EMODnet

European Marine Observation and Data Network

Your gateway to marine data in Europe

CMEMS INSTAC - EMODnet Physics MoU Status & Plans for 2021/2022

9th February 2021

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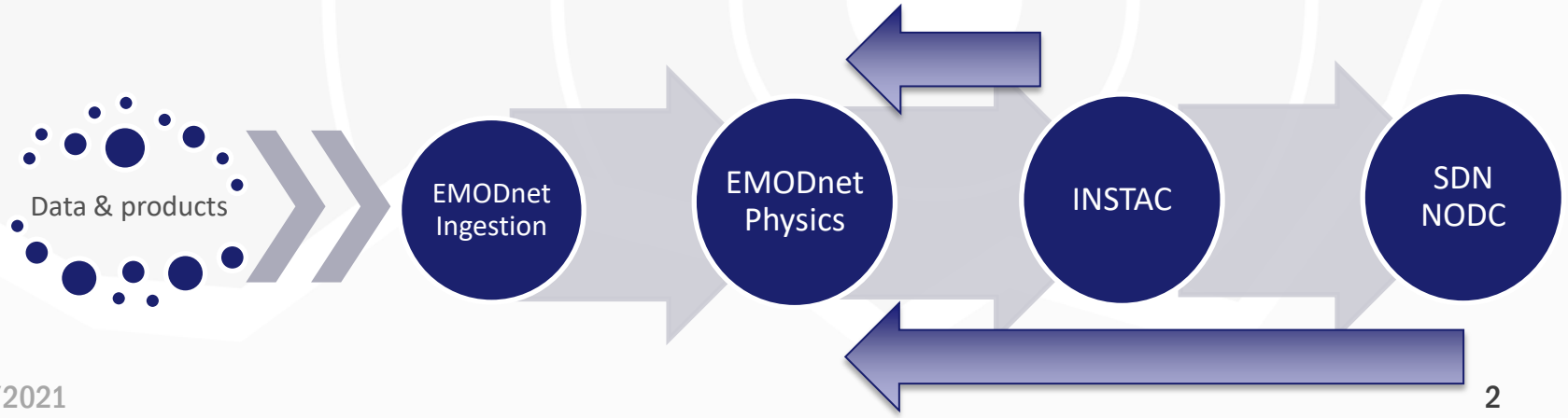
The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

- EMODnet Physics – CMEMS INSTAC planned activities are:
  - Keep working on a common framework for data ingestion /connection and use and reuse in the European infrastructures
  - We are all promoting a common (nrt) flow that is (whenever possible/reasonable – parameter dependent) Data ingestion → Physics → INSTAC → SDN



Planned joint activities in April 2020

EMODnet Physics – CMEMS INSTAC planned activities are:

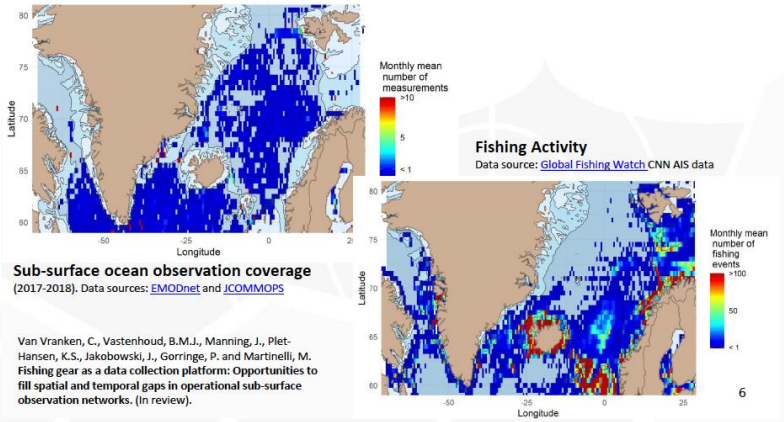
- Working on Fishing for data workshop and data ingestion (data from smart sensors in the fisherman networks) we all are discussing on the best practice and methods to unlock this data and make it available in Physics/INSTAC/ICES …

- Joint effort for HFR data integration (and call to providers' action)

- Joint effort to support GOOS asset mapping (together with JCOMMOPS – started within the framework of AtlantOS prj)

EMODnet Physics – EMODnet Data Ingestion – CMEMS INSTAC

- Collaboration for ingesting new opeartional sources workflow:
  - Identification of the source
  - Analysis of the dataset, data transport format, data access protocol
  - Mapping of the minimum set of metadata (time, datum, insitute, platform type, parameters, units,)
  - Presentation on EMODnet Physics (=Data Ingestion phase 1)
  - further mapping vs INSTAC metadata and application of INSTAC QC/QF
  - Integration into INSTAC products
  - Presentation on EMODnet Physics (=Data Ingestion phase 2)



Sub-surface ocean observation coverage
(2017-2018). Data sources: EMODnet and JCOMMOPS

Van Vranken, C., Vastenhoud, B.M.J., Manning, J., Plet-Hansen, K.S., Jakobowski, J., Gorringe, P. and Martinelli, M. **Fishing gear as a data collection platform: Opportunities to fill spatial and temporal gaps in operational sub-surface observation networks.** (In review).

Fishing Vessels from BEERING COOPORATE DATA

2019
Fishing vessels sensors identified as potential new source

May 2020
Fishing for Data Workshop

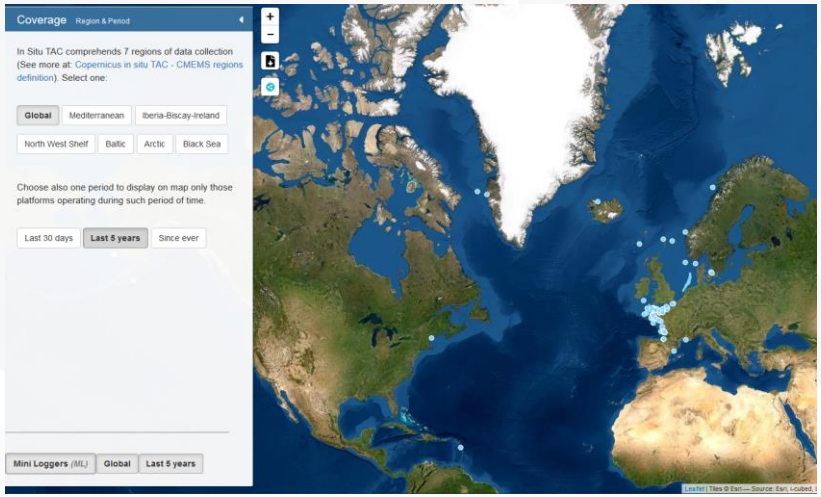
June 2020
BDC data ingested/linked in EMODnet Physics
INSTAC took over for phase 2

Oct 2020
OCEANOPS to assign unique WMO to Fishy sensors

Jan 2021
INSTAC completed phase 2 process and BDC data included in GLO_013_030

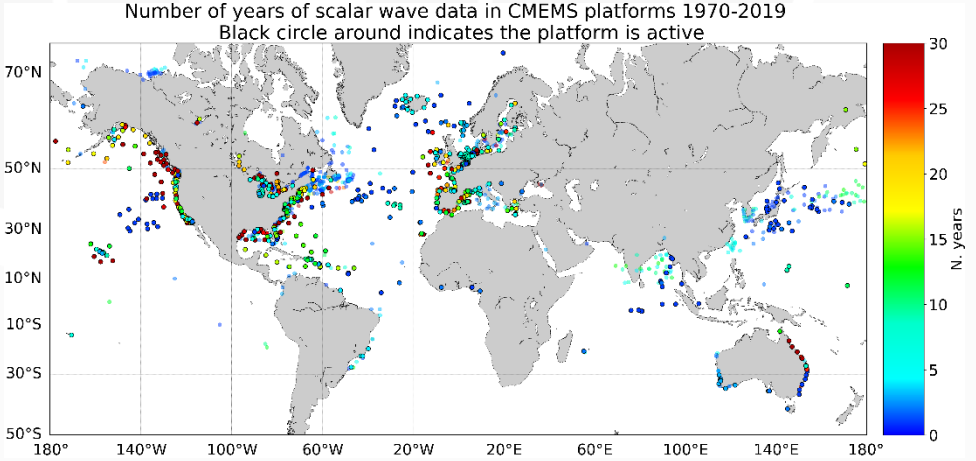
SailDrones

- Saildrones : Contact taken at OceanOBS 20019
  - Agreement on data flow and establishment of data provision to CMEMS in 2020
  - Less Saildrones data due to COVID 19 crisis
  - Consolidation of Data holdings between CMEMS and EMODNET underway



More than connecting Data Center Moving Towards FAIR services

- CMEMS, SDN and Physics are working and promoting FAIR
- CMEMS and SND are more specifically working on reformat with **FAIR** marine domain standards and QCs
- this FAIRification process may initially introduce a delay:
  - RT DataStream are temporarily available via EMODnet-Physics
  - as soon as CMEMS-INSTAC or SeaDataNet are ready to host/ingest data is transferred and Physics re-link the data from its pillars



Artic data Portal

WEBINAR organised JOINTLY late November

EMODnet
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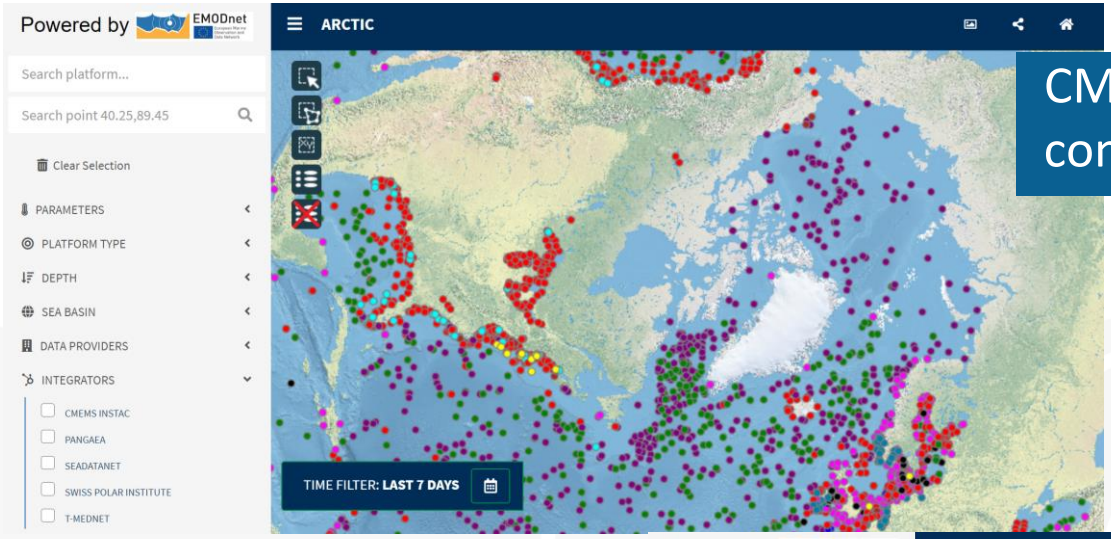
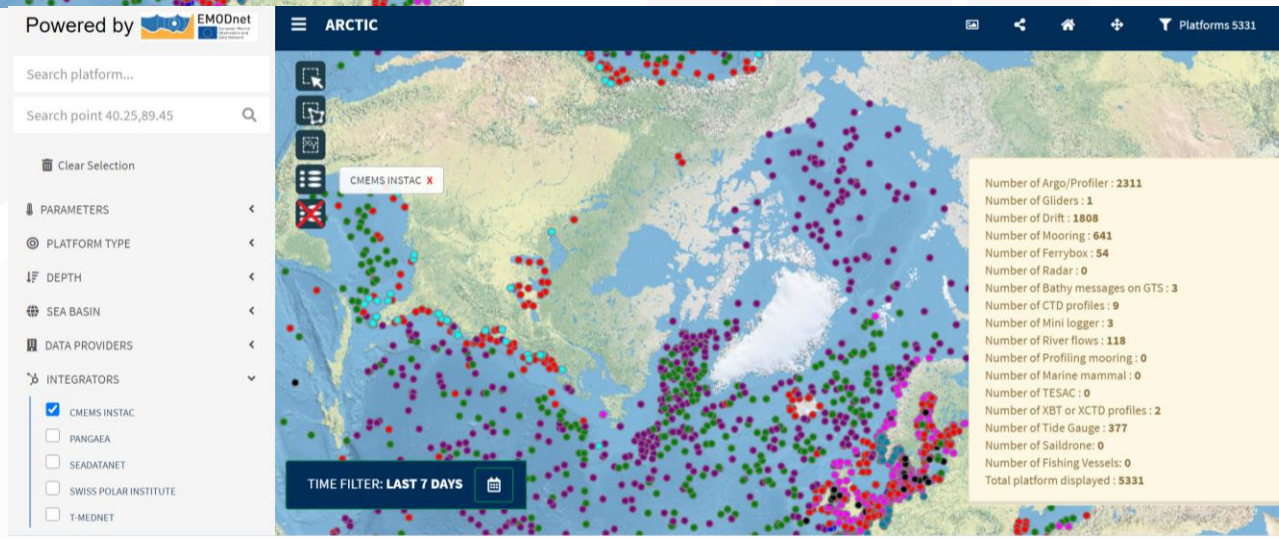


CMEMS In-Situ Thematic Center data contribution to the Arctic Data portal

Latest 7 days



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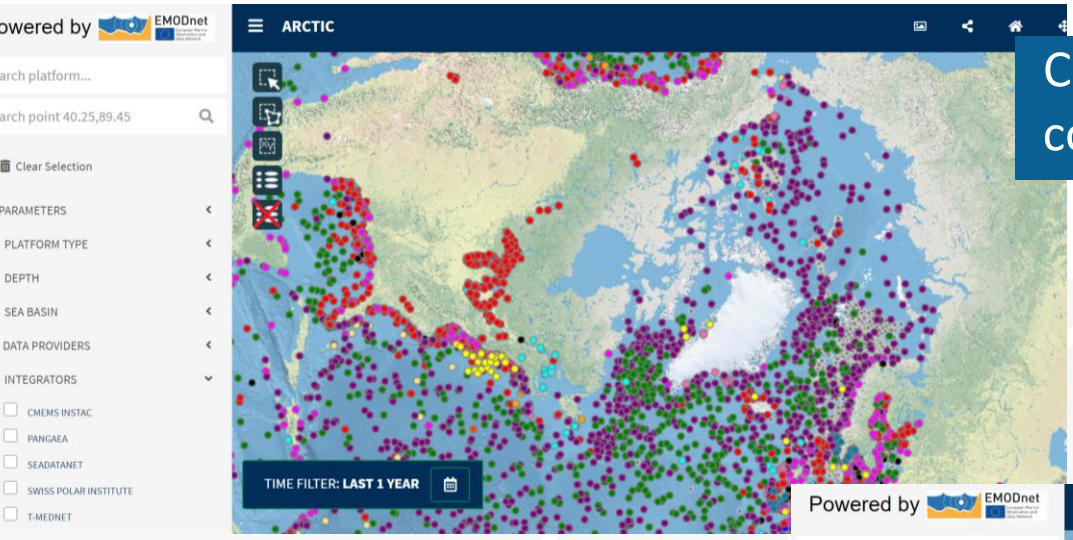
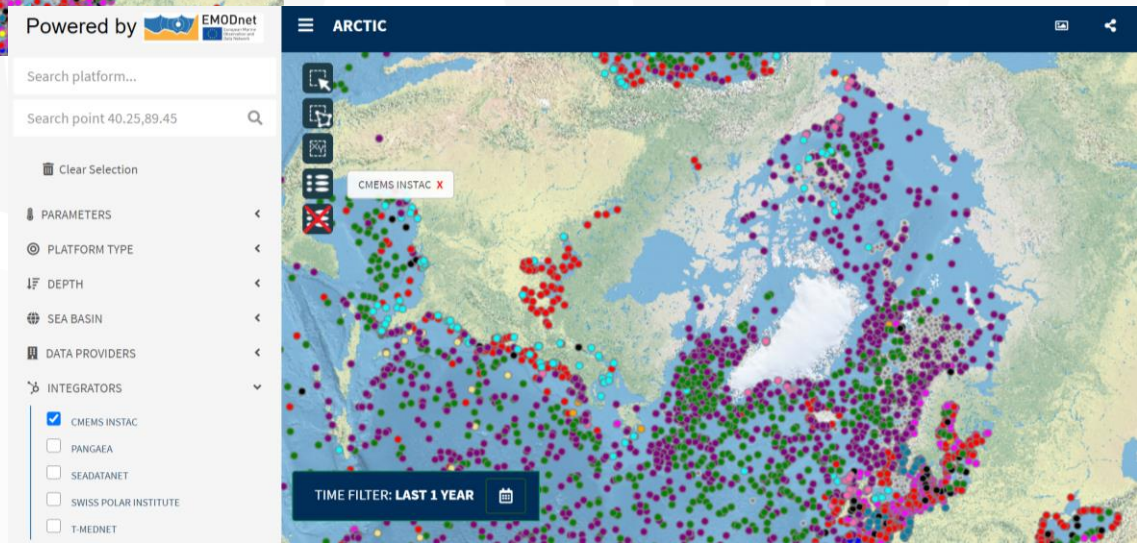


CMEMS In-Situ Thematic Center data contribution to the Arctic Data portal

Latest year



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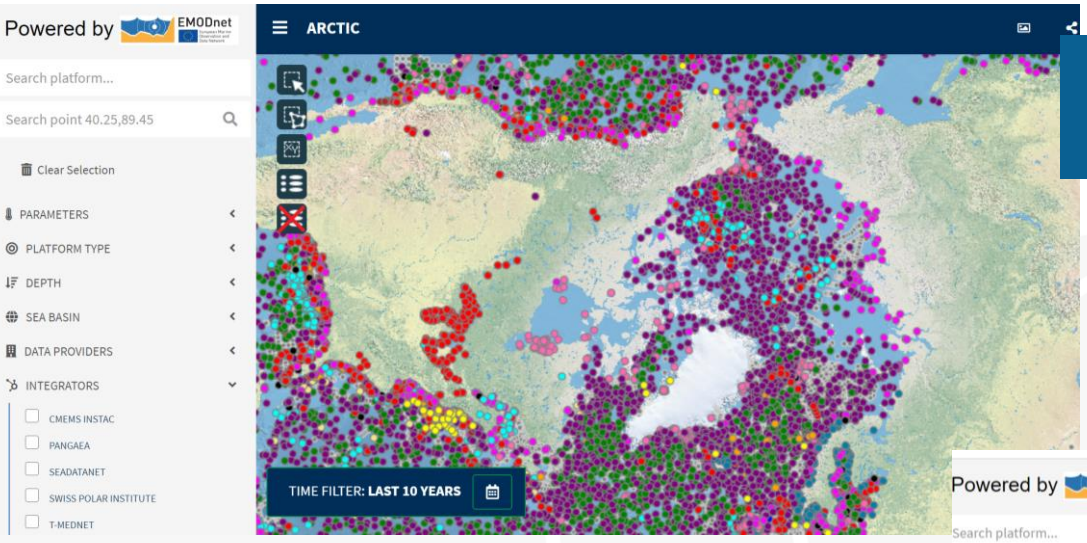
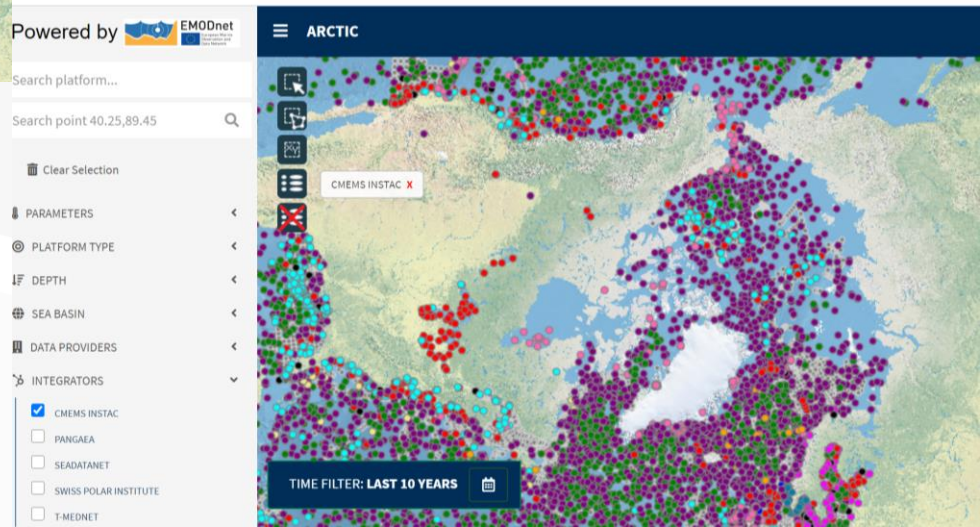


Latest 10 years



Artic data Portal

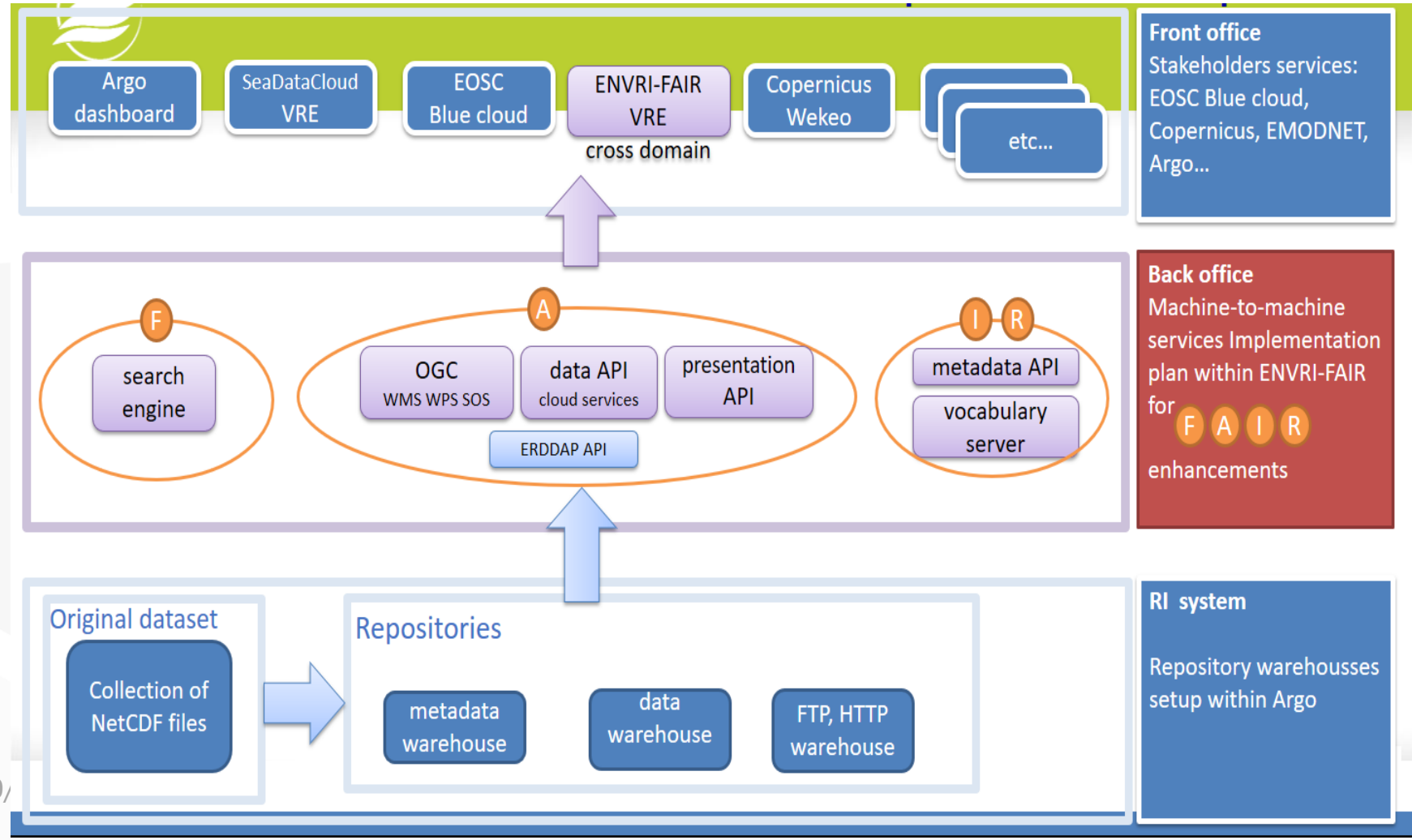
WEBINAR organised JOINTLY late November

- Challenges for operational data:
  - Difficult environmental conditions
  - Automatic data transfer
  - Expensive
- Challenges for delayed mode data:
  - Identify new data sources
  - Availability of data (long delays)
  - Importance of metadata (FAIR data)

Acquire once
Use multiple

Unlock access to existing data

EnVRI-FAIR MARINE DOMAIN Implementation plan



Brooker demo useful for CMEMS and EMODnet

User request: give me Oxygen

Broker

NVS

Marine Data Services Catalogues

RI metadata and data services

RI database

Step1: data files from each RIs with PID to trace provenance

2021 : ERDDAP
2022 ERDDAP or sparql endpoints on linked data

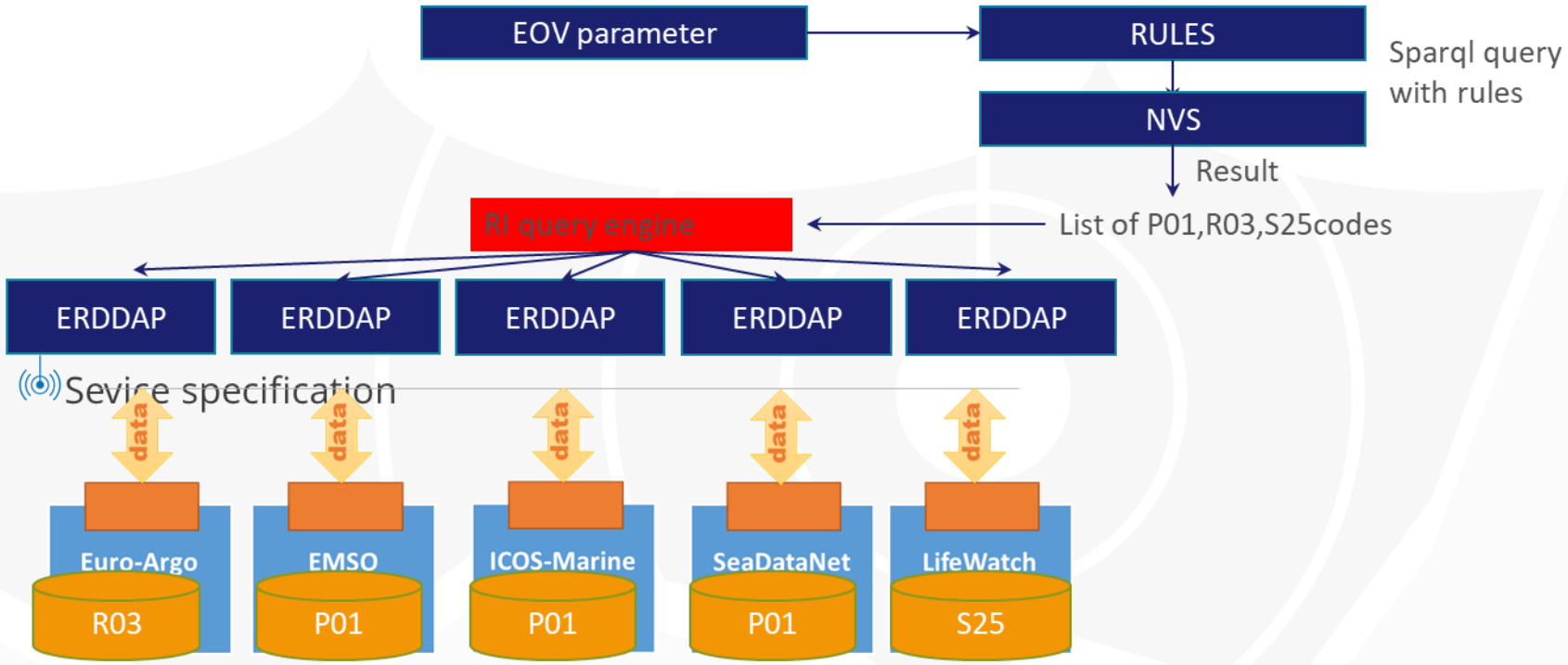
VRE

JupyterHub, SeaDataCloud, Wekeo

Integrators such as SDN, CMEMS or EMODNet

Step2: data Aggregation & Product assessment

Brooker demo useful for CMEMS and EMODnet



Follow up

- We recommend (also in line with the EMODnet future evolution) to work on common vocabularies across disciplines (as we are already doing by adopting the SDN in Phy, INSTAC, Che), common terms, etc
- Collaborate with OceanOPS for Unique ID and link with lobal networks
- Identify some common use case and work together to show/prof the benefit from the mutual/joint collaboration,
- Establish a common framework (calls and funds) for supporting joint Service Evolution/implementation projects.

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CMEMS INSTAC /EMODnet Chemistry MoU Status & Plans for 2021/2022

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S Pouliquen/Ifremer
A Giorgetti/OGS

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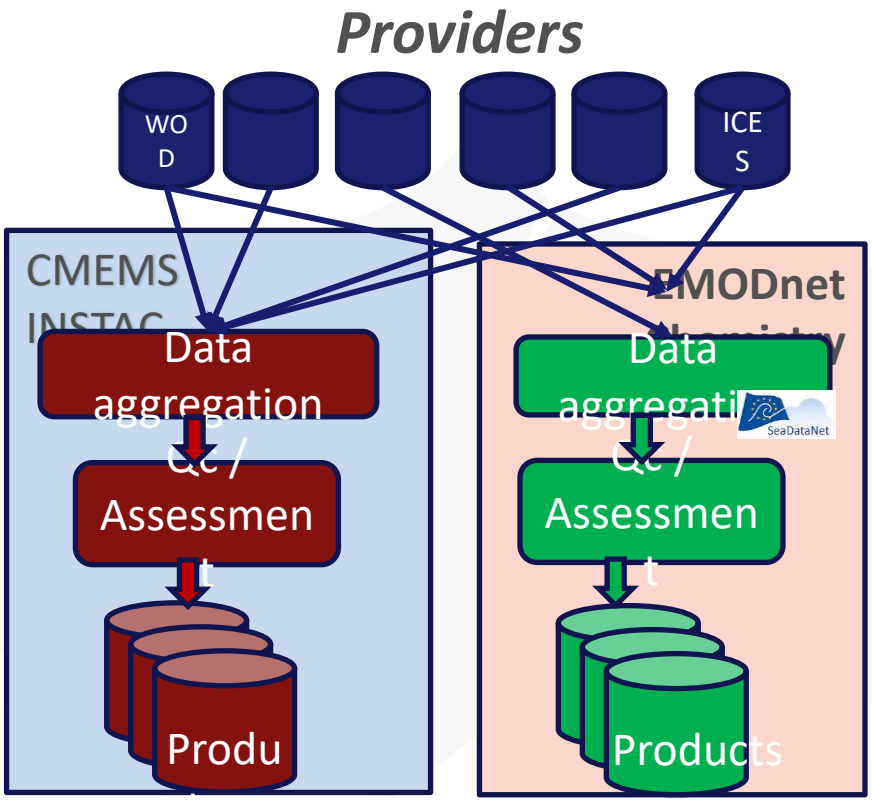
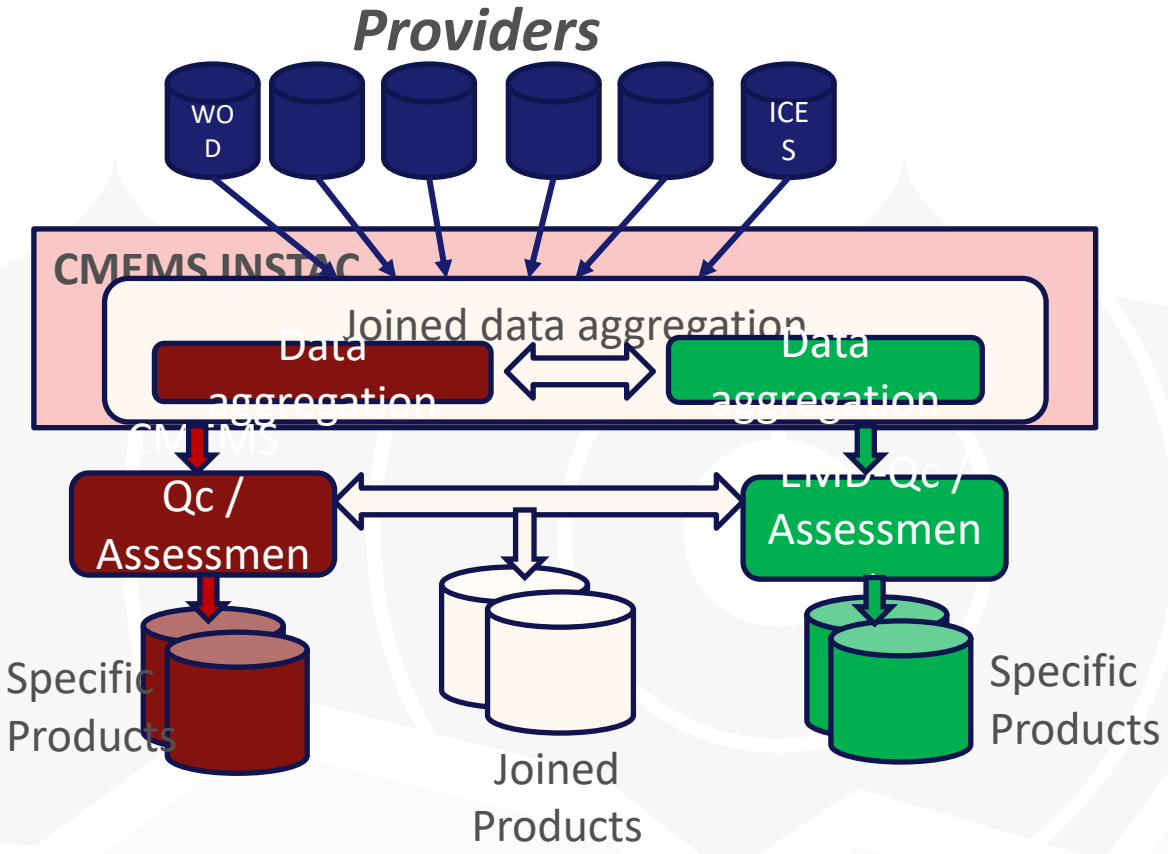
Present Situation presented in April 2020



- EMODnet and CMEMS/INSTAC are not competitive projects.
- Each of the projects has a lot to share and learn of the other

Long term target agreed in February 2020



Actions decided at the 1st meeting in February

- This meeting was the **first one a fruitful collaboration wanted by both teams**
- **Work together to facilitate data integration reducing duplications of efforts**
  - Agreement on vocabularies used for parameters, standard names, institution platform codes based on SeaDataNet vocab
  - Definition of mandatory metadata to be able to exchange data collections
  - Enhancement of API to facilitate exchanges for **data open and free**
- **Share expertise on QC procedures**
  - Oxygen
    - Share CMEMS Matlab QC tool with EMODNet Chemistry partners
    - Use EMODnet Chemistry regional detailed ranges in CMEMS procedures
    - Inform EMODNet Chemistry MIN/MAX climatology development by CMEMS
  - Chlorophyll
    - refine range test in EU marginal seas in CMEMS based on EMODNet Chemistry
    - Set up a join EMODnet- CMEMS group to enhance Chl-a QC method for REP products.
  - Carbon
    - CMEMS to share with EMODNet tools and expertise developed in SOCAT and GLODAP context

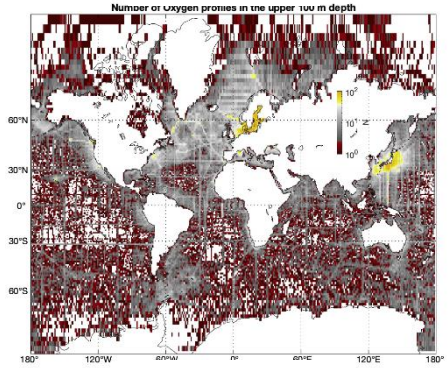
BioGeoChemical products in CMEMS

World-wide datasets of chlorophyll, oxygen and nutrients

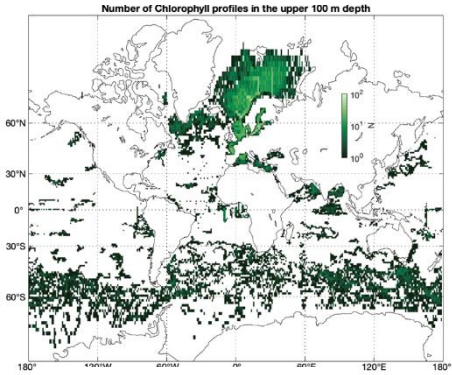
Significantly enhanced the resolution of point-on-land position test for validatin observations in fjords

- BGC data in NRT available since 2017
- Chlorophyll REP (since 2019)
  - Quality control procedures separated into coastal and pelagic eco regions and euphotic zone and deep ocean
- Oxygen REP (since 2019)
  - Refined eco-regions for regional range testing
  - Setting up and improvement of REP Quality Control procedure that wa gradually ported to NRT level
  - Easy-Oxygen: unit standardization for modelers (µmol/l) or oceanic application and monitoring purposes (µmol/kg)
- Nutrients REP (nitrate, silicate, phosphate; since 2020)
  - Refined eco-regions for regional range testing
  - Automated outlier detection and visual inspection of doubtful profiles
- Inclusion of EMODnet chemistry 2018 in the GLOBAL NRT product (May 2021)

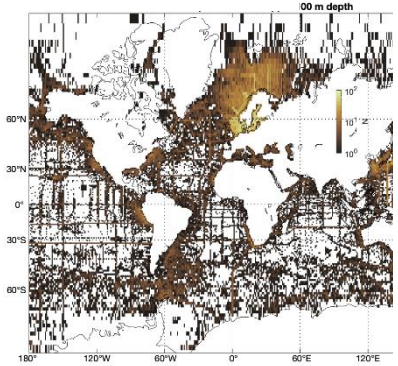
Oxygen



Chlorophyll



Nitrate



Phosphate