Copernicus Marine Service

COPERNICUS MARINE
8th GENERAL ASSEMBLY

# Improving Product Quality & Product Quality Monitoring

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PROGRAMME OF THE EUROPEAN UNION
Copernicus Europe's eyes on Earth
Copernicus Marine Service
implemented by MERCATOR OCEAN INTERNATIONAL

# How do we monitor product quality?

- Measuring and documenting **product quality changes**
- Developing new product quality metrics

production centres

- Improving the access to **quality information** :
  - Managing the quality documentation
  - Monitoring product quality centrally and close to real time
- Organizing cross-cutting exchanges on product quality

Cross-cutting

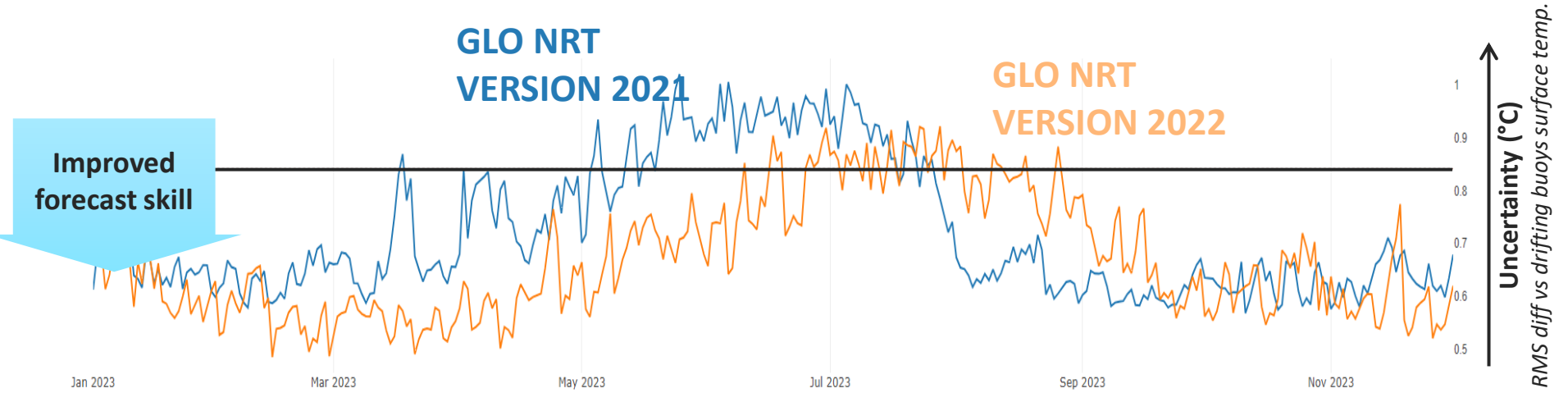
Copernicus Marine Service

# Product quality changes

production centres

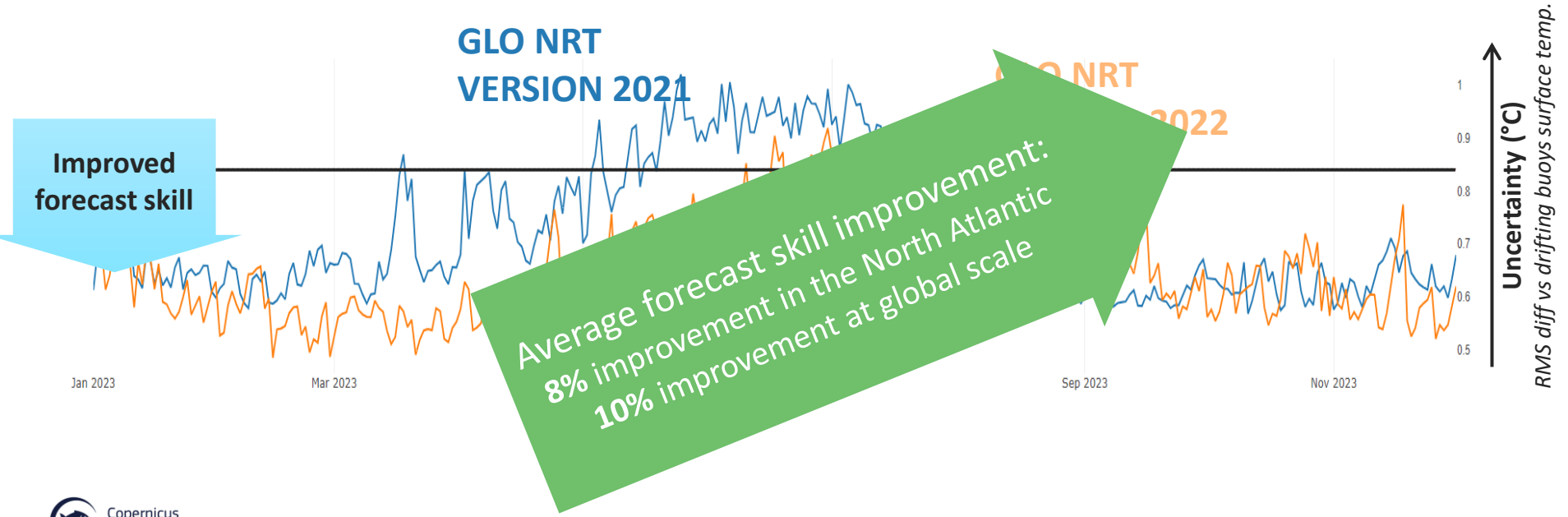
# Measuring quality improvement

North Atlantic basin **5-day sea-surface-temperature forecast** uncertainty



# Measuring quality improvement

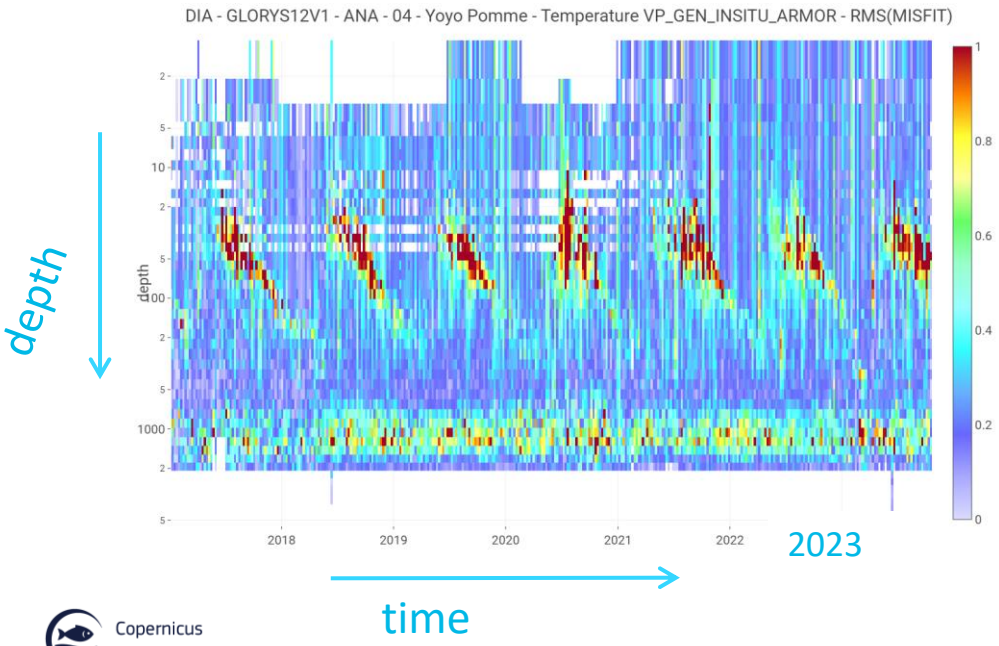
North Atlantic basin **5-day sea-surface-temperature forecast** uncertainty



# Multi-year: regular verification of time extensions

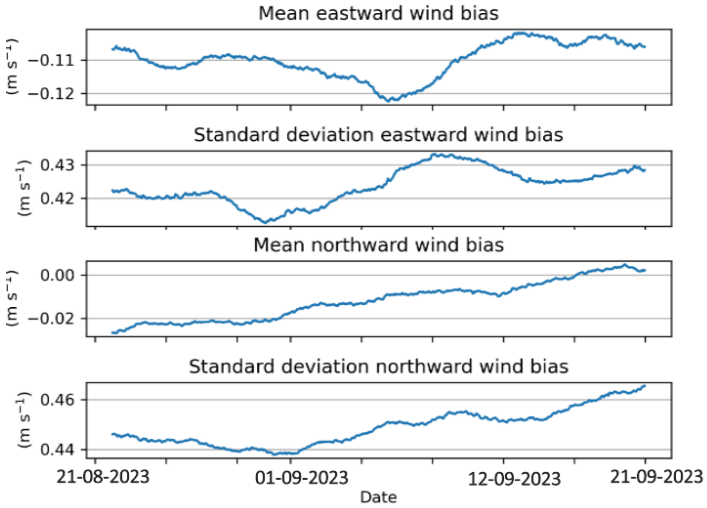
Example from GLO MFC reanalysis

North East Atlantic temperature uncertainties




Example from WIND TAC reprocessing

Global wind uncertainties



# Product quality information

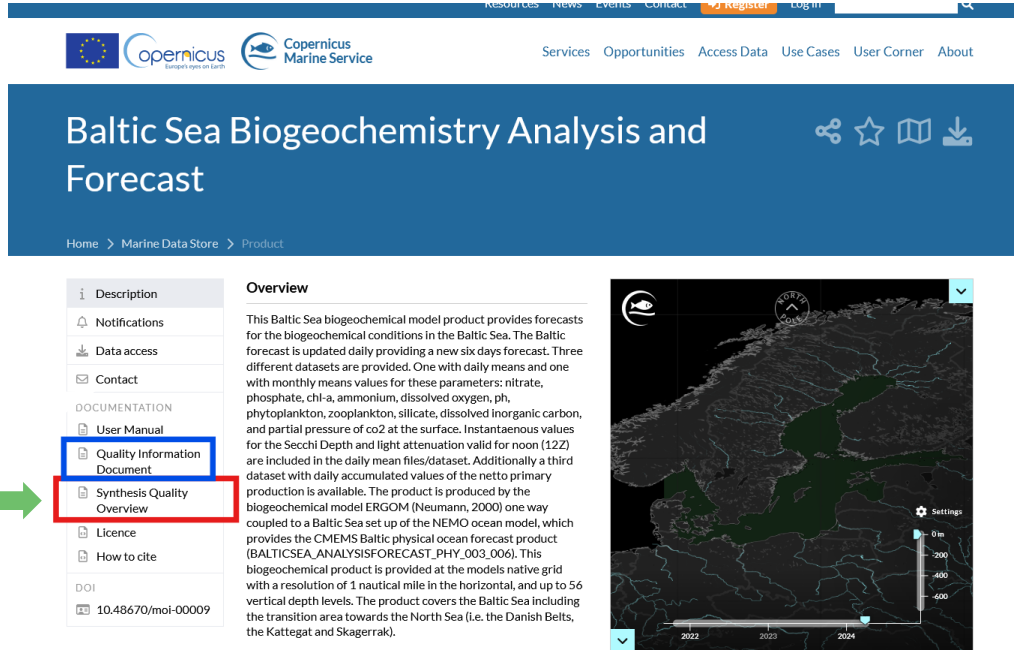
Cross-cutting

# Improving available quality documentation

*Synthesis Quality Overview (SQO) documents are accessible from the catalogue.*

*Briefer that the QUality Information Document (QUID); provides synthetic information on validation of specific variables.*

1 QUID => 1 SQO.
SQO: 1 page per variable:
1 short summary + EANs +
(optional 1 figure)



# Improving process

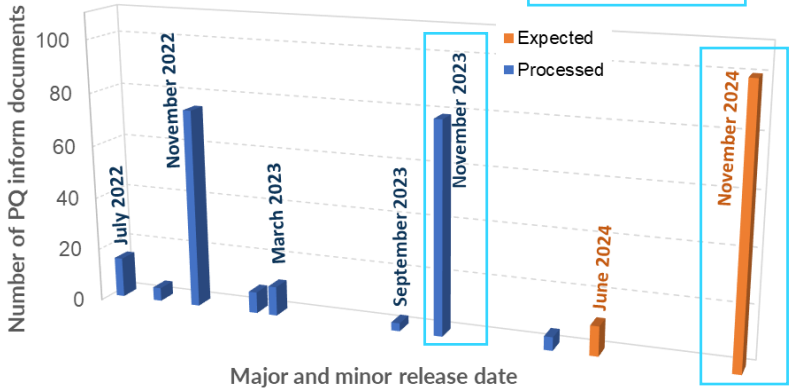
**External review following:**

- the increase in the number of product updates.
- the addition of SQOs to the catalogue.

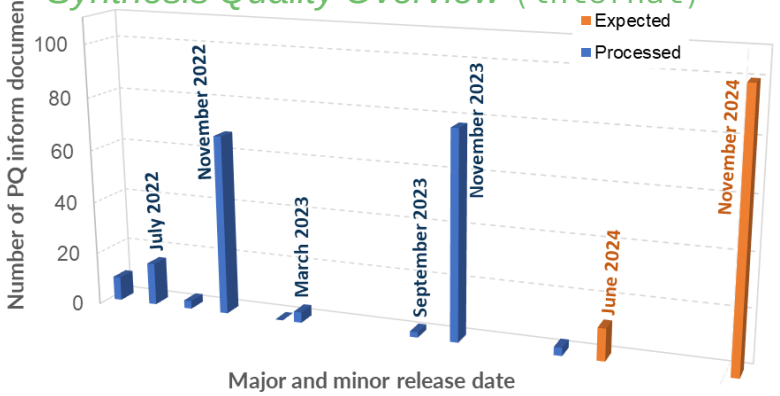
*Major entries in service: product update.*

*Minor entries in service: specific purpose.*

*QUality Information Document* (external)



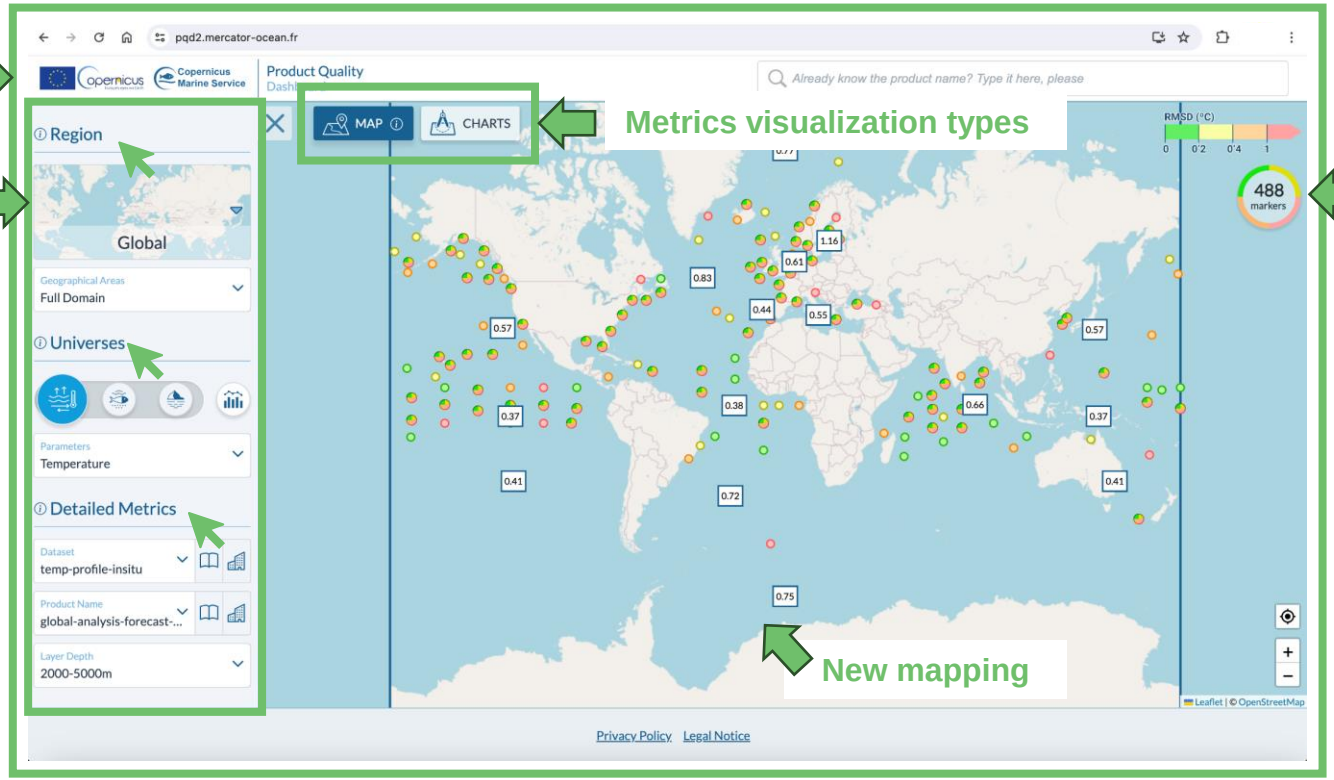

*Synthesis Quality Overview* (internal)



# Improving the product quality dashboard

Revamped interface

New sidebar controller

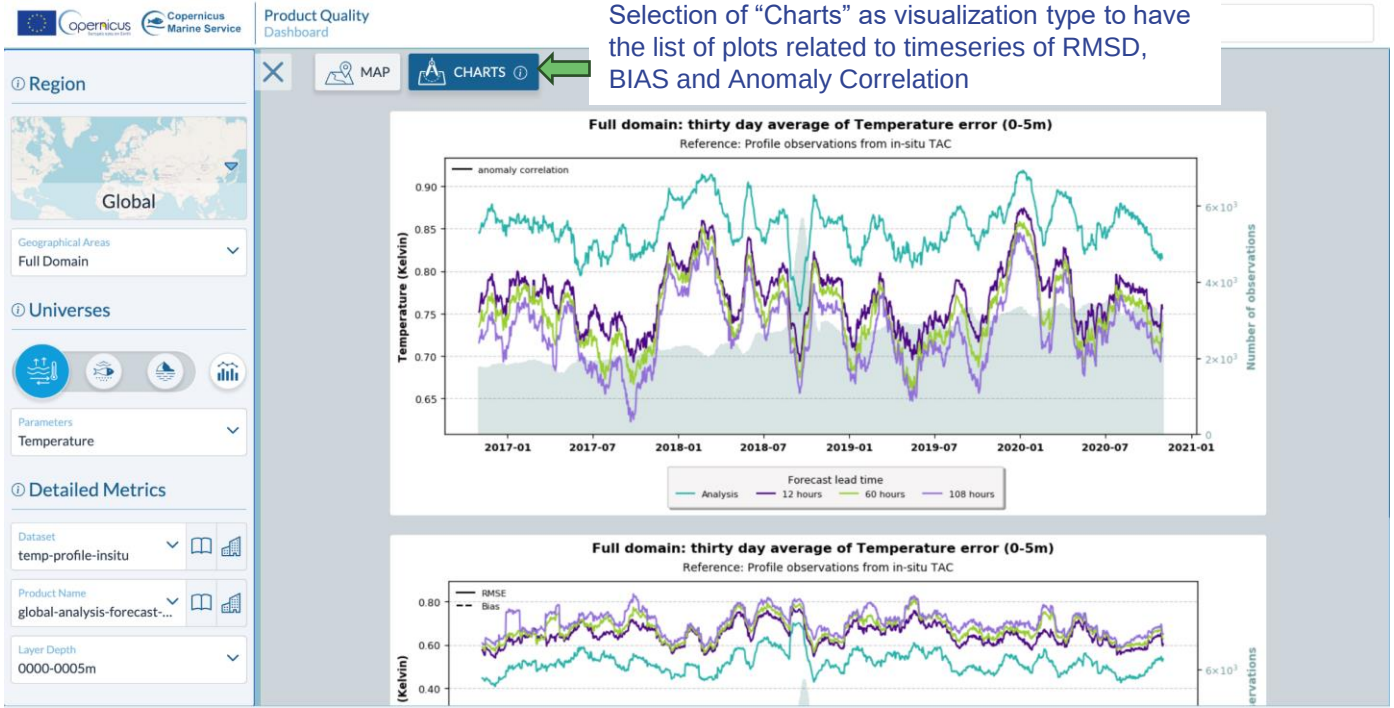



Metrics visualization types

Counter for buoys, with clustering function

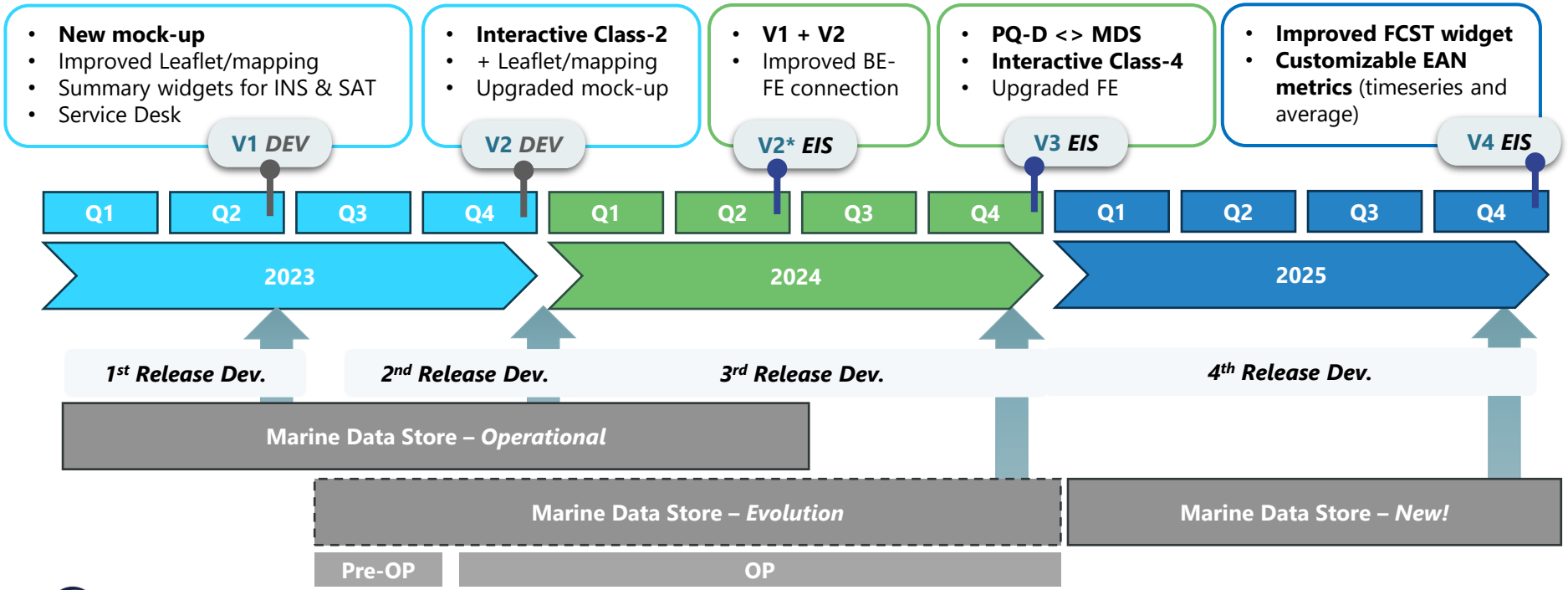
New mapping

# Improving the product quality dashboard




Selection of “Charts” as visualization type to have the list of plots related to timeseries of RMSD, BIAS and Anomaly Correlation

# Improving the product quality dashboard : roadmap



# Meetings to exchange on product quality June 2023

***Product Quality Working Group** meeting*

- *New metrics and quality incidents detection*
- *New product quality dashboard presentation*
- *Thematic task teams*
  - Bio Argo
  - Mixed layer depth
  - Validation of sea level at tide gauges
  - Common TAC metrics
  - Etc…

Next meeting online **25-26 June 2024**

*-> to encourage and sustain thematic exchanges*

# Meetings to exchange on product quality October 2023

- Strengths and weaknesses of ocean reanalyses, for physics, sea ice, biogeochemistry, waves
- Preparation of an intercomparison exercise including regions for 2025

Workshop summary published in BAMS (Bulletin of the American Met. Society)
***Gathering users and developers to shape together the next-generation ocean reanalyses: Ocean reanalyses workshop of the European Copernicus Marine Service***
https://doi.org/10.1175/BAMS-D-24-0034.1

# Thank You!