



2024 R/V Marcus Langseth Facility Update

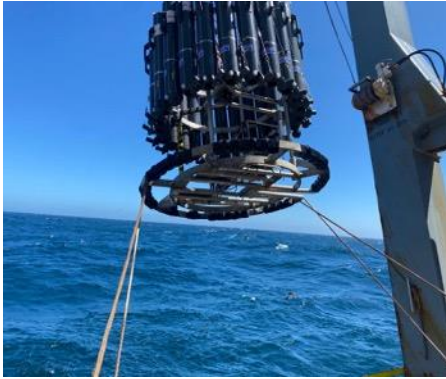
LAMONT DOHERTY EARTH OBSERVATORY
 COLUMBIA CLIMATE SCHOOL



2024 Year in Review Summary

- Total Operational Days: ~294 *
- # of Projects: 6
- Operational Area: North Atlantic (up to 68°N) and South Atlantic (up to ~54°S)
- One NERC-NSF Barter Project (Jones)
- One NOAA GO-Ship Cruise
- Shipyard- Klaipeda, Lithuania-

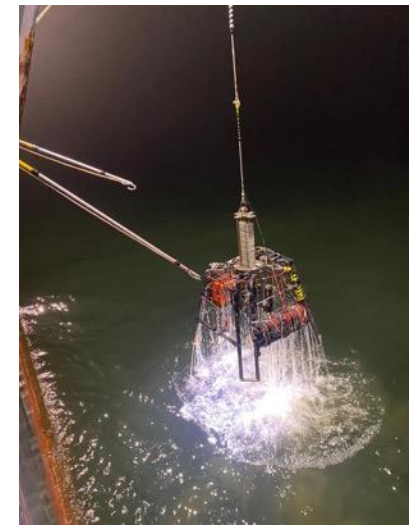
LANGSETH 2024 MISSION DIVERSITY



CTD water sampling system fielded and now available from LDEO



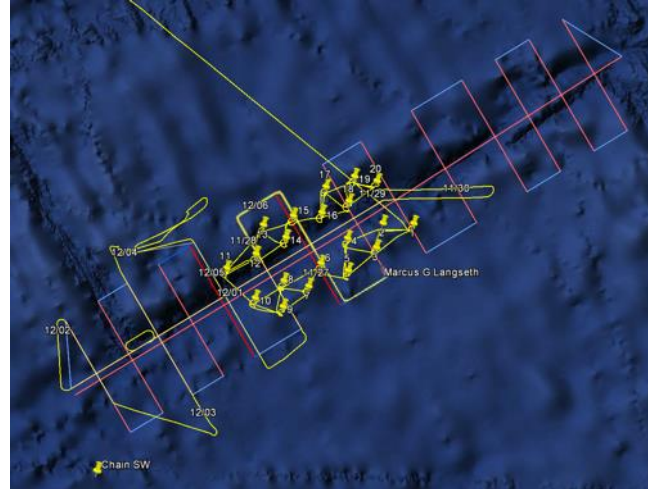
NERC OBS active source and 15K streamer



MC400 Multicore from Langseth



Mooring Recoveries

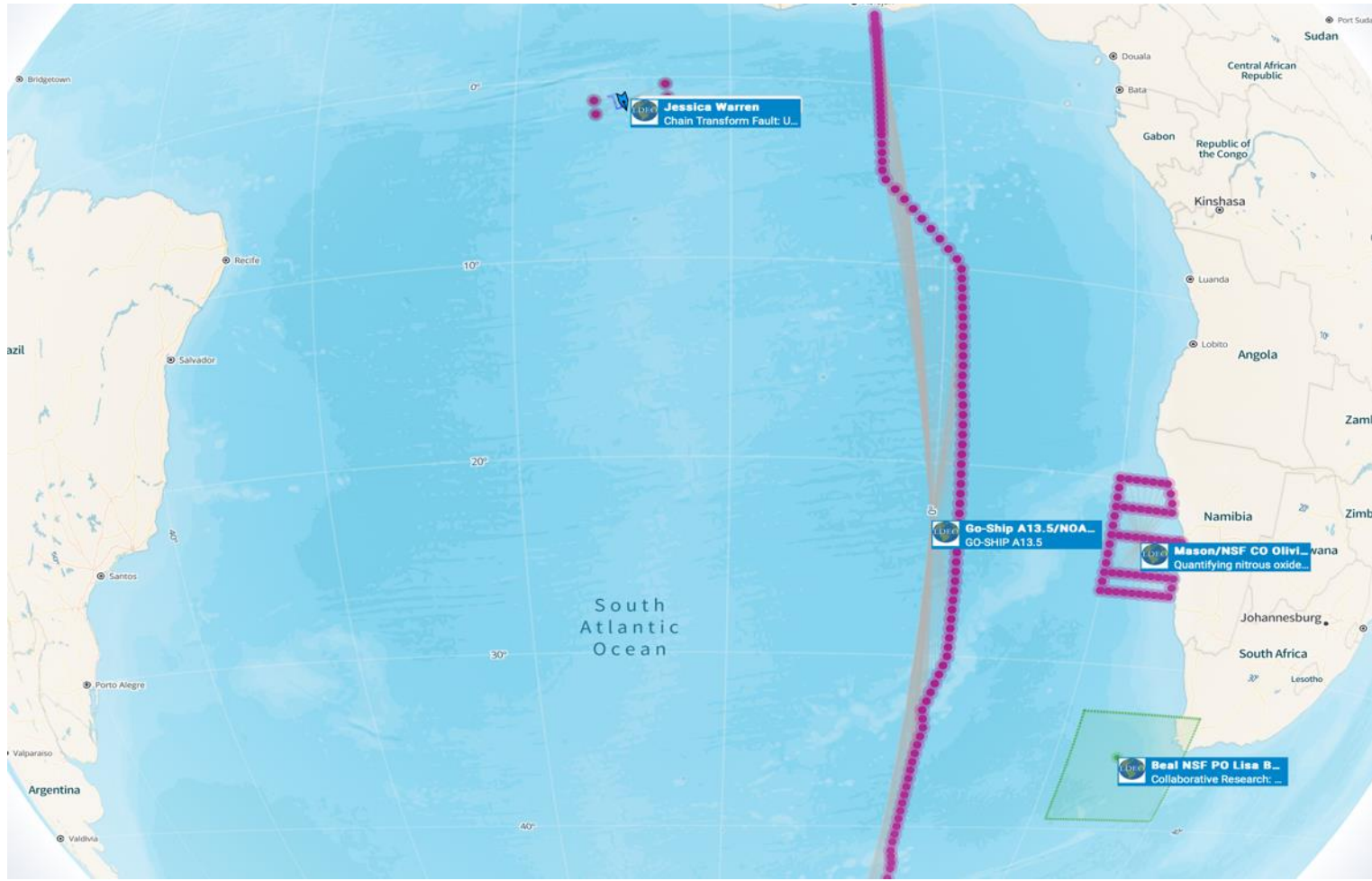


NSF OBS and 15k Streamer, CHAIN Transform

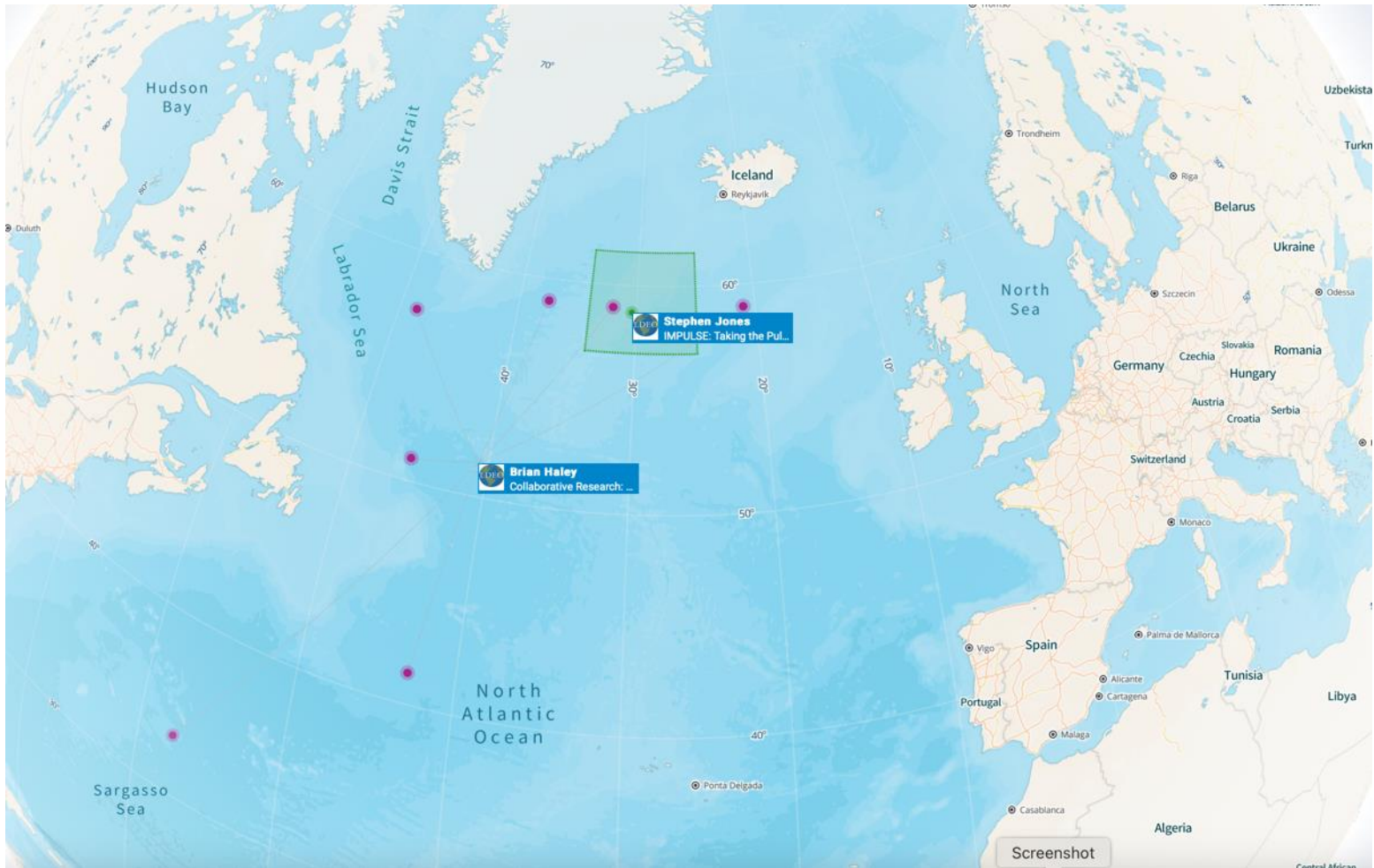


MC800 Multicore from Langseth

Central and South Atlantic Projects



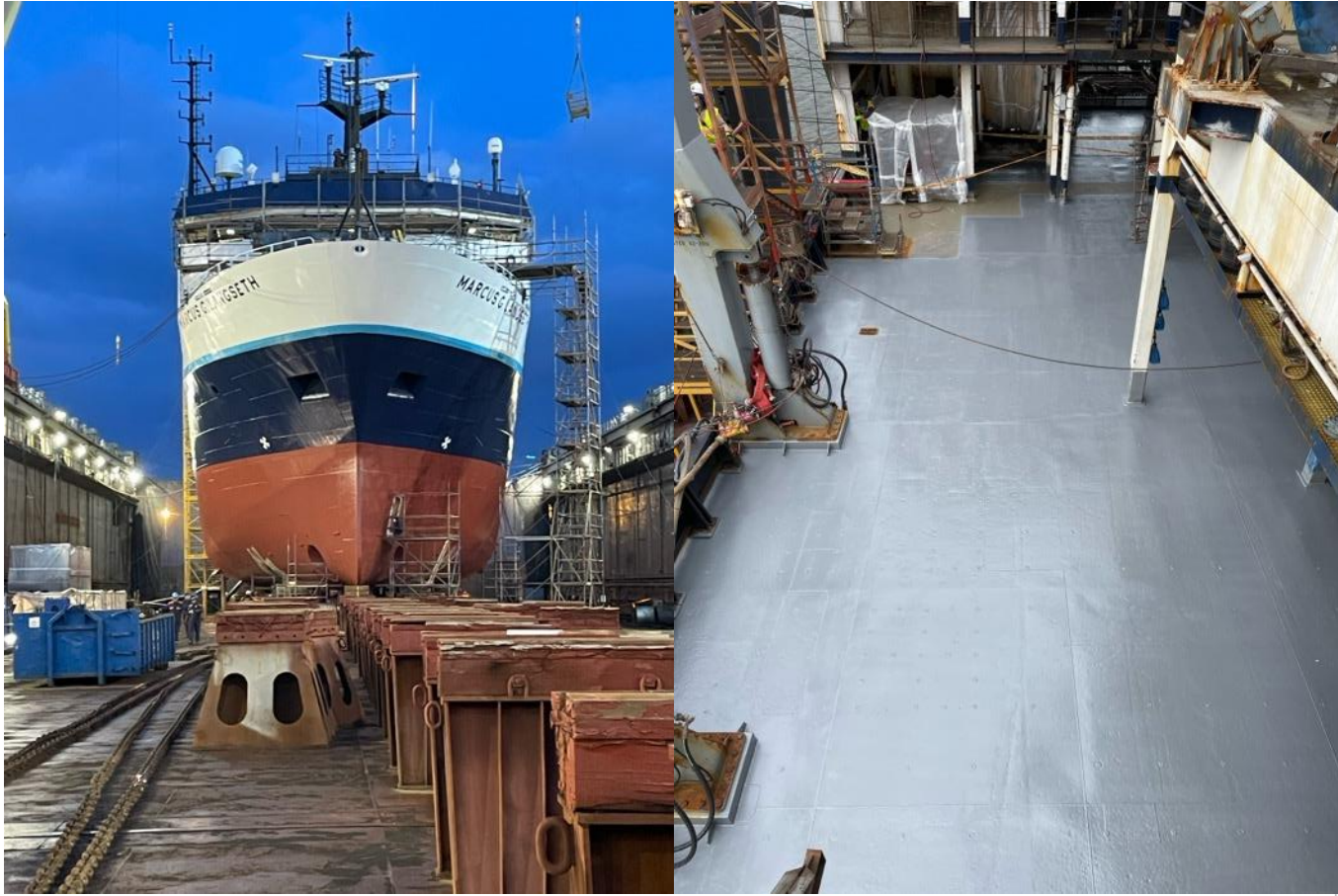
North Atlantic Projects



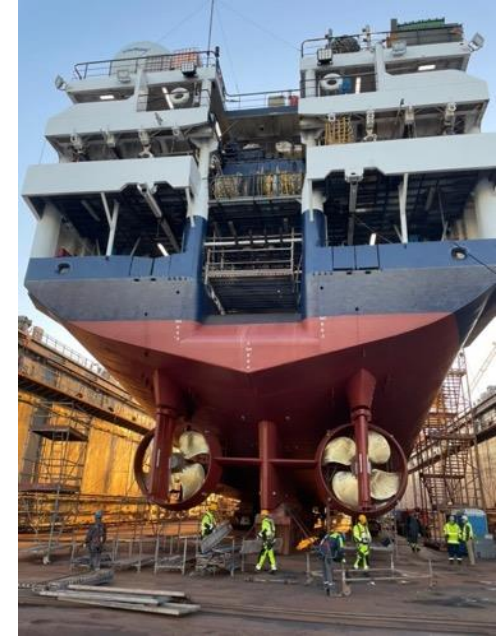
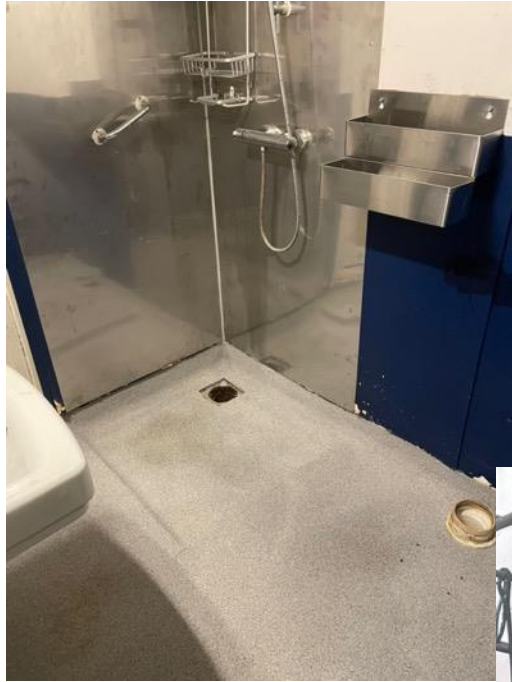
2024 Regulatory Shipyard/Drydock – October -Klaipeda, Lithuania



2024 Regulatory Shipyard/Drydock – October



2024 Regulatory Shipyard/Drydock – October



SEISMIC STREAMER ACQUISITION SYSTEM

- Onboard Seal 428 and ESQC systems continue performing well
 - Capabilities include
 - Continuous Recording now available
 - Hi Res 2D up to **5km of 6.25** group spacing streamer now available for cruises.
 - Hi Res 3D capable with additional hardware from manufacturer
 - 2D Long offset 15km, 2 cruises during H2 2024
 - 3D Acquisition, up to 4x6km
 - Calibrated Near Field Hydrophones (NFH) now installed on every station of source Array for better QC and processing of datasets.
 - New upgraded lead in now onboard to replace aging equipment.
 - 4DX positioning now complete



New Hi-Res
Streamer Section



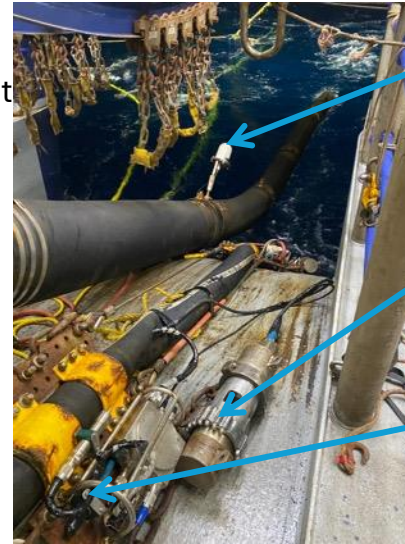
NFH Interface
For Seal 428



New Lead-in

LANGSETH SEISMIC SOURCE SYSTEM

- Continue replacing and updating
 - Better 6600 cu in. performance overall in 2024.
 - Proper gauge tools now in place to discard worn equipment
 - New main housings/chambers to replace worn equipment
 - More maintenance and repeat contractors to maintain performance.
 - Hi Res source
 - GI guns used in 2023 worked well, now sent to SIO for their surveys in 2024
 - Gi guns will be back onboard for HR2D on Langseth May 2025
 - 4DX positioning upgrade now complete!



New 4DX GPS, 8 installed on array for 100% redundancy in-water

Re-engineered clamps for better performance on older equipment

Calibrated NFH at every station, 28 on array

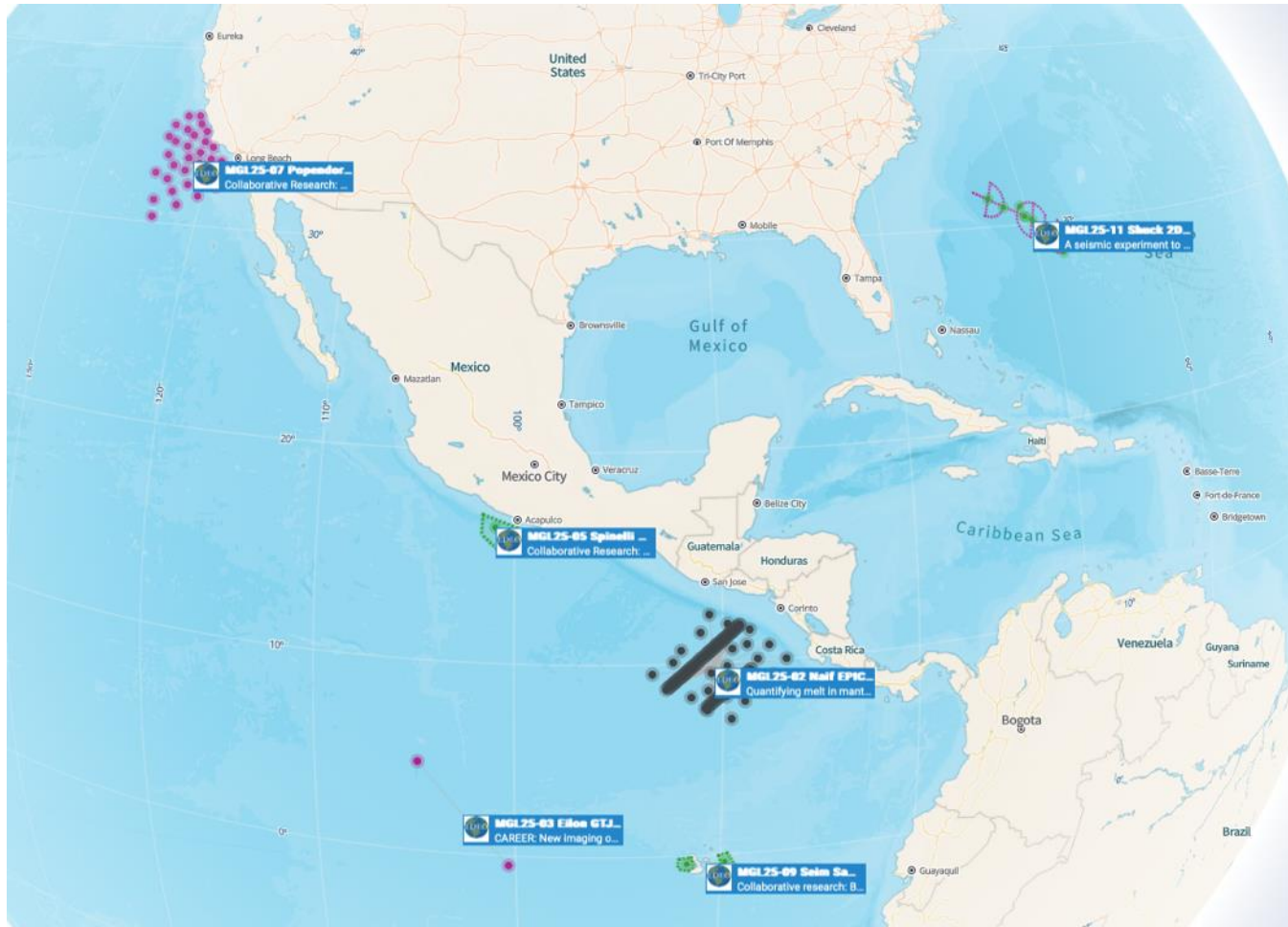


New 4DX with radio GPS pods(purple). 8 working on source array and one each for head and tail of 15km streamer



Modified/Replaced Overboarding system during 2024 Shipyard for safer operations and to reduce equipment damage during deployments/recoveries

2025 Langseth Schedule and Projects – Proposed 254 Days





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