Project objectives and definition
GMES: Global Monitoring for Environment and Security

- **Core Service** = European Public Service
- To support and develop Downstream activities
- Definition and setting up: FP7

- 3 « Fast Tracks Services »:
  - Emergency Response Core service: SAFER (Infoterra Fr.)
  - Land Monitoring Core Service: Geoland-2 (Infoterra Gmbh – Medias)
  - Marine Core Service: MyOcean (Mercator-Ocean)

- 2 « Pilot Services »:
  - Security: G-Mosaic (Telespazio)
  - Atmosphere: MACC (ECMWG)

- + « Climate »
Goal of the project

MyOcean overall objectives are to

- set up a concerted and integrated **pan-European capacity** for ocean monitoring and forecasting, using nationally-available skills and resources.

- demonstrate the **operationality** of the system, based on a « service oriented » organization, according to the European quality standards, and to achieve operational qualification and eventually qualification of Service.

- bring a new pan-european value for the benefit of the **marine service providers** on duty at national or european levels.

- contribute to the long-term **sustainability** of this pan-European capacity.
Areas of benefit

- MyOcean will “provide the common denominator data for all users in the marine sector, in other words the information for existing & new downstream services.”

- Climate
- Marine Environment
- Seasonal and weather forecasting
- Offshore
- Maritime transport and safety
- Fisheries
- Research
- General Public
(to whom) The targeted users

- The Key Users
  - MyOcean will deliver a service to
    - EU: The European Union
      - Users: European agencies (EEA, EMSA, EDA, ...)
    - MS: The Member States
      - Users: National / Regional Service Providers (public or private)
    - IG: The Intergovernmental bodies
      - Users: MS and/or exec. bodies such as OSPAR, UNEP-MAP, HELCOM, ICES, ...
The MyOcean value
… to market user’s needs

- A network of partners all around Europe
- A privileged link with first-rank users
  - EU agencies
  - Conventions and policies
- A MyOcean « Core User Group »
- A MyOcean User Requirement document

A MyOcean network involving all European maritime countries
Partners networking 28 countries for user’s requirements
Linking with Member States key services, linking with the Maritime Policy, linking with conventions HELCOM, OSPAR, UNEP/MAP, ICES, …
(what) The service

- MyOcean will
  - “deliver regular and systematic reference information (processed data, elaborated products) on the state of the oceans and regional seas:
  - at the resolution required by intermediate users & downstream service providers, of known quality and accuracy,
  - for the global and European regional seas.”

Data handling, Modelling and Assimilation

Variables: T, S, UV, SSH, ice, Chl-a, ...

Products: Catalog of reference products: predefined data fields, reanalysis, reports, ...

Service: Delivery, Discovering, Viewing, Downloading, 24/7 Support, Information, PoC,…

myOcean – novembre 2008
The MyOcean offer

MyOcean will

- deliver regular and systematic reference information (processed data, elaborated products) on the state of the oceans and regional seas:
- at the resolution required by intermediate users & downstream service providers, of known quality and accuracy,
- for the global and European regional seas.”

- Physical state of the ocean, and primary ecosystem
- For global ocean, and main European basins and seas
- Large and basin scale; mesoscale physics
- Hindcast, Nowcast, Forecast
- Data, Assimilation and Models
Scope of responsibility

**Data, Model European added-value**

**upstream to our service**
... is done (duty) by an **observation** agency or center (raw data)
Example: Eumetsat SAF or the ESA PAC

**downstream to our service:**
... is done (duty), or will be better done (skill) by a **specialized** agency, a **European** agency or a **national** center; usually already in place
Example: COASTAL SYSTEMS
A 3-year project

- Governed by the “qualification steps”
  - Stream 1 (MFC Global, Med, Arctic), qualified at month 18
  - Stream 2 (MFC Baltic, NWS, IBI, B.Sea) qualified at month 24
The production

**GOAL:** Ensure the best production of information through the involvement of first-rank players in Europe.
The MyOcean value
... through Production Units

12 PRODUCTION UNITS

- TAC: Thematic Assembly Centers
  - “Observations”
- MFC: Monitoring and Forecasting Centers
  - “Model / Assimilation”

- 5 TAC:
  - Arctic
  - Baltic
  - Atl. NWS
  - Atl. IBI
  - Med Sea
  - Black Sea

- 1 global and 6 regional MFC:
  - Global

- Each Production Unit
  - under operational commitments to deliver a service
  - Conducting R&D, Integration, Operations, and Assessment
The MyOcean value
6 European Seas + Global Ocean

- 1. Global
- 2. Arctic
- 3. Baltic
- 4. NWS
- 5. IBI
- 6. Med Sea
- 7. Black Sea
An organization of 12 Production Units
MCS TACs

The Thematic Assembly Centers as production units of the GMES Marine Core Services
TACs will feed the global and regional components of the MCS in observation products for space and in situ data.

From observation systems to the service centres. Specific requirements from modelling and data assimilations centers as well as from users and downstream services.
TACS: main functions

- Interfaces
  - In-situ: observing system networks
  - R/S: European and non-European G/S and facilities (includes EUM SAFs)

- Functions of In-Situ and R/S TACs
  - Monitoring performances of the observing system
  - Real-time and delayed mode processing (R/S=multi-satellite, level 2+)
    - Regular + on request
  - Quality control, Validation and Error characterization
  - Data synthesis and added value products (user requirements, services)

- Interoperable, harmonized data distribution system (MCS)

- Interface with other TACs and MFCs (Modelling Forecasting Centres)
  - Prepare “best” products for MFCs (spec. from data ass. centers)
  - Feedback on data products and on the observing systems
  - Contribute to the design and implementation of the observing systems

- Interface with applications and users (downstream services)
  ⇒ Management, Production/Maintenance, Cal/Val, Development, R&D
     + external R&D (see Research WP: call for proposals, visiting scientists)
Operate the main functions of a European GHRSSST-PP RDAC and GDAC

Produce and distribute in NRT SST L2P, L3, L3P and L4 regional and global SST products for the needs of the other MCS components and of MCS downstream users, but also for other GHRSSST-PP users
  – full L2P reprocessing from level 1 data is part of the GMES ground segment, ESA and OSI-SAF, + other GHRSSST-PP RDAC

Provide a delayed mode (3-5 day) update of L2P, L3 and L4 products

Continuously monitor and verify SST-TAC products and services using metrics by exploiting the tools developed in the context of the GHRSSST-PP, ESA MERSEA, MEDSPIRATION project (MDB, DDS) and the EUMETSAT OSI-SAF
  – L2 validation is foreseen as part of the GMES ground segment

Maintain and improve SST products and services through R&D activities on high priority topics: ex: error covariances, bias correction, meta-data, ice surface temperature,….

Organization:
  – Coordination: WP leader (MF/CMS)
  – Central mirroring, access and helpdesk functions at IFREMER
  – Production functions at MetO (global L4), IFREMER (NW shelves L4, global delayed mode L4), CNR (Med Sea L4, Back Sea L4), DMI/Met.no (Arctic L4), M-F/CMS (L3)
  – Common quality monitoring and verification functions at IFREMER (MDB) and NOCS (DDS)
  – Distributed R&D
SST-TAC Components

- GDAC
  - Helpdesk
  - Controller
  - Rolling Archive
  - Deep Archive
  - Messaging
  - SST-TAC interface

- MDB
- HRDDS
- Verification suite
- Validation suite
- QC suite
- System Documentation
- Product Documentation
- DV Toolbox
- QC Toolbox
- L4 Toolbox
- Verification Toolbox
- IceT Toolbox
- Indicator toolbox

- L4 Med Sea
- L4 Global 1
- L4 Global 2
- L4 Black Sea
- L4 IBI
- L4 Arctic
- L4 Caspian
- L4 Baltic
- L4 Galapagos
- L4 MARCOAST

- Anomalies
  - Long term
  - Reanalysis
  - Satellite bias correction
  - Climatology

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Ocean Colour TAC

- Objectives:
  - To produce global, pan-European and regional (Arctic, Baltic, NW Shelves, Mediterranean, SW Shelves and Black Sea) high-quality ocean colour products for MFCs, Intermediate users & downstream services
  - To support MCS quality monitoring
  - Provide a central access point in NRT to regional and global OC products from European and non-European sources

- Products:
  - NRT,DT L3: from individual sensors and from intercalibrated/ merged data sets
  - NRT,DT L4 analysis: merged multi-sensors analysis (with in situ in the future)
  - L2,L3 and L4 Re-analysis & Indicators of ecosystem state
  - Parameters: chlorophyll, nLw, diffuse attenuation coefficient, etc...

- Organisation:
  - OCTAC will be a distributed system composed by a Global center and regional centers

- Partnership:
  - CNR (coordination & MED), ACRI (Global), JRC (re-analysis & global validation); PML(NWShelves –TPC), Ifremer (SW Shelves)
  - R&D and CAL/VAL all Partners + link to external R&D activities

- Interfaces
  - Data interface: Space Agencies ground segments, in situ TAC, MFCs, downstream services
Ocean Colour TAC

- L1/L2/L3T Access / Archive Normalisation Format standard Extraction (ACRI)
- L3/L4 NRT processing QC (ACRI)
- L3/L4 DT processing QC Analysis (ACRI)
- DDS
- MCS Delivery CNR
- OCTAC
- REGIONAL
- SUPPORT ACTIVITIES - CNR
- SW Shelves: Ifremer
- NW Shelves: PML
- Med: CNR
- Regional centre
- Reg L2/L3/L4 NRT/DT processing +QC Validation /intercalibration
- Validation results
- Production Multi Re-Analysis QC (JRC)
- Scientific Advisory Group
- R&D activities

Marine Core Service
Project organization
MyO Work Breakdown Structure

7 MFCs + 5 TACs = 12 Production Units

each Production Unit = 1 Sub-System
The MyOcean value
6 European Seas + Global Ocean

- 1. Global
- 2. Arctic
- 3. Baltic
- 4. NWS
- 5. IBI
- 6. Med Sea
- 7. Black Sea
The MyOcean value
... in the organization

- An organization to run the project and the Service
- An organization preparing the future MCS Management Organisation, linked with the overall GMES management organisation

- Demonstrate the value during the coming 3 years, and build organization and sustainability with GMES stakeholders for the further steps
Management and strategic bodies

- **Board**
- **Advisory bodies**
  - The Scientific Advisory Committee
  - The Core User Group
- **Executive Committee**
Consortium

- 60 Partners (today) – representing 28 countries
  - Met’ Offices
  - Marine / Hydrographic / Oceanographic centers
  - Research centers, …

- 5 Private companies
  - CLS : Central Engineering and Altimetry
  - ACRI : Ocean Color TAC
  - StarLab : Users management (URD, SLA, …)
  - Brockmann Consult : Users management (URD, SLA, …)
  - HR Wallingford : Central Desk (reviewing activities)
  - Techworks : Central desk (web based technical work)

- Budget
  - 55 M€ (33,8 M€ EC-Grant)
  - 84% : personnel cost
  - 7% travel cost
  - 190 FTE (~ 400 persons directly involved in the project)
The service

MyOcean is focussed on a strict « core » service

- No « downstream » activities
- No « on request » production

A « core service » limited to:
- « Easy-download-of-bulk-and-assessed » information
- + « Discovering & Viewing » of this ocean information

Delivery : two kinds of Users
- Registered / Regular Users (Met’Offices, Navies, …)
- Occasionnal Users (Researchers, EU Citizen, …)
The service

- WP17 is defining and maintaining the « list of products » (Portfolio)
- The « producers » in MFCs and TACs are producing and assessing them
- WP16 is providing access to them
  - A « central desk » (one only) to download the core product
  - A « viewing tool » to have a look at the ocean
Conclusion
Few months to go before the kick-off, and 3 years to demonstrate the real value of the MCS idea, and ensure real progresses.

MyOcean was born amongst the operational oceanography community, which forms a real community thanks to structuring initiatives such as EuroGOOS and its regional alliances.

The success of MyOcean and GMES relies on a strong involvement of the scientific community and of the user community.
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