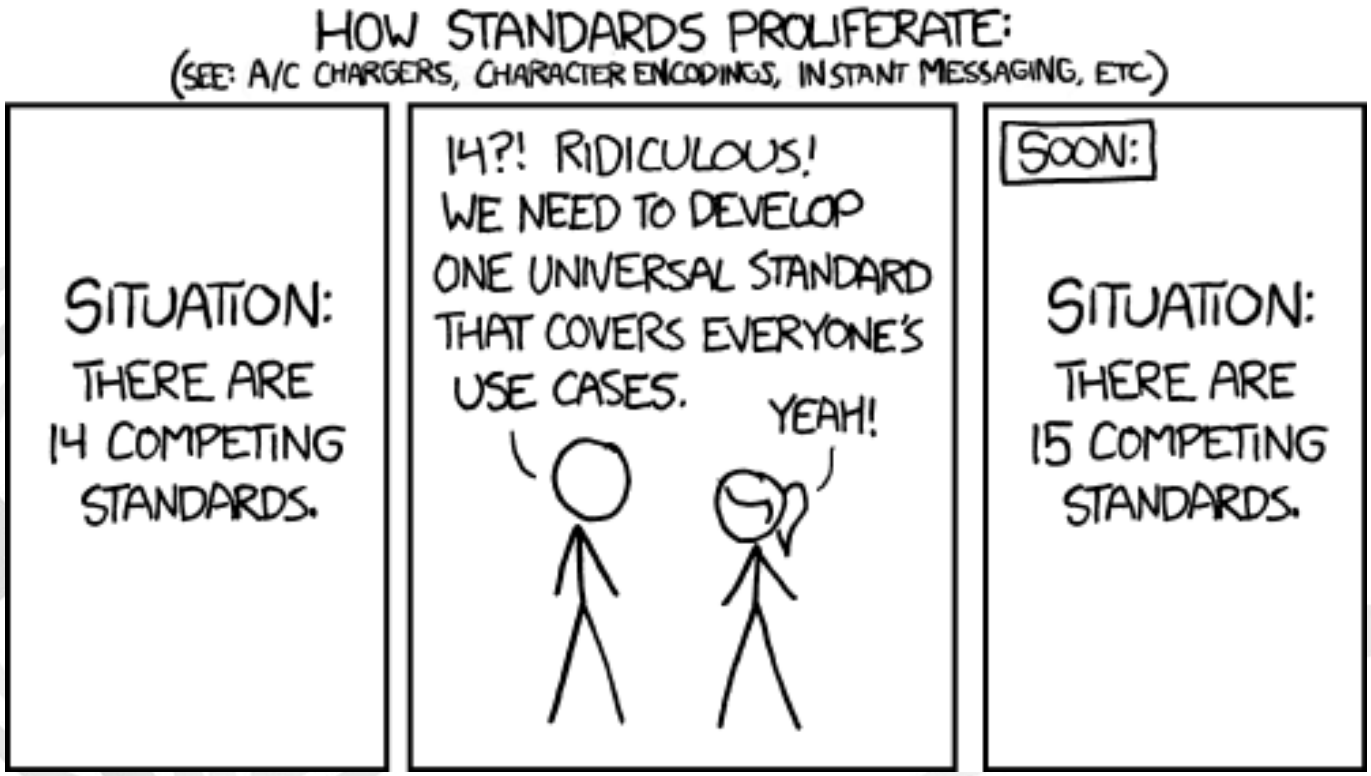
- Collected once and stored where it can be effectively maintained
- Easily discoverable
- Readily and transparently available
- Capable of being seamlessly combined across Europe

DATA.GOV.UK Beta
Opening up Government

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

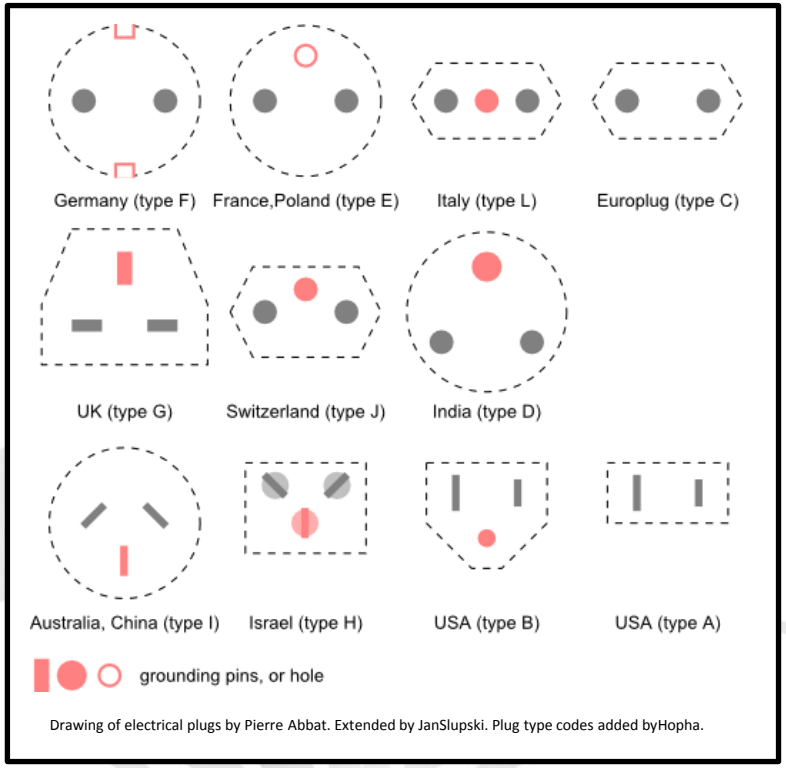
géoportail

Standards and Guidelines



Source: xkcd.com

Standards and Guidelines



Drawing of electrical plugs by Pierre Abbat. Extended by JanSlupski. Plug type codes added byHopha.

"Reisestecker" by User:Mattes - Own work. Licensed under Public domain via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:Reisestecker.jpg#mediaviewer/File:Reisestecker.jpg

Standards and Guidelines

In order to find and use data you need to know something about them.

Metadata describes data – “data about data”

ISO Standard for geospatial metadata
- ISO19115/19139

UK Implementation
- UK GEMINI

Marine “super-set”
- MEDIN Discovery Metadata Standard
- Keywords in European infrastructure

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```

Metadata is IMPORTANT!

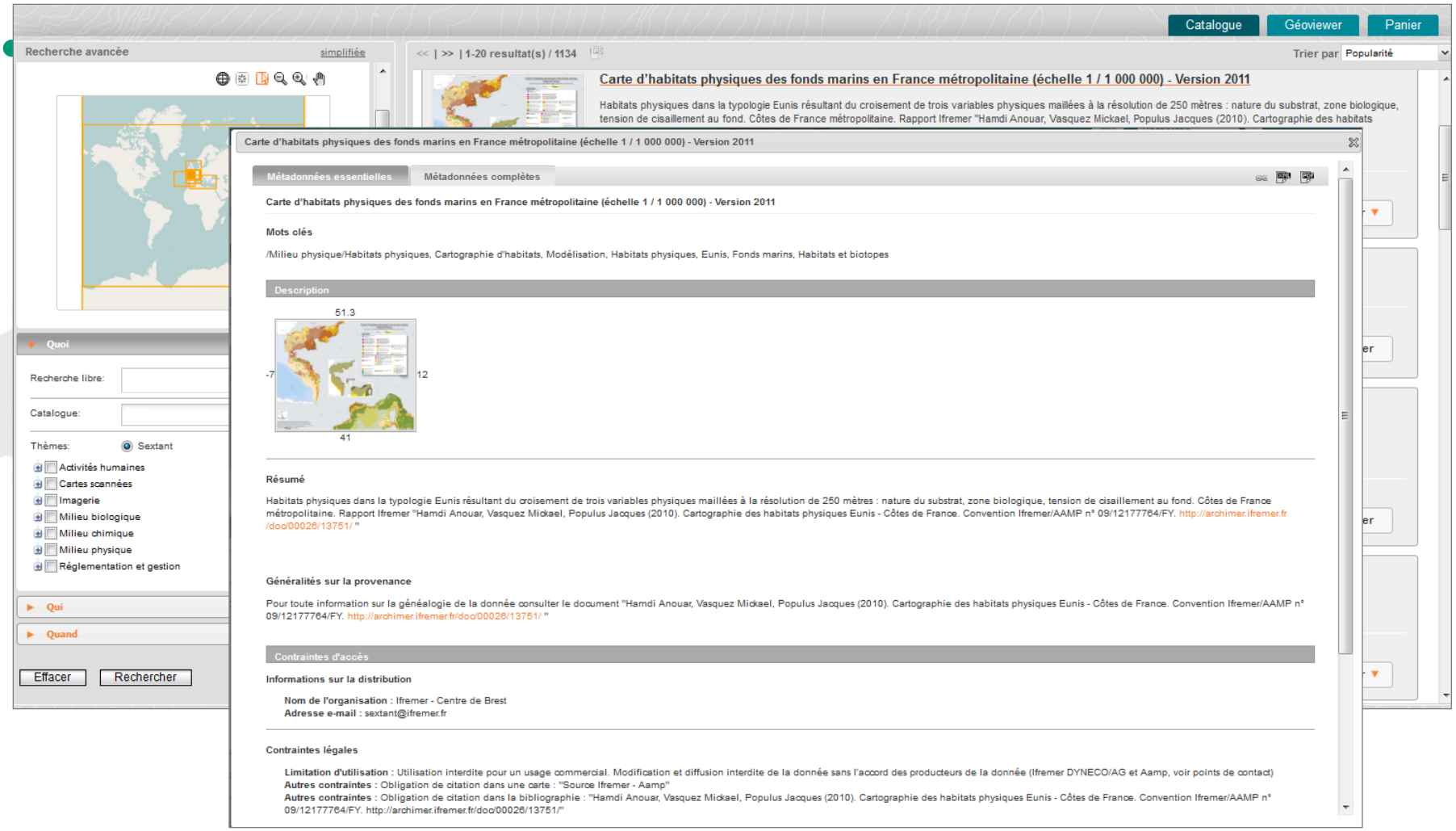
photograph courtesy of Flickr user sarah0s / Creative Commons Licensed

The Metadata Catalogue

Search criteria

Results page

The Metadata Catalogue



home

data discovery portal

online data by theme

data submission

marine data standards

library

You are searching for...
everything in the catalogue.
2611 results returned in **0.23** seconds.

Shortcut search
Click to search...
- The United Kingdom
- England
- Scotland
- Wales
- Northern Ireland

Add your own record here.

A light version of the portal is available for mobile and other limited browsers.

home

data discovery portal

online data by theme

data submission

marine data standards

library

You are searching for...
documents containing `Haddock`
6 results returned in **0.80** seconds.
Return to your results or Edit this search.

Download
The metadata is available for downloading in the following formats:
- MEDIN format (CSV)
- MEDIN format (XML version 2.3.1)
- Dublin Core format (XML)
- GCMD DIF format (XML version 9.4)

This metadata complies with INSPIRE and GEMINI 2 standards.

Add your own record here.

A light version of the portal is available for mobile and other limited browsers.

Metadata: 2005 UMBSM Clyde Sea The Importance of Inshore Are
Commercially Important Fish Species

Overview

Abstract: A PhD was undertaken at the University Marine Biological
(UMBSM) and presented to the University of London. The importanc
nursery grounds for commercially important fish species was inves
west coast of Scotland. The study investigated the spatial and temp
in diet, condition and growth and community analysis techniques w
incorporated. Otolith microchemistry was investigated as an effecti
identifying differences in the environmental history of whiting during
post-settlement phase. It was suggested that adult populations cou
be linked to inshore nursery areas.

Data holder: University Marine Biological Station (UMBS), Millport

Online resource present:

Use constraints:

- Restrictions apply. Please contact UMBSM for further details.

Details

Details for the metadata are as follows:

Unique resource identifier (info)	UMBSM9494
Abstract (info)	A PhD was undertaken at the University Marine London. The importance of inshore nursery gro coast of Scotland. The study investigated the s analysis techniques were incorporated. Otolith differences in the environmental history of whit populations could potentially be linked to inshore
Keywords (info)	NDGO0001, Species distribution, Fish abundanc
Geographic bounding box (info)	-5.1327°W, -5.0304°E, 56.0068°N, 55.8672°S

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

British Oceanographic Data Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

THE UNITED KINGDOM HYDROGRAPHIC OFFICE

Met Office

DASSH The Archive for Marine Species and Habitats Data

Cefas

marinescotland science

The Scottish Government

ads ARCHAEOLOGY DATA SERVICE

European Commission

INSPIRE GEOPORTAL

Enhancing access to European spatial data

Welcome to the INSPIRE geoportal

The INSPIRE Directive requires the Commission to establish a community geo-portal and the Member States shall provide access to their infrastructures through the geo-portal as well as through any access points they themselves decide to operate.

More...

Discovery / Viewer

Search, discover and access geographic

```
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        </gmd:MD_Keywords>
    </gmd:descriptiveKeywords>
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        <gmd:MD_Keywords>
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                    <gmd:date>
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Create metadata according to the INSPIRE implementing rules.

More ...

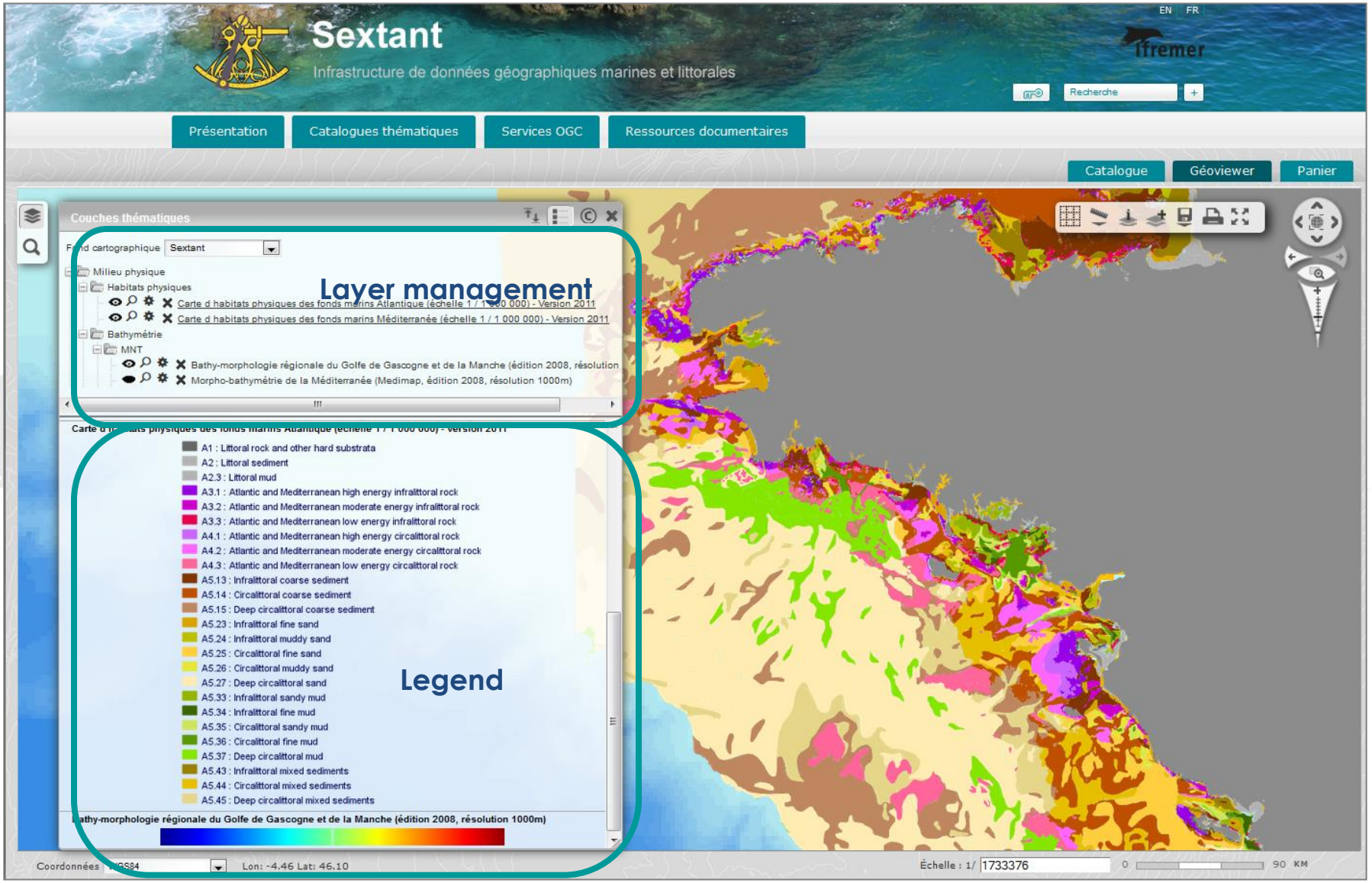
SCANDINAVIA
Trondheim
Gulf of Bothnia
Podgorica
Pristina
Skopje
Tirana
Naples
Thessaloniki
Istanbul
Ankara
Athens
Madrid
Lisbon
PENINSULA IBERI
Seville
Algiers
Tunis
Valletta
Oran
Nicosia
Aleppo

But what about the data…?

The Geoviewer

MapServer
open source web mapping

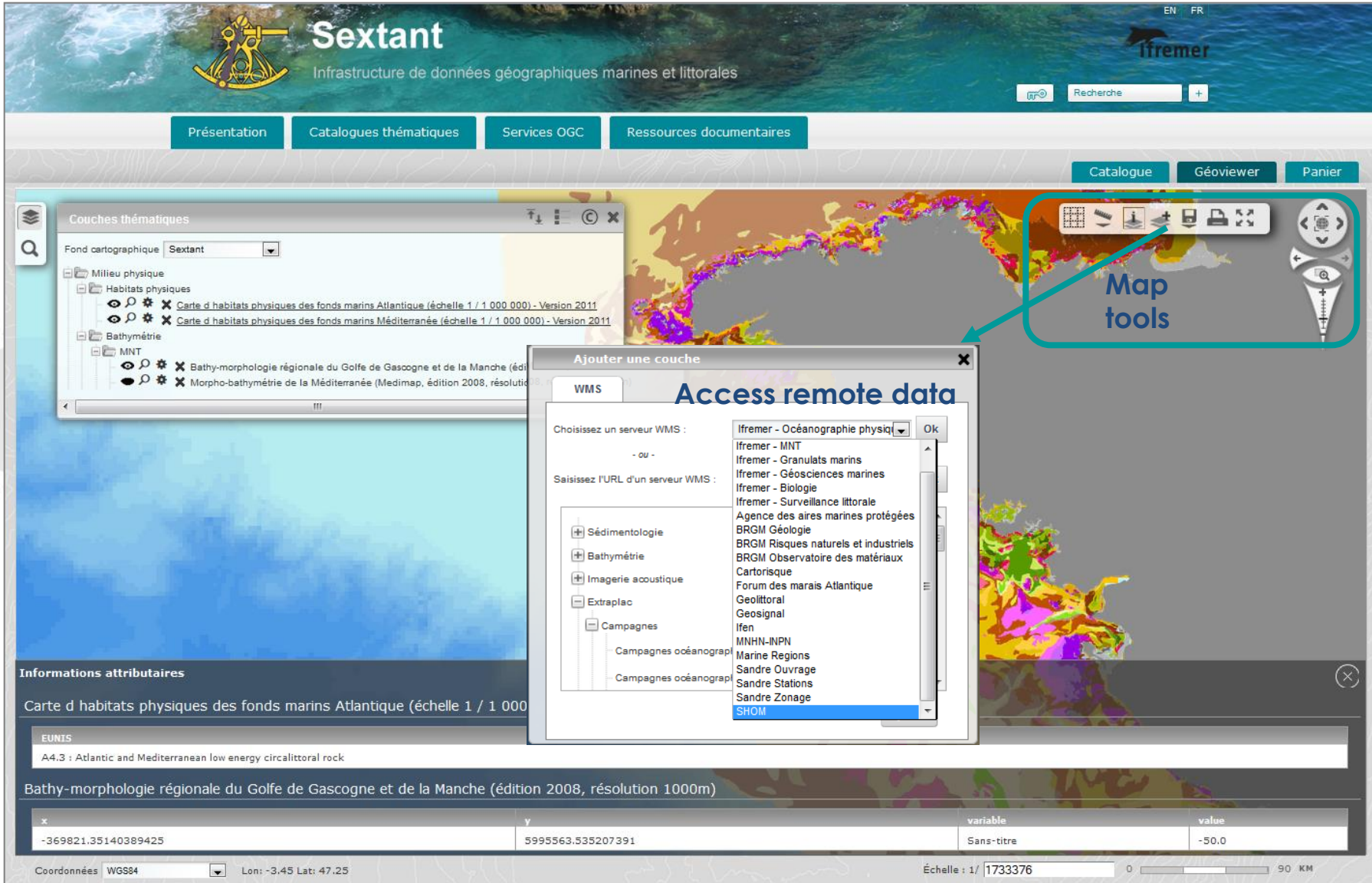
mapfaces



The Geoviewer

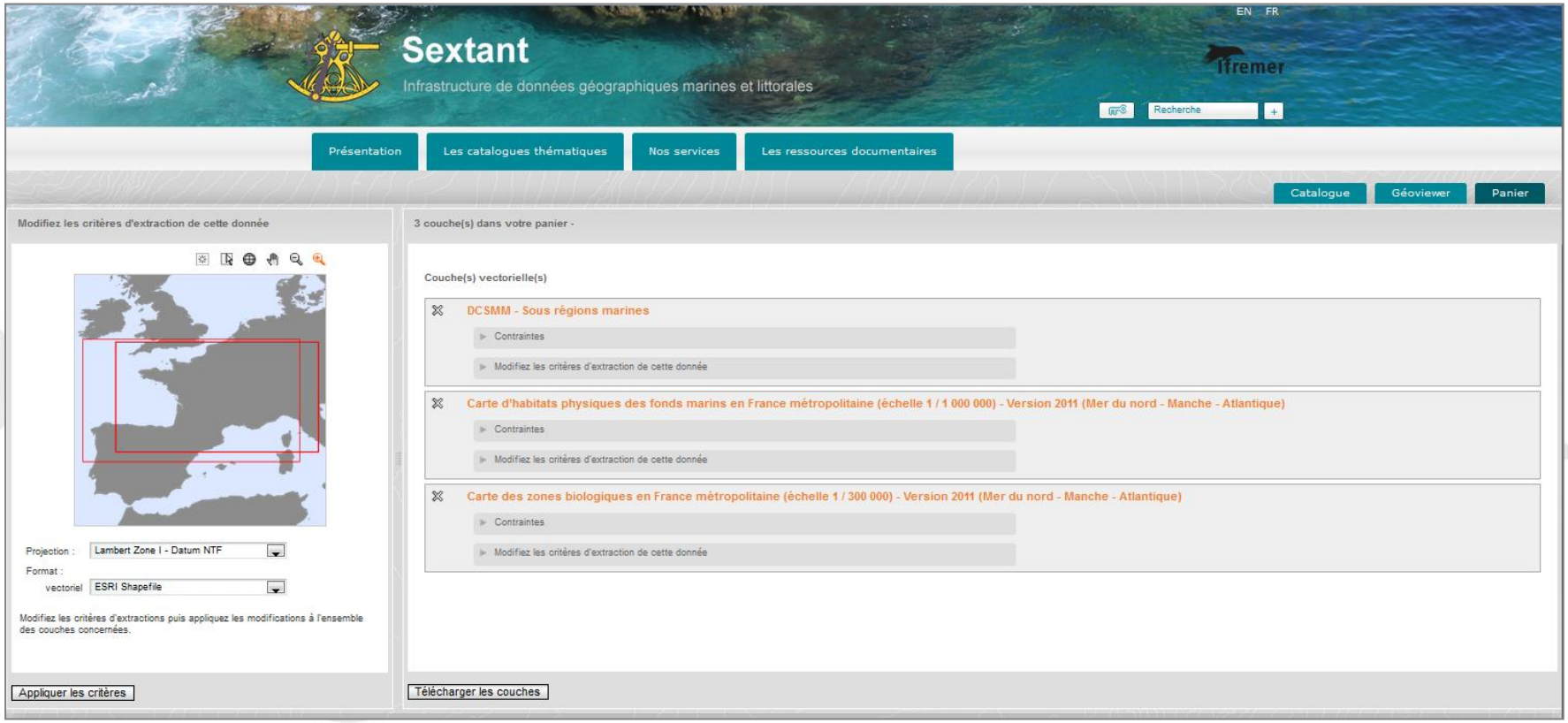
MapServer
open source web mapping

mapfaces



The Shopping Cart

- Download Interface



DASSH

The archive for marine species and habitats data

Bounding Box (Entered via Map)

-3.60626220703125,50.33844888725473,-2.39776611328125,50.812877010308966

Survey Name

Species

Originator

Owner

Search

Show per page: 10

nator	Owner	Sampling Device	Start Latitude	Start Longitude	Sample Date	Taxon Name
Museum, nent	3175: Natural England	HU	50.635717	-2.564783	1999-08-26T23:00:00Z	Zostera (Zostera) marina
atural Museum, nent	3175: Natural England	HU	50.635717	-2.564783	1999-08-26T23:00:00Z	Lamprothamnium papulosum
atural Museum, nent	3175: Natural England	HU	50.635717	-2.564783	1999-08-26T23:00:00Z	Zostera (Zosterella) noltei

Showing 1 to 10 of 2,385 entries

Prev

Next

Export Your Search Results as CSV

Export Data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

British Oceanographic Data Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

THE UNITED KINGDOM HYDROGRAPHIC OFFICE

Met Office

DASSH The Archive for Marine Species and Habitats Data

Cefas

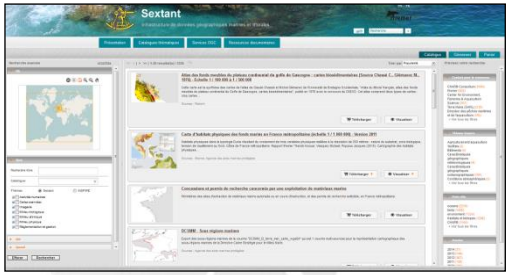
marinescotland science

The Scottish Government

ads ARCHAEOLOGY DATA SERVICE

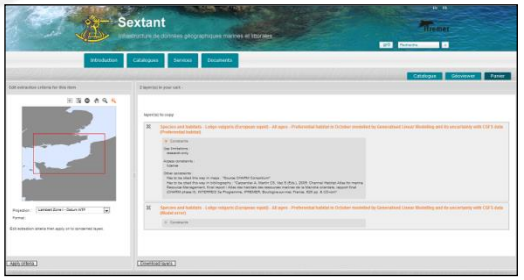
Sextant & MEDIN/DASSH: Standards

- Search
  - Built on metadata standards
  - Compliant with ISO 19115 and ISO 19139
  - OGC – Catalogue Services Web (CSW 2.0.2)



- Visualise
  - Web Map Service (WMS and WMTS)
  - Sensor Web Enablement (SWE)

- Download
  - Web Feature Service (WFS)
  - Web Coverage Service (WCS)



Standards and Guidelines
Why bother?

- Instill good practice amongst users
- Allow contracting organizations to specify a format that data should be returned in that can be readily used and includes all relevant attributes
- Provide a consistent format for contractors to work to (rather than a different format for each contract)
- Allow easy ingestion of data to Data Centres

It saves time and money!

Photo: iStockphoto

The wider story

Cost of ocean observation in the EU

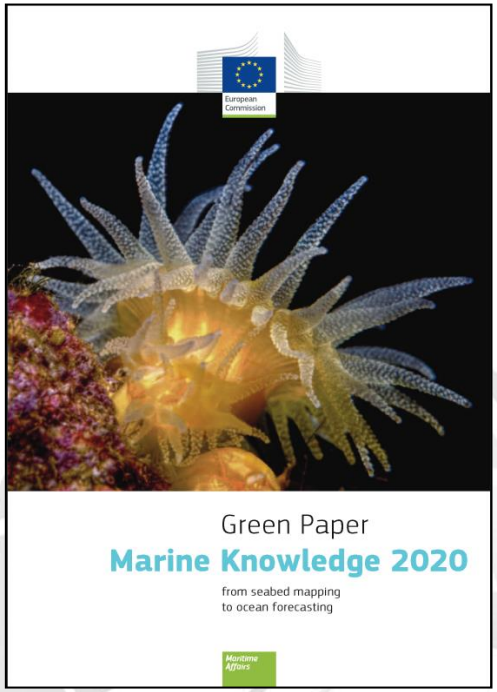
Space data - €400 million/year
In-situ data - > €1 billion/year

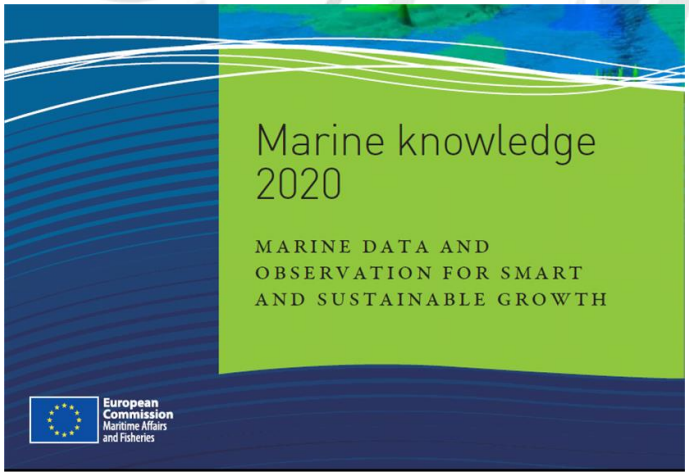
The wider story

"…the data collected through these observations can only generate knowledge and innovation if Europe's engineers and scientists are able to find, access, assemble and apply them efficiently and rapidly. At present this is often not the case."

Maria Damanaki, Former Commissioner for Maritime Affairs and Fisheries

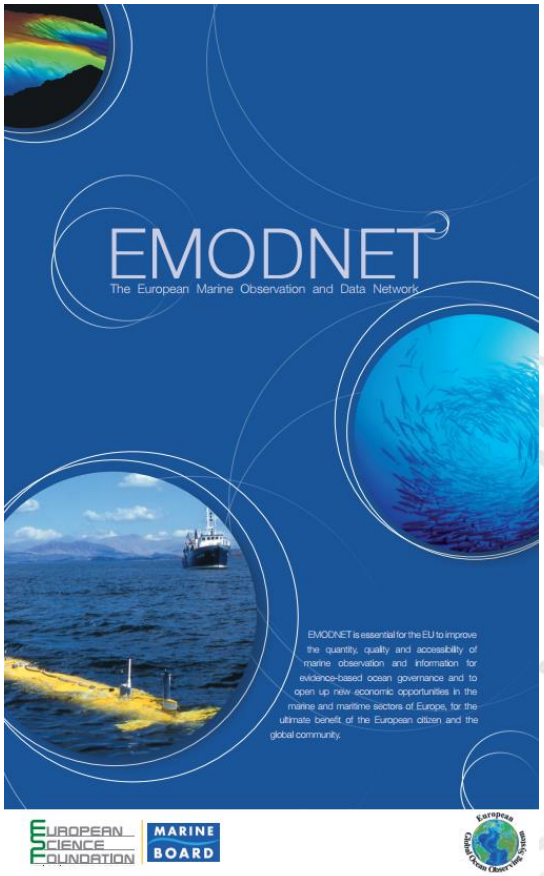
The wider story



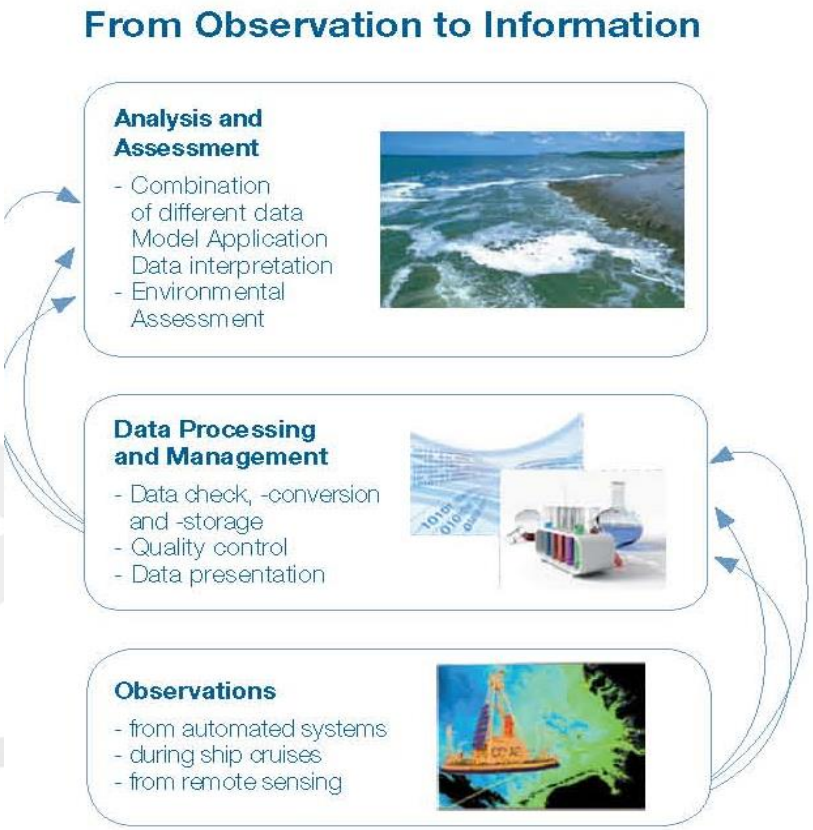


- Overall definition and scope: Marine Knowledge 2020 brings together marine data from different sources with the aim of:
- Helping **industry, public authorities and researchers** find the data and make more effective use of them to develop new products and services.
- Supporting environmental protection needs (Marine Strategy Framework Directive).
- Implemented through an European Marine Observation and Data Network

The wider story

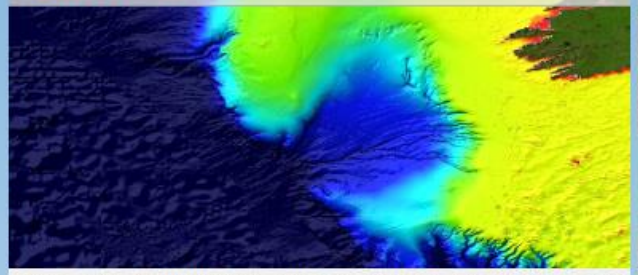


EMODnet
European Marine Observation and Data Network



The objective is to assemble existing data from public and private organisations relating to the state of sea basins; processing them into interoperable formats which includes agreed standards, common baselines or reference conditions; assessments of their accuracy and precision and creating data products;

Bathymetry



Data on bathymetry (water depth), coastlines, and geographical location of underwater features: wrecks.

Read more Portal

Geology

Data on seabed substrate, sea-floor geology, coastal behaviour, geological events, and minerals.

Read more Portal

Seabed Habitats

Data on modelled seabed habitats based on seadbed substrate, energy , biological zone, and salinity.

Read more Portal

Chemistry

Data on the concentrations of pesticides, heavy metals, and antifoulants, in water, sediments and biota.

Read more Portal

Biology

Data on temporal and spatial distribution of species abundance and biomass from several taxa.

Read more Portal

Physics

Data on salinity, temperature, waves, currents, sea-level, light attenuation, and FerryBoxes.

Read more Portal

Human Activities

Data on the intensity and spatial extent of human activities at sea.

Read more Portal

The wider story

MEDIN
marine environmental data & information network

VALMER

INSPIRE · Infrastructure for Spatial Information in Europe

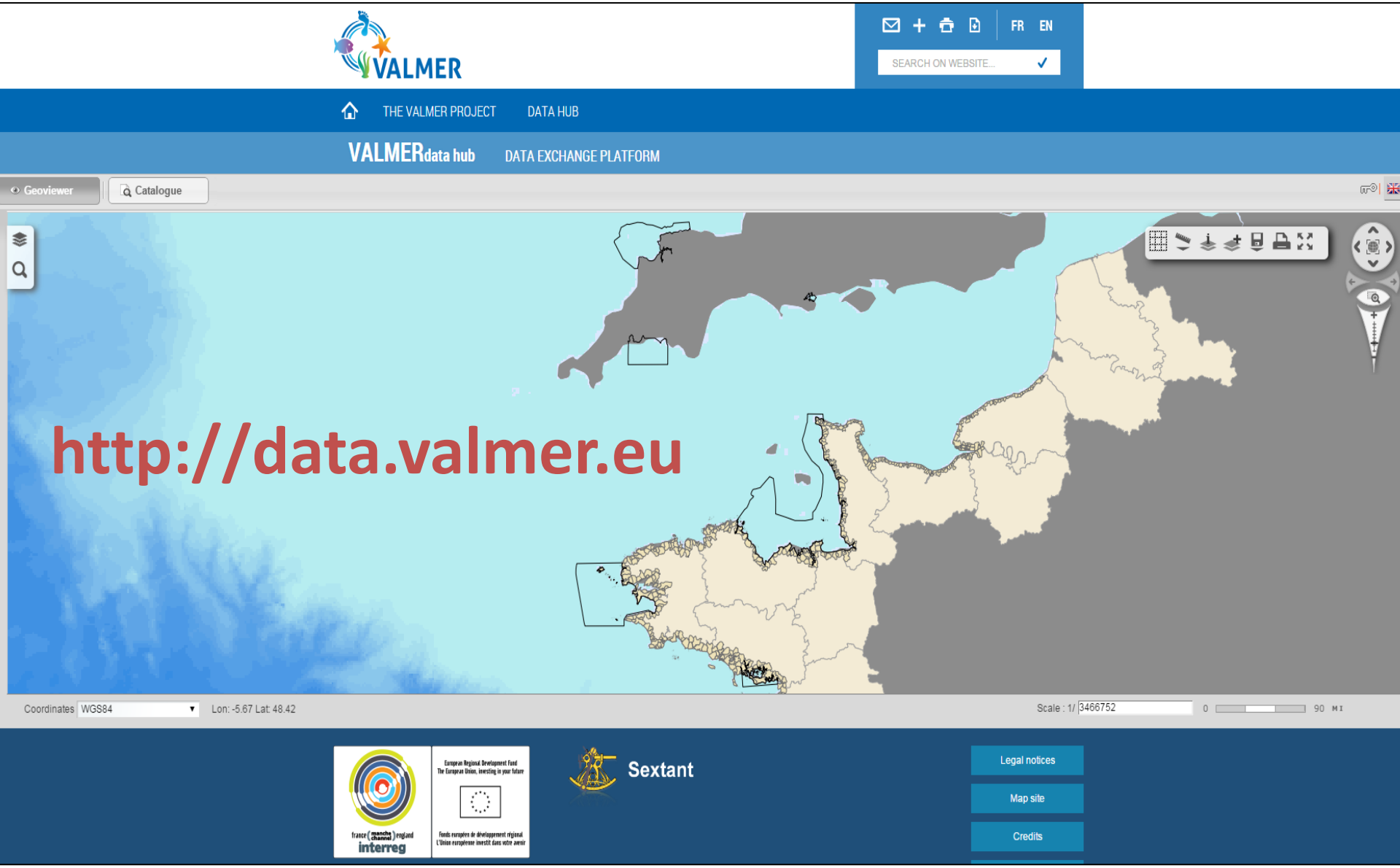
CERTIFIED OGC® COMPLIANT

SeaDataNet

ISO

EMODnet
European Marine Observation and Data Network

VALMER Data Hub

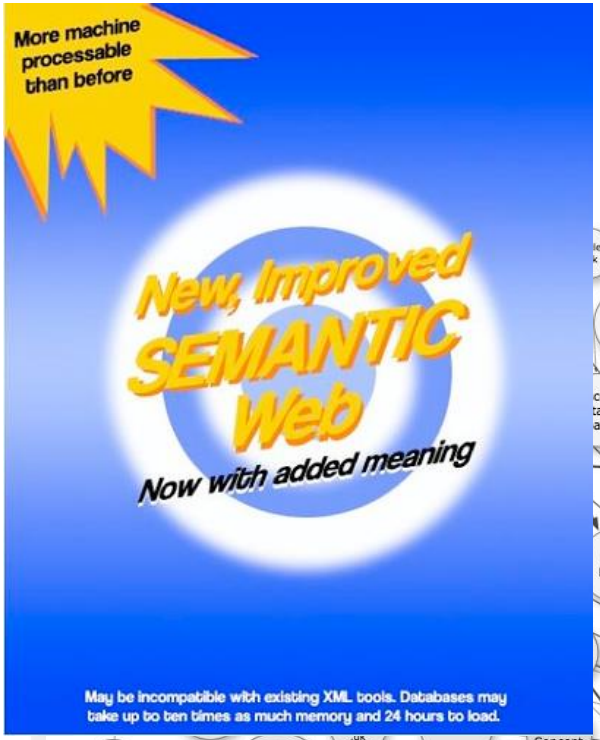


What next?

Still room for improvement

- Under-represented data themes (social & economic, noise, litter…)
- & sectoral data (industry, commercial, some academic)
- Need to promote infrastructures/standards more widely
- Integration of data management throughout the project lifespan (and beyond for a lasting legacy…)

What next?



Linked Open Data

W3C® Semantic Web

Don’t drown in data…

Dan Lear & Charly Griffiths (MBA)
Sonia Carrier (AAMP)
Catherine Satra La Bris (Ifremer)

The VALMER and PANACHE projects were selected under the European cross-border cooperation programme INTERREG IV A France (Channel) - England, co-funded by the ERDF.