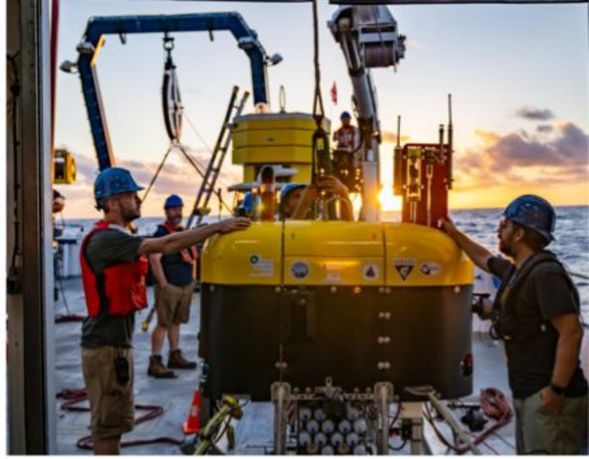
NAUTILUSLIVE.ORG
OCEAN EXPLORATION TRUST

DESSC MEETING — FEBRUARY 18, 2024

iXblue

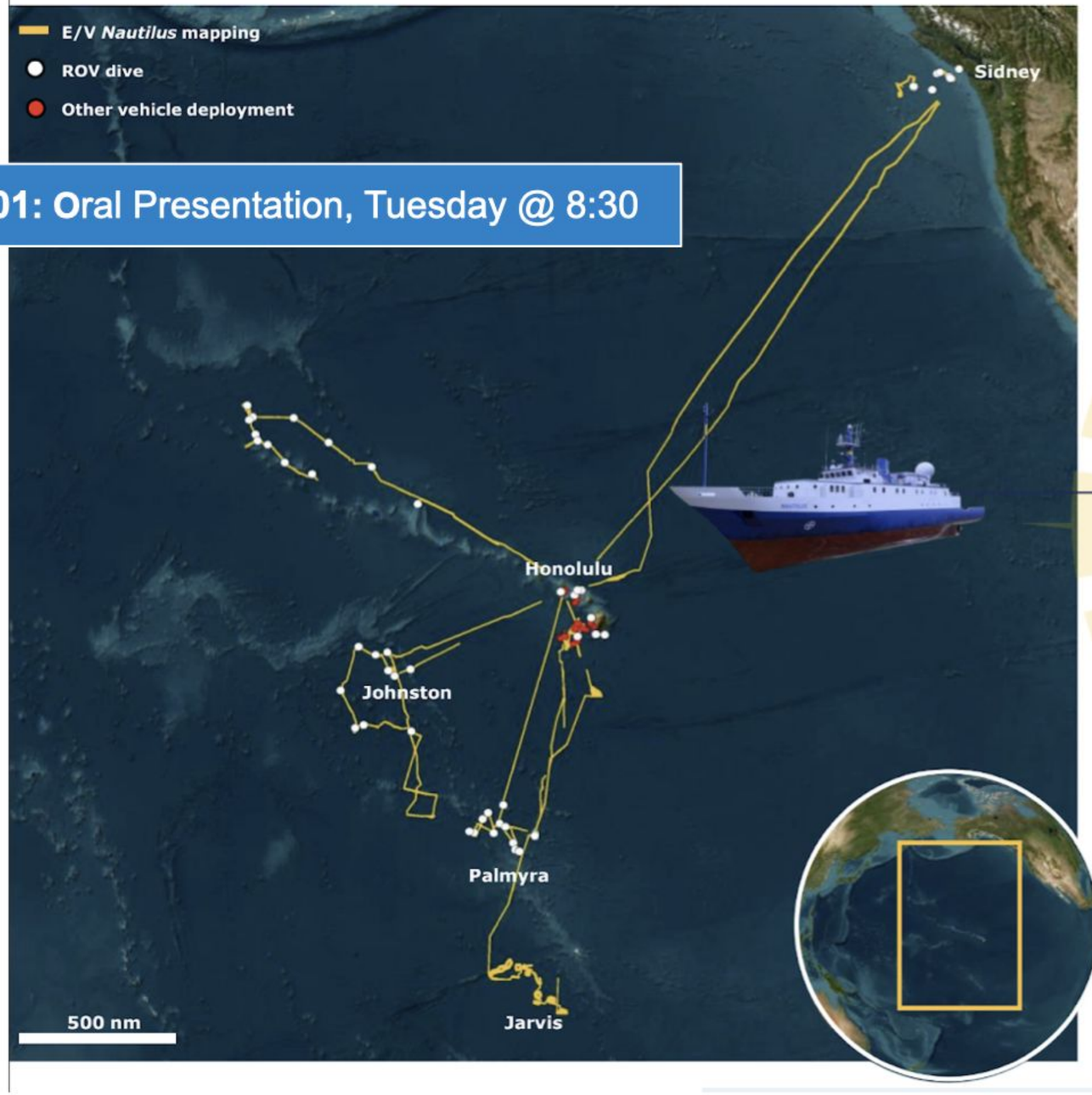


NAUTILUS
KINGSTOWN

SENTRY

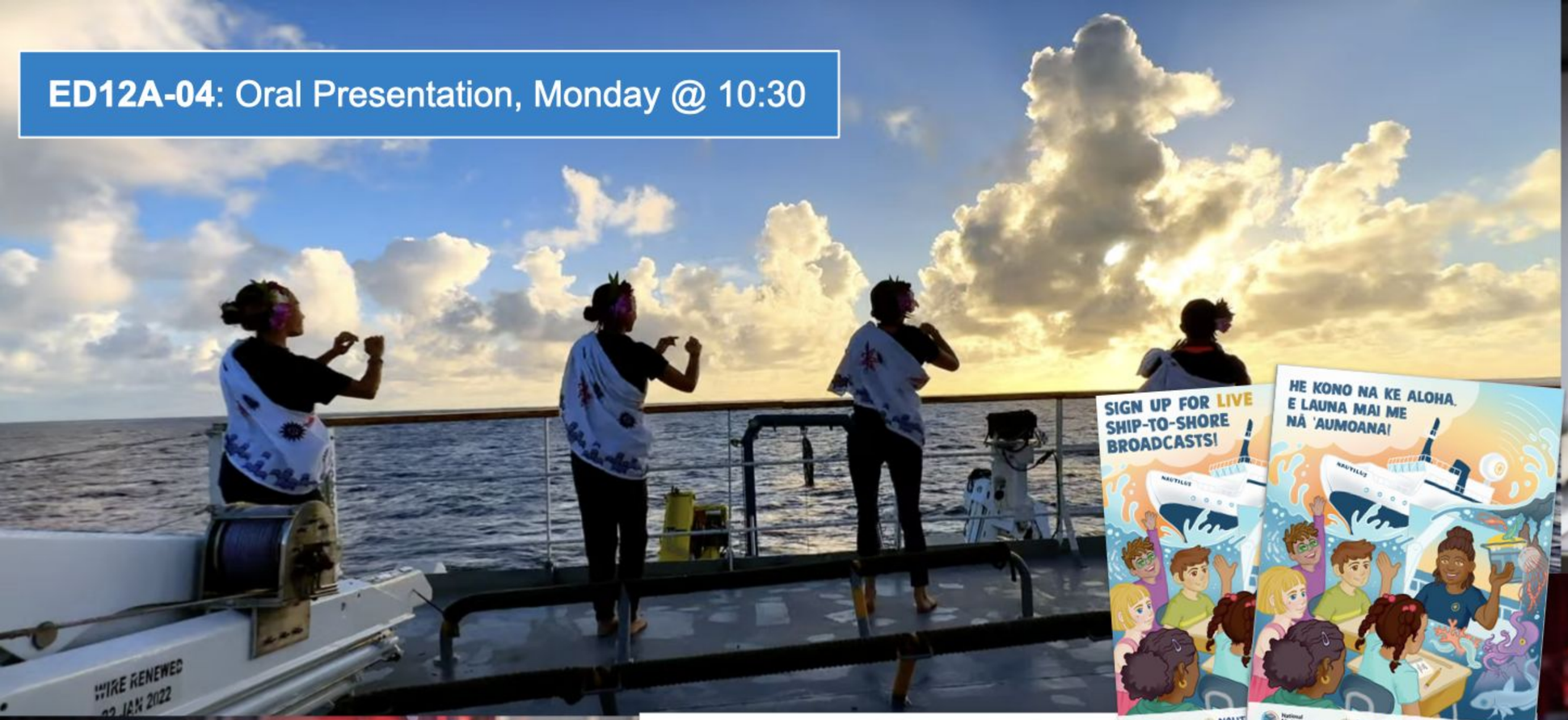
2023 E/V NAUTILUS FIELD SEASON

DS21A-01: Oral Presentation, Tuesday @ 8:30



- **12** expeditions
- **215** days at sea
- **183,473** km² of seafloor mapped
- **85** successful ROV dives
- **1,080** hours of ROV exploration
- **54** other vehicle deployments
- **1,131** samples collected
- **55** students at sea
- **122** scientists participated remotely
- **710** live ship-to-shore interactions
- **30,500** ship-to-shore participants
- **>1,400,000** live stream views
- **>9,300,000** highlight video views
- **3,845** media stories

ED12A-04: Oral Presentation, Monday @ 10:30



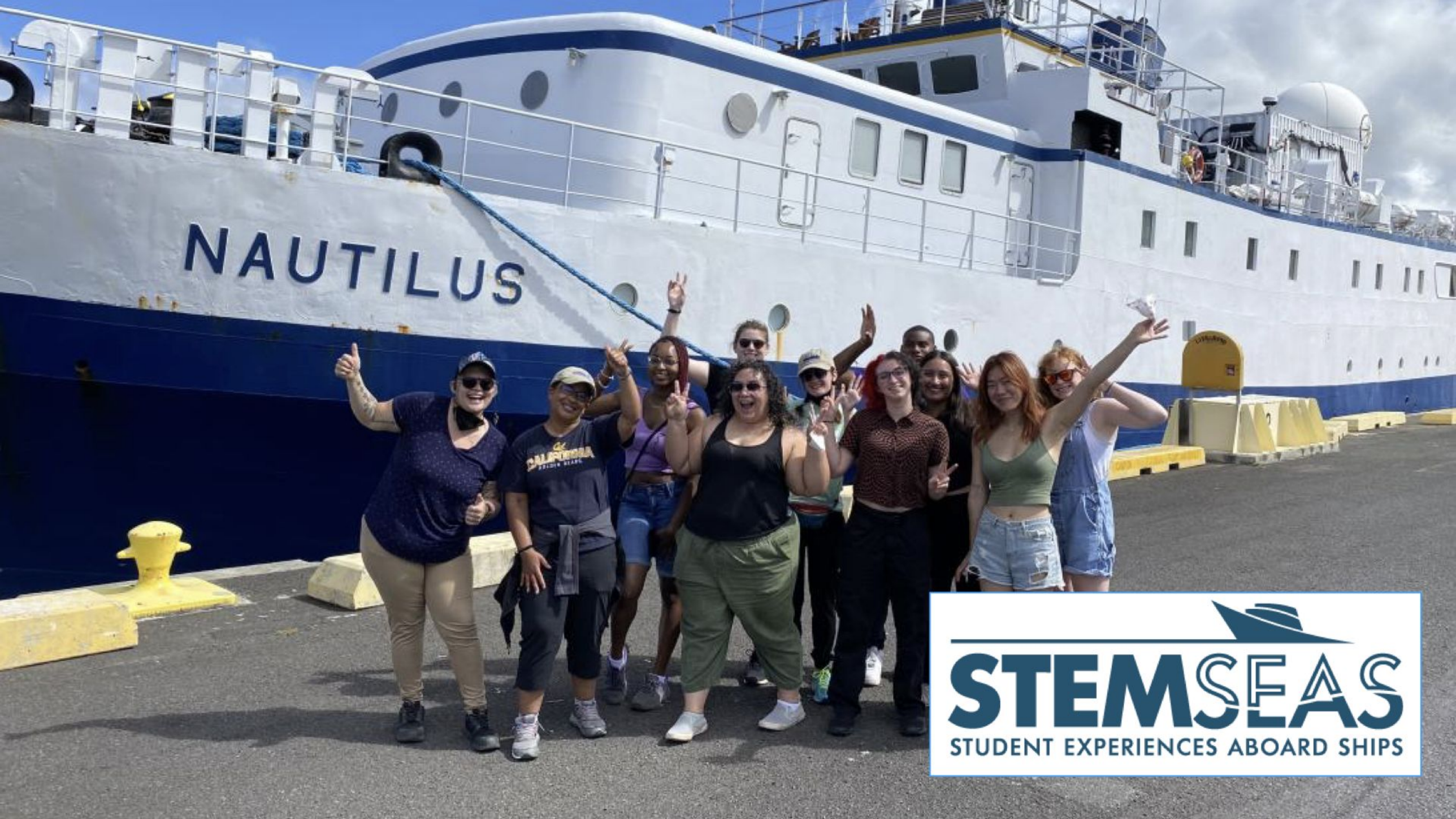
Prepared for the 2022 National Ocean Exploration Forum

Re-envisioning the Collective Voyage for Ocean Exploration

By Kalani Quiocho (NOAA Office of National Marine Sanctuaries, Pacific Islands Region), Allison Fundis (Ocean Exploration Trust), Kanoe Morishige (NOAA Papahānaumokuākea Marine National Monument, contracted by Lynker Technologies), J. Hau'oli Lorenzo-Elarco (Honolulu Community College), Hōkūokahalelani Pihana (Nā Wa'a Mauō Marine Stewardship Program), Dr. Alyssa Anderson (University of Hawai'i at Mānoa), and Megan Cook (Ocean Exploration Trust)

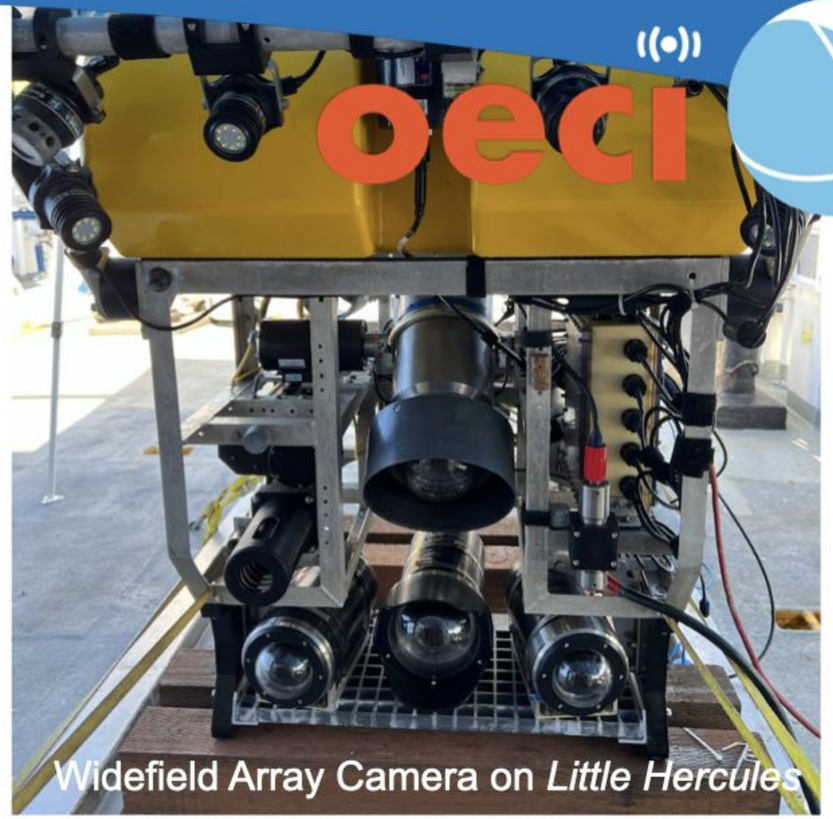
Vision Statement

By 2032, ocean exploration will have a thriving community of practice that supports development of a diverse workforce, facilitates effective communication, and advances national and community priorities for exploration. These efforts will support a cohesive public value proposition for ocean exploration.


NAUTILUS
STEMSEAS
STUDENT EXPERIENCES ABOARD SHIPS

ROV OPERATIONS UPDATE

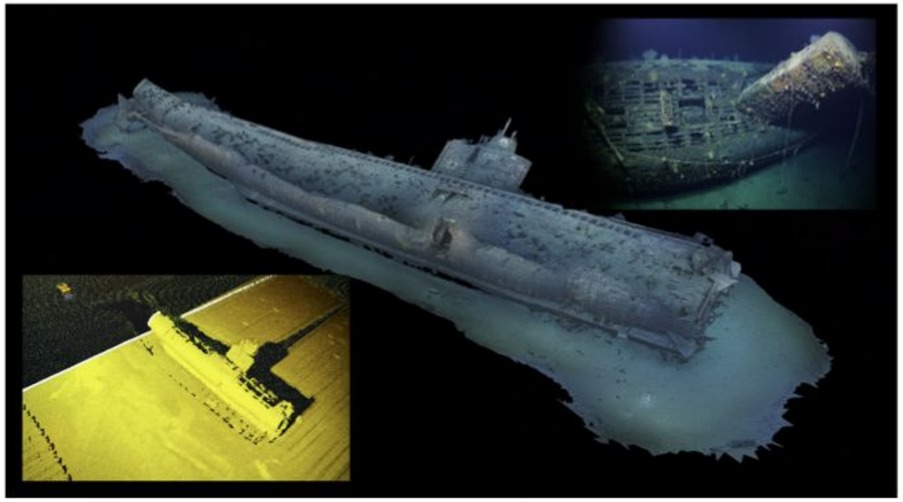
- Deepest dives in OET's history to ~5500m to survey historically significant Battle of Midway Wrecks: USS Yorktown, IJN Akagi 赤城, and IJN Kaga 加賀
- Integration of Impossible Sensing's Laser Raman Spectrometer to collect geochemical data in situ
- Integration of Sexton Widefield Array Camera with Norbit sonar to capture ultra-high-resolution imagery and immersive video footage



Widefield Array Camera on *Little Hercules*

IJN Akagi 赤城

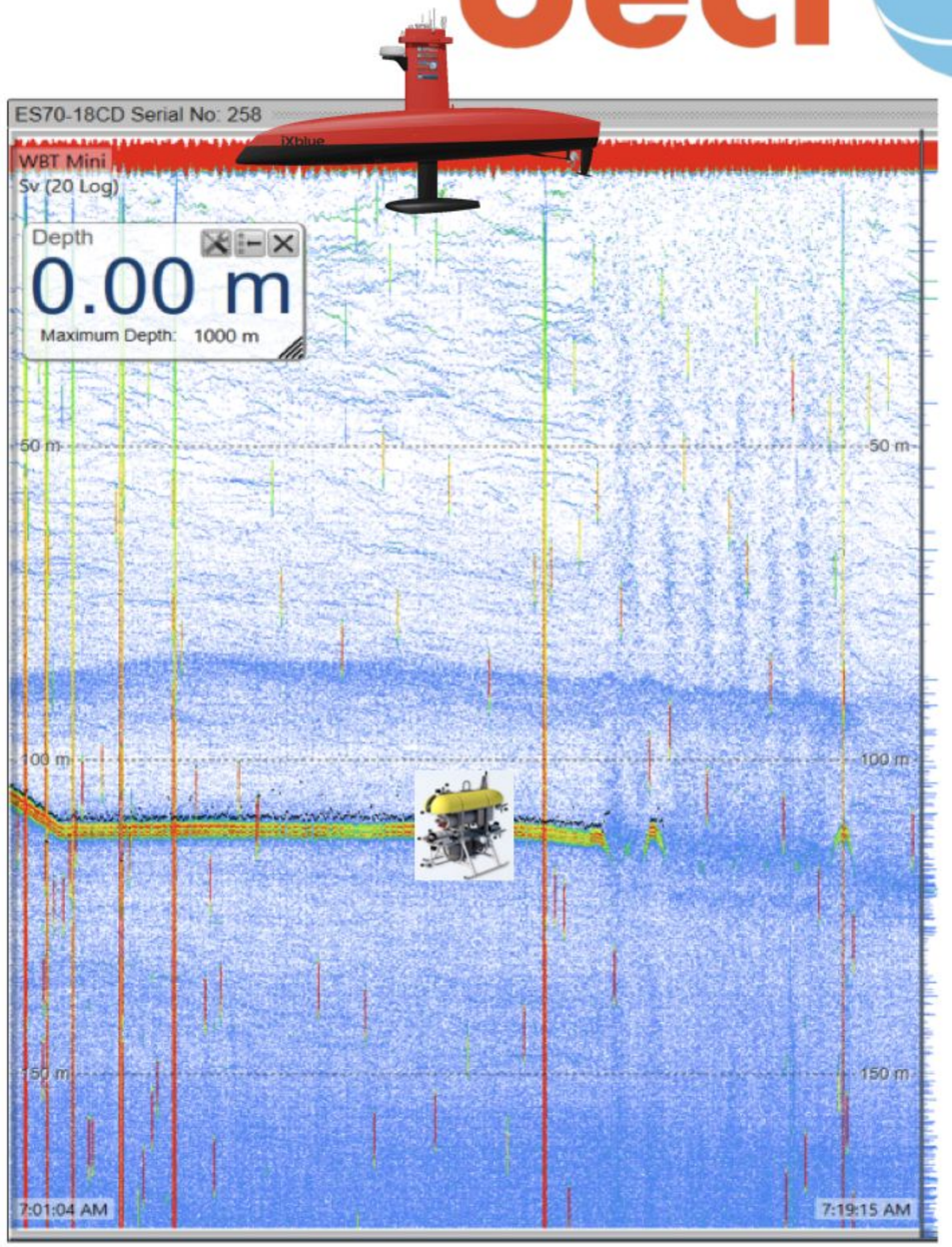
InVader Raman Spec.



DS34A: Poster, Wednesday @ 16:00

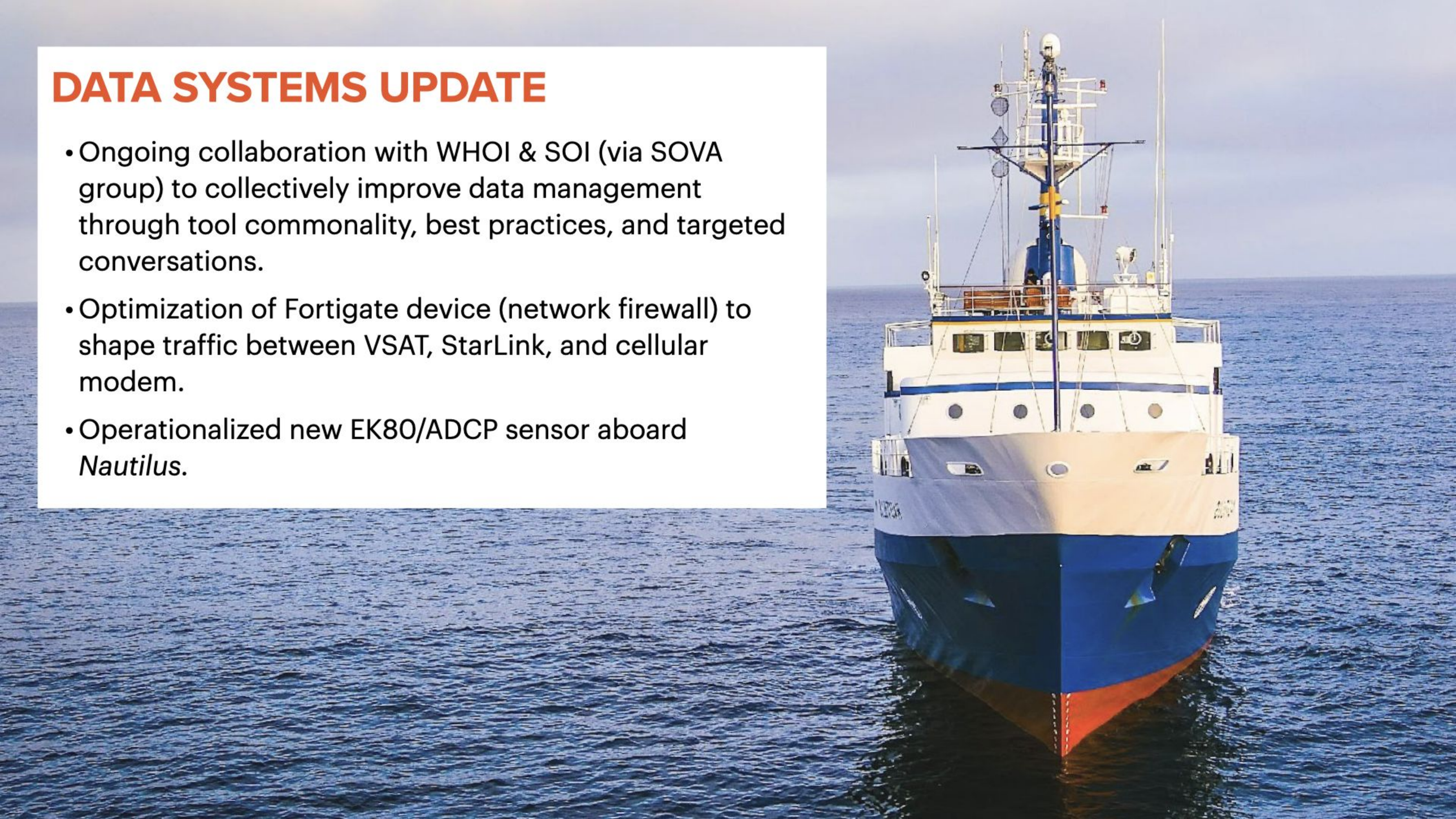
VEHICLE CONOPS UPDATE

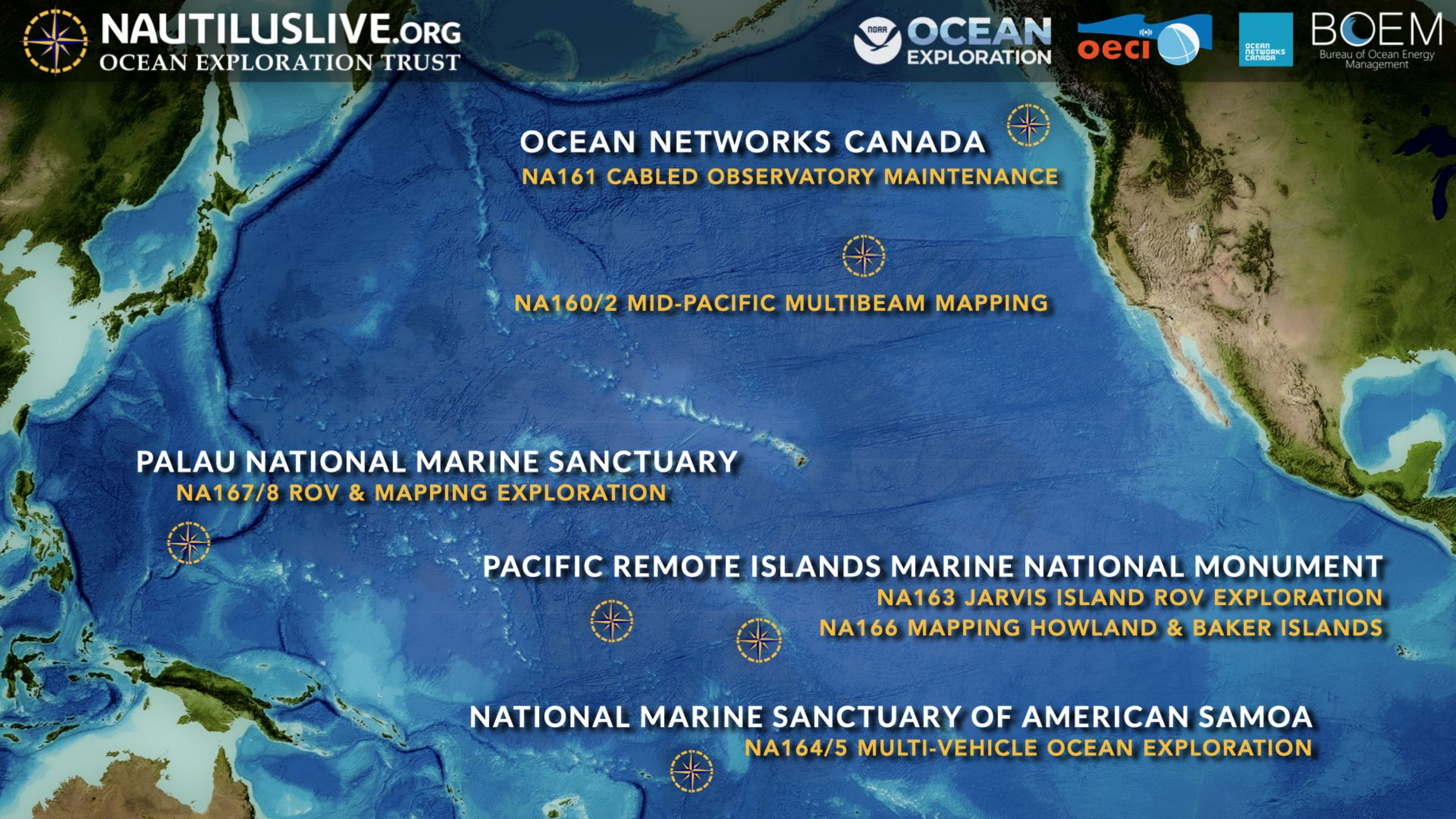
- Remote Operations *(Allisa Dalpe/WHOI)*
- Multi-vehicle Operations
  - Upgrade of UNH's DriX EM2040 > EM712 and integration of StarLink
  - Evolution of "Verified Direct Sampling" and automated tracking behavior to only pass over AUV every 10 minutes (as to not impact avoidance behavior of mid-water targets)
  - Demonstrated over-the-horizon ops (40 km range) with remote operations
  - In 2024…
    - DriX to operate from shore and rendezvous with Nautilus/*Mesobot* offshore



DATA SYSTEMS UPDATE

- Ongoing collaboration with WHOI & SOI (via SOVA group) to collectively improve data management through tool commonality, best practices, and targeted conversations.
- Optimization of Fortigate device (network firewall) to shape traffic between VSAT, StarLink, and cellular modem.
- Operationalized new EK80/ADCP sensor aboard *Nautilus*.

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OCEAN NETWORKS CANADA
BOEM
Bureau of Ocean Energy Management
OCEAN NETWORKS CANADA
NA161 CABLED OBSERVATORY MAINTENANCE
NA160/2 MID-PACIFIC MULTIBEAM MAPPING
PALAU NATIONAL MARINE SANCTUARY
NA167/8 ROV & MAPPING EXPLORATION
PACIFIC REMOTE ISLANDS MARINE NATIONAL MONUMENT
NA163 JARVIS ISLAND ROV EXPLORATION
NA166 MAPPING HOWLAND & BAKER ISLANDS
NATIONAL MARINE SANCTUARY OF AMERICAN SAMOA
NA164/5 MULTI-VEHICLE OCEAN EXPLORATION

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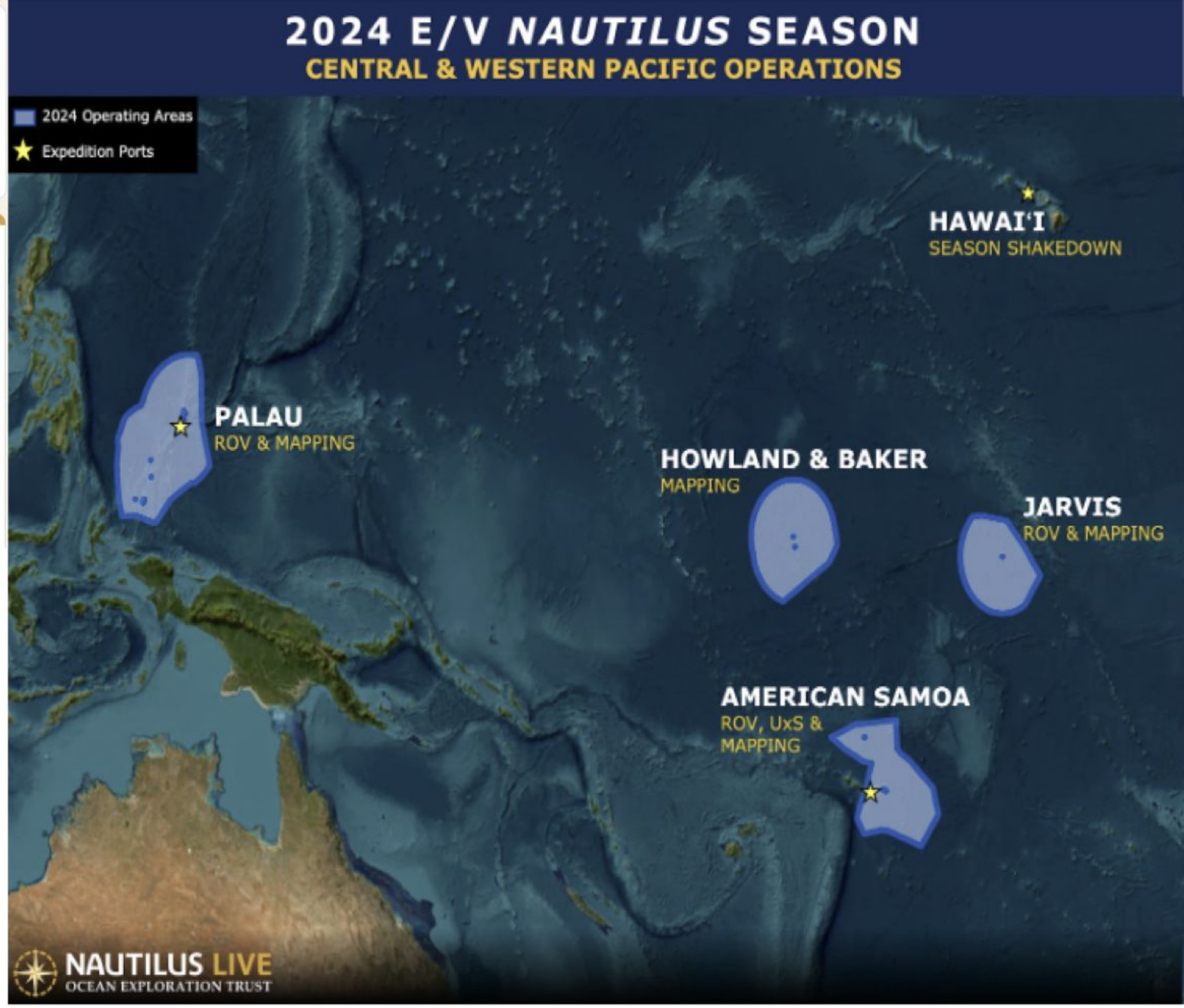
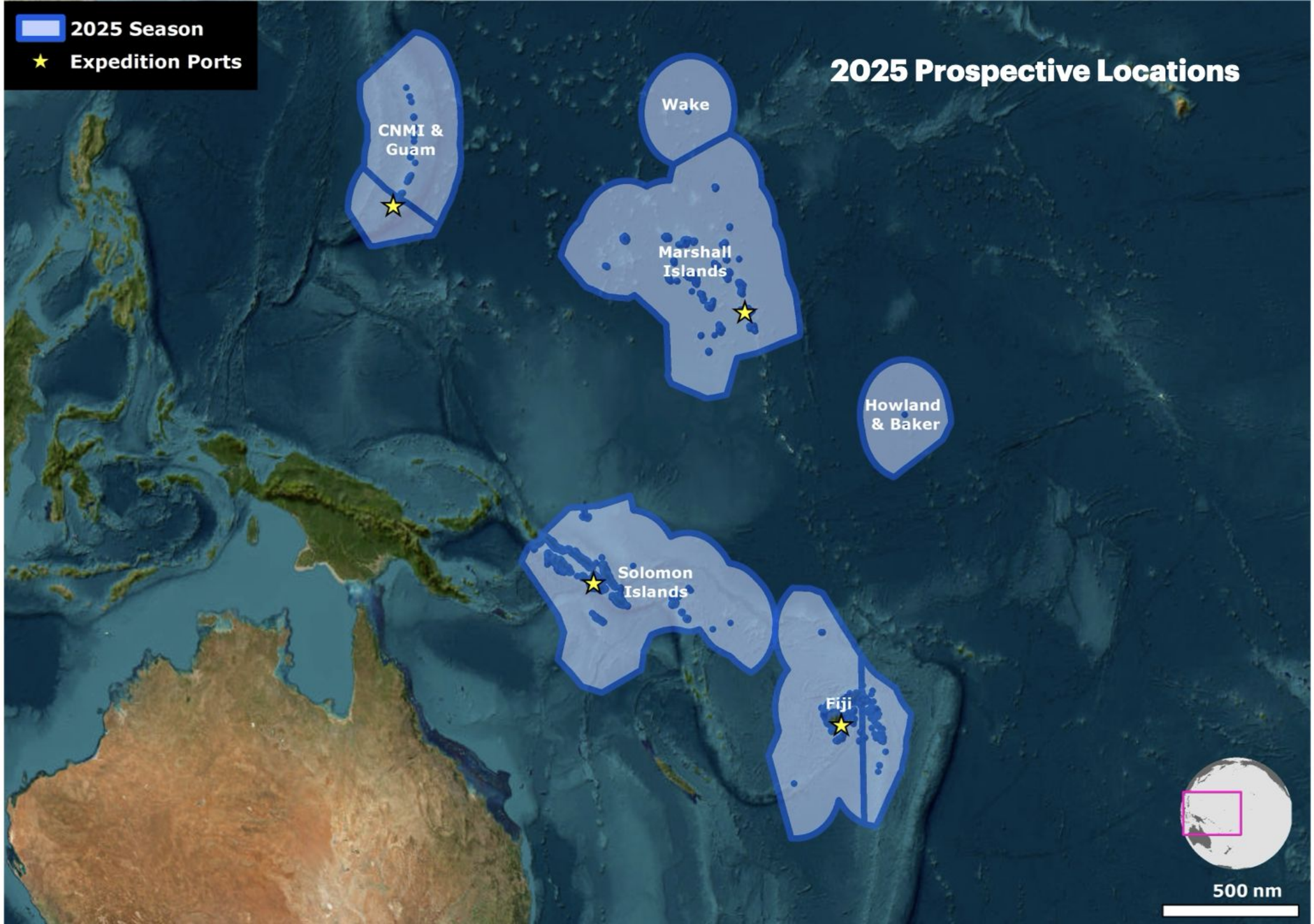
2024 E/V *Nautilus* expeditions call for science input

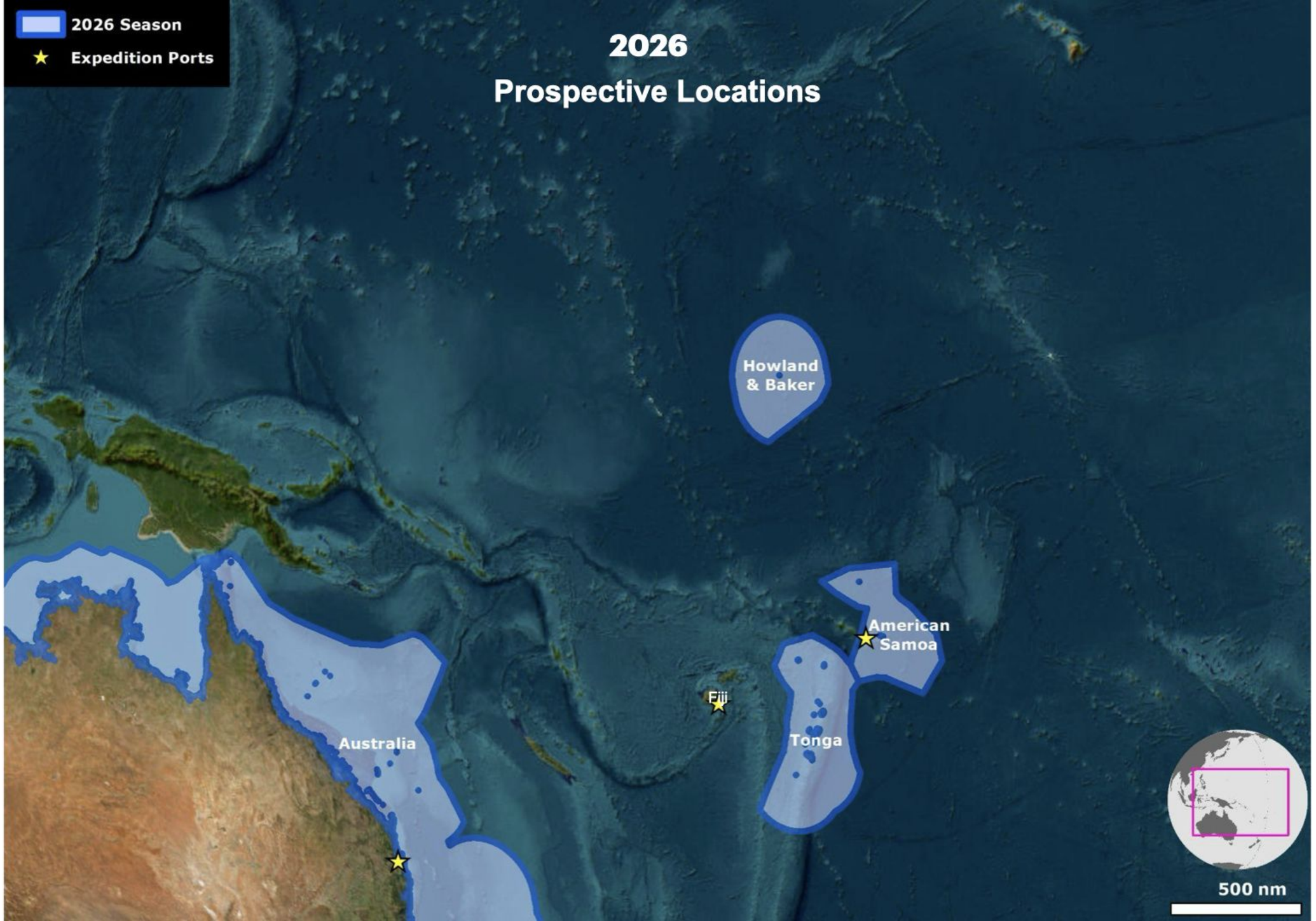
In 2024, E/V *Nautilus* will conduct several telepresence-enabled, multidisciplinary expeditions to explore the deep sea throughput the Pacific. The purpose of this form is to provide an opportunity for input on expedition planning by identifying exploratory interests, mapping priorities, ROV dive targets, physical sample requests, and technology integrations. Please provide your input by **February 1, 2024**. Information received will be used to open up opportunities for collaboration and refine expedition plans, which will be discussed during community webinars preceding each expedition.

- Subject Area of Expertise
- Physical Sample Request
- ROV Exploration Targets
- Mapping Priorities
- Technology Integrations



www.NautilusLive.org/join/scientists-ashore-program


2025 Season
Expedition Ports
2025 Prospective Locations
CNMI & Guam
Wake
Marshall Islands
Howland & Baker
Solomon Islands
Fiji
500 nm


2026 Season
Expedition Ports
2026
Prospective Locations
Howland
& Baker
American
Samoa
Fiji
Tonga
Australia
500 nm

Thank you!

science@oet.org
education@oet.org