

Challenges for an integrated system

- The integrated system has to be clearly seen as "one single system"
- Access to the integrated System service has to be simple for users
- The integrated system internal architecture has to be modular and evolutive, and organized as a "system of systems"
- The integrated system must be compliant with European and international standards
- The integrated system should be based on state-of-the-art technical solutions

One single system

- MyOcean project
 - **Clear distribution of tasks** achieved during proposal, based on Mersea project heritage
 - 62 partners for one integrated service
 - **Aggregation** by type of observation (TAC : SST, Ocean color,...) and forecasting area (MFC : Global, Mediterranean,...)
- Try to have one single product for one usage
 - Need to elect the most relevant product among similar products => **no redundancy** or ambiguity

One single system

- Dedicated centers for data assembly or forecast
 - Identification, collection or production of the relevant data and products
 - Distributed production and Centralized archive management => **system of systems**
 - coordination/harmonization for data processing and quality control
 - Single contact point and connection to central system => access, operation messages, performances

Service and user access

- "single access"
 - Centralized catalog of products and services
 - Unique and shared catalog
 - Information submitted by each provider for each product
 - Data search & discovery functions
 - Centralized help desk
 - Different levels for different issues : data access, usage, quality, processing details
 - But cascading of reply down to relevant partner
 - Centralized user management : registration, authentication,...
 - Data policy
 - Data access
 - Seamless access through common protocols
 - Data visualization (Quicklook)
 - One application (based on OpenDAP & OGC)

Service and user access

- Commitments
 - Sustain **quality of service**
 - Timeliness, quality, availability
 - Managed through **Service level agreements & operational level agreements** between partners and users
- Assessment
 - Monitoring and providing of performance indicators at data & service provider level
 - Central monitoring and assessment of performances

Integration in international global ocean observation system

- Integration with source data providers (ex:space agencies)
- Involvement/compliance to thematic international project & standards
 - ARGO
 - All float data QCed and registered
 - European GDAC (Coriolis)
 - GOSUD, OceanSites
 - GHRSSST
 - Level 2 : ESA (ENVISAT) & EUMETSAT (METOP, MSG, NOAA AVHRR) data registered and archived
 - Level $\frac{3}{4}$: Mersea/MyOcean products full integrated too
- Export MyOcean project model and standards to other similar European project
 - => coastal and regional area

Data harmonization / interoperability

- Data standards
 - Format
 - NetCDF 3 : Woce, Clivar, Argo, Ghrrsst, Mersea,...
 - Harmonization following CF Convention
 - Metadata
 - All Mersea/MyOcean product metadata compliant with ISO19115/ISO19139 (US/Europe convergence)
 - European harmonization in interaction SeaDataNet
- Dissemination protocols
 - FTP & OpenDAP