Improving the offer

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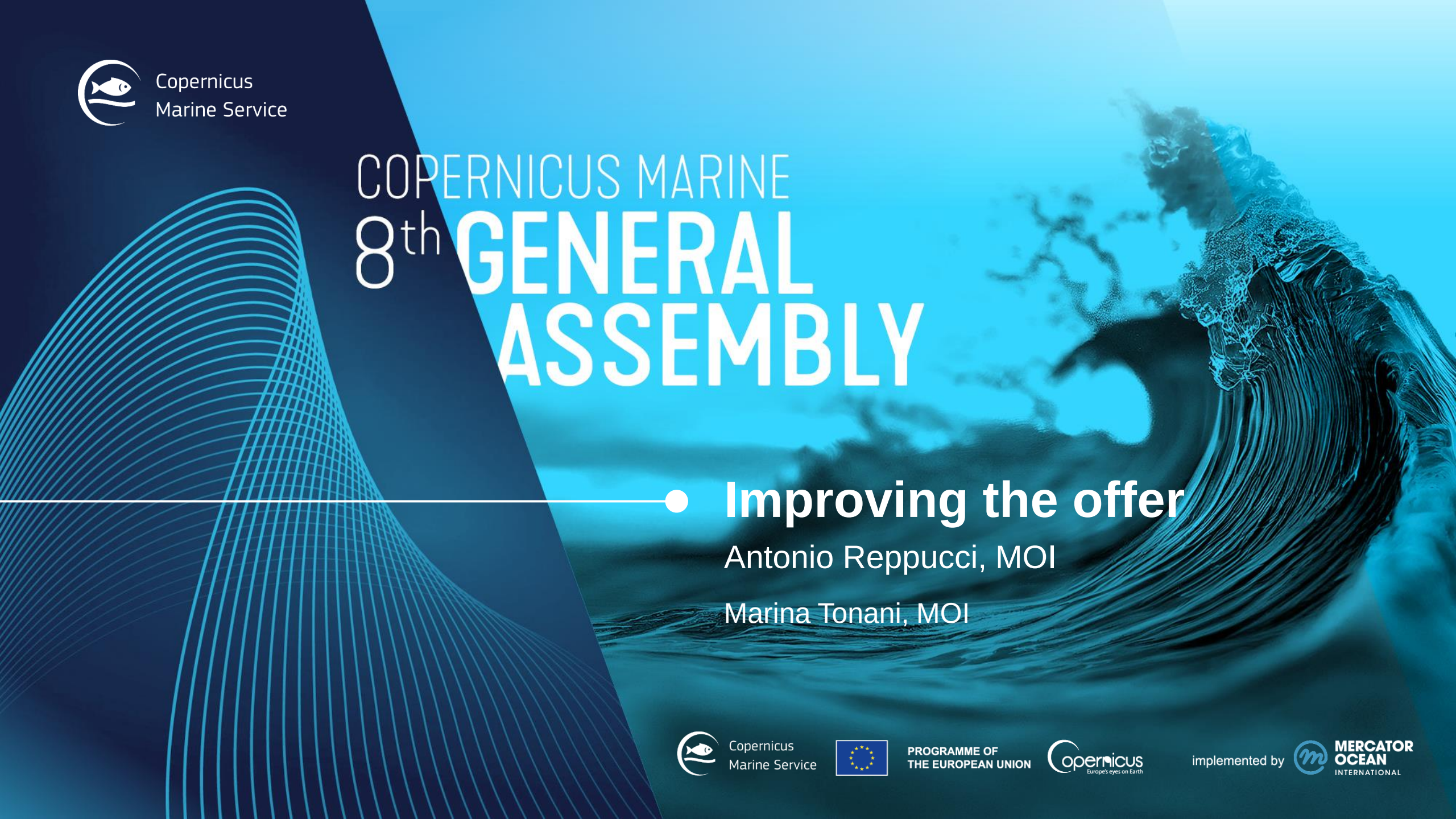
Copernicus
Marine Service

COPERNICUS MARINE
8th GENERAL ASSEMBLY

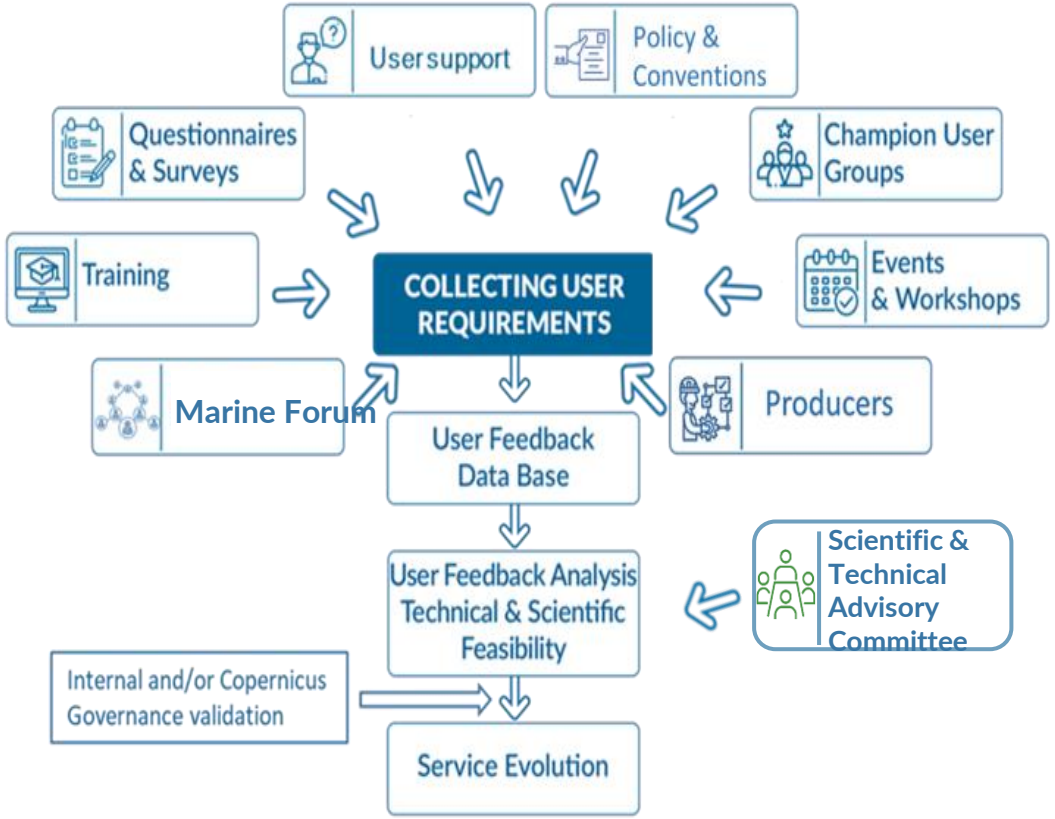


Improving the offer

Antonio Reppucci, MOI

Marina Tonani, MOI

A USER AND POLICY DRIVEN SERVICE
USER FEEDBACK AND SERVICE EVOLUTION PROCESS

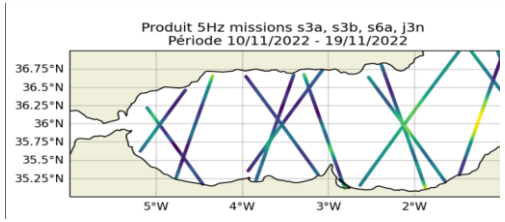


Translate User feedbacks into achievable service evolution objectives taking into account **scientific&technological advances** (observations, modelling, assimilation, AI, cloud and computing capabilities).

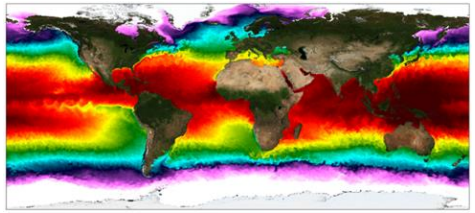
Thematic Assembly Centres

Blue Ocean TACs Main Achievements

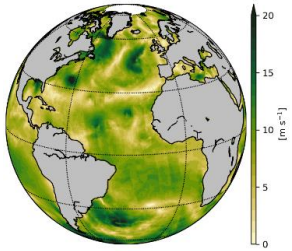
New Level-3 Sea Level products with ~1km posting rate (L3 5Hz)



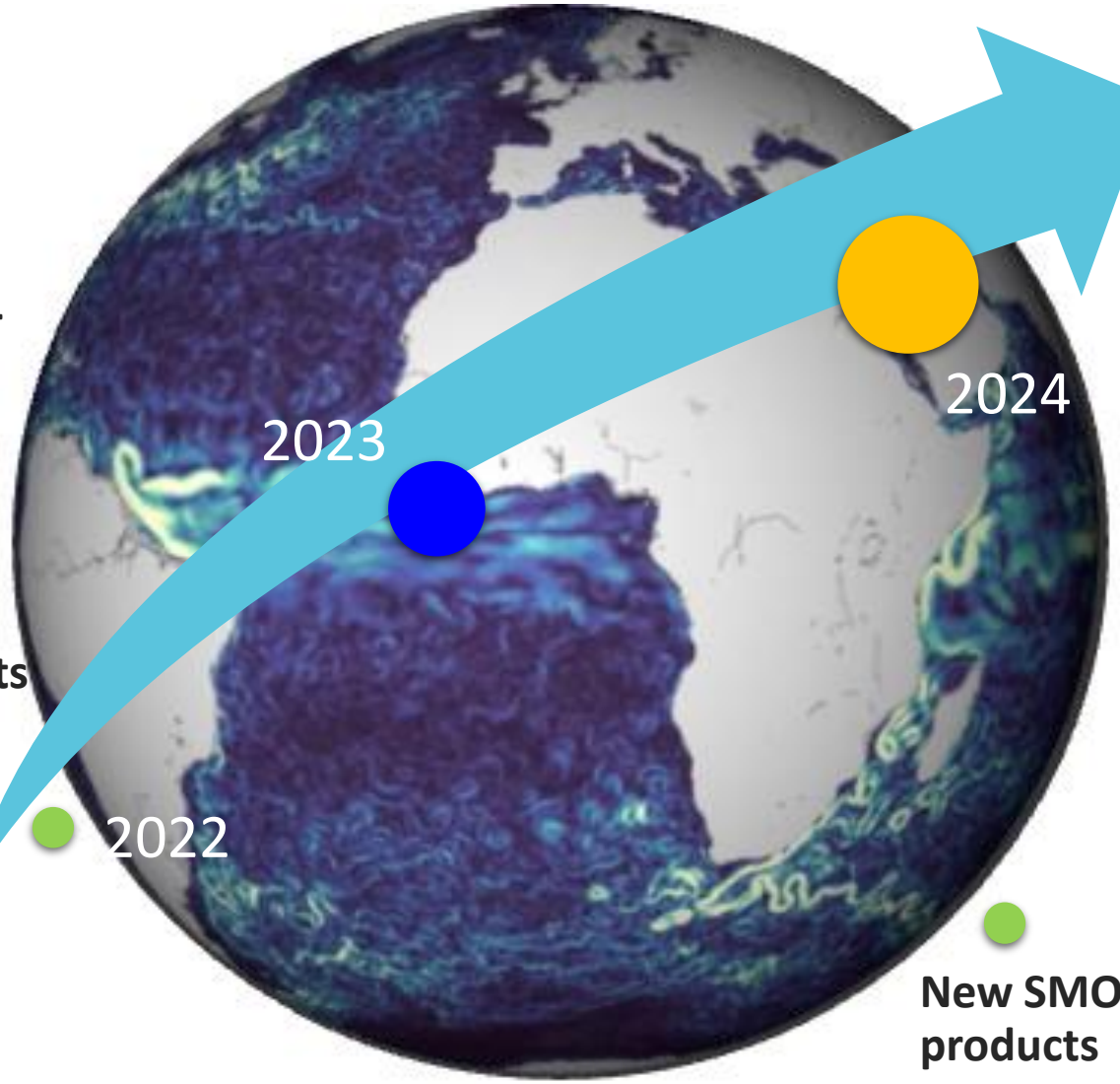
New ODYSSEA Global SST



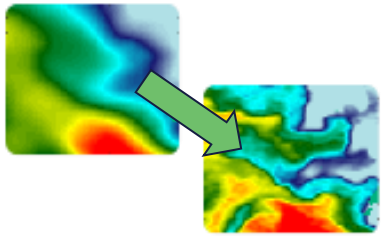
New Hourly Wind products



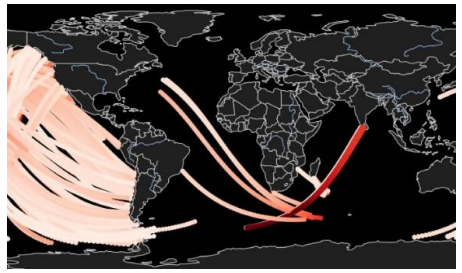
(psu)



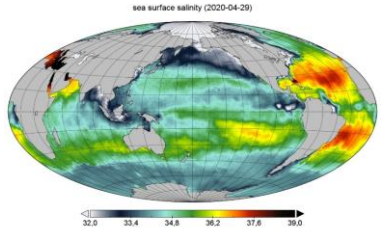
AI-based Super Resolution SST algorithms (MED/BS);



New Ocean Waves Spectra from CFOSAT

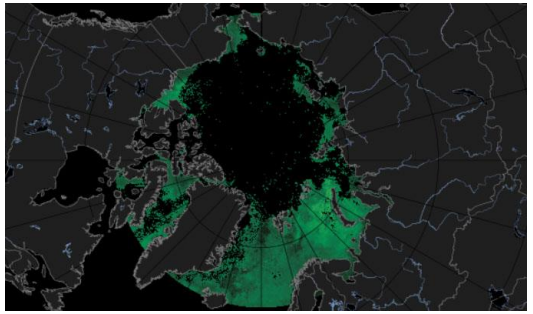


New SMOS Salinity products

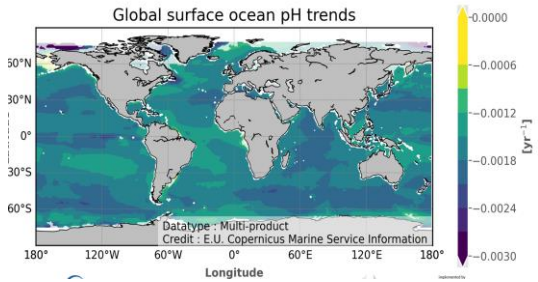


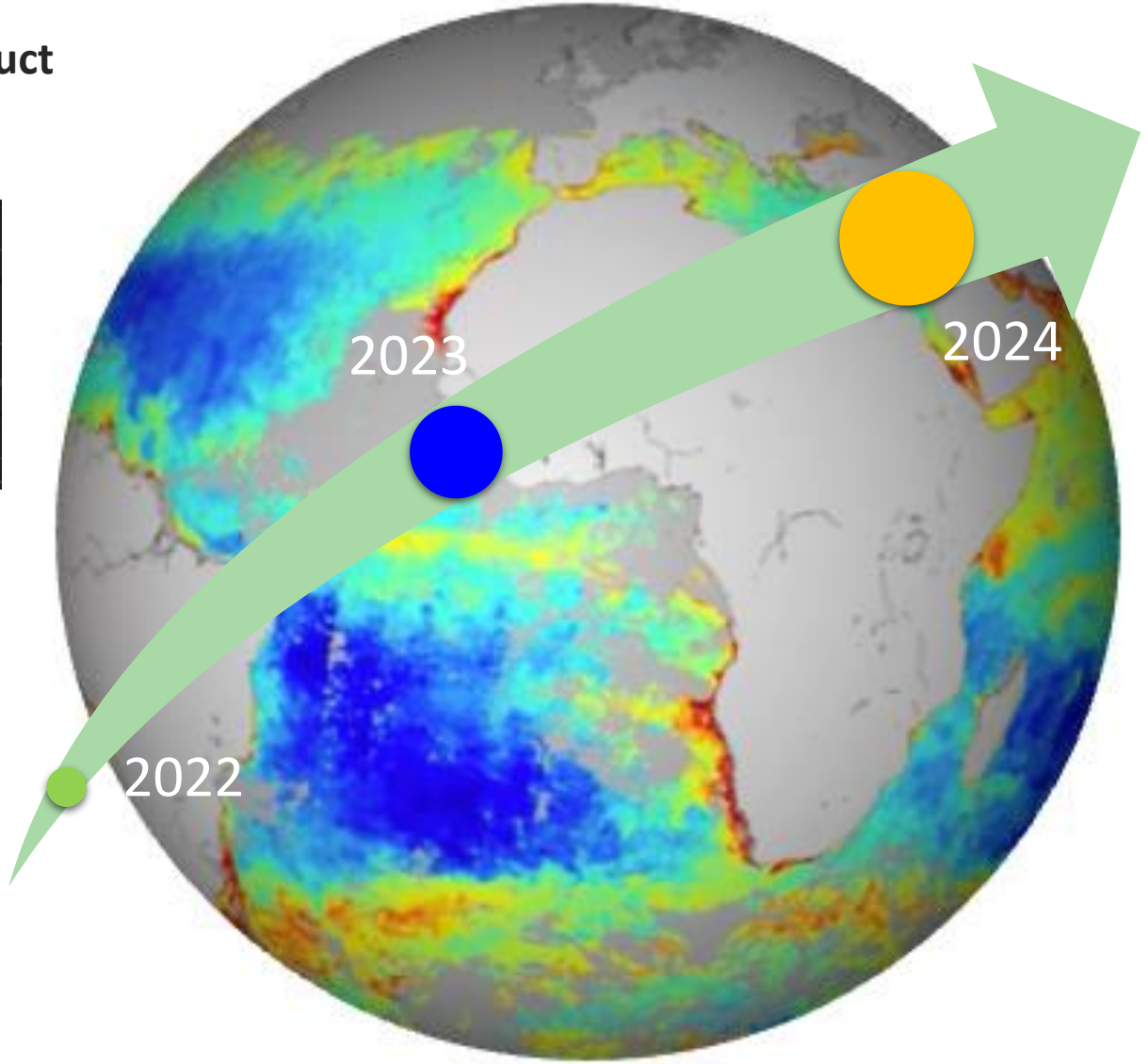
Green Ocean TACs Main Achievements

New Arctic Ocean Colour product based on Machine Learning

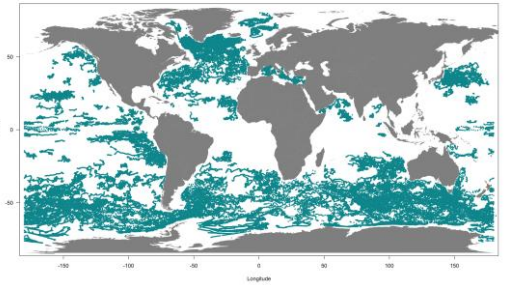


Global map of sea water pH trend based on Machine Learning

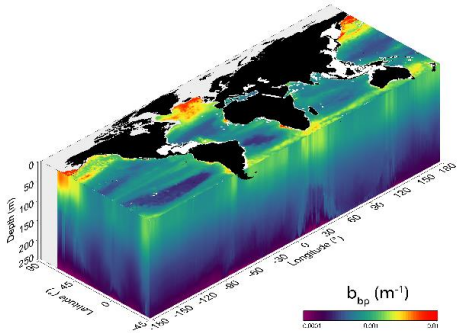




NRT Nutrients and associated carbonate system parameters based on Machine Learning



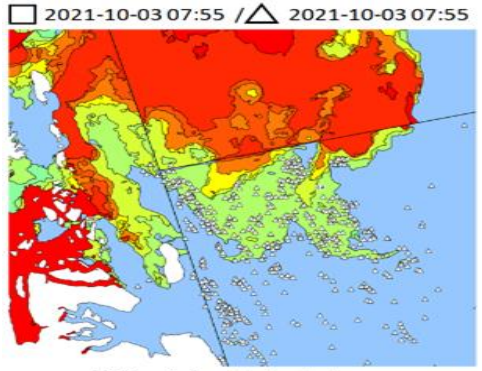
Higher Resolution (1/8°) 3D POC/bbp and Chla



Copernicus Marine Service

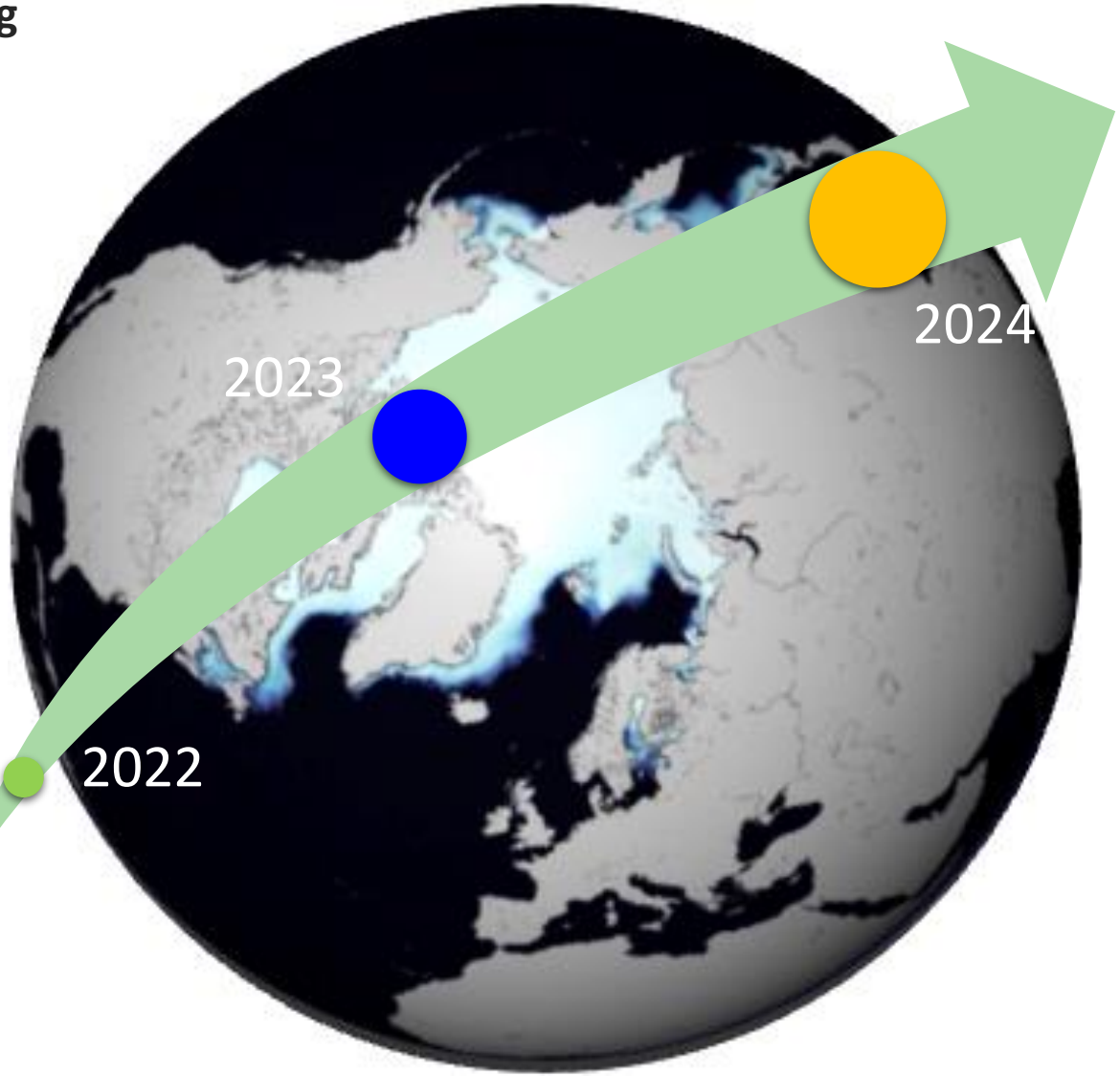
White Ocean TACs Main Achievements

Improved Iceberg Detection using Automated Sea Ice Products

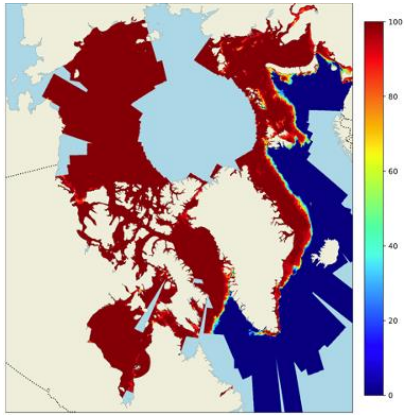


ASIP auto ice chart + icebergs

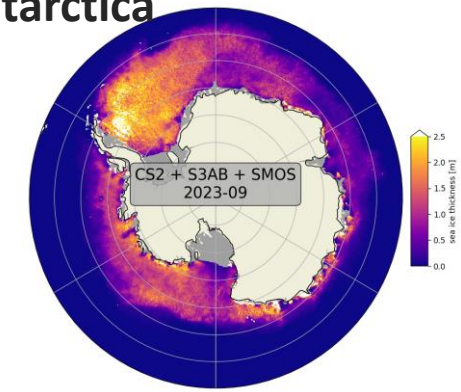
High resolution Sea Ice Concentration based on Deep Learning model



Pan-Arctic sea ice products based on Deep Learning model

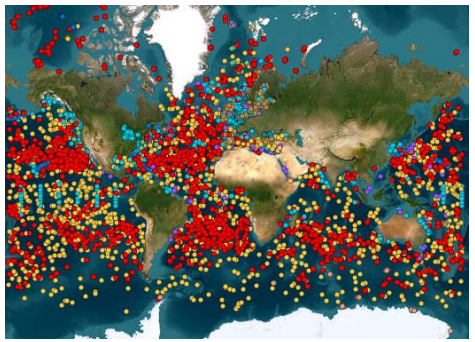


Sea Ice Thickness in Antarctica

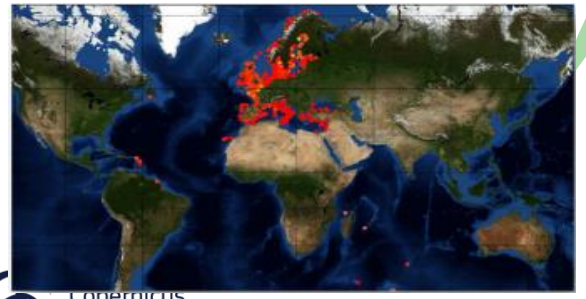


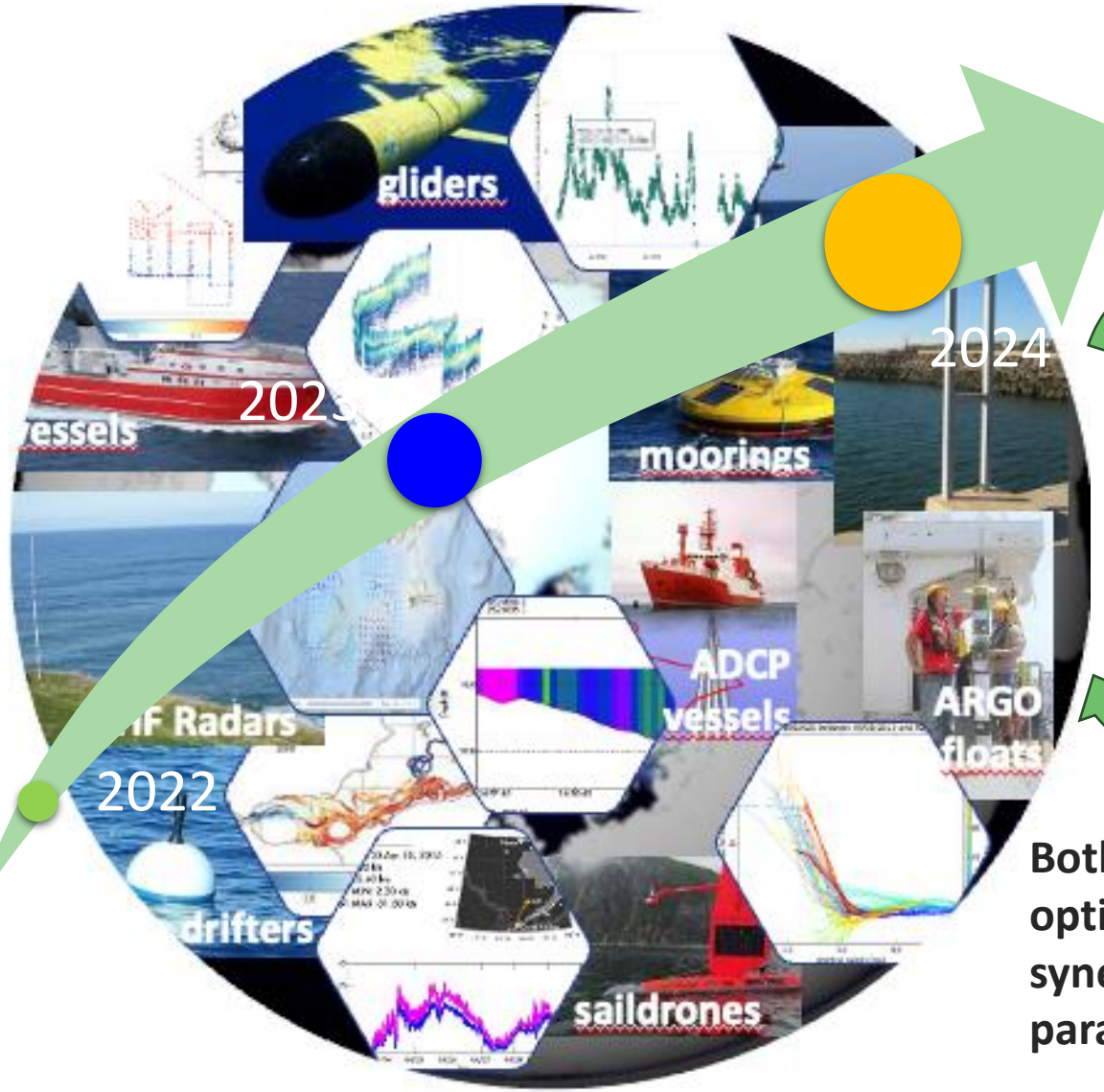
In Situ Observation Main Achievements

Temperature & salinity product down to 5500m (now to 2000m)



New multiyear sea level global product





Copernicus Marine Service and EMODnet form the backbone for the European marine knowledge

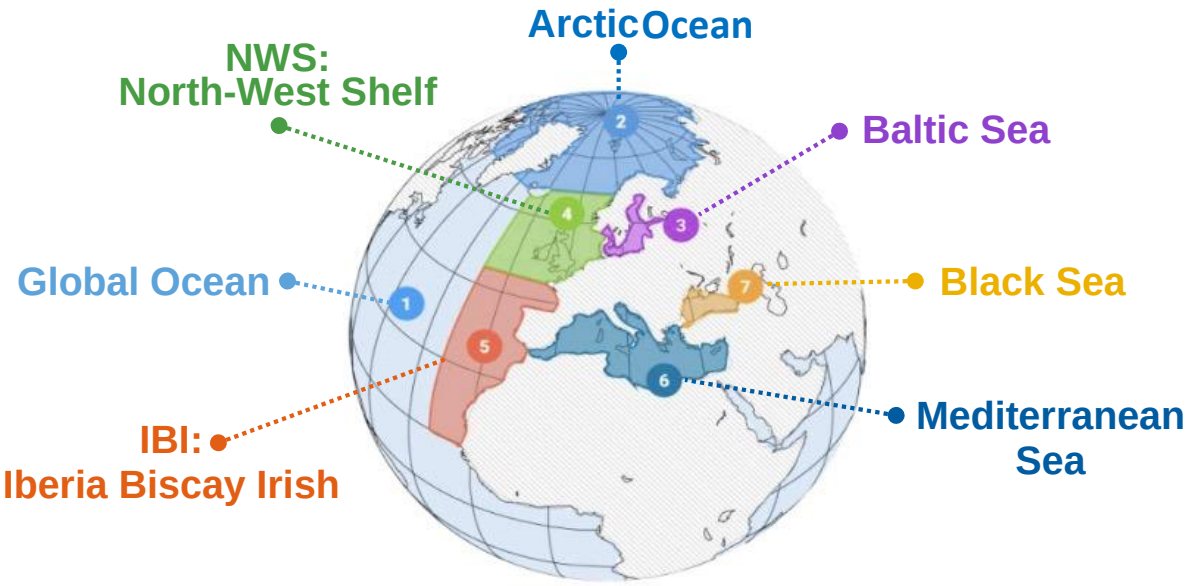
EMODnet
European Marine Observation and Data Network

Both data services work together to optimize data flows, coordination and synergies of the in situ marine data parameters required by both services.

Copernicus Marine Service

Monitoring and Forecasting Centres

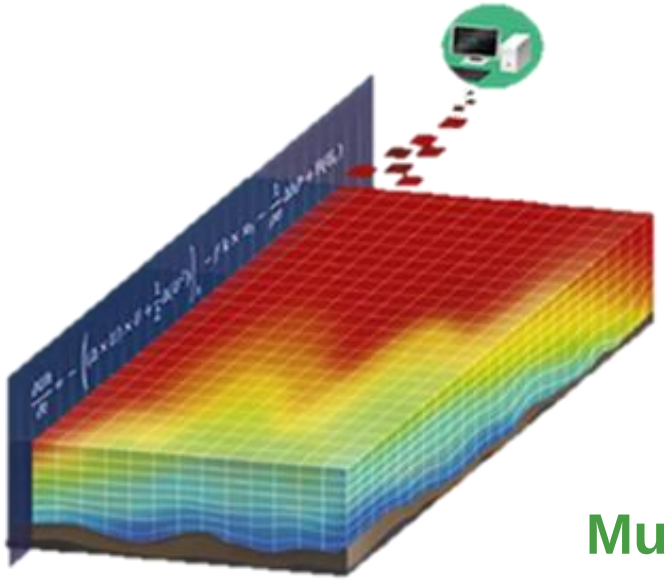
What are the modelling products?



Numerical models with data assimilation scheme

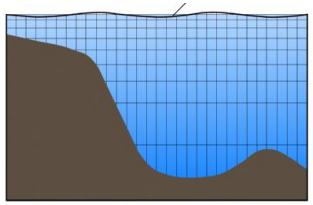
- The Global Ocean
- The Arctic Ocean
- The European regional seas

Main characteristics



Δx,y ~ 1 - 10 km

Δz ~ 1 - 500 m



Multi Year

Reanalysis: last decades

Interim: up to m-1

Near Real Time

Analysis: - 2 years

Forecast: 10 days

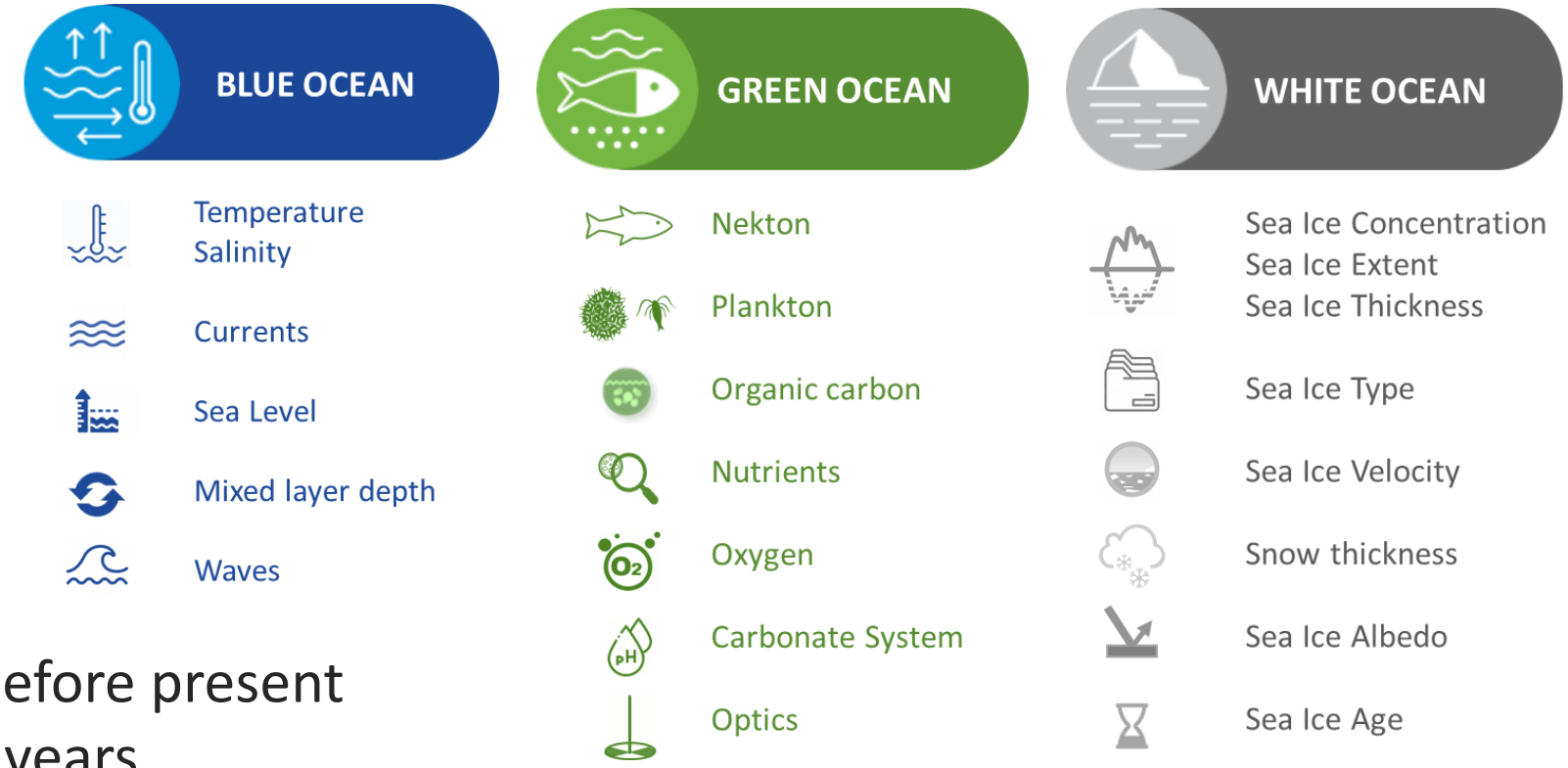
Products

Forecast:

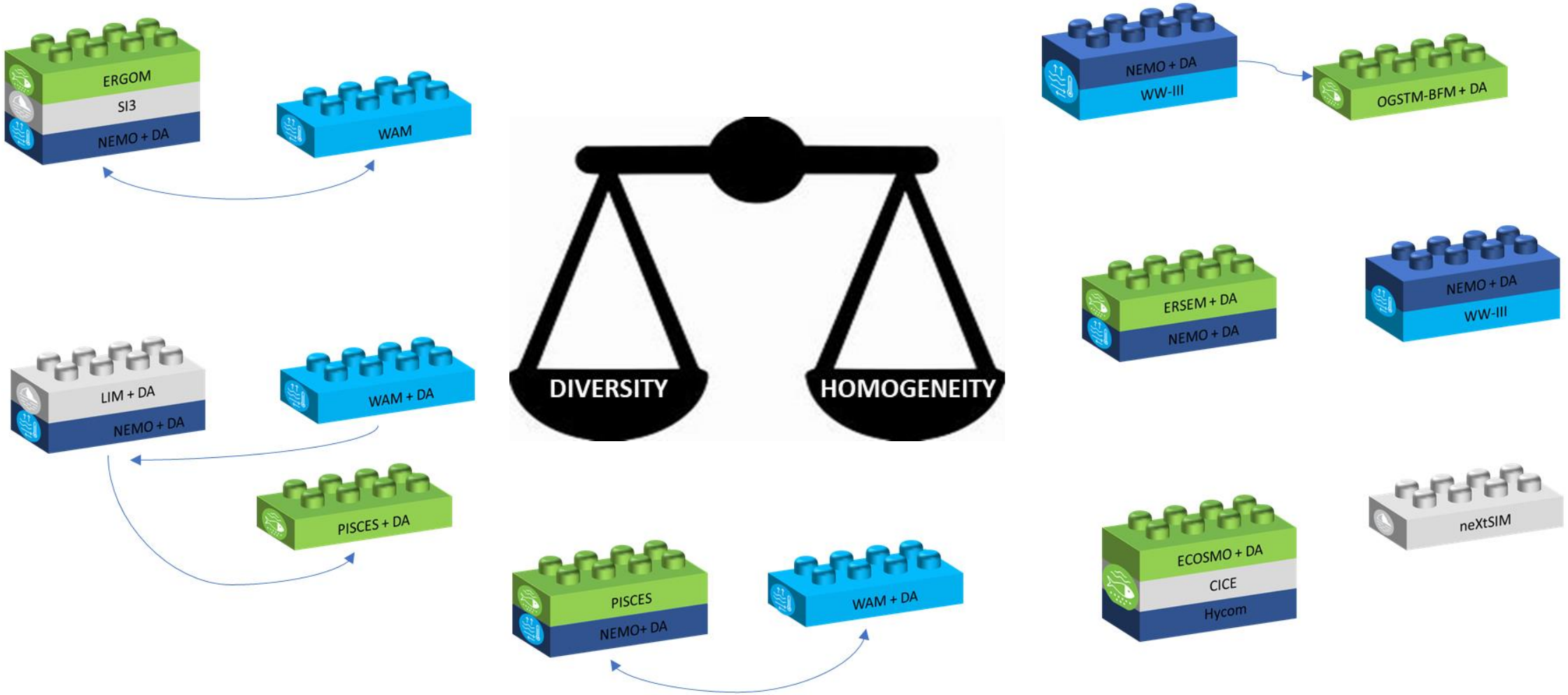
- Deterministic
- Daily cycle (twice a day)
- Lead time 10 days

Multi-Year:

- (1980)1992 → 1 -2 years before present
- New time series every 3-5 years
- Timeseries regularly extended



What are the components of the MFCs?



Evolution of the offer

ACCURACY

Model parameterization and processes
Data assimilation and observations

SEAMLESS

Boundaries from neighbouring MFCs
Forecast and **MY** system **similar**
Same **observations**

PORTFOLIO

New products/variables
Longer timeseries
Extension of forecast lead time

Conclusion

Continuous improvement of all the components → **delivery of better and more products**

Increased the harmonization across MFCs → **ease of use for users**