



SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

***WP11 Products
for European Sea regions***

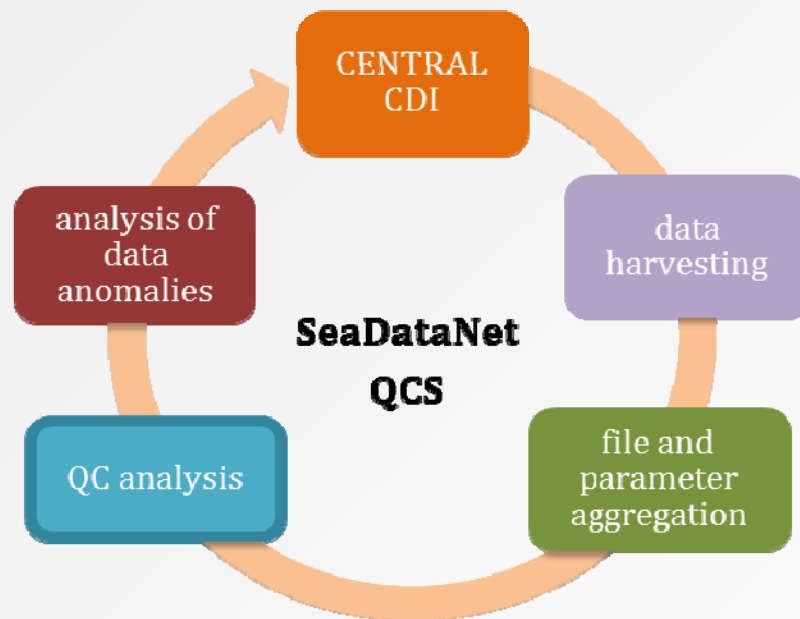
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- Introduction: SeaDataNet2 outcome
- SDC Innovation
- SDC WP11 objectives
- WP11 structure: partners and roles
- WP11 timetable and deliverables
- Focus on 1st year activities
- Conclusions

INTRODUCTION

SDN2 outcome

SDN2 project implemented and continuously refined a Quality Control Strategy (QCS) aiming at improving the quality of the database content and creating the best data products.



Iterative approach to facilitate the **upgrade of the database** and **versioning of data products** through:

- the release of new data collections at the end of each QCS loop
- the generation of derived climatological products after a certain time lag (data processing)

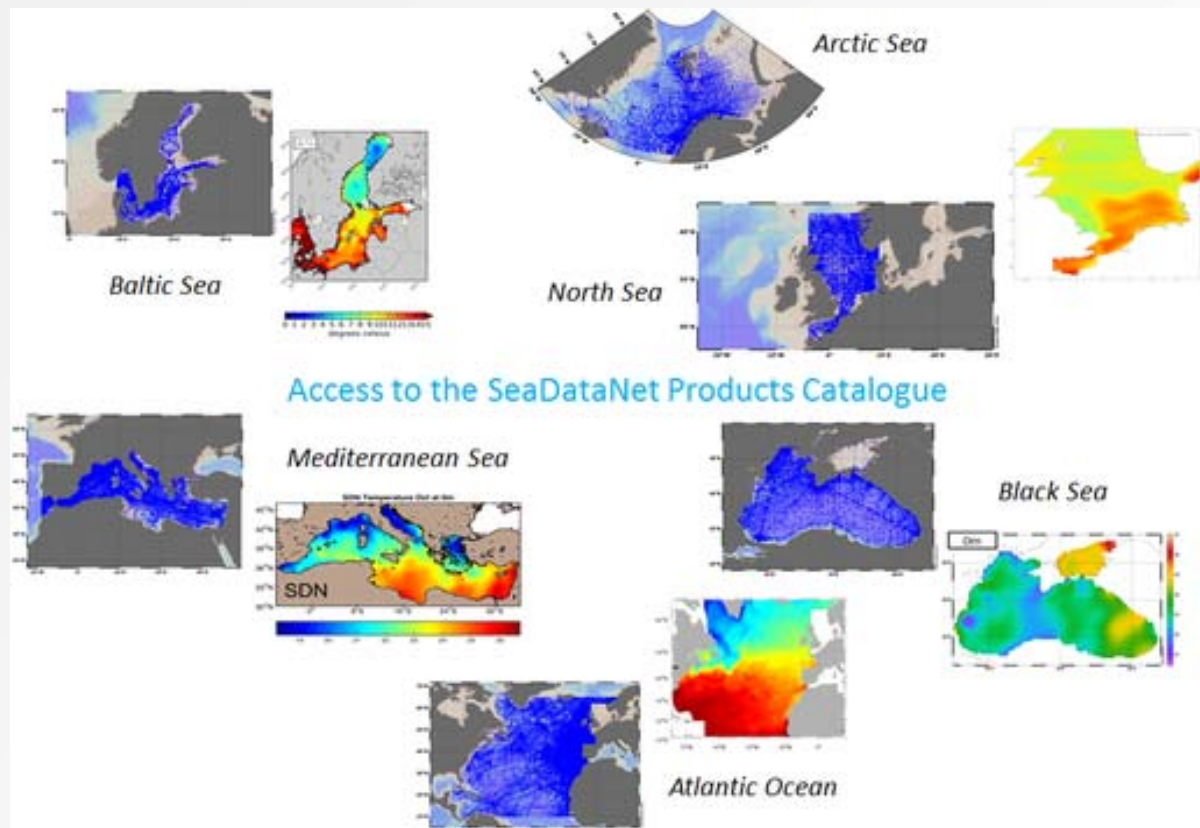


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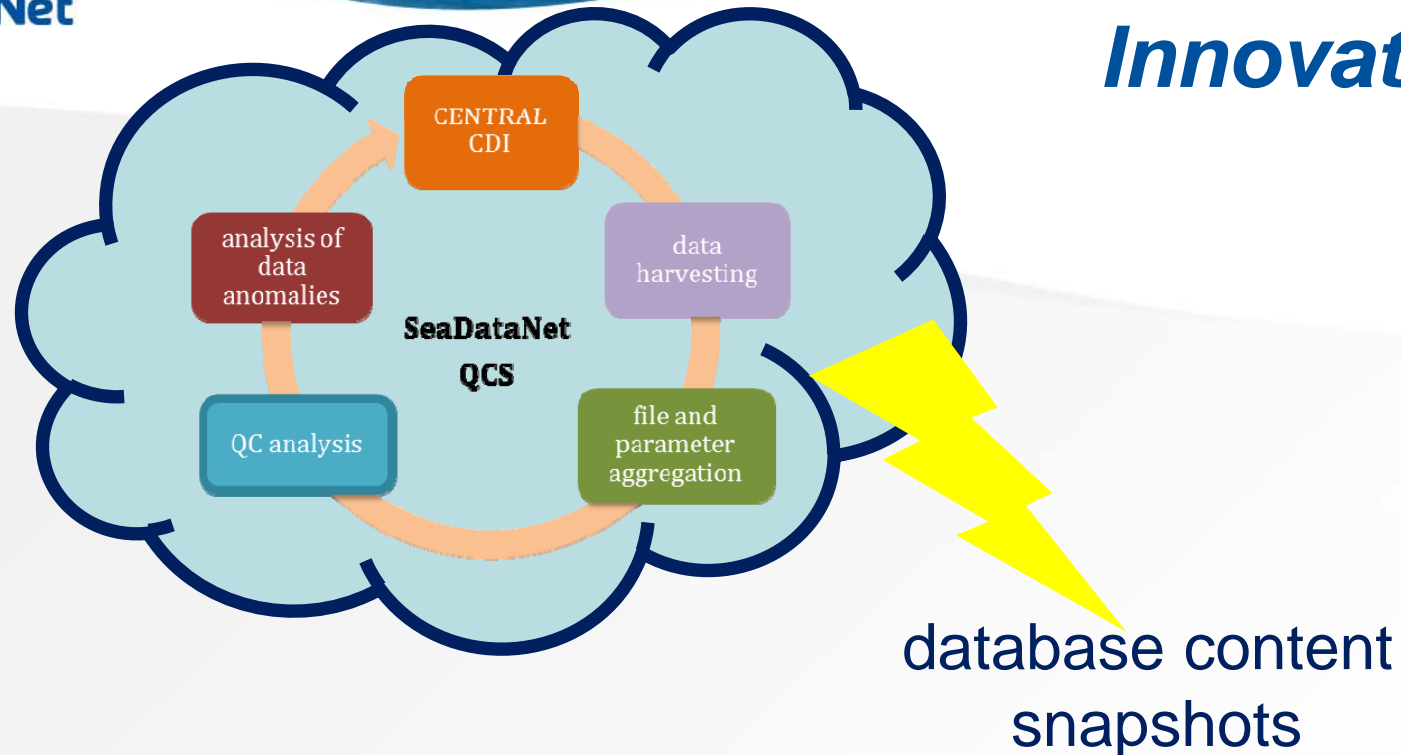
SeaDataNet Data Products

- **V1.1, V2 aggregated datasets:** ODV collections of all SeaDataNet measurements of temperature and salinity by sea basins
- **V1.1 climatologies:** regional gridded field products

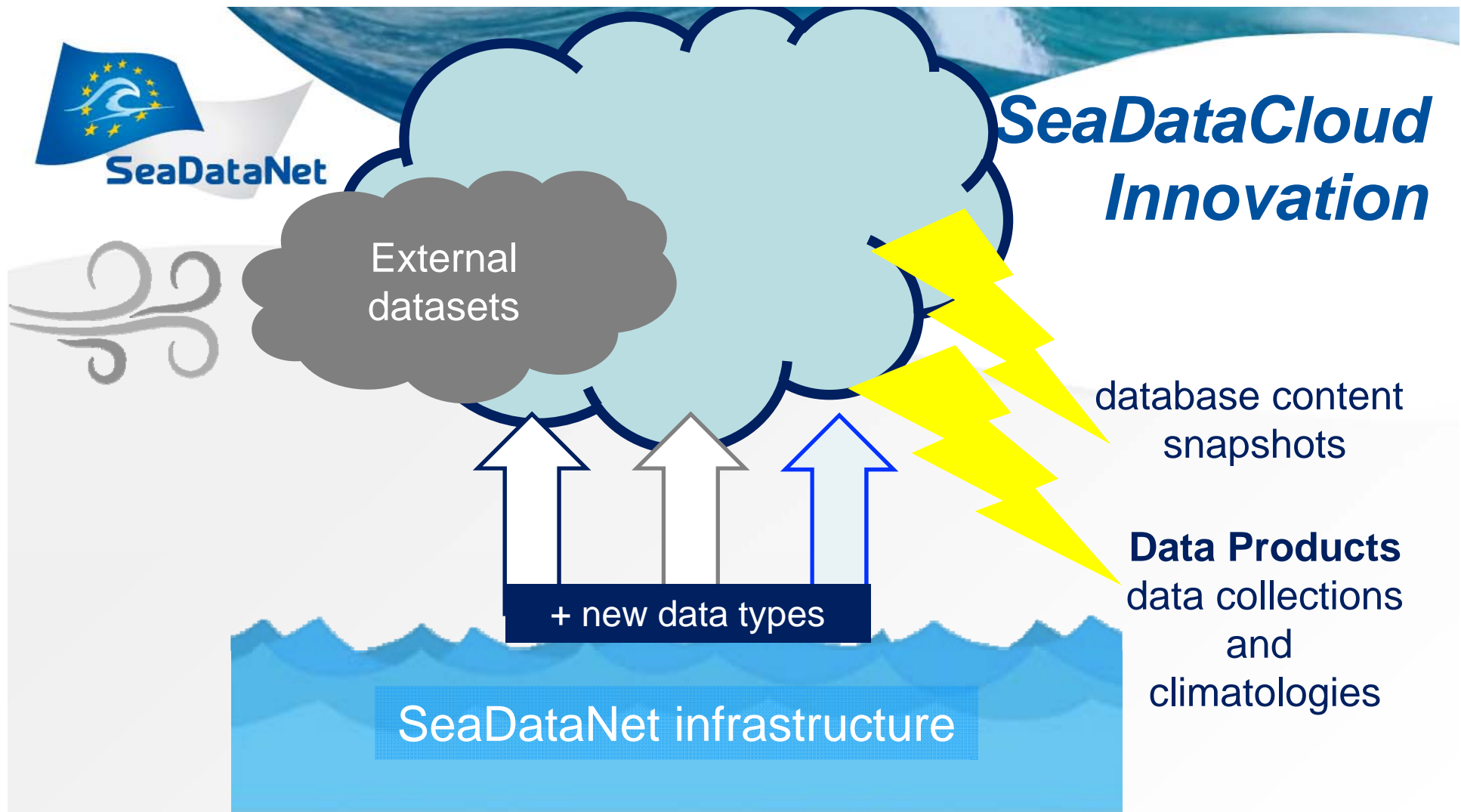


<http://sextant.ifremer.fr/en/web/seadatanet/>

SeaDataCloud Innovation

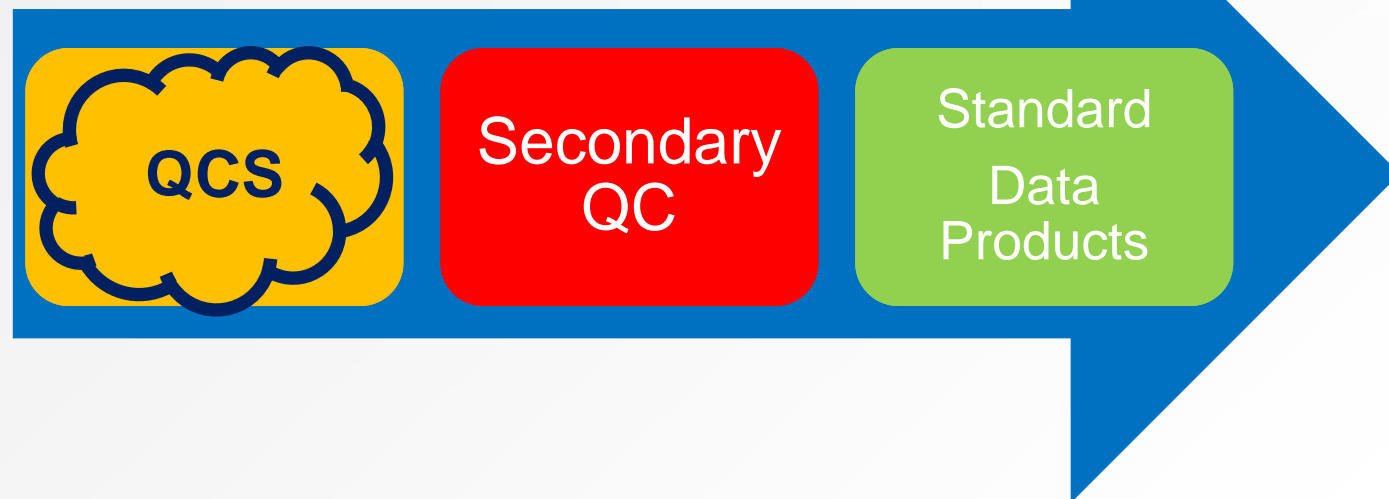


The **implementation of the European cloud environment** will optimize and automate the QCS at the central level assuring a continuous monitoring of the database content and quality, together with the possibility of generating database snapshots on a regular basis and allowing data products versioning
→ consolidation and further development of standard climatological data products and relative documentation



The **ingestion of new data types** (HF radar, glider data) and the **integration of external data sets** are fundamental actions for the creation of appropriate observational data products as demanded by the user community

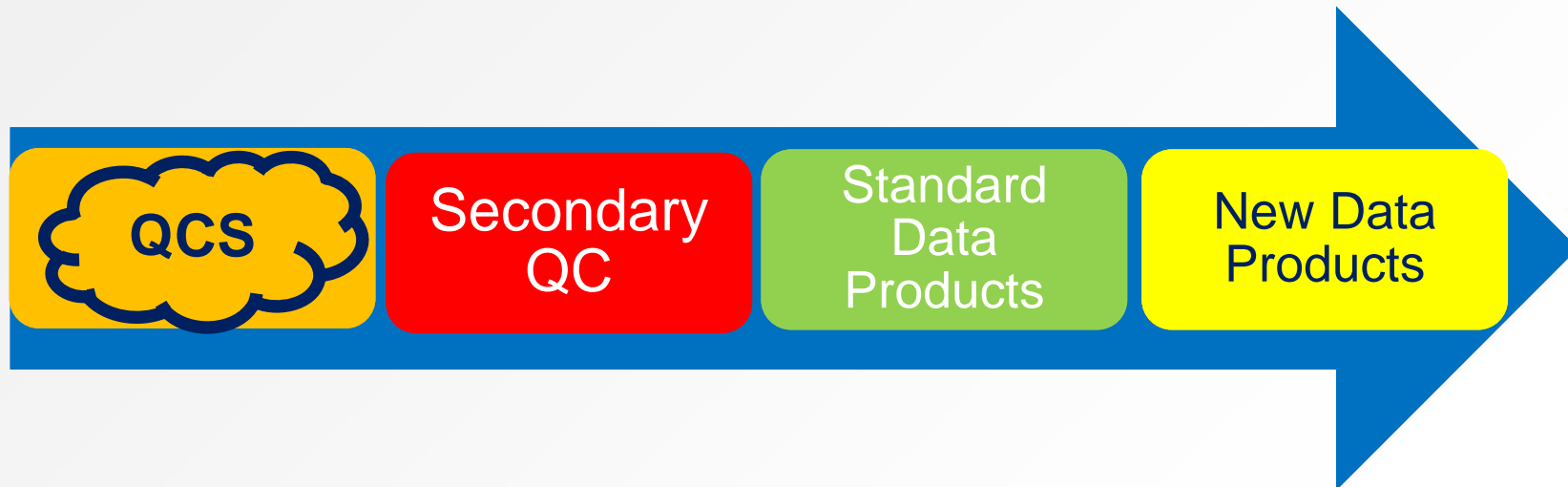
WP11 challenge: **production and release of the “best aggregated observational data sets” for climatological studies** through the development and implementation of **secondary data quality assessment procedures** assuring data consistency in space and time



Aggregation of long time series of **multiple data types** brings about the issue of **variable data accuracy and resolution**

Data integration will increase spatial/temporal data coverage allowing:

- a higher resolution of standard climatological products
- to explore new products (pentadal, decadal means and trends)
- to develop new Integrated Observational Products (IOP) under the guidance of the Scientific Committee
- to generate new climatological products in the coastal areas



WP11 will promote collaboration

- with other WPs and with data originators
- between SDC and CMEMS in situ TACEMODnet Physics/Chemistry through the creation of working groups in order to maintain a true synergy and serve operational oceanography and climate change communities.

Objectives are to:

- share the expertise
- avoid duplication of efforts
- define common strategies
- decide the information flow





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WP11 Objectives

- Produce the “best aggregated observational data sets” using multiple data sources for climatological products
- Delivery of regularly updated climatological standard products
- Consolidate and further develop the data products for European Sea basins and global ocean
- Define new standard climatological products (pentadal, decadal means and trends, climatological derived quantities)
- Develop best practices of delayed mode quality control and information flow for real time data archiving in collaboration with CMEMS in-situ TAC and in consultation with JCOMM and IODE.
- Develop new Integrated Observational Products (IOP) that will make use of satellite data, physical and biogeochemical data
- Make available products for discovery, search, visualisation and transformation to the INSPIRE-compliant services developed in WP9-10.
- Training activities on the usage of historical data sets to produce from basin-scale to shelf area climatologies.

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WP11

Work Organization

Activities for the generation of standard observational products will be conducted at regional level under the supervision of Regional Coordinators (RCs)

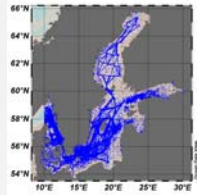
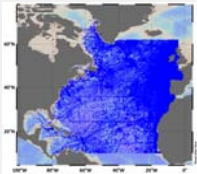
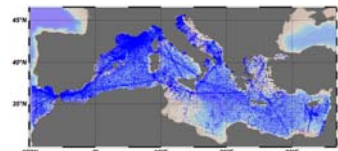
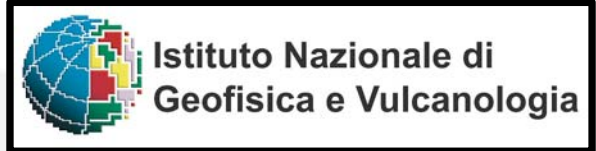
!!! NEW !!!

- SeaDataCloud includes also observational data products for the Global Ocean
- A working group involving all WP11 partners is dedicated to the developments of the new Integrated Observational Products (IOP) under the guidance of the Scientific Committee

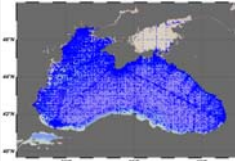


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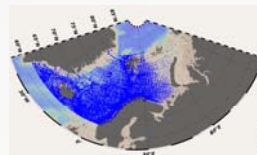
WP11 roles



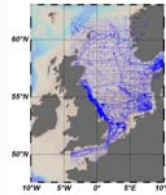
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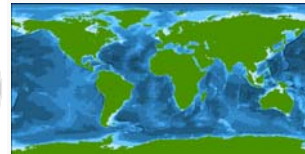
IMR



RBINS



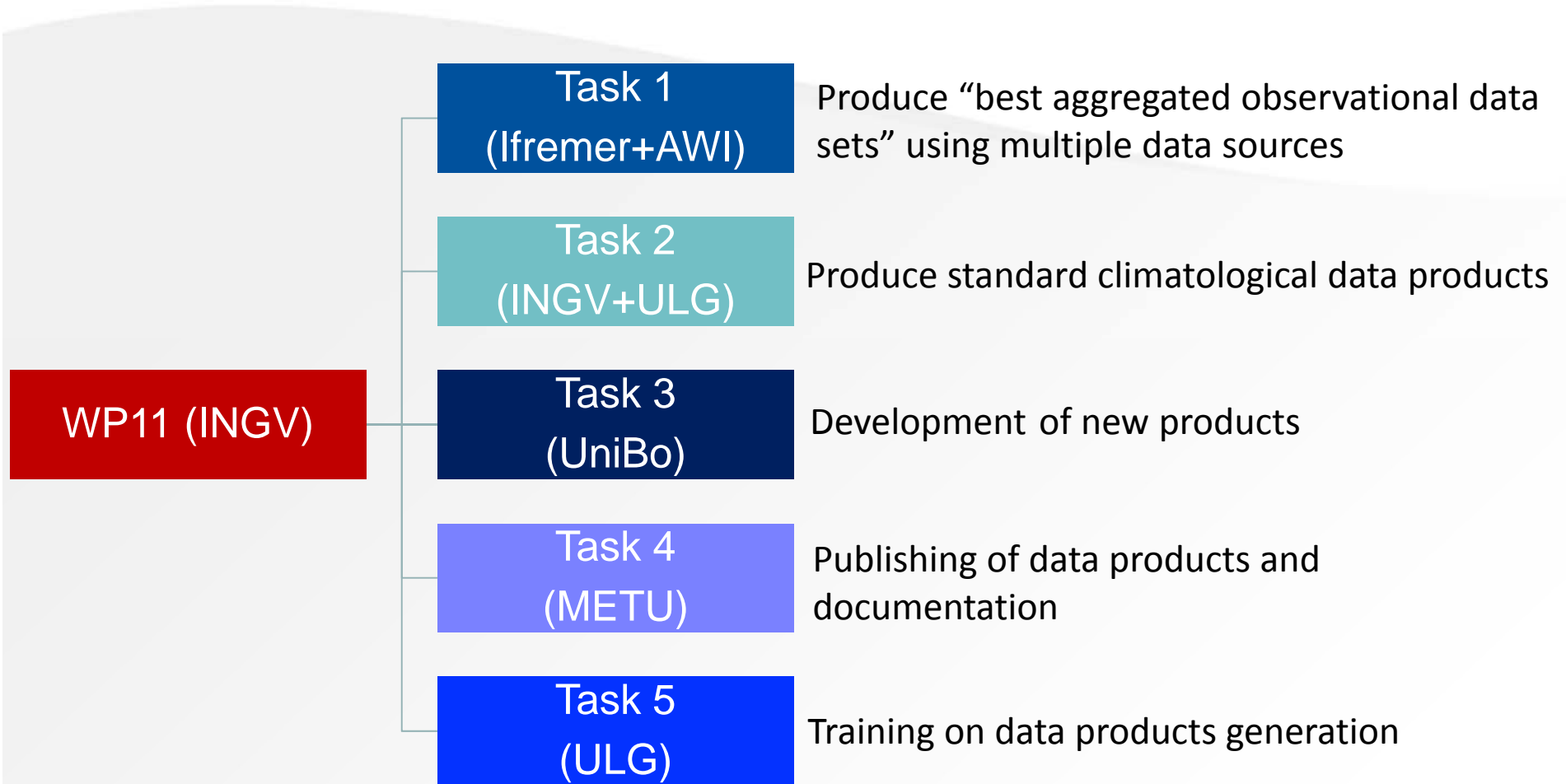
UniBo



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ODV





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Task 1

Produce best aggregated observational data sets using multiple data sources

- Creation of large quality controlled data collections enriched with extensive metadata and of high data quality → basis for the generation of data products for European sea regions and the global ocean
- **Integration of external datasets** to historical data collection in order to improve the quality of standard climatological products → use on-line ODV services to ingest, validate, harmonise and aggregate data from the established SeaDataNet data infrastructure as well as from external international programmes and organisations (EuroGOOS ROOSes, WODB and ARGO) → aggregation of files/parameters and harmonisation of units
- **Development of DM automated QC procedures** to increase data consistency in cooperation with CMEMS in situ TAC
- Introduce the existent SeaDataNet climatologies into DM QC analysis procedures

Task 2

Produce standard climatological data products for the European Seas basins and the global ocean

- Temperature and salinity climatologies with **increased horizontal and vertical resolution**
- Analysis of space/time data distribution, long term variability to compute climatologies on a decadal or pentadal basis
- Consistency analysis of climatologies with available CMEMS products like climatologies computed by satellite reprocessed data sets and reanalysis products

Development of new products

The feasibility and creation of new type of products will be explored by the partners in collaboration with the **Scientific Committee**. Some examples:

- products merging in situ and satellite data;
- products oriented towards other discipline like biogeographical maps;
- surface current climatologies in a coastal area based on HF radar data and possibly ADCP and altimetry data;
- in situ based reconstruction of monthly time series of gridded temperature and salinity;
- derived quantities such as mixed layer depth;
- properties or climate indicators such as heat content and steric height;
- improved statistics fundamental for data quality control methods like horizontal scales and vertical correlations

Task 4

Publishing of data products and documentation in collaboration with WP9 and WP10

- Standard observational data products, aggregated data sets and climatologies, will be published regularly using permanent identifiers (DOIs) via Sextant catalogue
- Each product will be accessible through the Sextant catalogue
- Each product will be described in the Sextant metadata catalogue and will have an annexed documentation describing the methodology applied and informing about the product quality
- Climatologies will be visualised via OceanBrowser

→ The advance on data products documentation, publishing and dissemination is a necessary step towards user awareness and products uptake

Training on data products generation

- Two DIVA workshops will be organized for the RCs, which are open primarily for SeaDataCloud partners but also participants from other projects
- E-Learning course on the usage of historical data sets to produce from basin-scale to shelf areas climatologies and value-added climatological products at different scales → sub-regional users need to increase the resolution in the shelf and near coastal areas
- UniBo has partially developed an Optimal Interpolation Toolbox that will allow trainees to understand how to produce better climatologies for specific ocean areas of interest, starting from the SeaDataCloud database. The toolbox will be inserted in a general e-learning platform managed from UniBO.



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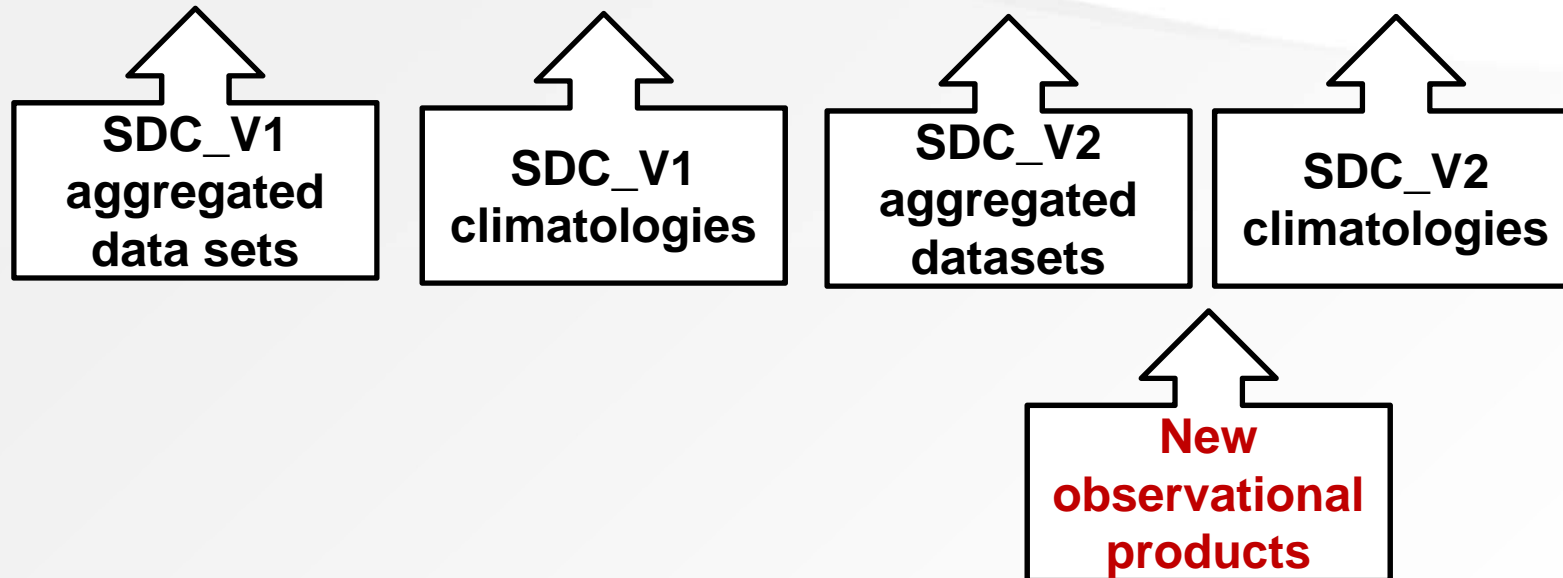
WP11 Timetable

Year 1

Year 2

Year 3

Year 4



Year 1

Year 2

Year 3

Year 4

D11.1 (INGV)

Definition of product documentation

D11.5 (INGV)

Feasibility study and definition of new climatological products

D11.8 (Unibo)

Feasibility analysis and definition of new observational products time schedule, release and dissemination

D11.11(METU)

Strategy for publishing and dissemination of data products

Year 1

Year 2

Year 3

Year 4

D11.14 (M14, ULG)

Strategy for training activities, work plan,
scheduling of courses

D11.15(M18, ULG)

Outcome of training activities

D11.3 (M24, Ifremer)

Definition of improved Delayed Mode
QC procedure for data consistency

WP11 Timetable

Year 1

Year 2

Year 3

Year 4

D11.9 (M30, UniBo)

Status of new observational products:
revision of their time schedule,
release and dissemination

D11.12 (M30, METU)

Outcome of publishing, dissemination
and visualization of data

WP11 Timetable

Year 1

Year 2

Year 3

Year 4

D11.10 (M42, UniBo)
**Release of new
observational products**

D11.16 (M42, ULG)
Final outcome of training
activities

D11.13 (M48, METU)
Final presentation of
SeaDataCloud
catalog

MILESTONE

- Definition of product information documents (templates, outline)
 - SDC_V1 release of aggregated data sets and documentation for regional seas and the global ocean
 - Feasibility study and definition of new climatological products
 - Feasibility analysis and definition of new observational products time schedule, release and dissemination
 - Strategy for publishing and dissemination of data products
- **Product Meeting at M6** to discuss QC analysis (literature survey and definition of the methodology), product documentation, validation/consistency analysis

- SDC data products will be more user&sciece oriented to feed intermediate and end users
- WP11 activities will be coordinated in synergy with other projects/services/initiatives
- WP11 work load has been distributed to optimize the final results
- WP11 will be the test user of the new cloud infrastructure and VRE
- Activities will be constantly monitored through webex meetings
- Scientific publications will be encouraged