



Endurance Array OOIFB Update

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May 13, 2020



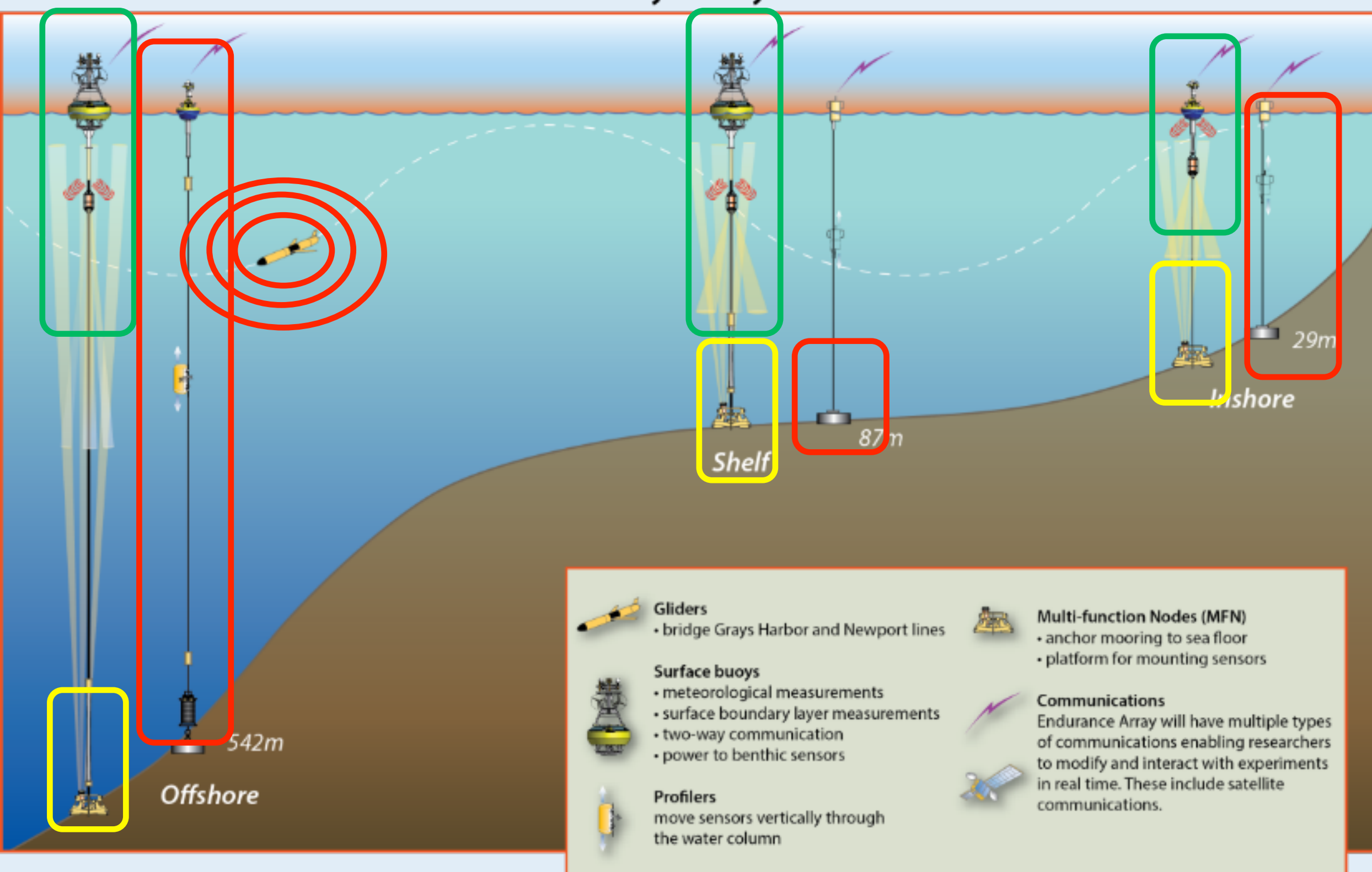


Endurance Array Turn Cruise 13: 1 – 19 July 2020

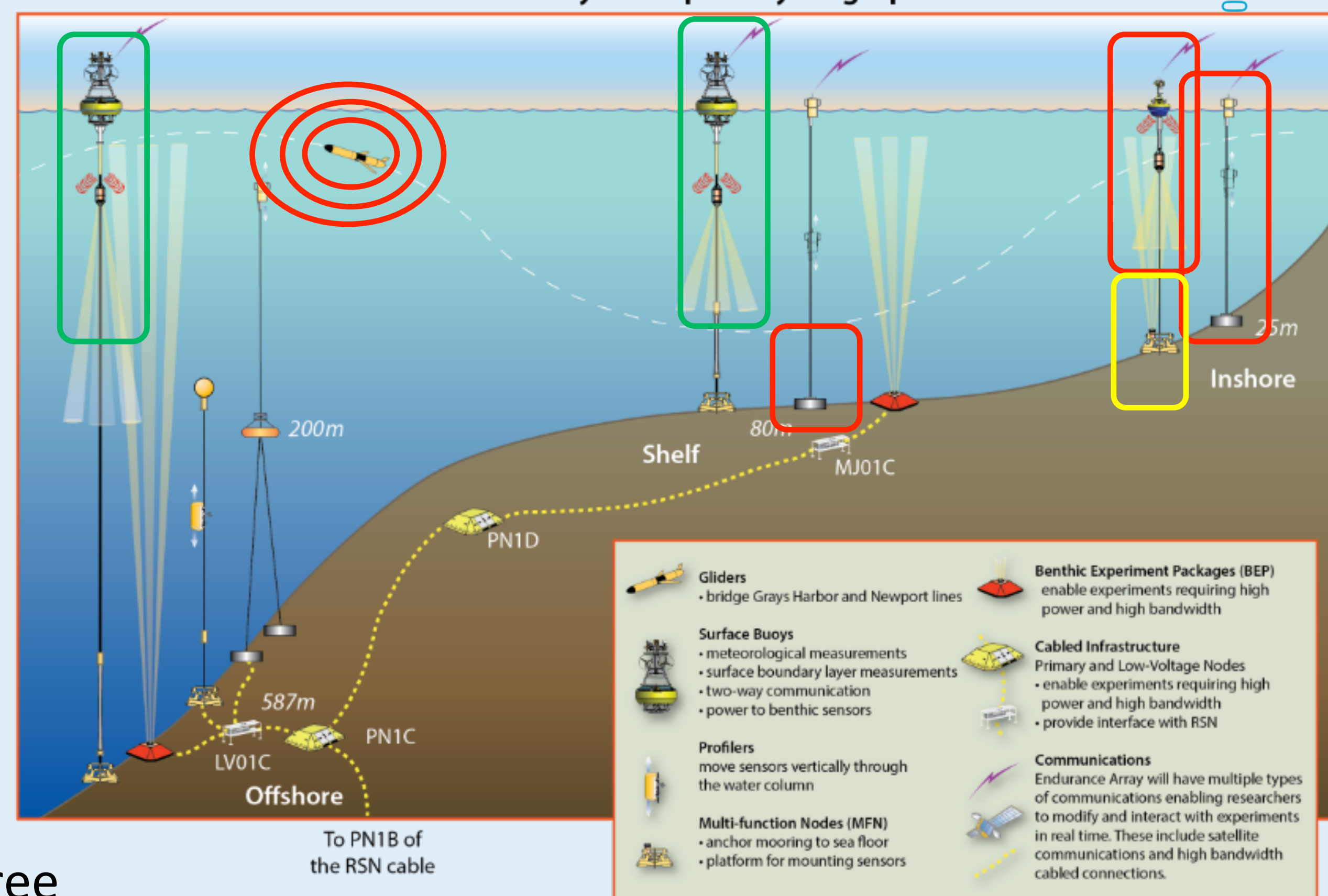
- Planned Spring 2020 Endurance R/V Sikuliaq (March 31- April 15) was canceled due to COVID-19.
- Endurance 12 (Oct 2019) moorings continue to operate at reduced levels.
- Moorings for spring 2020 are ready for a second burn in during June
- Next cruise planned on R/V *Thompson* 1 – 19 July. Will adhere to UNOLS, UW, and OSU guidance for COVID-19 precautions. Newport, OR – Newport OR. Coordinating with subsequent OOI RCA cruise.
- The following cruise (Endurance 14) will be spring 2021, i.e., there will be successive 9-month deployments. The summer 2020 deployment will be planned from the get go as a 9-month deployment. The inshore moorings and the WA offshore profiling mooring will have slightly reduced sampling rates such that an even sampling rate can be maintained over the 9-month deployment.

Endurance Array Platform Status

Endurance Array – Grays Harbor Line



Endurance Array - Newport Hydrographic Line



All moorings would have been turned in April. At least three gliders and two CSPP's would have been deployed in April.

Endurance 12 Mooring Status

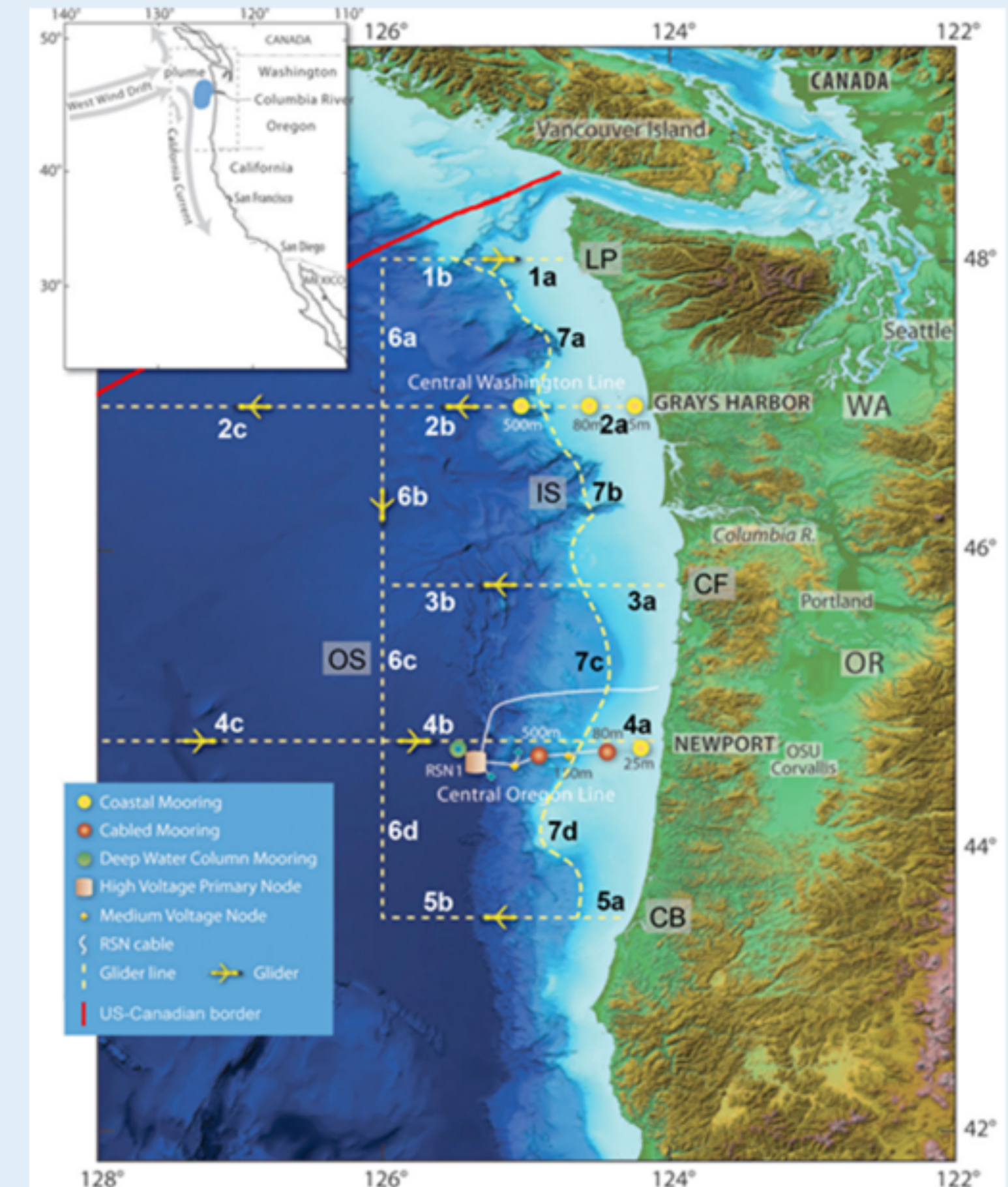


Platform	Infrastructure %	Instruments Deployed %	Near Real Time Delivered %	Data Collected %
Oregon inshore	32%	95%	0%	43%
Oregon shelf	95%	100%	35%	55%
Oregon offshore	100%	100%	100%	100%
Washington inshore	100%	95%	52%	83%
Washington shelf	98%	97%	64%	93%
Washington offshore	98%	93%	67%	93%
Washington offshore profiler	91%	100%	0%	0%

% takes into account electronics intentionally turned off (e.g., acoustic modems, FreeWave etc.)

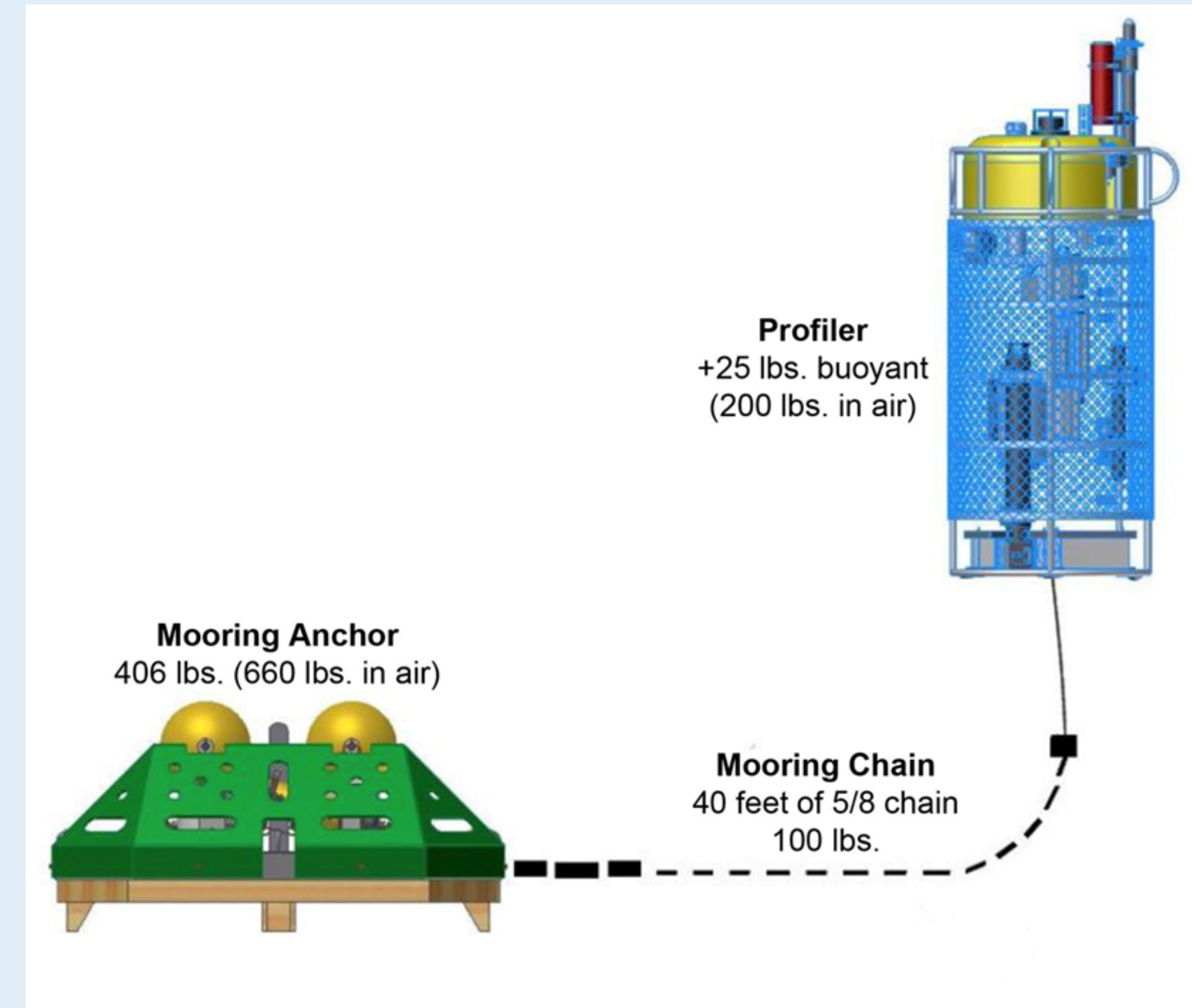
Endurance Array Glider Coverage

- 3 gliders deployed shortly before Nov 2019 meeting; gliders deployed on 21 Nov 2019 and 20 Feb 2020 (12 per scope)
- Less than full scope of gliders deployed due to slow servicing, lack of a MoN, ship availability, winter storms, and COVID-19
- 3/5 deployments to full duration (last recovery 10 April 2020)
- 2 gliders leaked (30, 50 days) – aft section digifin leaks (aging components)
- Winter storms and small ship availability affected ability to recover gliders; 2 gliders beached in a storm 10 Jan after expending batteries (one lost, one recovered)
- MoN approved, TWR continues servicing with constraints during COVID-19.
- External glider review, report in preparation
- One glider lost 2018, one glider lost Jan 2020, one G3 replacement glider being constructed, one glider order pending approval of ECR
- 3-4 glider deployments planned for May 2020 pending resumption of field operations
- 2-3 glider deployments planned for July 2020 pending scheduling of Endurance 13 cruise



Endurance Array CSPP Deployment Summary

- 2 CSPPs profiled with 1 deployment between Nov and May (106/388 scoped profiling days)
- Both deployments completed with full depletion of batteries (40 and 66 days respectively, significantly shorter than 90 days due to sea states and ballasting)
- Currently parked at Washington shelf and Oregon shelf
- MoN approved, 3 CSPP refurbishments completed at Sea-Bird/WET Labs
- Ballast tank constructed
- 2 - 3 planned for deployment in May pending resumption of field operations



Community Engagement

- February 2020 Ocean Sciences meeting
 - 5 talks/posters – data presentation and QC (METBK, pCO₂a, CSPP, WFP, CAMDS)
 - 3 town halls (2 associated with OOI)
 - Contributed staffing to OOI exhibit booth
 - Dever participated in RU data workshop preceding meeting
- Early March seminar and workshop at Hatfield Marine Science Center
- Planning for Northeast Pacific data workshop (suspended but will present webinars based on some of the ideas developed for this workshop)
- New M2M tools being developed and made available with links from OOI website
 - MATLAB
 - R



Challenges

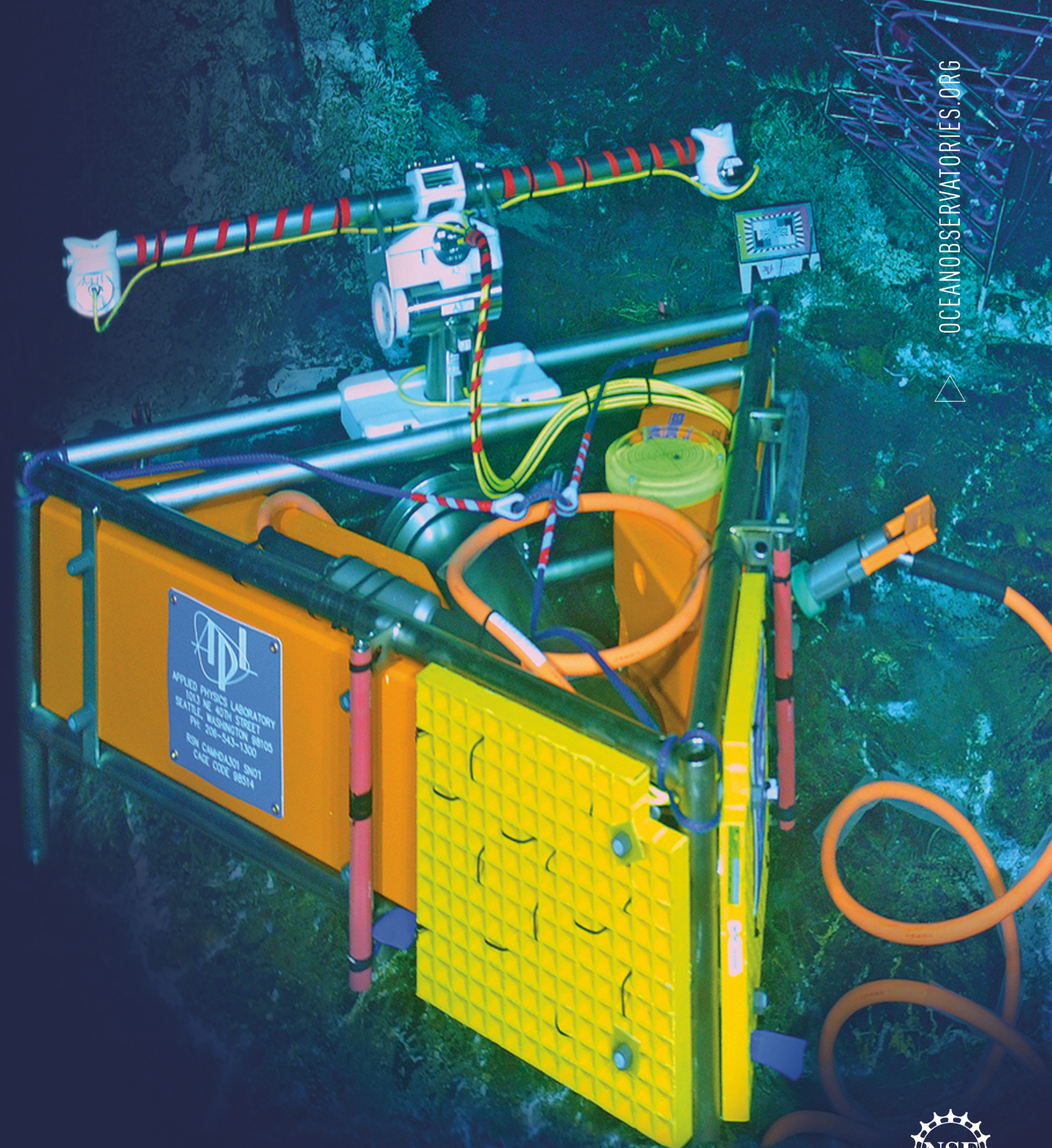
- Glider servicing
 - Digifin leaks – addressing through radome fin upgrades
 - Servicing delays – MoN approved, TWR and their suppliers working with COVID-19 constraints (3 tail fins arriving 13 May)
 - Two gliders under scope – have ordered one; rebudget ECR to order second
- UNOLS COVID-19 pause – working with UNOLS, UW for July Endurance cruise
- Small vessel availability and scheduling – local charter vessel has completed inspection and safety upgrades, OSU vessel completing UNOLS inspection items, second OSU vessel returning from yard after receiving new engine
- COVID-19 work disruptions – addressing through monthly ECR's that identify remote work (data, engineering) as well as on-site work with social distancing and cleaning





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Questions?



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