

UPDATE TO THE OOI FACILITIES BOARD

Dr. Kate Moran | President & CEO

AN INITIATIVE OF UNIVERSITY OF VICTORIA

PRESENTATION

- ❖ ONC Infrastructure
- ❖ Observatory Physical Operations
- ❖ Observatory Digital Operations
- ❖ Funding Agency Metrics



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Infrastructure

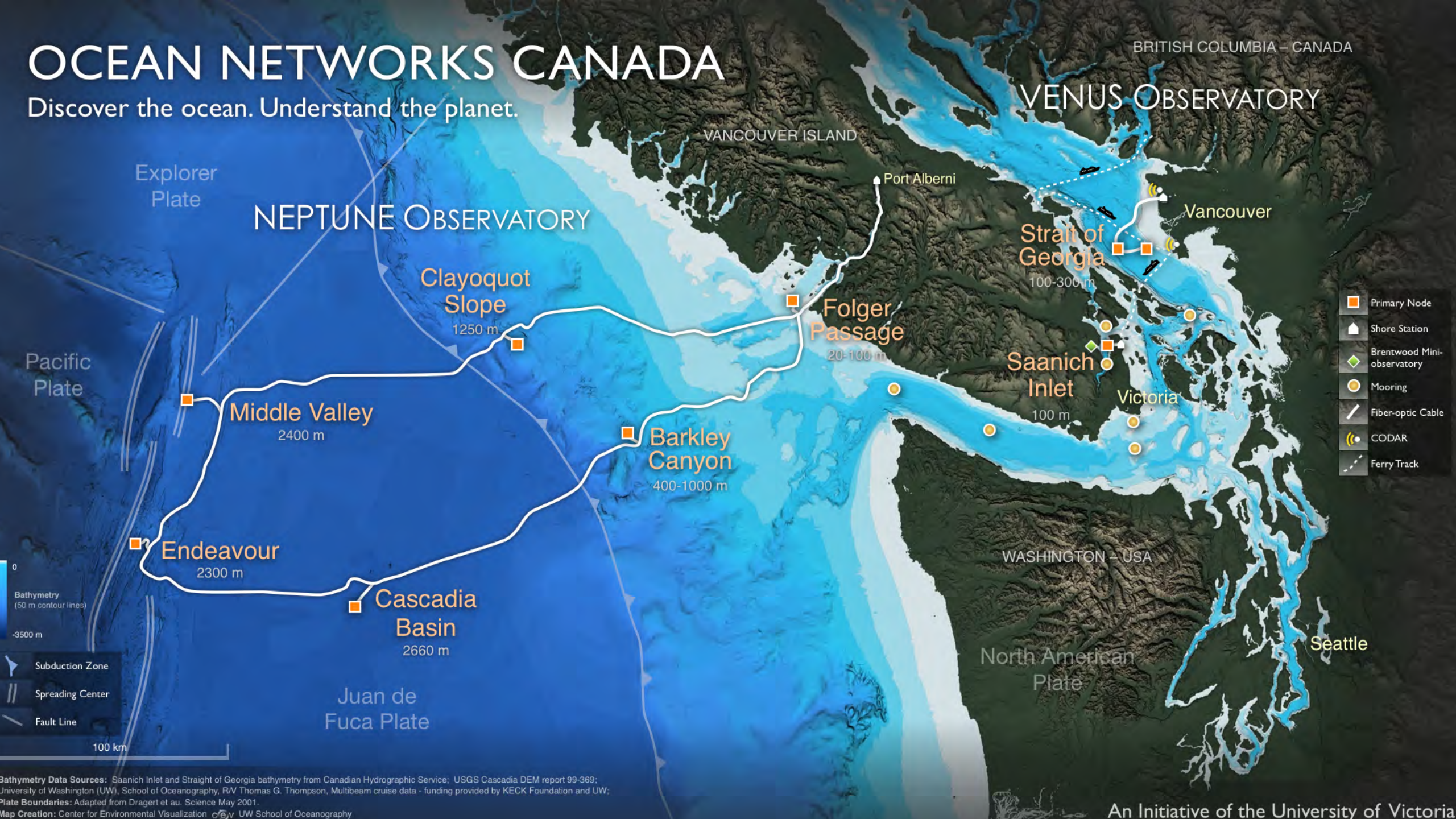
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Discover the ocean. Understand the planet.

BRITISH COLUMBIA – CANADA

VENUS OBSERVATORY

NEPTUNE OBSERVATORY

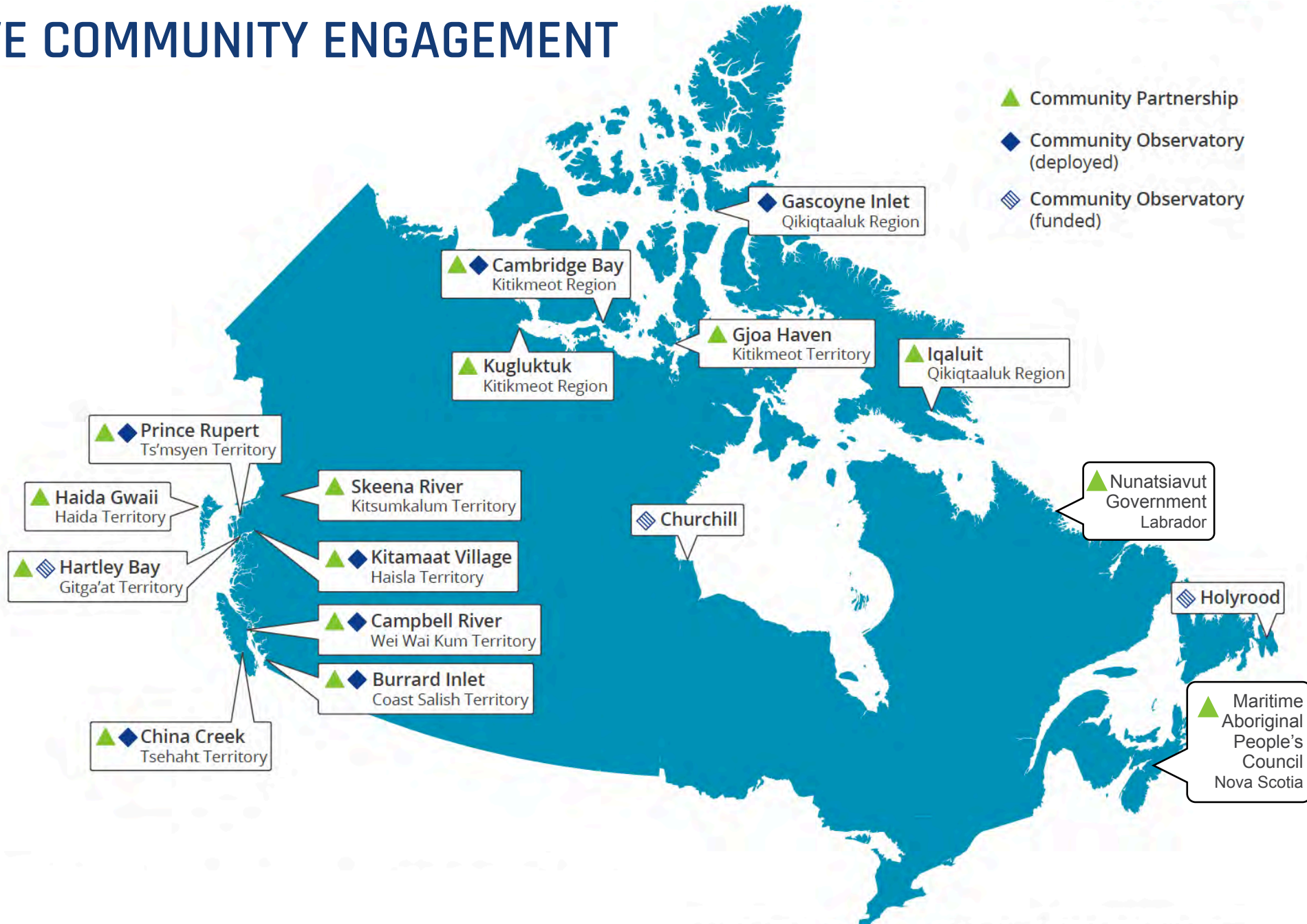


- Primary Node
- Shore Station
- Brentwood Mini-observatory
- Mooring
- Fiber-optic Cable
- CODAR
- Ferry Track

- Bathymetry (50 m contour lines)
- Subduction Zone
- Spreading Center
- Fault Line

Bathymetry Data Sources: Saanich Inlet and Strait of Georgia bathymetry from Canadian Hydrographic Service; USGS Cascadia DEM report 99-369; University of Washington (UW), School of Oceanography, R/V Thomas G. Thompson, Multibeam cruise data - funding provided by KECK Foundation and UW; Plate Boundaries: Adapted from Dragert et al. Science May 2001. Map Creation: Center for Environmental Visualization © UW School of Oceanography

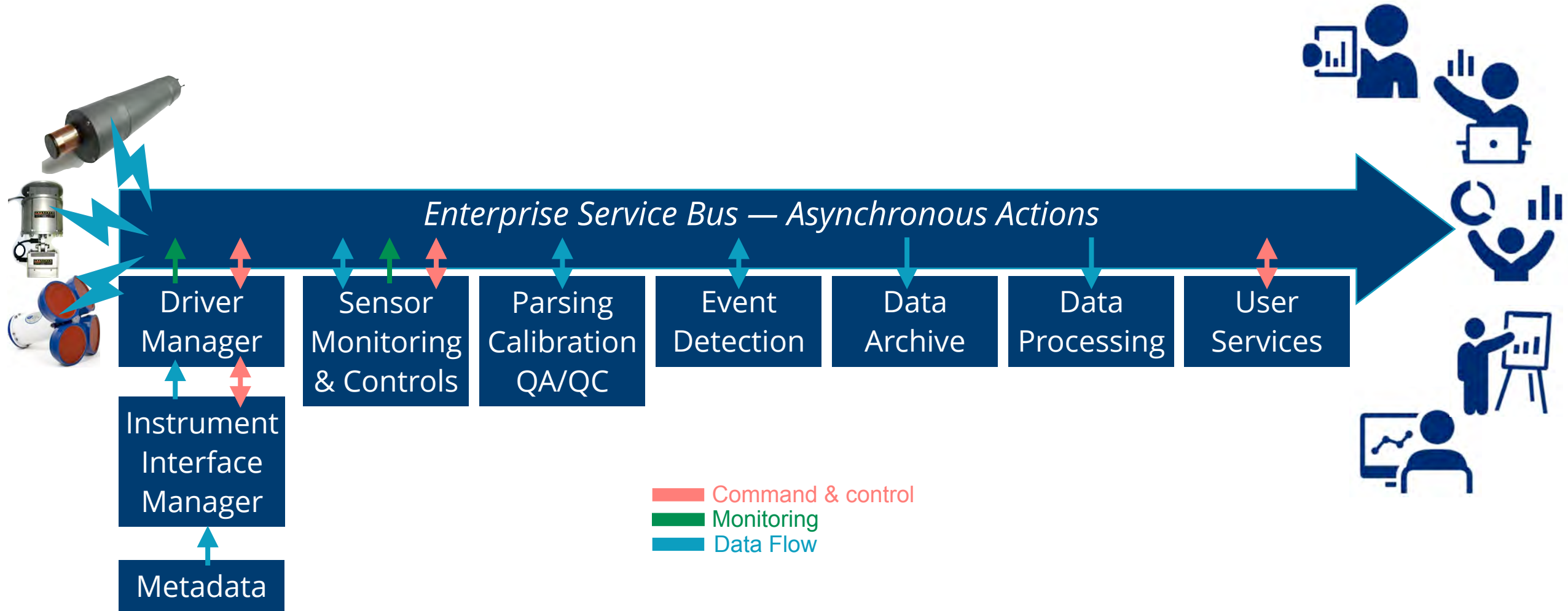
ACTIVE COMMUNITY ENGAGEMENT



OCEANS 2.0

- ❖ CONTINUOUSLY INCREASING VOLUME (CURRENTLY AT OVER 1 PETABYTE)
- ❖ DATA STRUCTURES THAT ENABLE RAPID ACCESS & DELIVERY OF ALERTS
- ❖ ROBUST METADATA
- ❖ AUTOMATIC AND MANUAL QA/QC
- ❖ INSTRUMENT MANAGEMENT SYSTEM
- ❖ SENSOR HEALTH MONITORING AND INDUSTRIAL-LEVEL MONITORING
- ❖ DUPLICATE ARCHIVES, THOUSANDS OF KM APART

OCEANS 2.0 DATA WORKFLOWS



OBSERVATORY PHYSICAL OPERATIONS



On board E/V Nautilus during COVID

FY20/21 EXPEDITIONS

- ❖ CCGS Tully/Pelagic 01 - 16 Jun 2020
- ❖ OET (E/V Nautilus) 04 - 18 Sep 2020
- ❖ Cable Innovator 14 Sep - 17 Sep (Delayed)
 - Replacement of Barkley Canyon Node
- ❖ CCGS Tully 21 Sep - 06 Oct 2020
- ❖ CCGS Tully 14-21 Mar 2021 (Planned)
- ❖ Servicing Community Observatories, Earthquake Early Warning Sites, Ferries

EXPEDITIONS HIGHLIGHTS

- ❖ All inshore and offshore sites serviced
- ❖ Completed tsunami array
- ❖ Expanded neutrino array
- ❖ Replaced single hydrophones with 3-hydrophone arrays
- ❖ Earthquake early warning system serviced
- ❖ Found! the Delta Dynamics Experiment
- ❖ Barkley node repair delayed

A conceptual image where a jellyfish is depicted with fiber optic cables as its tentacles. The jellyfish's bell is a glowing, translucent sphere with a grid of small lights on its surface. The tentacles are long, thin, and radiate outwards, some ending in small glowing tips. The background is a dark, deep blue, suggesting an underwater environment.

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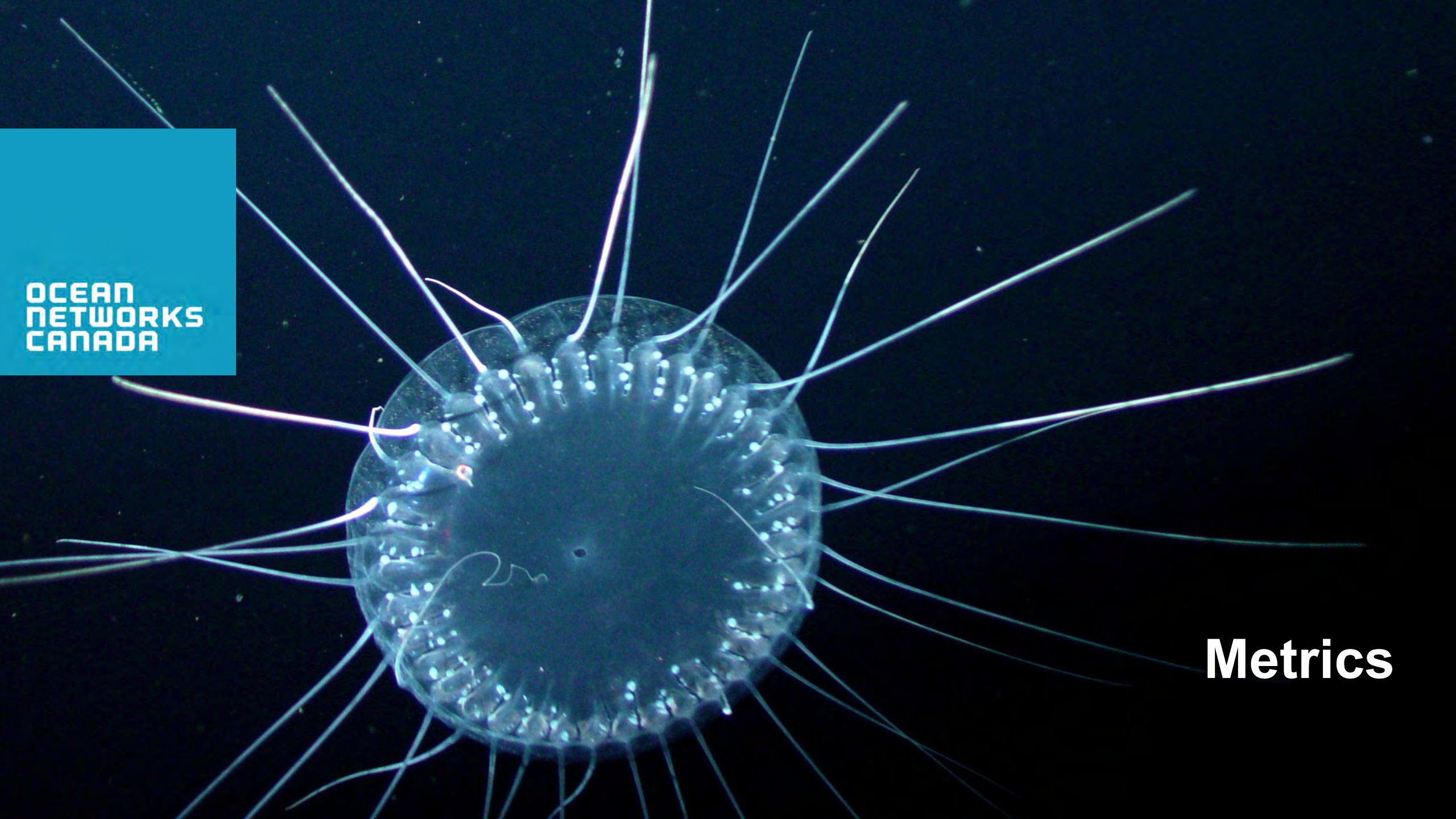
Observatory Digital Operations

HIGHLIGHTS

- ❖ Expedition Preparation—200 new workflows created
- ❖ Shore-based expedition logging
- ❖ Commissioned Community Observatories
- ❖ Canadian Integrated Ocean Observing System Data System
- ❖ Acoustic Instruments Data Viewer
- ❖ Geospatial Data Search
- ❖ Dashboards Development
- ❖ Tsunami Risk Modelling
- ❖ Data Transmission Upgrades
- ❖ Data Storage Increases

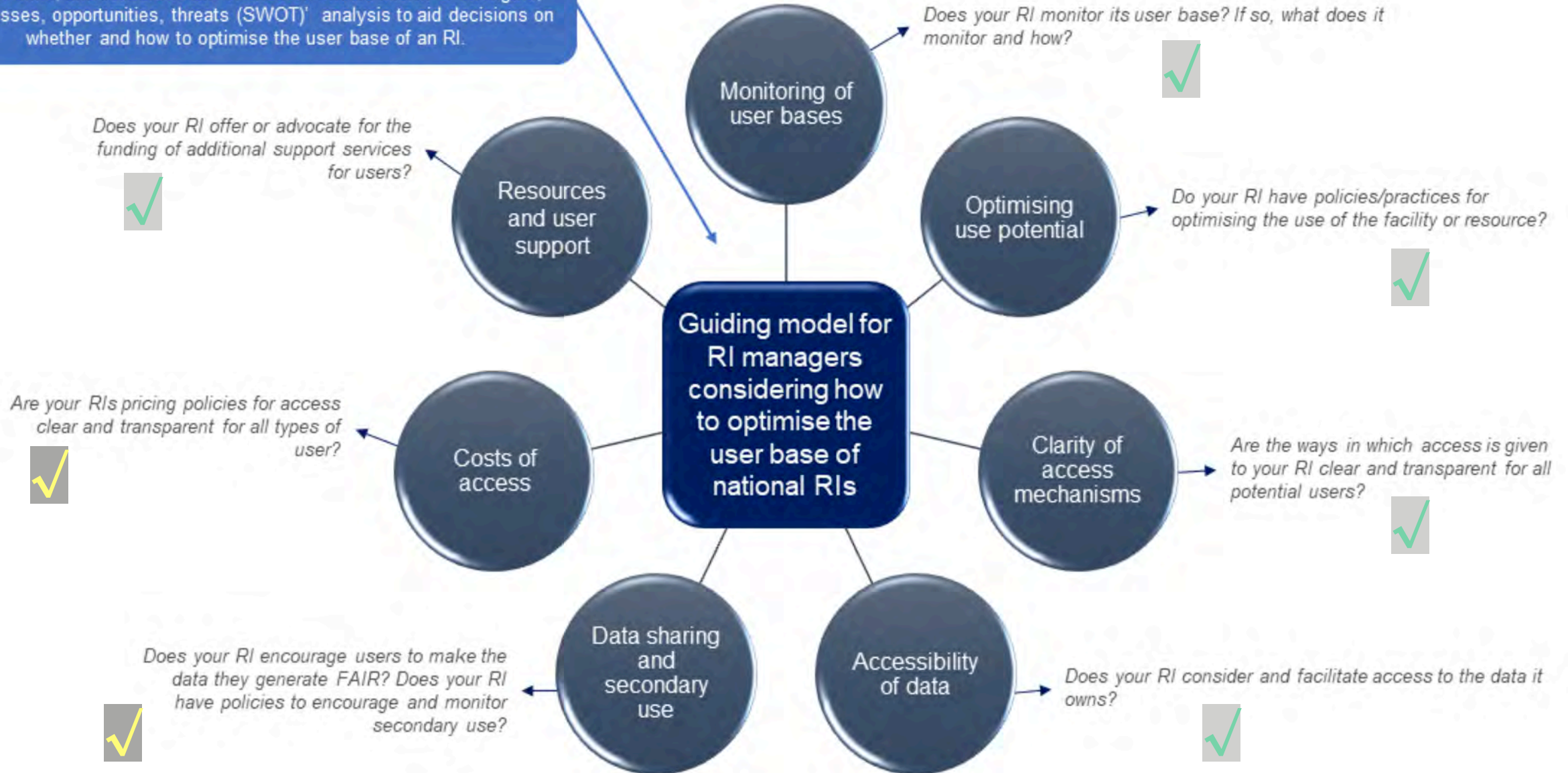
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Metrics



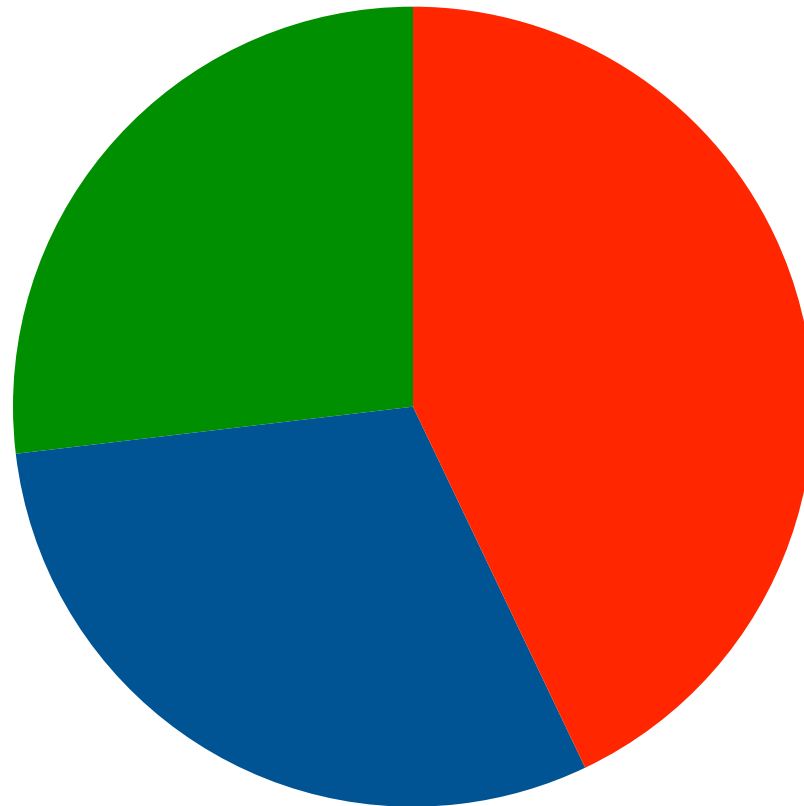
BEST PRACTICES IN THE MANAGEMENT OF RESEARCH INFRASTRUCTURES

A thorough knowledge of the current use of an RI, and how users, access units, and resources are distributed should inform a 'strengths, weaknesses, opportunities, threats (SWOT)' analysis to aid decisions on whether and how to optimise the user base of an RI.

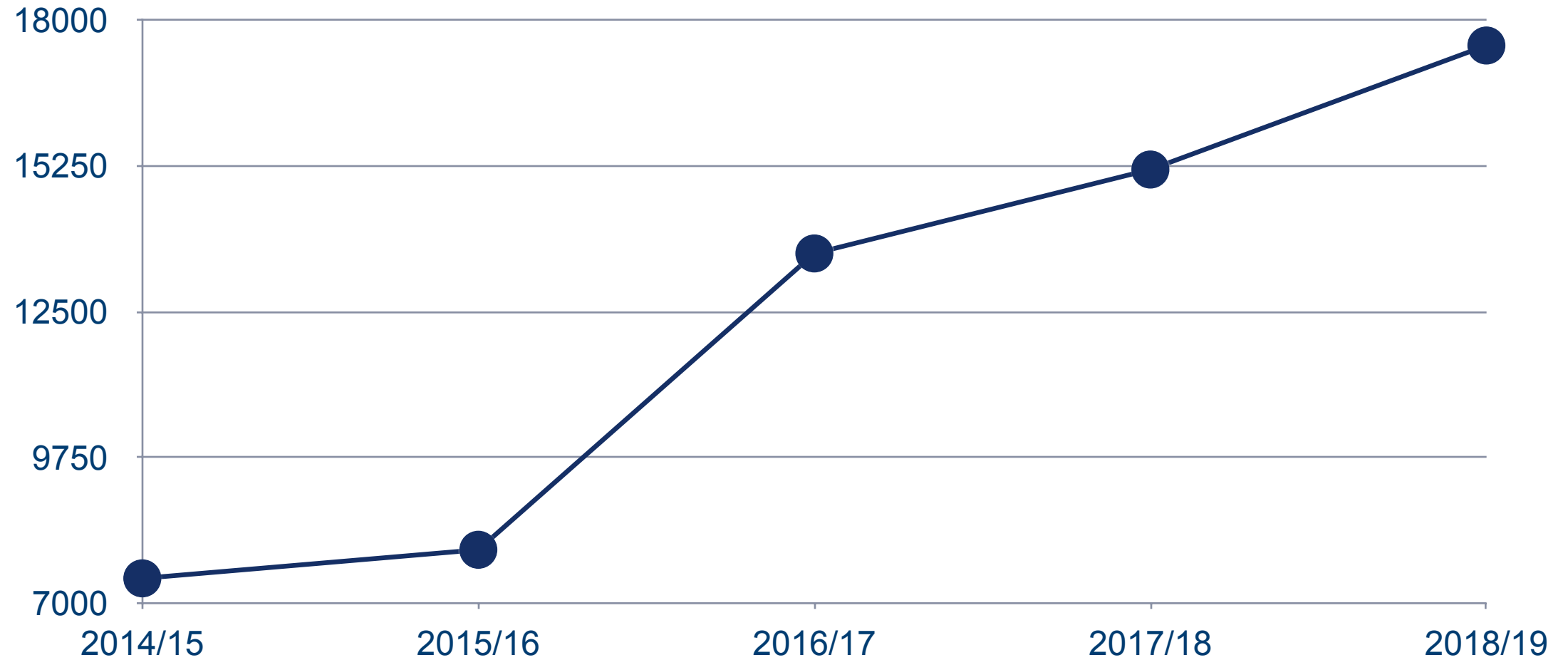


DATA USER DISTRIBUTION LOCATIONS

- Canada
- United States
- Other Countries



NUMBER OF DATA USERS



SCIENCE SERVICES: RECENT PUBLICATIONS

nature astronomy

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Comment | Published: 08 September 2020

The Pacific Ocean Neutrino Experiment

Matteo Agostini, Michael Böhmer, [...] Juan Pablo Yanez

Nature Astronomy (2020) | Cite this article

83 Accesses | 104 Altmetric | Metrics

The Pacific Ocean Neutrino Experiment is a new initiative towards constructing a multi-cubic-kilometre neutrino telescope to expand our observable window to the highest energies, and will be installed within the deep Pacific Ocean infrastructure of Ocean Networks Canada.

Journal Impact Factor: 10.5

frontiers
in Microbiology

Microbial Symbioses

SECTION ABOUT ARTICLES RESEARCH TOPICS FOR AUTHORS JOURNAL QUANTILE SEARCH FILTERS

Articles

ORIGINAL RESEARCH ARTICLE

Front. Microbiol., 24 July 2020 | <https://doi.org/10.3389/fmicb.2020.01636>

Evidence of Vent-Adaptation in Sponges Living at the Periphery of Hydrothermal Vent Environments: Ecological and Evolutionary Implications

Magdalena N. Georgieva^{1,2}, Sergi Taboada^{1,2,3}, Ana Riesgo^{1,2}, Cristina Díez-Vives^{1,2}, Fabio C. De Leo^{4,5}, Rachel M. Jeffreys⁶, Jonathan T. Cooley⁷, Crispin T. S. Little^{1,2,3}, Pilar Ríos^{1,2}, Javier Cristobo^{1,10}, Jon T. Hesterton¹¹ and Adrian G.

Journal Impact Factor: 4.24

scientific data

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Comment | Open Access | Published: 14 May 2020

The TRUST Principles for digital repositories

Dawei Lin , Jonathan Crabtree, Ingrid Dillo, Robert R. Downs, Rorie Edmunds, David Giarretta, Marisa De Giusti, Hervé L'Hours, Wim Hugo, Reyna Jenkyns, Varsha Khodiyar, Maryann E. Martone, Mustapha Mokrane, Vivek Navale, Jonathan Petters, Barbara Sierman, Dina V. Sokolova, Martina Stackhouse & John Westbrook

Scientific Data 7, Article number: 144 (2020) | Cite this article

10k Accesses | 1 Citations | 125 Altmetric | Metrics


Journal Impact Factor: 6.46

SCIENCE SERVICES: RECENT PUBLICATIONS

JGR Biogeosciences

Research Article

Temporal and Vertical Oxygen Gradients Modulate Nitrous Oxide Production in a Seasonally Anoxic Fjord: Saanich Inlet, British Columbia

Qixing Ji , Brett D. Jameson, S. Kim Juniper, Damian S. Grundle

First published: 28 August 2020 | <https://doi.org/10.1029/2020JG005631>

Journal Impact Factor: 3.41

Geophysical Journal International

Issues ▾ More Content ▾ Subject ▾ Submit ▾ Purchase About ▾ All Geophysical Jou



Volume 222, Issue 1
July 2020

New insights into the structural elements of the upper mantle beneath the contiguous United States from S-to-P converted seismic waves

Rainer Kind , Walter D Mooney, Xiaohui Yuan

Geophysical Journal International, Volume 222, Issue 1, July 2020, Pages 646–659,
<https://doi.org/10.1093/gji/ggaa203>

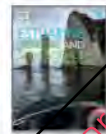
Published: 25 April 2020 [Article history ▾](#)

Journal Impact Factor: 2.78



Estuarine, Coastal and Shelf Science

Volume 243, 30 September 2020, 106815



Benthic fluxes of oxygen and heat from a seasonally hypoxic region of Saanich Inlet fjord observed by eddy covariance

Clare E. Reimers , Rhea D. Sanders , Richard Dewey , Rick Noel 

Journal Impact Factor: 2.6



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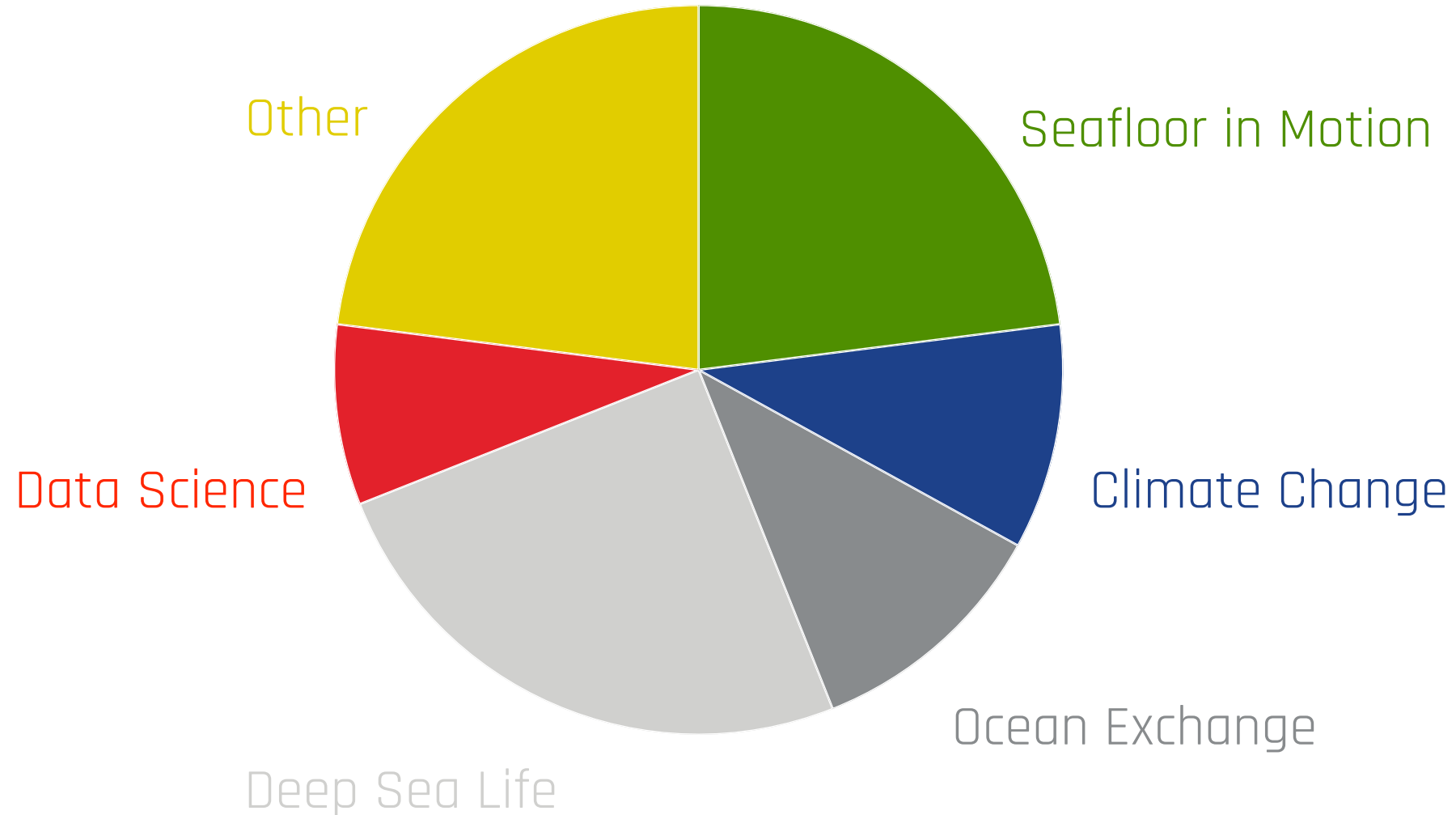
Open Access Article

Quality Control and Pre-Analysis Treatment of the Environmental Datasets Collected by an Internet Operated Deep-Sea Crawler during its Entire 7-Year Long Deployment (2009–2016)[†]

by  Damianos Chatziveangelou ,  Jacopo Aguzzi  Martin Scherwath  and  Larenz Thomsen 

Journal Impact Factor: 3.0

PUBLICATIONS BY THEME



A glowing jellyfish is the central focus, its translucent body emitting a soft blue light. Numerous thin, white fiber optic cables are attached to the perimeter of the jellyfish, extending outwards in various directions. The background is a deep, dark blue, making the glowing elements stand out prominently.

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Thank You