



**National
Oceanography
Centre**

**British
Oceanographic
Data Centre**

DELIVERING CONTINUOUS GLIDER OPERATIONS IN THE NORTH SEA

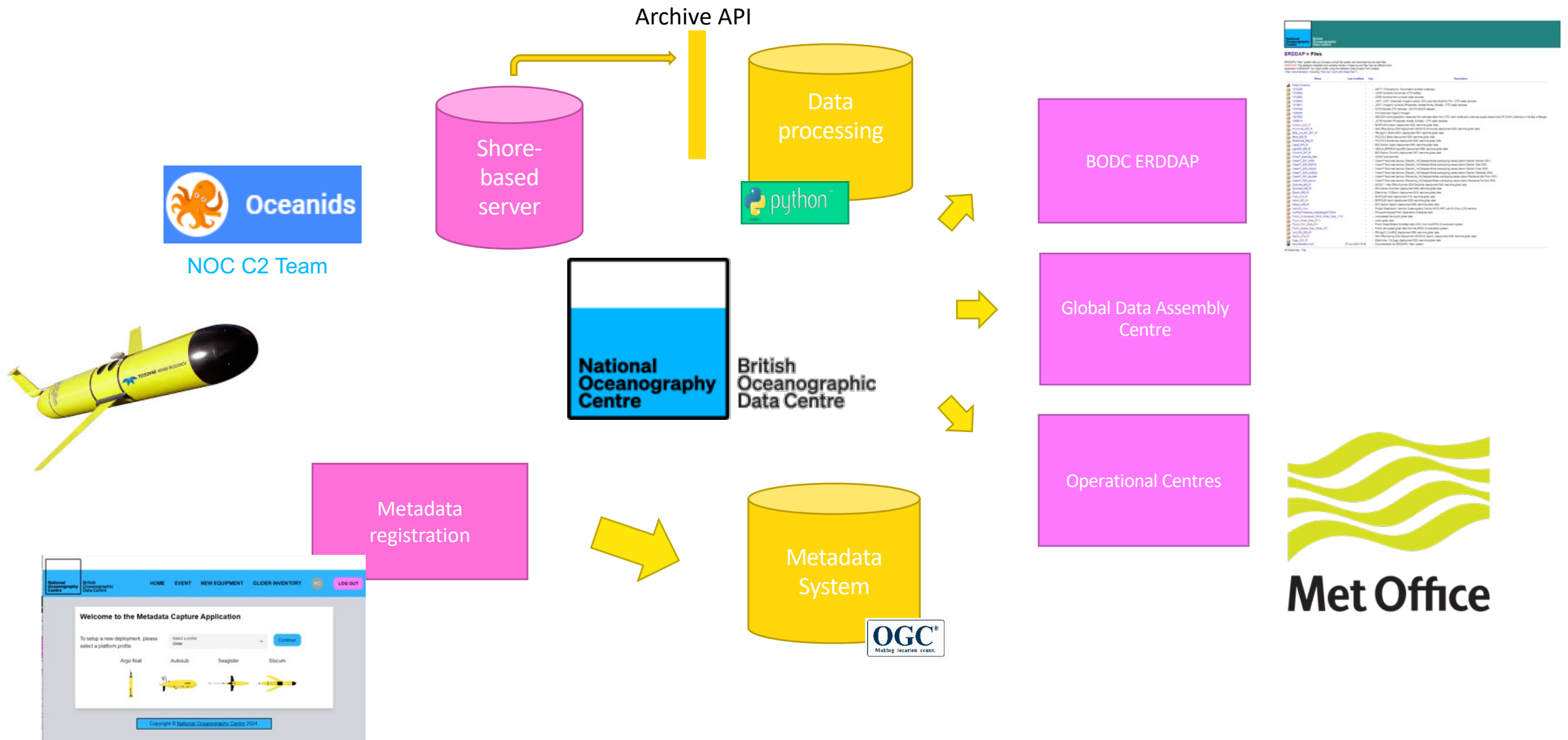
**ROBYN OWEN, EMMA GARDNER, JON TURTON, SIMON GOOD,
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BEN ALLSUP, PHIL BAGLEY, CHARLOTTE WILLIAMS AND NOC C2 TEAM**

OVERVIEW

- Sustained glider presence in the North Sea since September 2022 as part of the ongoing partnership between the UK National Oceanography Centre (NOC) and the UK Met Office (MO)
- This is currently a four year project
- Slocum gliders are deployed seasonally for three to five months and during that time cover > 2,000 km
- Glider payloads include CTDs and occasionally WET Labs ECO Pucks
- To ensure there is a continuous flow of data, service level agreements are in place for gliders to be replaced if issues arise and for the timely delivery of data to MO in time for forecasting models



Data Flow



DATA DISSEMINATION – SUBMISSION TO THE GTS



Fri 12/01/2024 13:46

do-not-reply@

SOVX05 EGRR 121345 BBB

To

KKYY 13113 0209/ 759060 002212

88871 ///65 20000 31123 43479 20000 31124 43479 20001 31124 43479

20003 31124 43479 20004 31124 43479 20005 31124 43479

20007 31124 43479 20008 31124 43479 20009 31124 43479

20009 31124 43479 20010 31124 43479 20012 31124 43479

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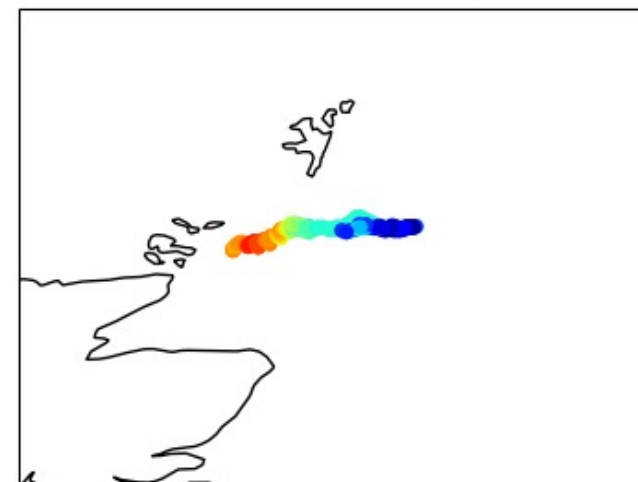
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20062 31125 43479 20064 31125 43479 20065 31126 43479

20066 31126 43479 20068 31125 43479 20069 31125 43479

99999 6800986=

160 TESAC profiles from 1 gliders (25/03/24 11:37 to 08/04/24 05:10)
WMO IDs: 6800985



DATA DISSEMINATION – BODC WEBSITE



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Home Deployment Catalogue

Deployment Catalogue

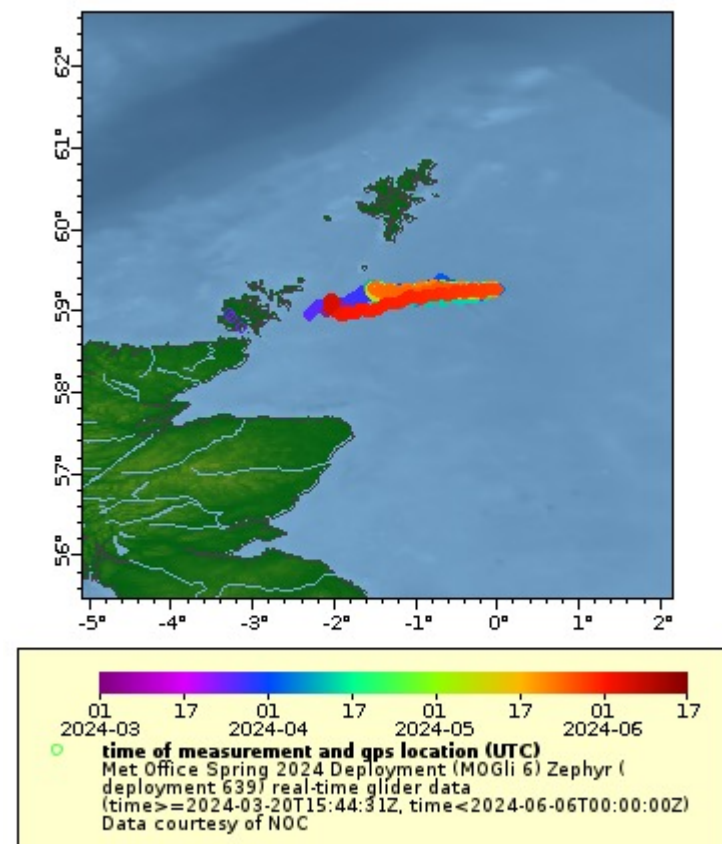
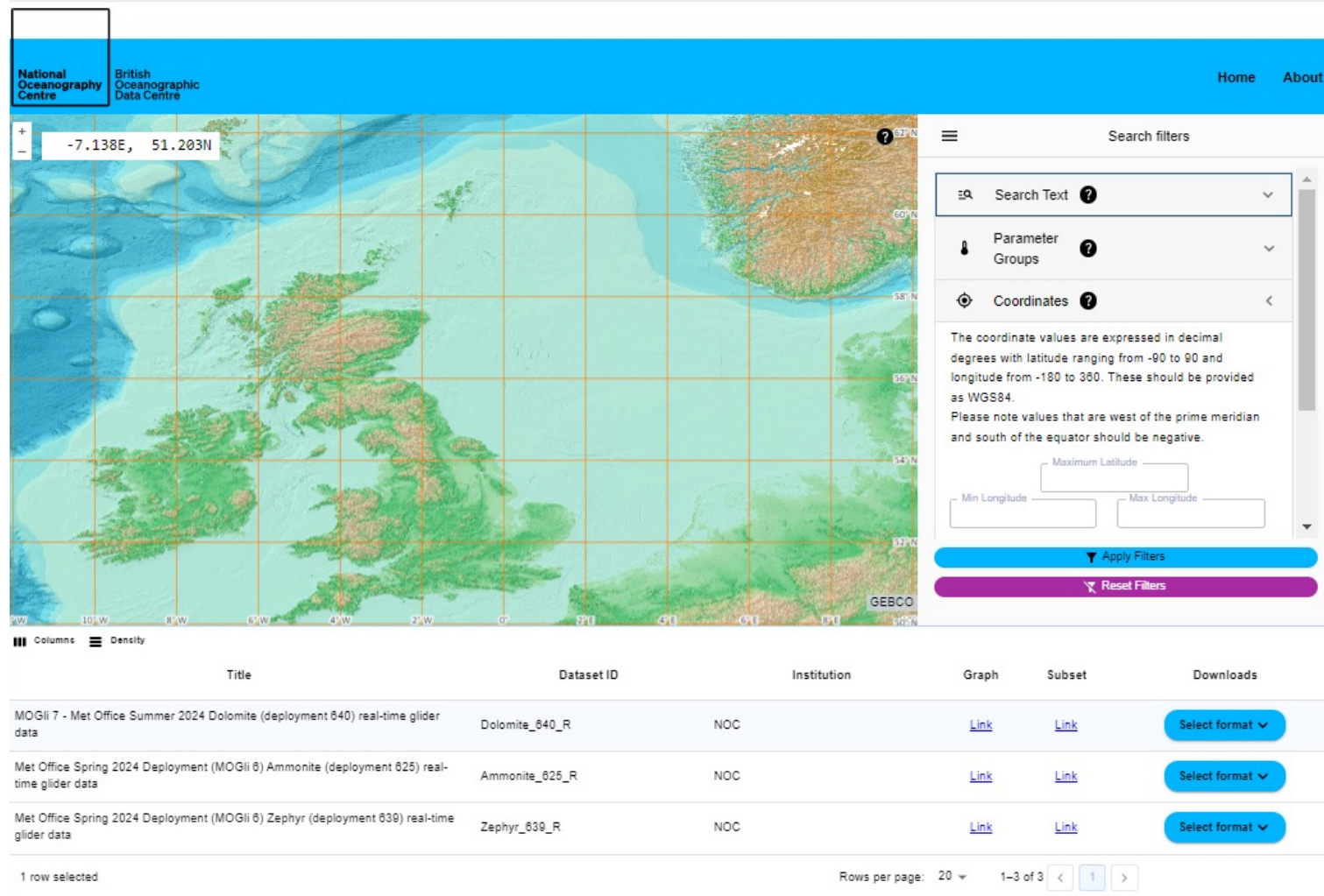


The details of all the campaigns are listed below. To view more details of a specific campaign, please click on a campaign. A side window will appear, detailing the platforms deployed during the campaign and with a direct download link to the NRT files. Further deployment information can be obtained by clicking on the Metadata link

If you require information concerning a particular deployment or campaign not listed here, please contact a member of the [BODC Autonomous Platforms Team](#) for assistance.

Columns	Filters	Density	Export	
Campaign Name	Start date	End date	Project/Activity	Glider names
MOGII 1 - Met Office Autumn 2022	2022-09-01	2022-12-01	MOGII	Ammonite (unit_304), Coprolite (unit_331), Cabot (unit_345)
MOGII 2 - Met Office Winter 2022	2022-12-01	2023-08-07	MOGII	Coprolite (unit_331), Raleigh (unit_399)
MOGII 3 - Met Office Summer 2023	2023-05-10	2023-08-07	MOGII	Cabot (unit_345), Ammonite (unit_304), Cabot (unit_345)
MOGII 4 - Met Office August 2023	2023-08-01	2023-11-01	MOGII	Ammonite (unit_304), Coprolite (unit_331)
MOGII 5 - Met Office Winter 2023	2023-11-11	2024-04-15	MOGII	Raleigh (unit_399), Cabot (unit_345)
MOGII 6 - Met Office Spring 2024	2024-04-08	2024-08-31	MOGII	Ammonite (unit_304), Zephyr (unit_306)
MOGII 7 - Met Office Summer 2024	2024-06-04	2024-08-31	MOGII	Dolomite (unit_305)

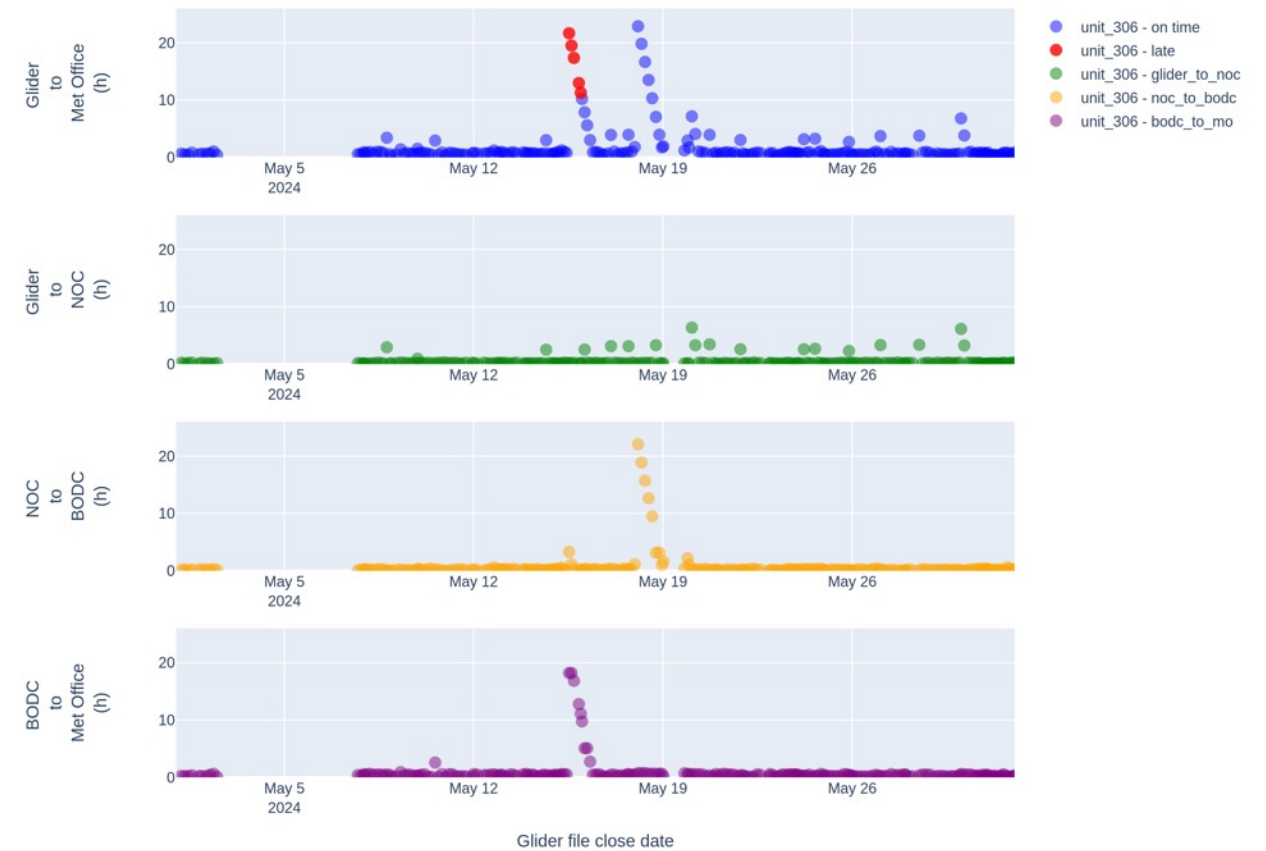
DATA DISSEMINATION – BODC ERDDAP INSTANCE



NEW TOOLS

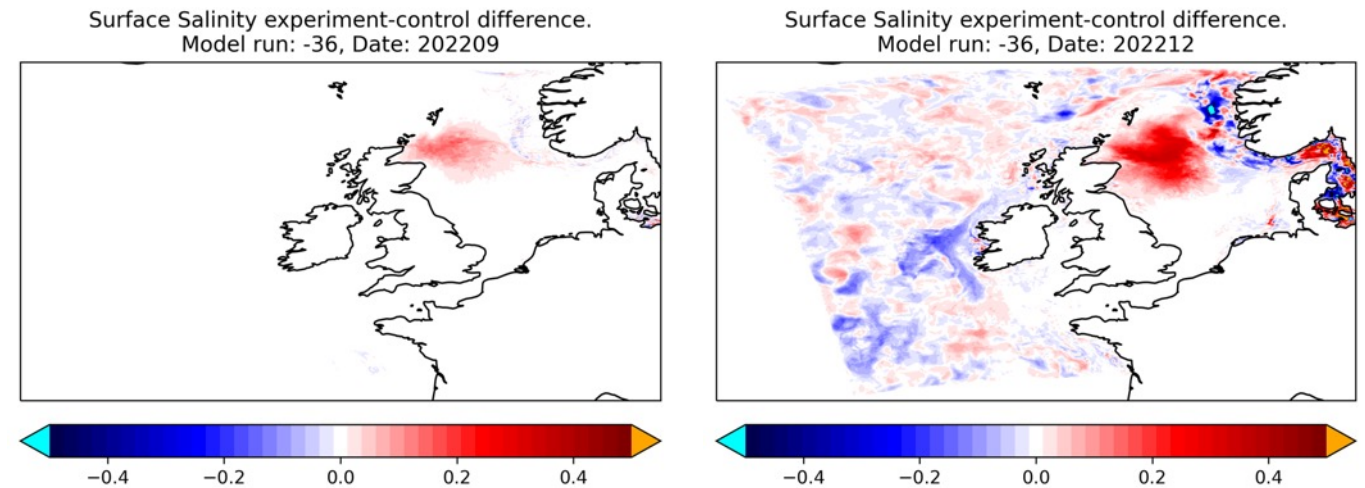
- New tools have been developed at NOC to support this project:
 - a new header to identify the TESAC messages
 - automated metrics
 - a monitoring dashboard
- Data archive upgrade to make the processing system more robust

MOGli Monthly Report - 2024/05 - Phase duration (hours)



IMPACT

- The UK Met Office runs a 1.5 km resolution operational ocean prediction model (AMM15) covering the seas around the British Isles.
- The impact of the glider data on the model was evaluated by running two AMM15 suites in parallel from 1st Sept 2022 to 25th January 2023 - one assimilating the North Sea glider data, the other without it. All other data were assimilated into both suites, so differences in the results were due to the North Sea glider data.
- The results showed a seasonal impact on bottom temperature and an impact on salinity through the water column with the greatest impact in the region of the North Sea gliders.
- Although the Met Office have assimilated glider data for many years, this was the first time an impact assessment had been made and the glider data are now routinely assimilated.



AMM15 averaged surface salinity analyses for September (month 1) and December (month 4) 2022.

FUTURE WORK

- Moving away from the current TESAC format and adopting a BUFR format
 - Ongoing meetings between NOC and MO to establish requirements
 - Development work will be split between NOC and MO
- Apply QC to the data in near-real time
 - Still need to gather requirements from stakeholders
 - Likely to start small
 - Will start by assessing what tools already exist in the community



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THANK YOU

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