SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

WP8 – WP9 Technical developments – roadmap

25 September 2014

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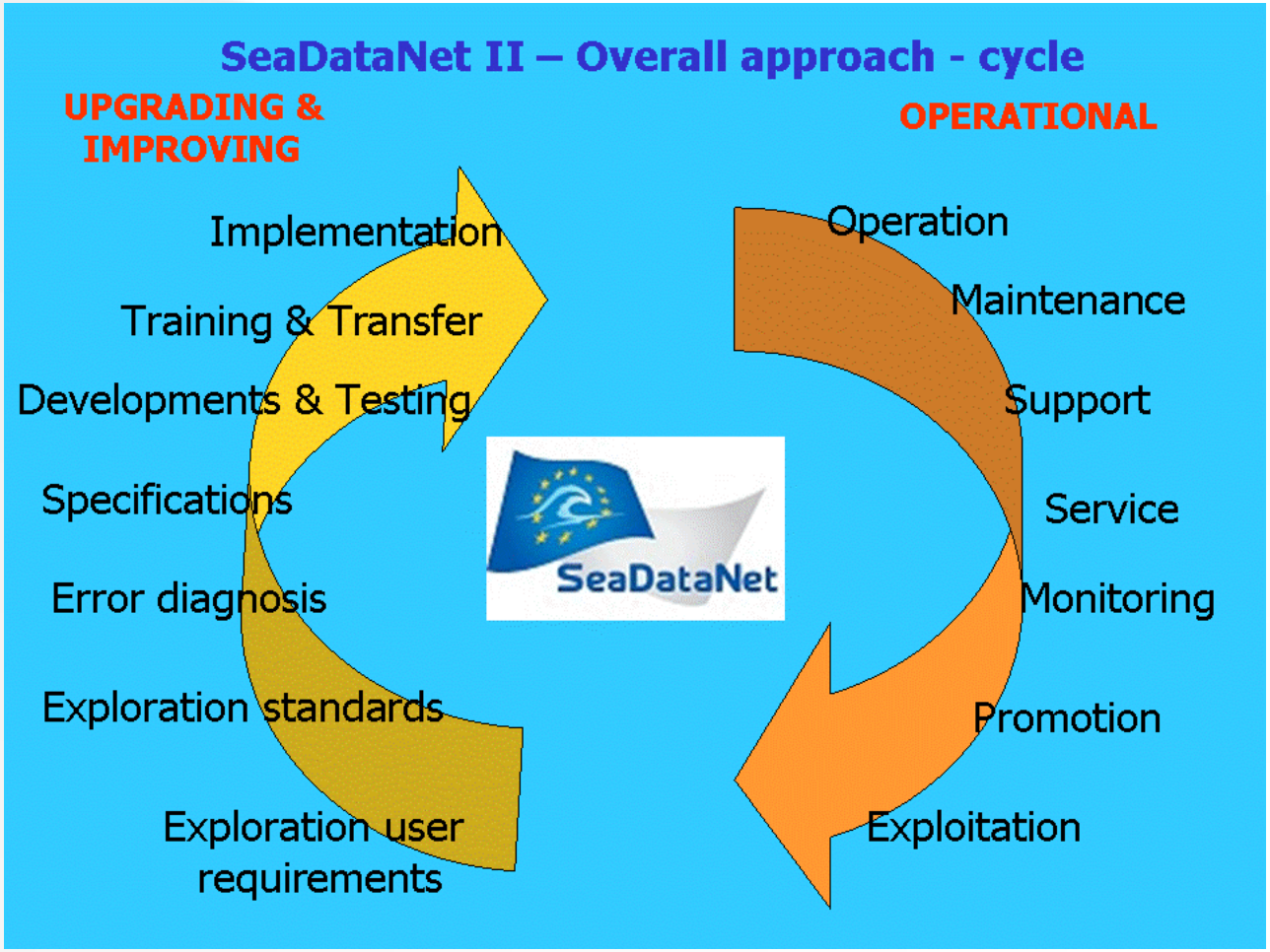

SeaDataNet II – Overall approach - cycle
UPGRADING & IMPROVING
OPERATIONAL
Implementation
Training & Transfer
Developments & Testing
Specifications
Error diagnosis
Exploration standards
Exploration user requirements
Operation
Maintenance
Support
Service
Monitoring
Promotion
Exploitation
SeaDataNet

WP8 – standards: objectives

- Extending and finetuning the SeaDataNet standards for handling all types of marine and ocean data, in real-time and delayed mode, achieving interoperability and exchange with other relevant data management systems in Europe, and tuning with international standards

- Achieving INSPIRE compliance and contributing to the INSPIRE process for developing implementing rules for oceanography

Deliverable: D8.1 = DONE

CDI profile extended with extra attributes to support linked data concept

CDI and CSR XML encoding adapted to ISO-19139 and using NV2.0 Vocabularies

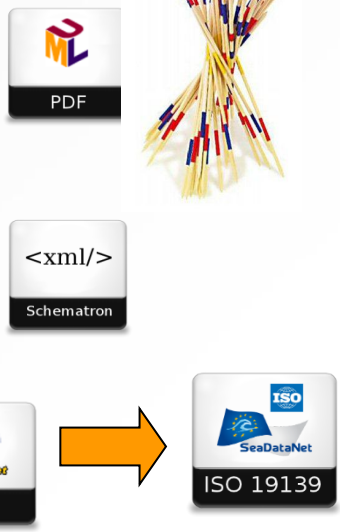
EDMED, EDMERP, and EDIOS XML migrated to using NVS2.0

Abstract metadata model specification

- ✓ SeaDataNet metadata profile of ISO 19115 documentation

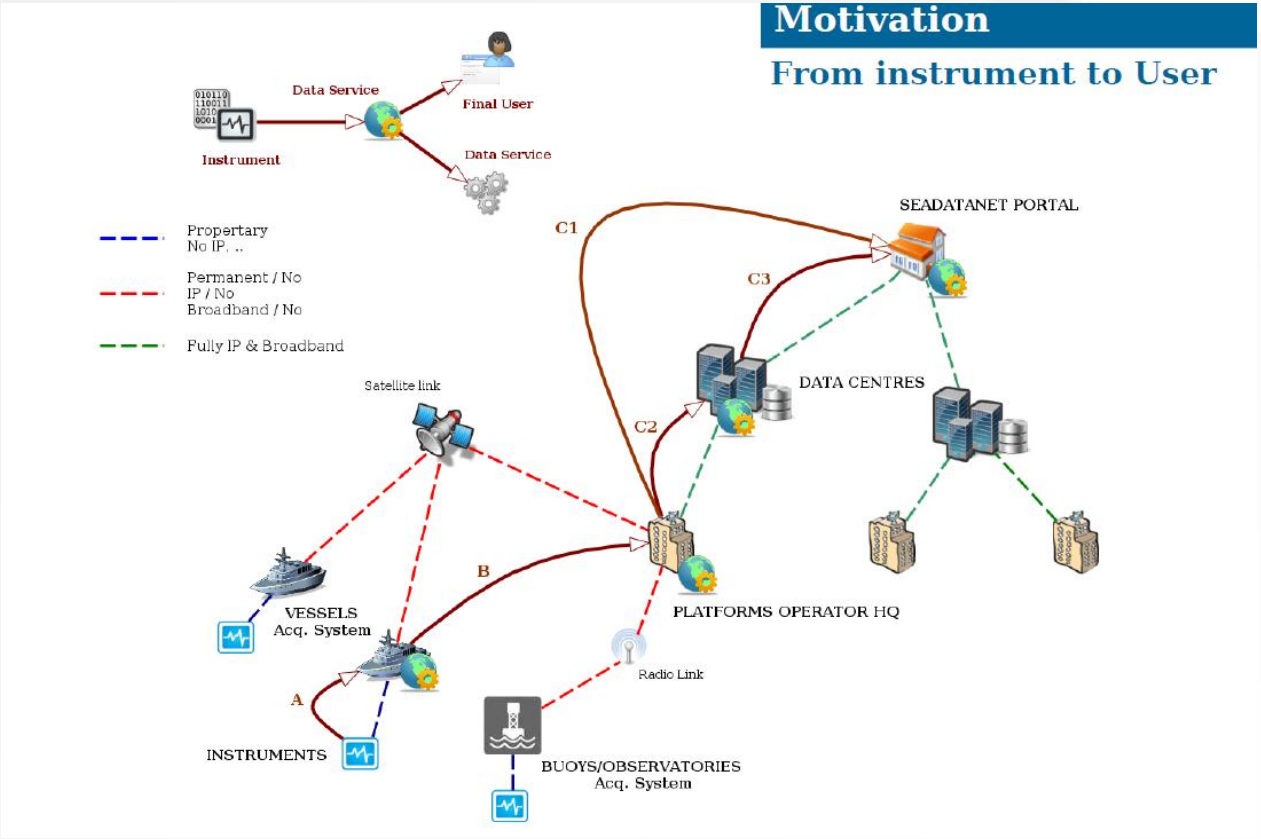
XML encoding implementation:

- ✓ Schema definition
- ✓ Schematron rules
- ✓ Sample metadata
- ✓ XML implementation documentation



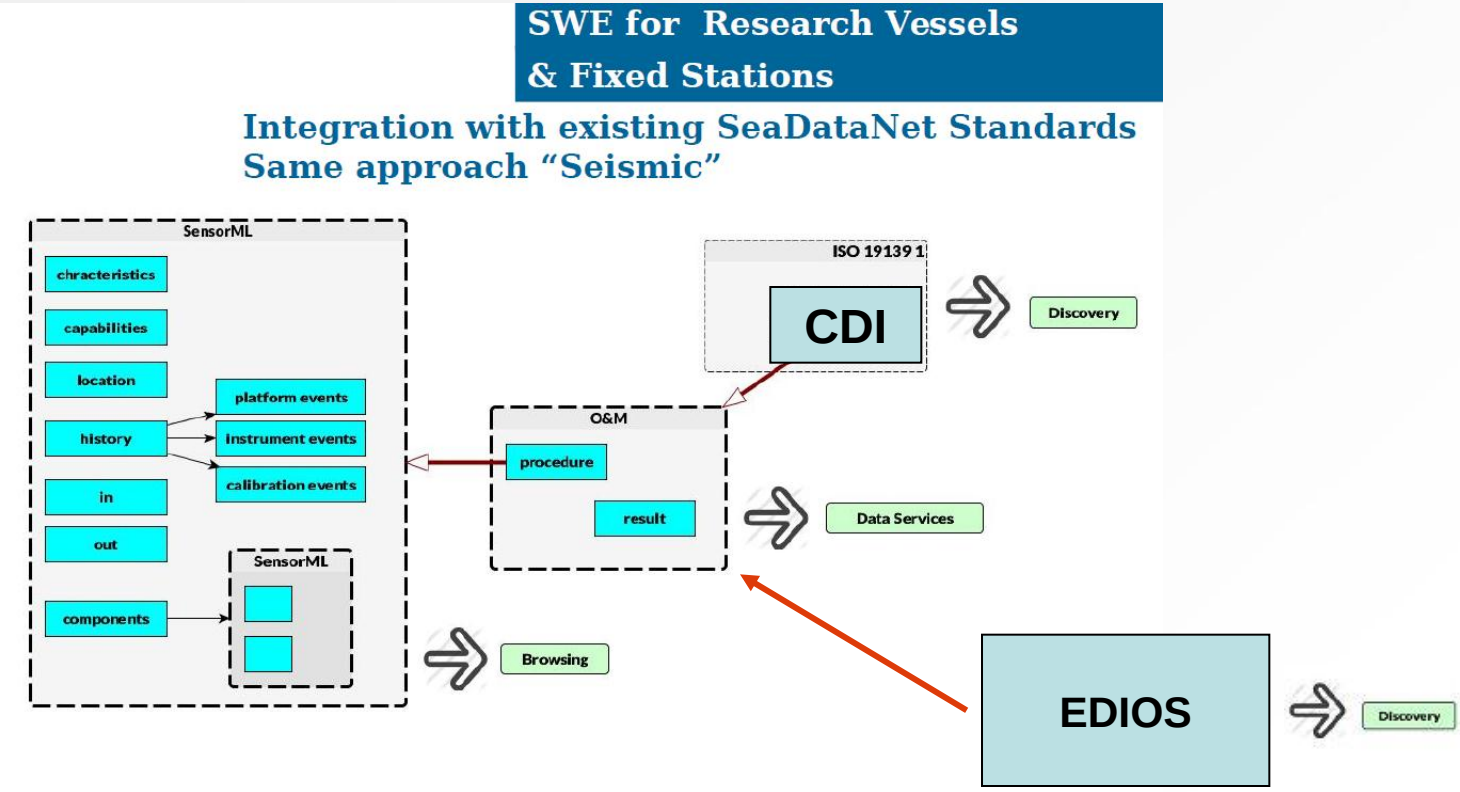
www.seadatanet.org/Standards-Software/Metadata-formats

- To define extended metadata formats to support operational oceanography and other specific applications, from fixed stations and research vessels to data centres to users



Deliverable: D8.2 and D8.3 = REVISED VERSION SOON (CSIC)

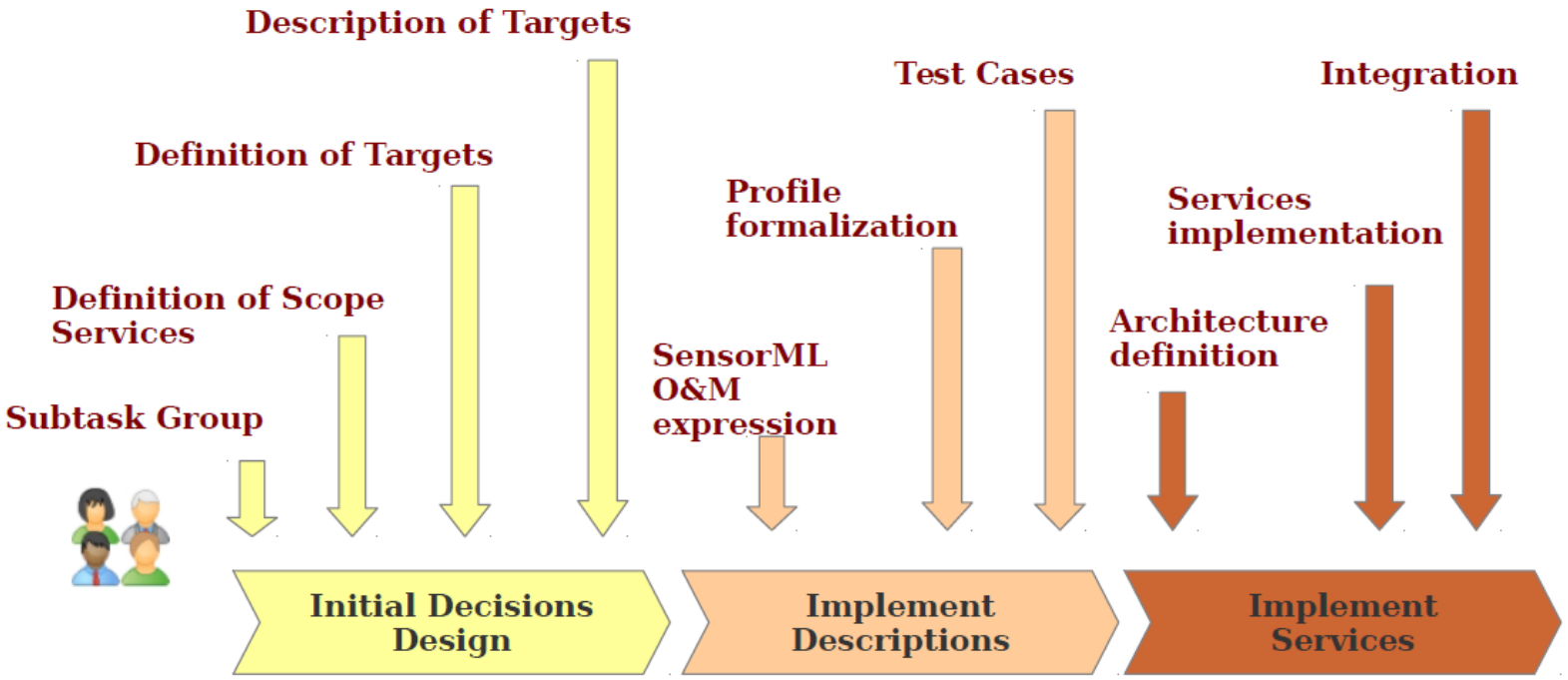
SensorML and Observation & Measurements (O&M) profiles for selected instruments and concept for integrating SOS services in SeaDataNet



SWE Adoption

Roadmap

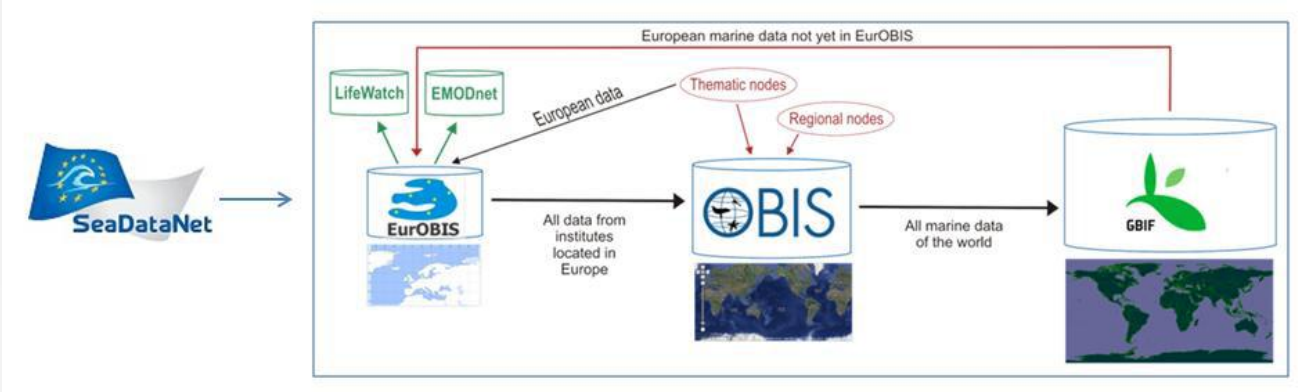
Research vessels & Fixed Stations



Deliverable: D8.4 = DONE – in trial => finalisation guideline soon

Analysis report for handling the discovery of, and access to marine biological data:

- CDI is fit for purpose
- Extensions for Vocabularies were required
- Adaptations of the SeaDataNet ODV ASCII format



- to make SeaDataNet better fit for handling marine biological data sets and establishing interoperability with biology data infrastructure initiatives.

Deliverable: D8.5 = DONE

Formulation of SeaDataNet NetCDF (CF) format next to the existing SeaDataNet ODV ASCII format (CFPOINT)

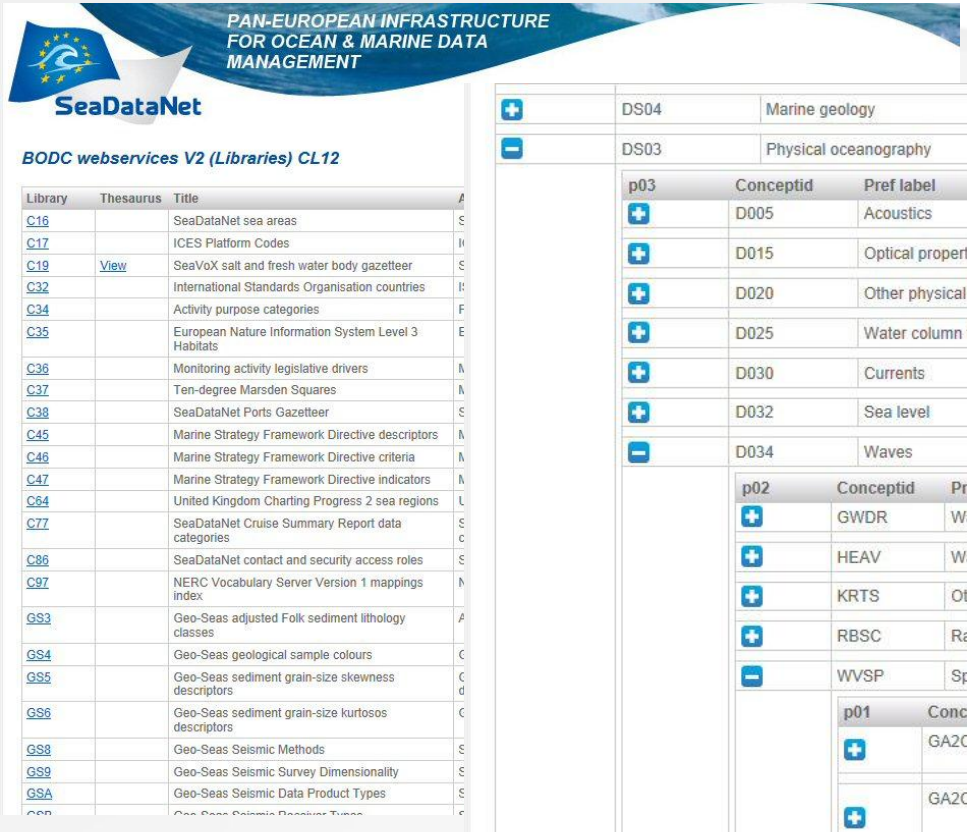
- Fit for profiles, trajectories and time series
- Following CF 1.6 specification
- Formulated together with an international community of NetCDF experts
- Software tools adapted (**MedSDN2CFPOINT, OdvSDN2CFPOINT, DM)**

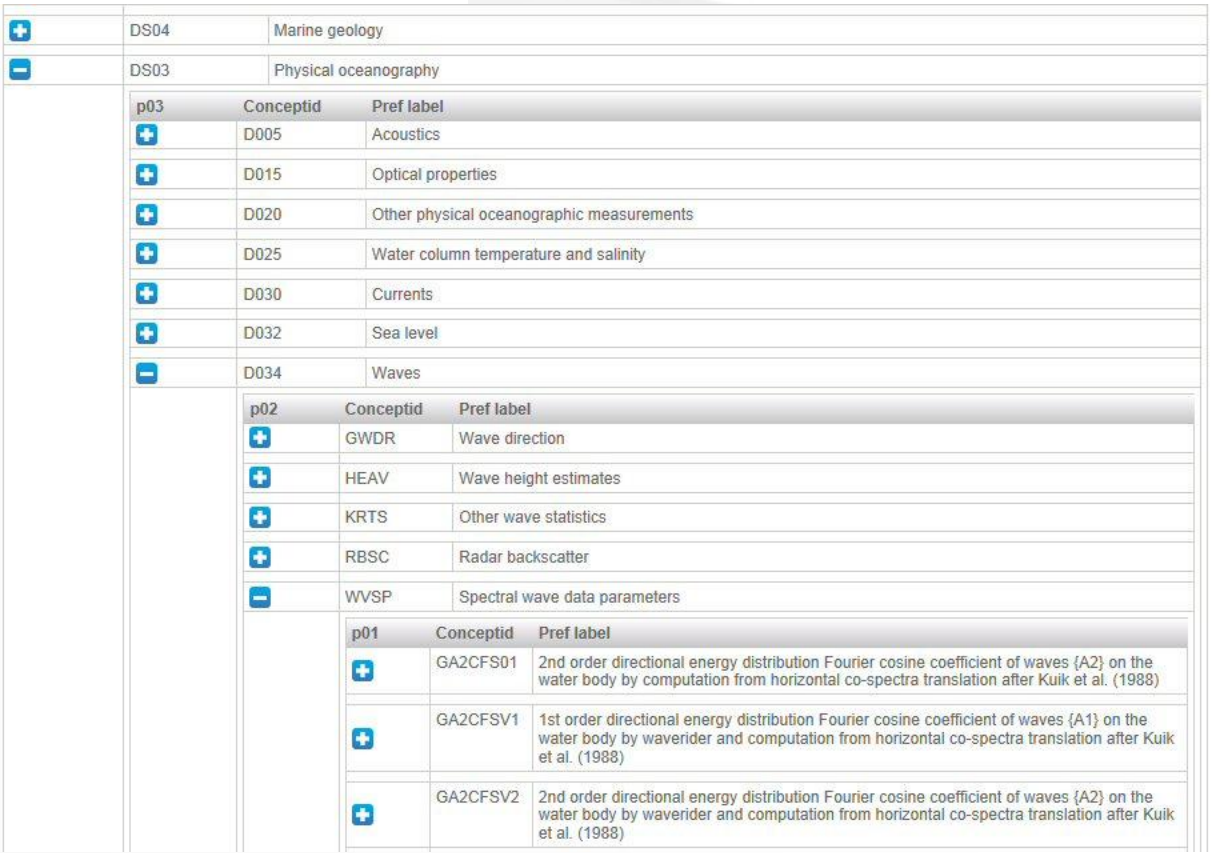
Deliverable: D8.6 = DONE

Upgrading of SeaDataNet Common Vocabularies to NVS2.0 and regular maintenance

- Migration to SKOS
- Provision for mappings to external resources
- Available by web services and amended User Interface
- Governance by international Seavox board

SeaDataNet Common Vocabularies

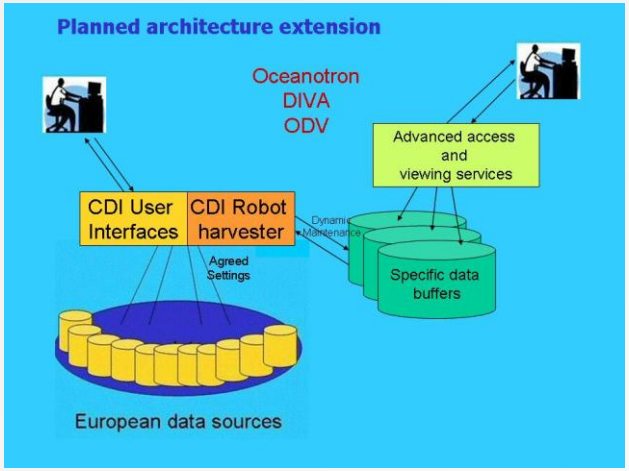


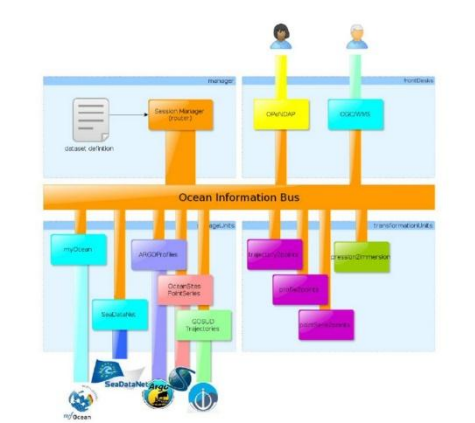


Deliverable: D8.7 = DONE,

Analysis and formulation of new access and viewing services

- Enhancing the interoperability of the CDI service with: OGC CS-W, WMS – WFS and OpenSearch (done)
- New services directly on the buffers of harvested data sets (specs?)
- Also new services EMODnet Chemistry,





Oceanotron supporting interfaces
To WMS, SOS, and OPENDAP

Deliverable: D8.8 = DONE

Method for checking of potential duplicates defined

- Integrated into ODV software
- Tested with large SeaDataNet – MyOcean T&S data set (ca 860.000 data sets)
- Integrated into CDI import and validation process
- Improves the overall quality of the data sets managed within the SeaDataNet infrastructure of distributed data centres

Deliverable: D8.9 - Underway October 2014

SeaDataNet standards submitted to the JCOMM/ IODE Ocean Data Standards (ODS) process

- Vocabularies, CDI and CSR Schema's, SeaDataNet NetCDF format

WP9 – Development and governance of software tools, services and interoperability solutions

- To support improved and upgraded maintenance of the metadata directories
- To support robust access to a wider range of data types, including real-time from acquisition to data centre
- Interoperability solutions towards IODE Ocean Data Portal, GEOSS and others
- To upgrade the ODV analysis and visualisation software
- To upgrade the DIVA statistical analysis and interpolation software
- To upgrade the OceanBrowser visualisation services for data products

Deliverable: D9.1 continued = DONE

Upgraded MIKADO XML editor software (V3.3.3)

- Adapted for use of Vocabularies NVS2.0
- Adapted for ISO 19139 XML profiles of CDI and CSR
- Reads both old and new XML files converting it into new XML files

Upgraded NEMO software for conversion of ASCII files (V1.5.4)

- Output to SeaDataNet NetCDF included Adapted for use of Vocabularies NVS2.0

Upgraded Download Manager software for connecting data centres (V1.4.4)

- Several improvements and DM_Checker for checking coherence between CDIs, local coupling table and local data sets / queries
- NetCDF CFPOINT support

Deliverable: D9.1 = DONE

- New tools
  - Software for conversion of the SeaDataNet Medatlas format to the SeaDataNet NetCDF (CFPOINT) format : **MedSDN2CFPOINT**
  - Software for conversion of the SeaDataNet ODV format to the SeaDataNet NetCDF (CFPOINT) format : **OdvSDN2CFPOINT**
  - Software for converting ODV or MEDATLAS SeaDataNet files with references to NERC vocabulary server **version 1** (NVS V1) to ODV or MEDATLAS SeaDataNet files with references to NERC vocabulary server **version 2** (NVS V2.0): **Change_Vocab_V1toV2** .
- Upgraded tools:
  - **EndsandBends** software to generate spatial objects from raw navigation (ship routes) to be included in CDI records to describe the geometries of the observations

Deliverable: D9.2 – pilots for CSR and CDI – combined with updated D4.5 and D5.3 (CSR start pilot soon; CDI start pilot early 2015)

Central CDI and CSR services upgraded and equipped with CS-W for harvesting of new and updated XML entries from local data centres to central directories

- GeoNetwork adapted for supporting CDI and CSR ISO 19139 XML output from MIKADO for providing as OGC CS-W services
- Finalisation of test with IFREMER – BSH for **CSR** harvesting and ingestion => guidelines for wider deployment needed
- Pilot development for **CDI** harvesting and ingestion taking into account staging process and relational model CDI – Coupling Table – Local data => development of online CDI harvesting and ingestion CMS by MARIS (end 2014)

Deliverable: D9.3 – End 2014 (IFREMER)

- Upgraded XML editor software with capabilities for O&M and Sensor ML profiles for Operational Oceanography support
  - Awaits finalisation profiles in updated D8.2 – D8.3 – soon!
  - Adoption of RITMARE approach for online Editor (SensorNanny) by IFREMER
  - Integration needed with CDI and EDIOS services, O&M and SOS services

Deliverable: D9.4 – awaits D9.3 and D8.7 further specs + combination with D5.4 – Mid 2015

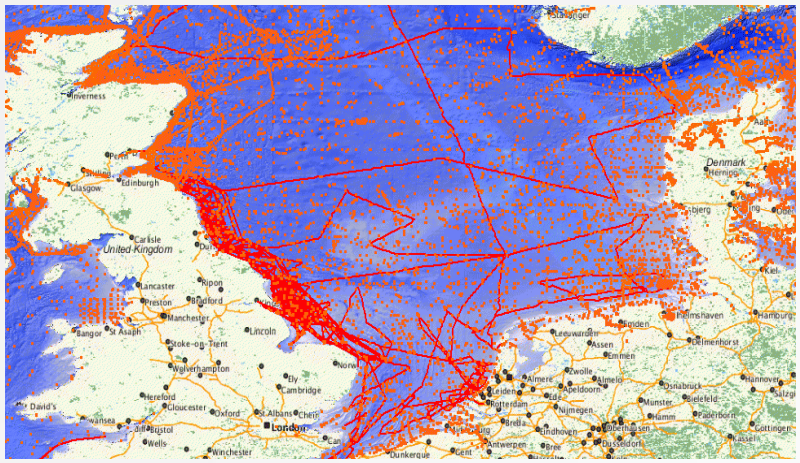
Upgraded Central CDI Data Discovery and Access service for demonstrating SOS services for Operational Oceanography and viewing services on data buffers

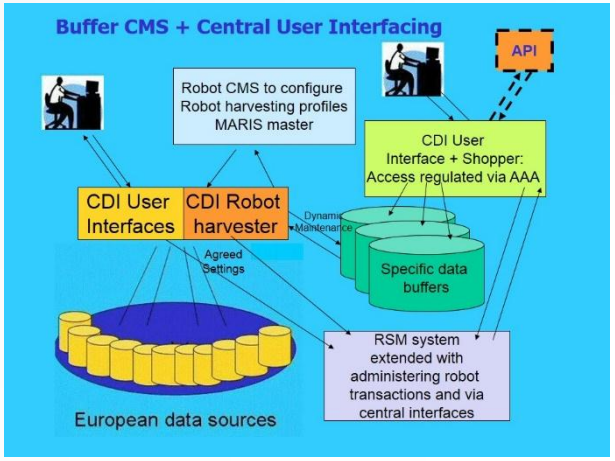
- Pilot planned with selected Oceanographic Platforms of IFREMER, OGS, CNR and CSIC for SOS linked to CDI and EDIOS services
- Oceanotron on ODV collections from buffers (IFREMER)?
- Extra: EMODnet Chemistry visualisations

Deliverable: D9.5 = DONE

Machine interfaces for CDI

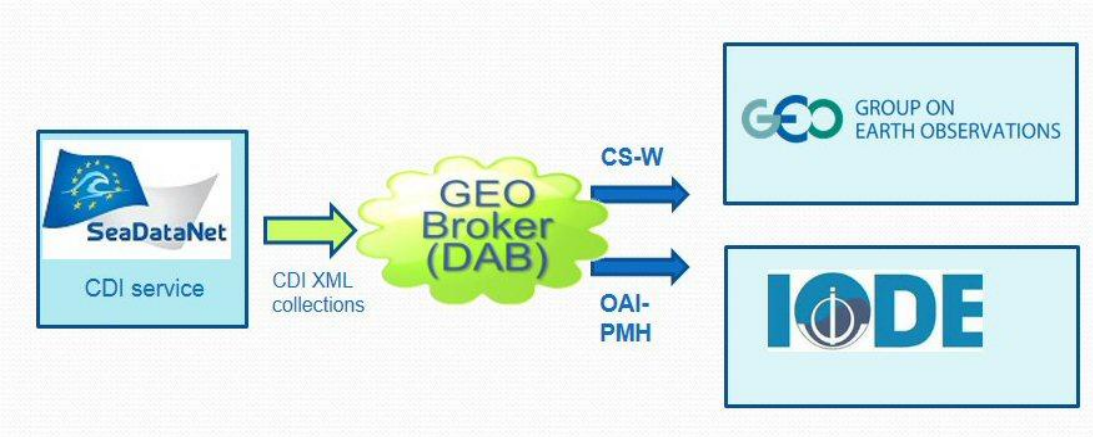
- D8.7 services implemented
- CDI OGC CS-W service
- CDI OGC WMS – WFS services
- CDI OpenSearch service
- CDI Harvesting and Buffer system, incl API

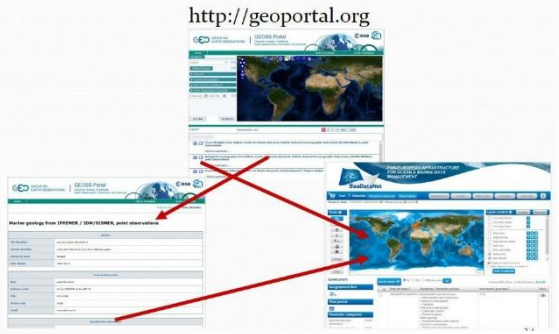


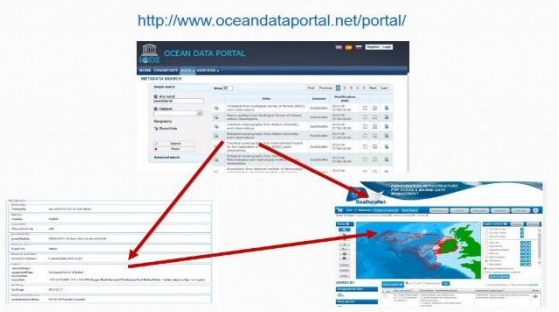


Deliverable: D9.6 = DONE

Interoperability solutions with global portals, such as IOC-IODE Ocean Data Portal (ODP) and GEOSS established



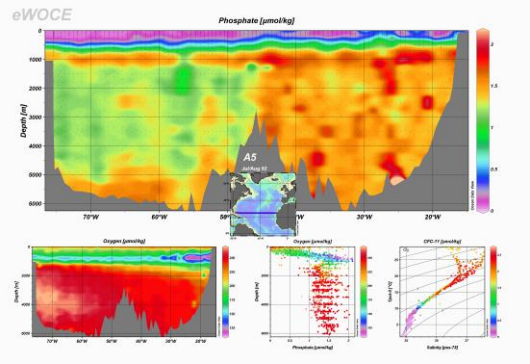


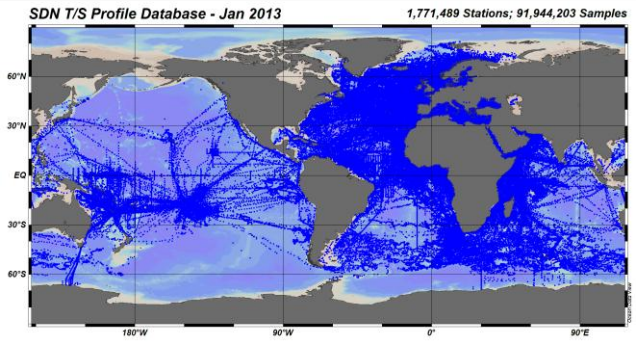


Deliverables: D9.7, D9.8, …. - DONE

Updated versions of the Ocean Data View (ODV) software

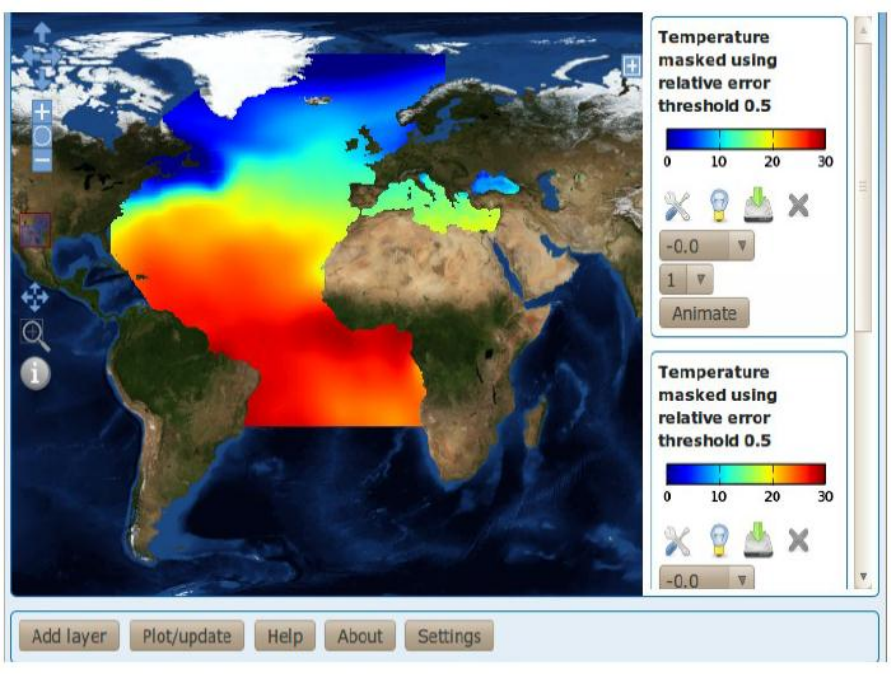
- support for “non-numeric” biological variables, bio model, remote netCDF access and a number of other major improvements and fixes
- ODV Application Programming Interface (API) plug-in, giving users full access to the data in an ODV data collection and allowing development of procedures for all kinds of data processing
- ODV API as C++ library and in Java language
- V4.6.4: significant improvements of the SDN file aggregator, duplicates checker, data quality checking facilities as well as message loggers .

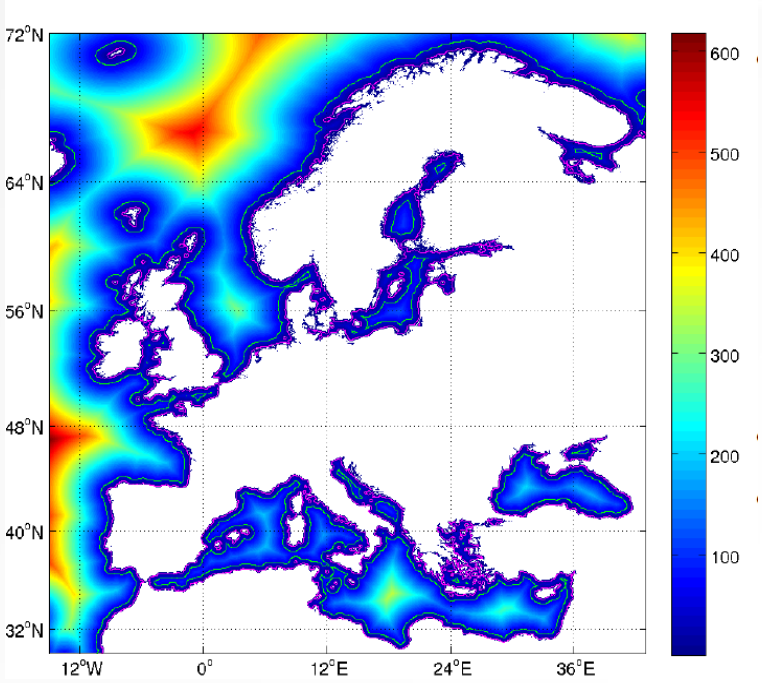




Deliverables: D9.9, D9.10, D9.11, D9.12,…. DONE

Updated versions of the Data Interpolating Variational Analysis (DIVA) software and OceanBrowser





Conclusions

- WP8 and WP9 are making very good progress
- All new formats and software products are fully documented and available from the public SeaDataNet portal
- Finalisation required for:
  - SWE for Operational Oceanography support via CDI – SOS and EDIOS – SOS – Mid 2015
  - Visualisation services via CDI Buffer – Oceanotron – Mid 2015
  - CDI and CSR harvesting and ingestion pilots operational – April 2015