Aviso & Mercator serving MyOcean

How a european marine user accesses ocean products derived from satellite altimetry and numerical simulations (past and present missions & forecasts)

mailto: myocean@mercator-ocean.fr
URL://www.myocean.eu.org
MyOcean is a **SERVICE**
- The main component of the « GMES » Marine Core Service
- Global & Regional Ocean monitoring and forecasting
- Information based on Data Combination and assimilative Models
- Currents, Temperature, Salinity, Sea level, Ice, ....

  ➔ GMES Marine Core Service

MyOcean is a **NETWORK** of European partners
- 61 partners out of 29 countries ; ~350 people involved ; ~150 FTE
- 20 core partners committed for operations; european best monitoring and forecasting systems

  ➔ Pan-European network

MyOcean is a **PROJECT**
- An EC/FP7 project, the GMES « Marine Fast Track » project
- 3 years : 1st April 2009 ➔ 31st March 2012
- Budget 55 M€, with 34 M€ EC funding

A clear (and limited) role in the value chain

Area 1: « MARINE SAFETY »
(marine operations, oil spill combat, ship routing, defense, search & rescue, ...)

Area 2: « MARINE RESOURCES »
(fish stock management, ICES, FAO, ...)

Area 3: « MARINE & COASTAL ENVIRONMENT »
(water quality, pollution, coastal activities, ...)

Area 4: « CLIMATE & SEASONAL FORECASTING »
(climate monitoring, ice, seasonal forecasting, ...)

PV 2009 – December 2009 – CLS / CNES
The Production Units (PU)

5 Thematic Assembly Centres

- Sea Level
- Ocean Color
- Sea Surface Temp.
- Sea Ice & Wind
- In Situ

7 Monitoring and Forecasting Centres

- 1. Global
- 2. Arctic
- 3. Baltic
- 4. NWS
- 5. IBI
- 6. Med Sea
- 7. Black Sea

Large and basin scale, meso-scale physics

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Data management & sustainability of systems

SALP mission – Altimetry

Production Unit with delivery commitments
(service level – OLA)

Archival center
SIPAD server

Timely delivery & aggregation center
ATOLL server

Access means depending on user needs, product level & mission appartenance, timeliness & long term commitments.

Applying data policy, user right, ascending & descending traceability

HMA Satellite Measurements (mono satellite, level 2)

MyOcean Ocean Observations (multi satellite)
From user request to data delivery

<table>
<thead>
<tr>
<th>1. User request</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Ocean currents</td>
</tr>
<tr>
<td>- Gridded maps</td>
</tr>
<tr>
<td>- Mediterranean sea products, multimission synthesis</td>
</tr>
<tr>
<td>- 10 years and subscription for timeseries</td>
</tr>
<tr>
<td>- Gilbratar straight extraction</td>
</tr>
<tr>
<td>- Numerical data needed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Request analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 9 years distributed on archival server</td>
</tr>
<tr>
<td>- delayed time products –</td>
</tr>
<tr>
<td>- Last year distributed on line via Thredds server</td>
</tr>
<tr>
<td>- delayed time products –</td>
</tr>
<tr>
<td>- Timely delivery distributed online via Thredds server</td>
</tr>
<tr>
<td>- near real time products, daily update of weekly data (past) –</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Transmit orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>- &lt; Archival server</td>
</tr>
<tr>
<td>(in once or in sandbox till readiness)</td>
</tr>
<tr>
<td>- &lt; An alert send for the last year product readiness</td>
</tr>
<tr>
<td>- &lt; An alert send each week, for updated delivery</td>
</tr>
</tbody>
</table>

*PV 2009 – December 2009 – CLS / CNES*
CNES SIPAD-NG functional architecture
Reference to the OAIS (Open Archival Information System) functional model
(http://public.ccsds.org/publications/archive/650x0b1.pdf)

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Adaptation of SIPAD-NG to a project

First interest:
Quick achieving of a prototype allowing to:
• access to real data
• refine metadata model

Second interest:
Development of web user interface by adapting the « basic » one offered with SIPAD-NG

Operational data access system
2 ways of accessing archives

- Direct access to archive via the SIPAD-NG catalog
- Access to a « catalog of catalogs » which accesses to archives via Web Services (SIPAD specific, HMA compliant, ...)

Ex: Mercator-Ocean

- SIPAD-NG
- Project 1 archive
- Web Services (WS)
- www

Ex: AVISO

- SIPAD-NG
- Project 2 archive
- WS
- www

Ex: ATOLL

- SIPAD-NG
- Project N archive
- WS
- www

« catalog of catalogs », providing also end user services

WS = Web Services

More details? ➔ See poster!
ATOLL design

Access to data
Search & Discover
Order or Subscribe
Get accounting data

Management Information System – MIS –

Knowledge Base:
- Ontologies
- Oracle Jena

PU
- Thredds (WMS, WCS, OpenDap)
- File server (FTP, ARC)
- Archival server
- Ordering + Subsetting service

Services rack
- Discovery
- Access
- Ontology
- Administration
- Supervision
- User
- Reporting
- Scheduling

Persistence
- Knowledge Base

Motu

Inspire

ITIL

Marine Core Service

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# [DIAL-P] Data and metadata

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Encoding*</th>
<th>Access Interfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite swath</td>
<td>NetCDF</td>
<td>FTP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SIPAD</td>
</tr>
<tr>
<td>Gridded data (model outputs,</td>
<td>NetCDF</td>
<td>FTP</td>
</tr>
<tr>
<td>satellite)</td>
<td>Climate and Forecast (CF)</td>
<td>Opendap/WCS/WMS** SIPAD</td>
</tr>
<tr>
<td></td>
<td>conventions</td>
<td></td>
</tr>
</tbody>
</table>

* Harmonisation underwork (*netcdf 3 / 4, CF 1.4, CSML feature type*)

** Thredds data server (aggregation of time parameter
associated to subsetting capabilities: parameters, space, time and depth)

* tested/validated by Humboldt Inspire implementation project, cooperative action in an ocean international framework

** english language

** SKOS vocabularies**
+ URIs , GEMET, SEADATANET

** + Inventory module for update of the dynamic information**
+ User module for transaction report
A basic supervision function to monitor product timeliness

<table>
<thead>
<tr>
<th>Name</th>
<th>Model Prediction</th>
<th>Weight</th>
<th>Time coverage</th>
<th>Expected update</th>
<th>Effective update</th>
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<tbody>
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</tbody>
</table>
[GMES] The traceability requirement (ascending & descending)

Data holder / Dissemination unit
Data owner / Data policy
Data distributor
Data user

Constellation of systems
[GMES] The traceability requirement (ascending & descending)

Constellation of systems

Data User

- Where does this product comes from?
  (in the value chain)

Data Distributor

- Product origin
  data server, owner,
  relay server, relay service

Data Owner

- User detailed request
  user information
  data request parameters
  transaction information

Data Holder

- External provider