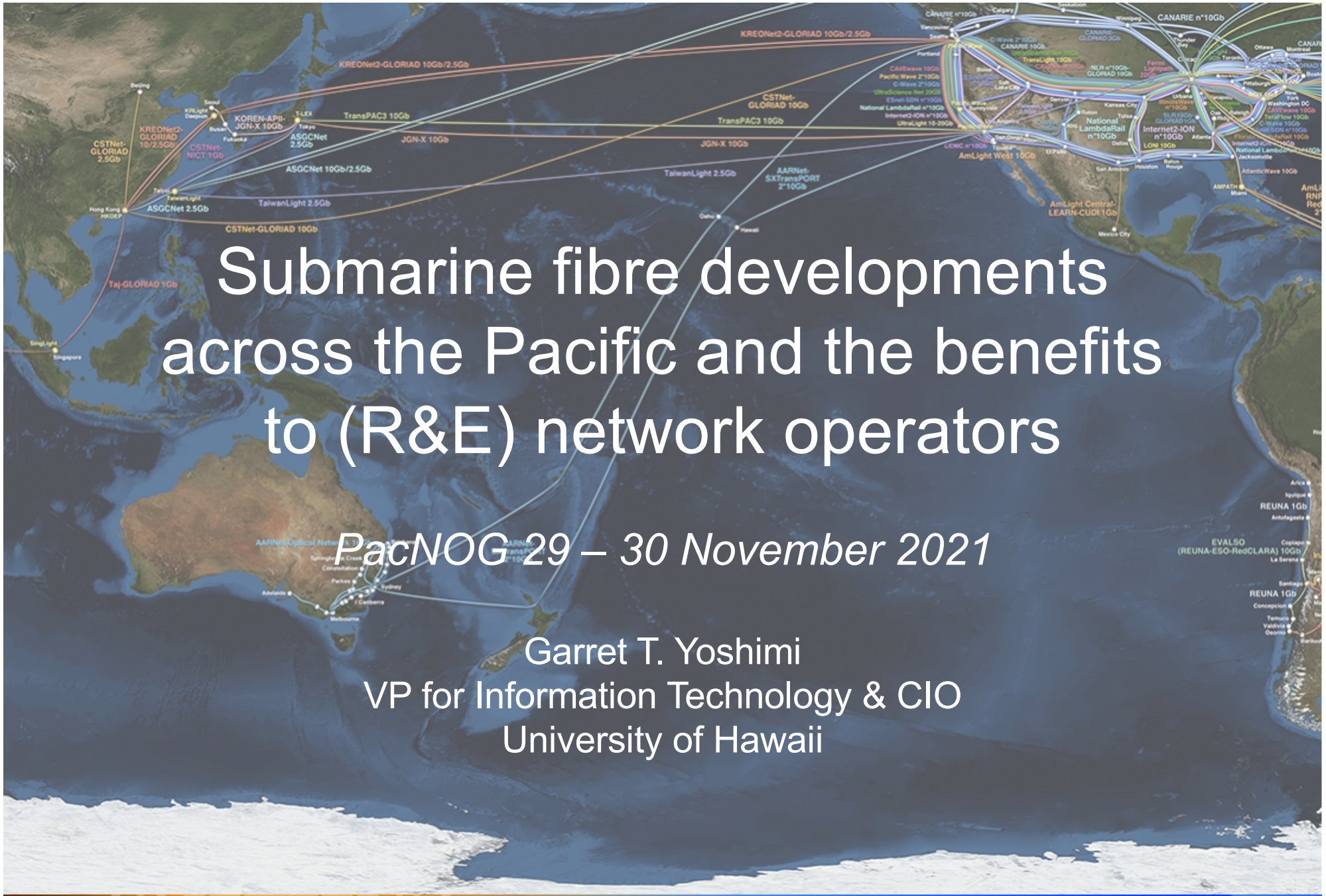
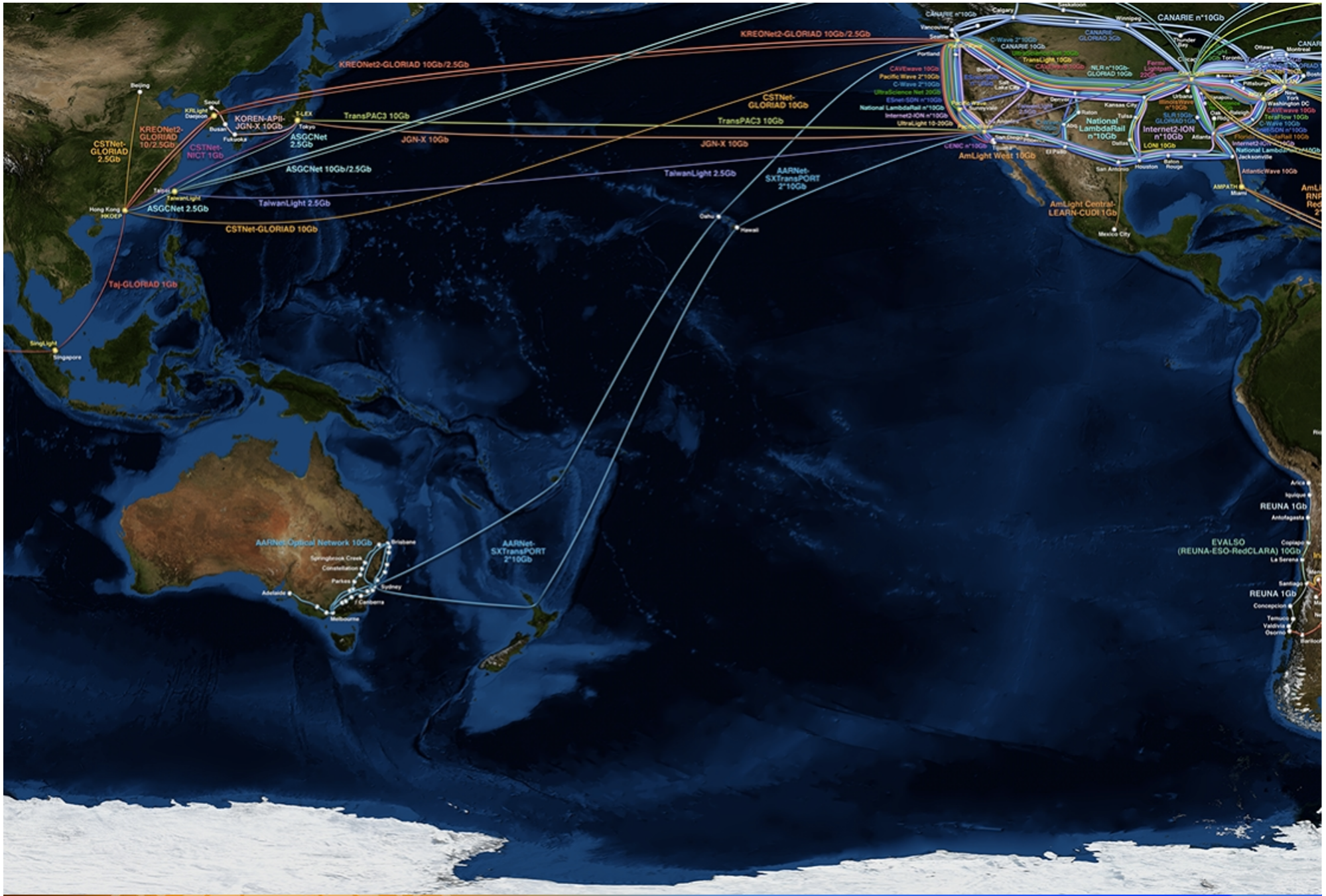


Submarine fibre developments across the Pacific and the benefits to (R&E) network operators

PacNOG 29 – 30 November 2021

Garret T. Yoshimi
VP for Information Technology & CIO
University of Hawaii



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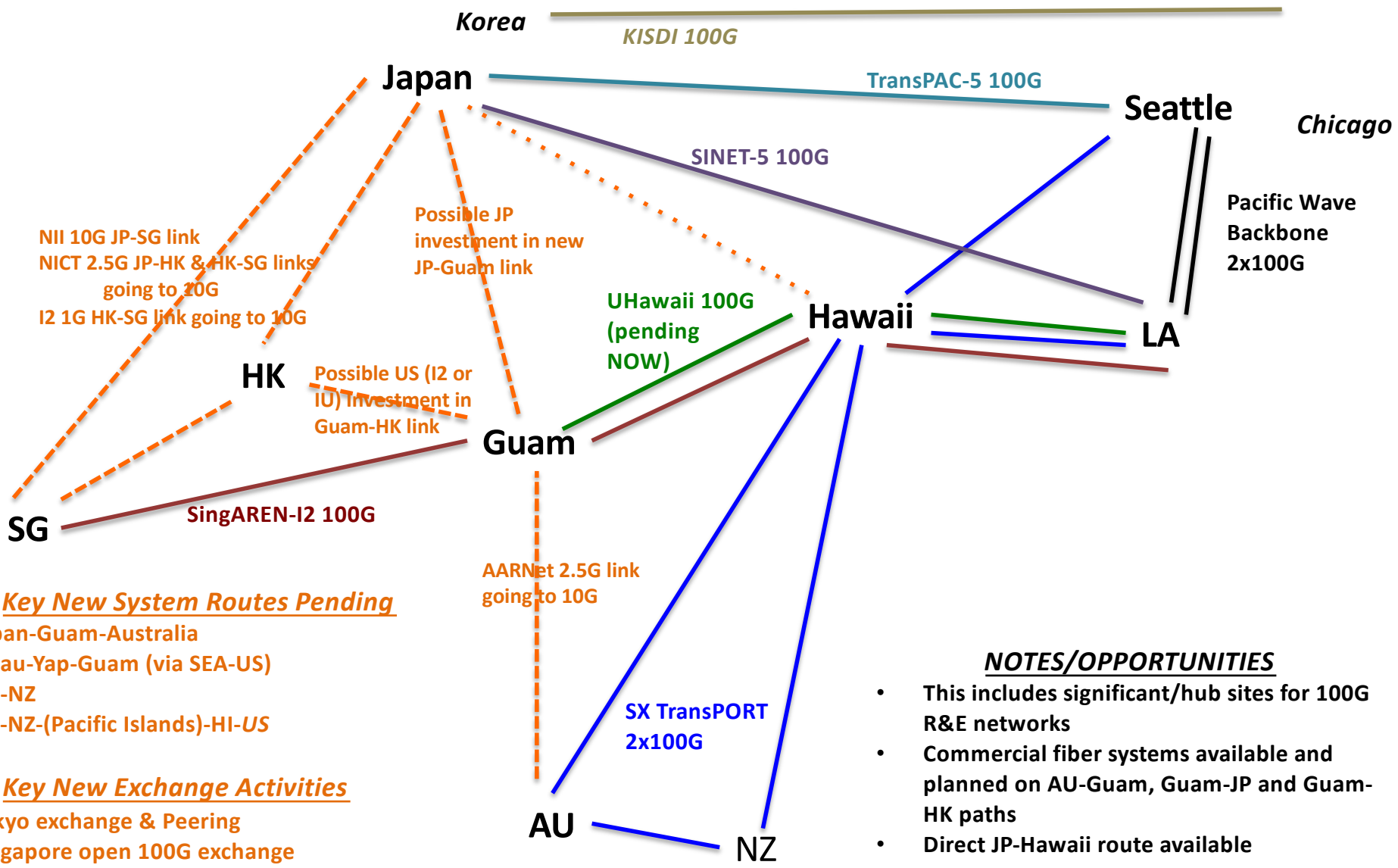
Toward Rationalizing the High Speed Trans-Pacific R&E Infrastructure

Notional Architecture



Key New System Routes Pending

- Japan-Guam-Australia
- Palau-Yap-Guam (via SEA-US)
- AU-NZ
- *AU*-NZ-(Pacific Islands)-HI-*US*

Key New Exchange Activities

- Tokyo exchange & Peering
- Singapore open 100G exchange
- Hong Kong exchange

NOTES/OPPORTUNITIES

- This includes significant/hub sites for 100G R&E networks
- Commercial fiber systems available and planned on AU-Guam, Guam-JP and Guam-HK paths
- Direct JP-Hawaii route available

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R&E Network Goals

- Connect local-regional-global education & research communities
  - Enable cyberinfrastructure-empowered research
  - Enable distance learning, training, access to content and academic collaborations
  - Support academic cloud services
- Develop, deploy and transfer advanced network applications and technologies
  - Enable new generation of R&E applications
  - Share massive datasets generated by R&E activities
  - Transfer technology, knowledge and experience for broad commercial use

Benefits of R&E Networking for the Pacific – Education & Health

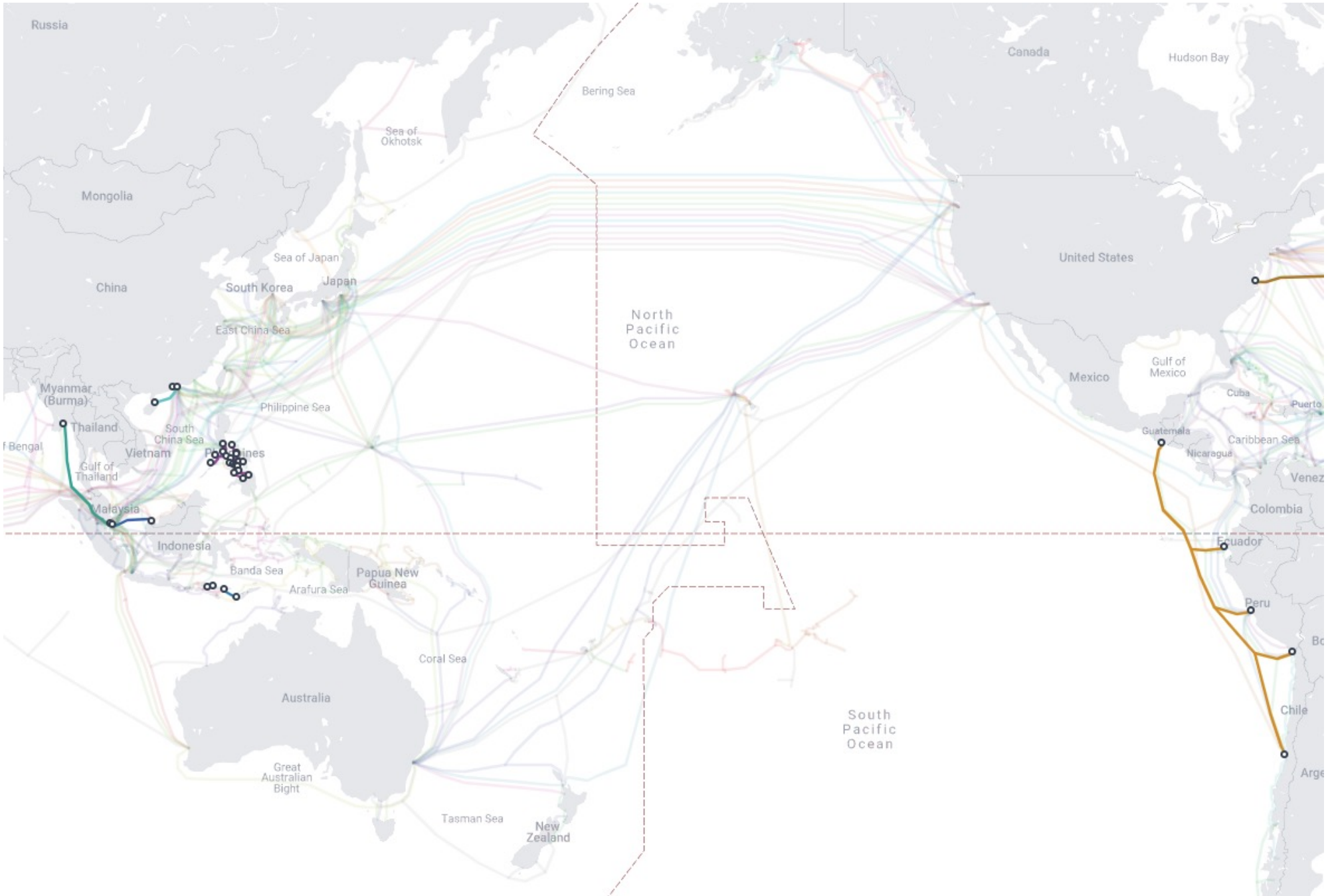
- Expand distance learning opportunities and improve educational capacity
  - Education, Public Health, Health Care, Social Work, STEM, Marine Sciences, Environmental Studies, Business…
  - Connect indigenous and native communities to share language, culture, practices and wisdom
- Access to global digital libraries and educational content repositories
- Enable collaboration among schools, colleges, universities, NGOs and others throughout the world
- Telemedicine & Public Health outreach and research

Benefits of R&E Networking for the Pacific – Addressing National & Regional Problems

- Enable strategic research using modern cyberinfrastructure and eScience approaches:
  - Climate Change & Sea Level Rise, Ocean Acidification, Coral Reef Survival, Fisheries, Island Sustainability, Indigenous Culture Preservation, Sustainable Agriculture, Public Health, Bioinformatics applications to people and the environment, Earthquake & Tsunami Modeling, Disaster Resilience, Environmental Studies…
- **WITH, not just FOR Pacific Islanders**

Benefits of R&E Networking for the Pacific – Economic

- Develop a workforce skilled with emerging technologies for local telecommunications and ICT industries
- Enable economic development for information economies through new ICT-based innovations and initiatives
- Build appreciation for higher speed broadband
- Catalyze demand for higher capacity services and infrastructure - ***direct benefit to commercial carriers***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United States
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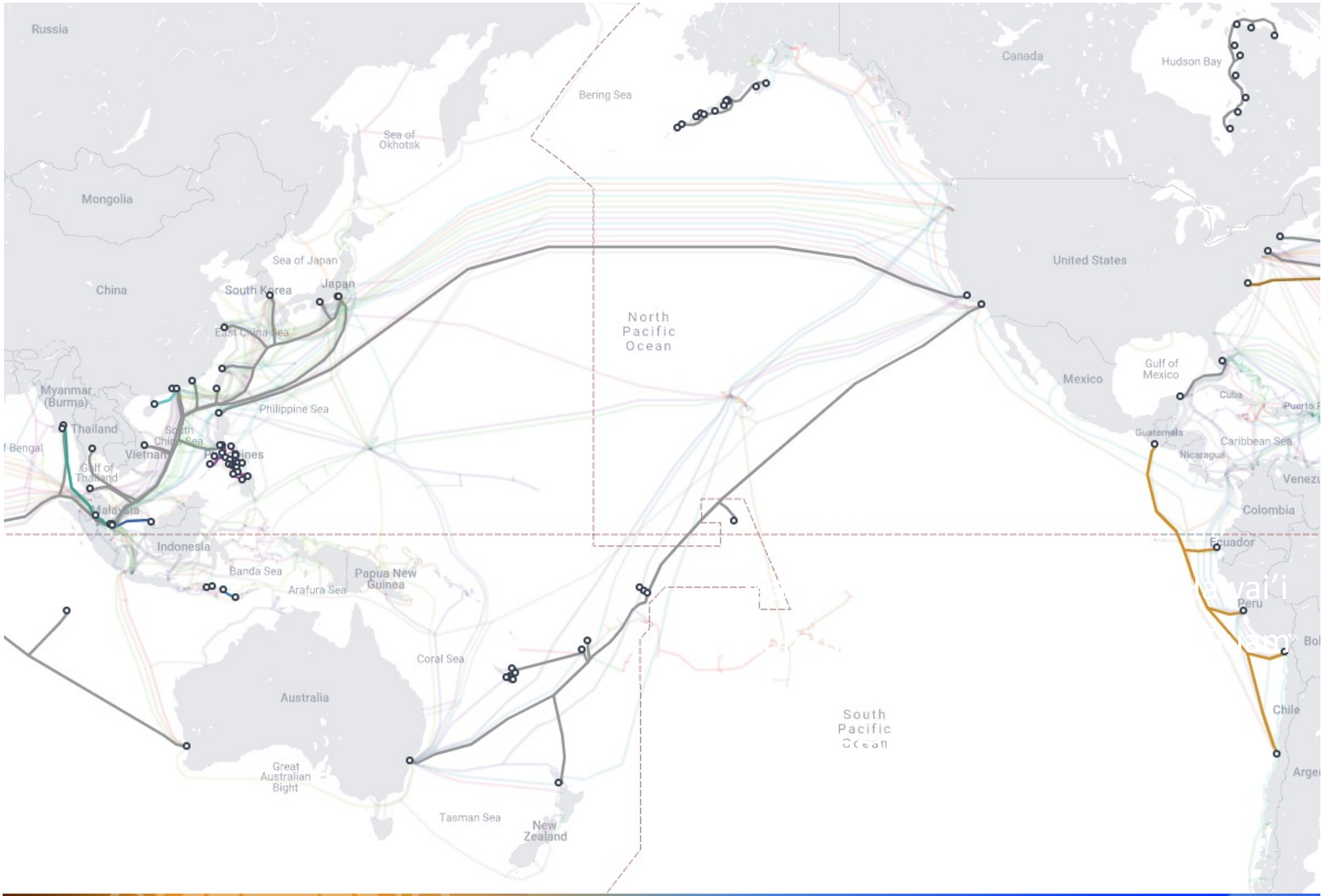
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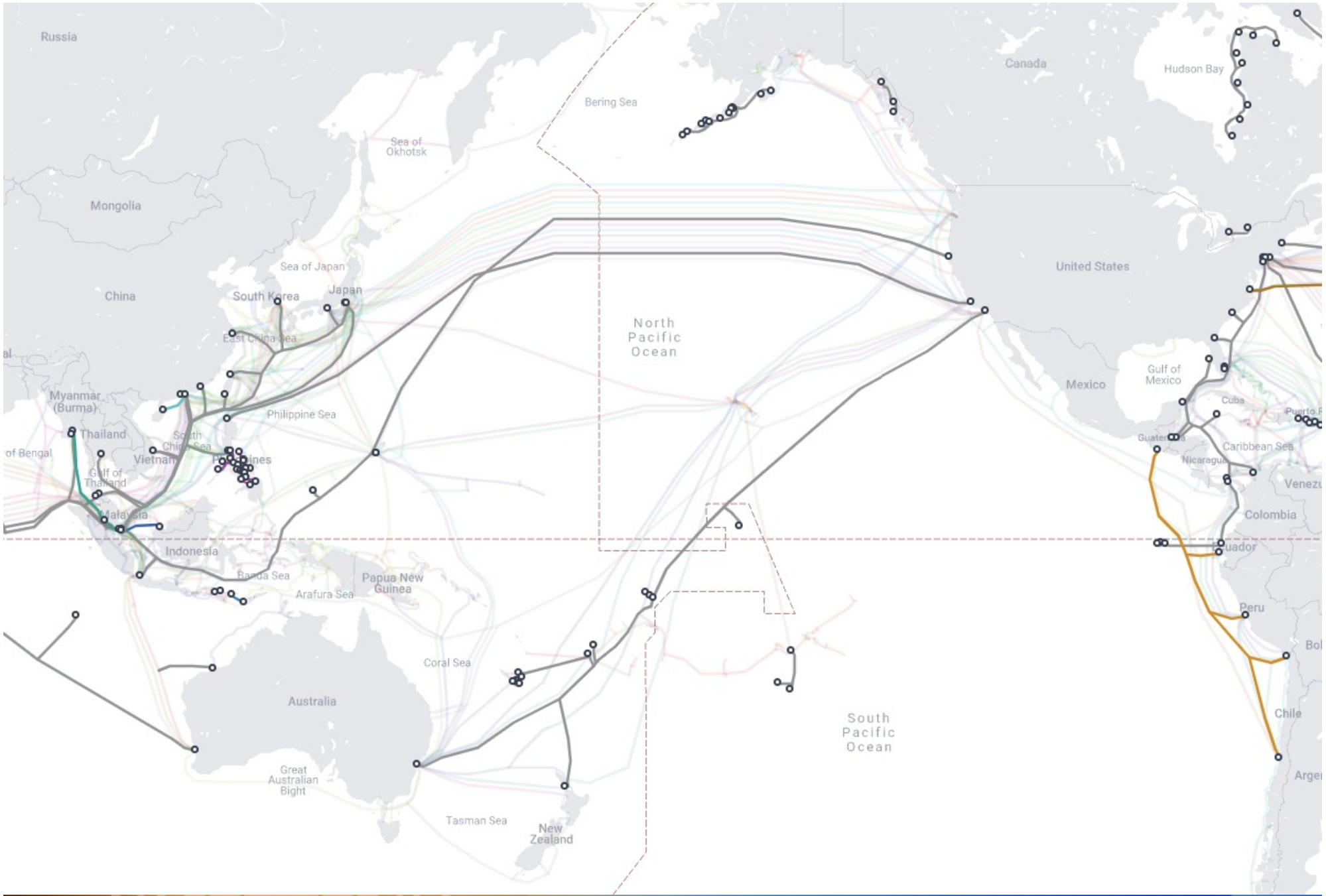
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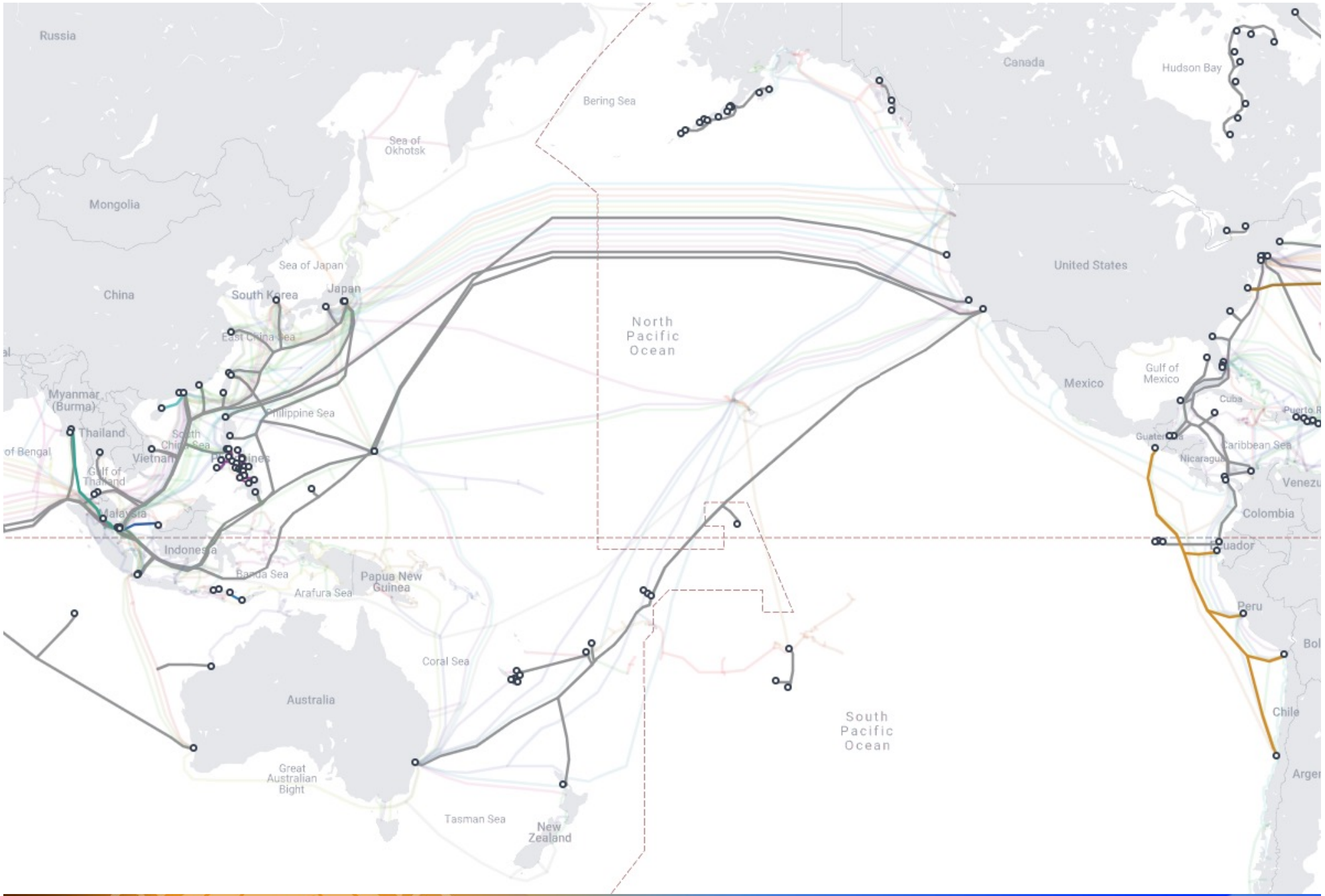

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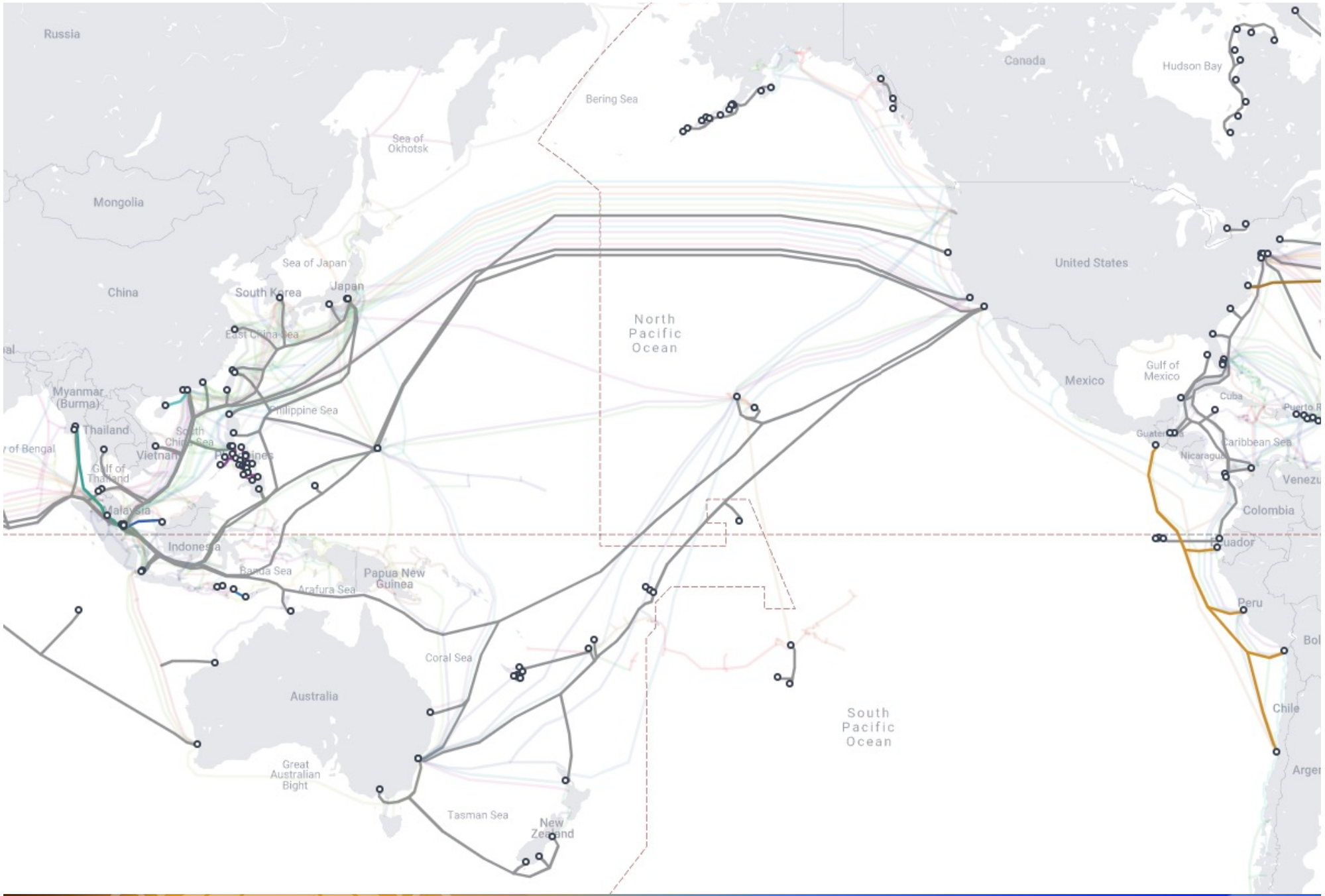
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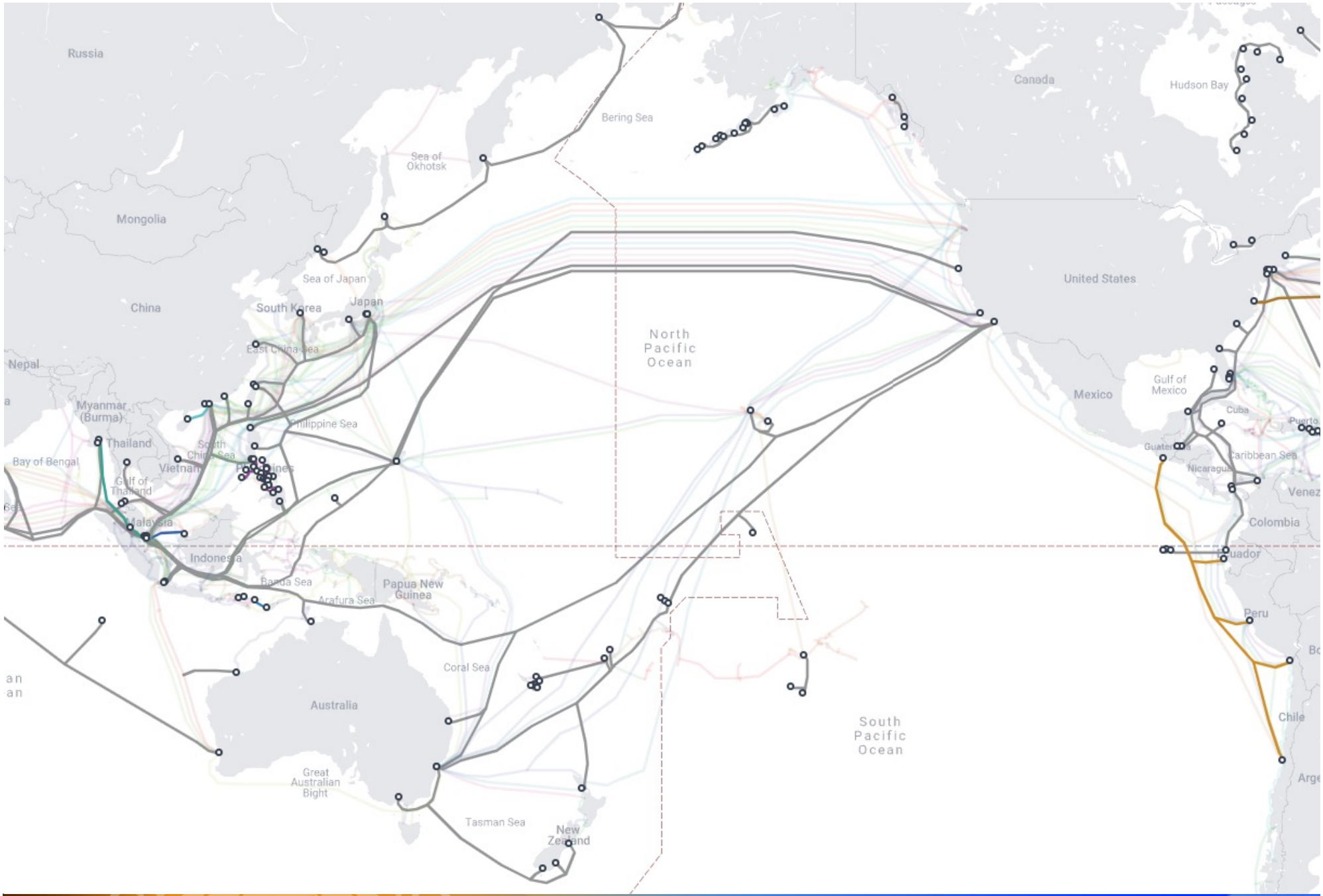
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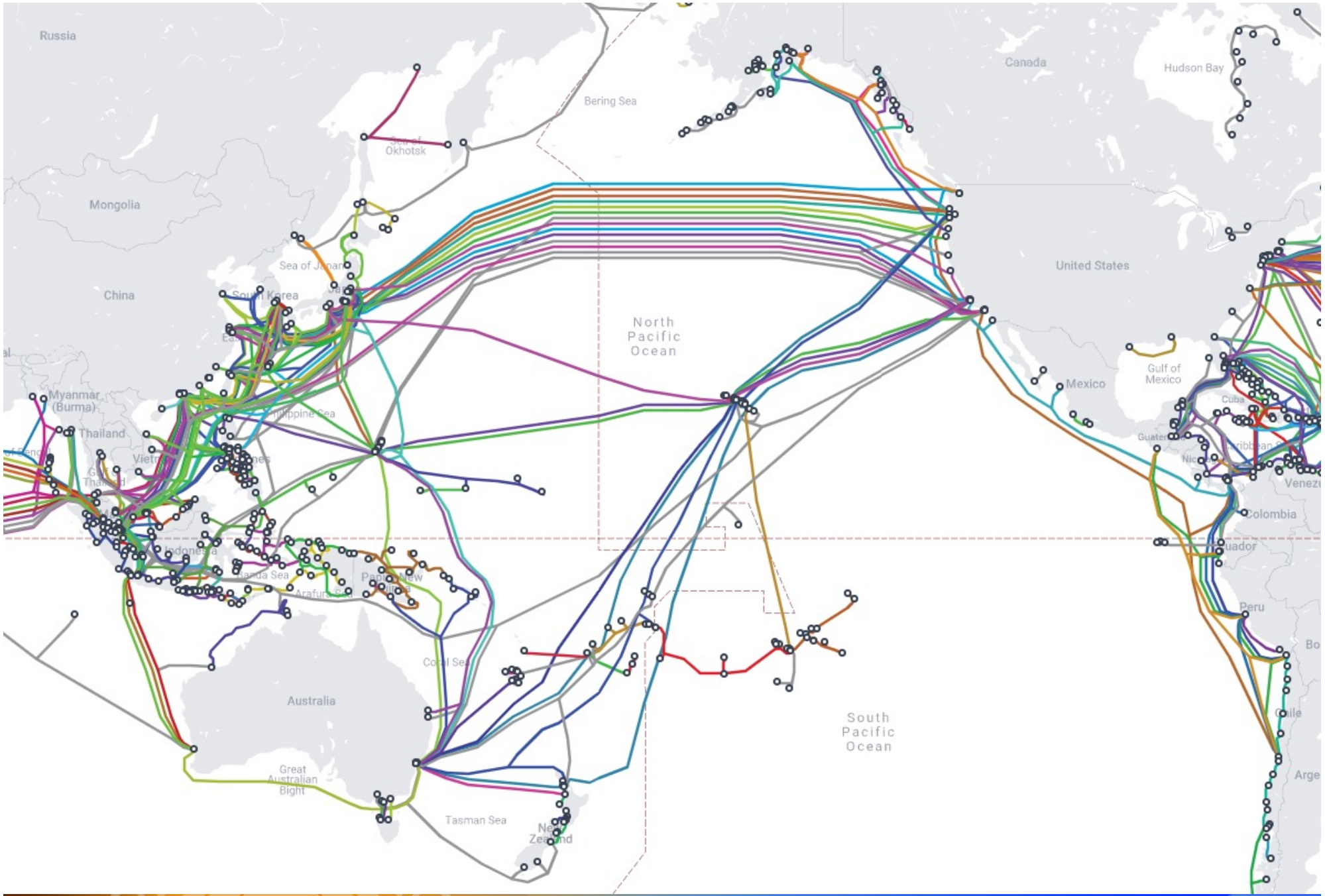
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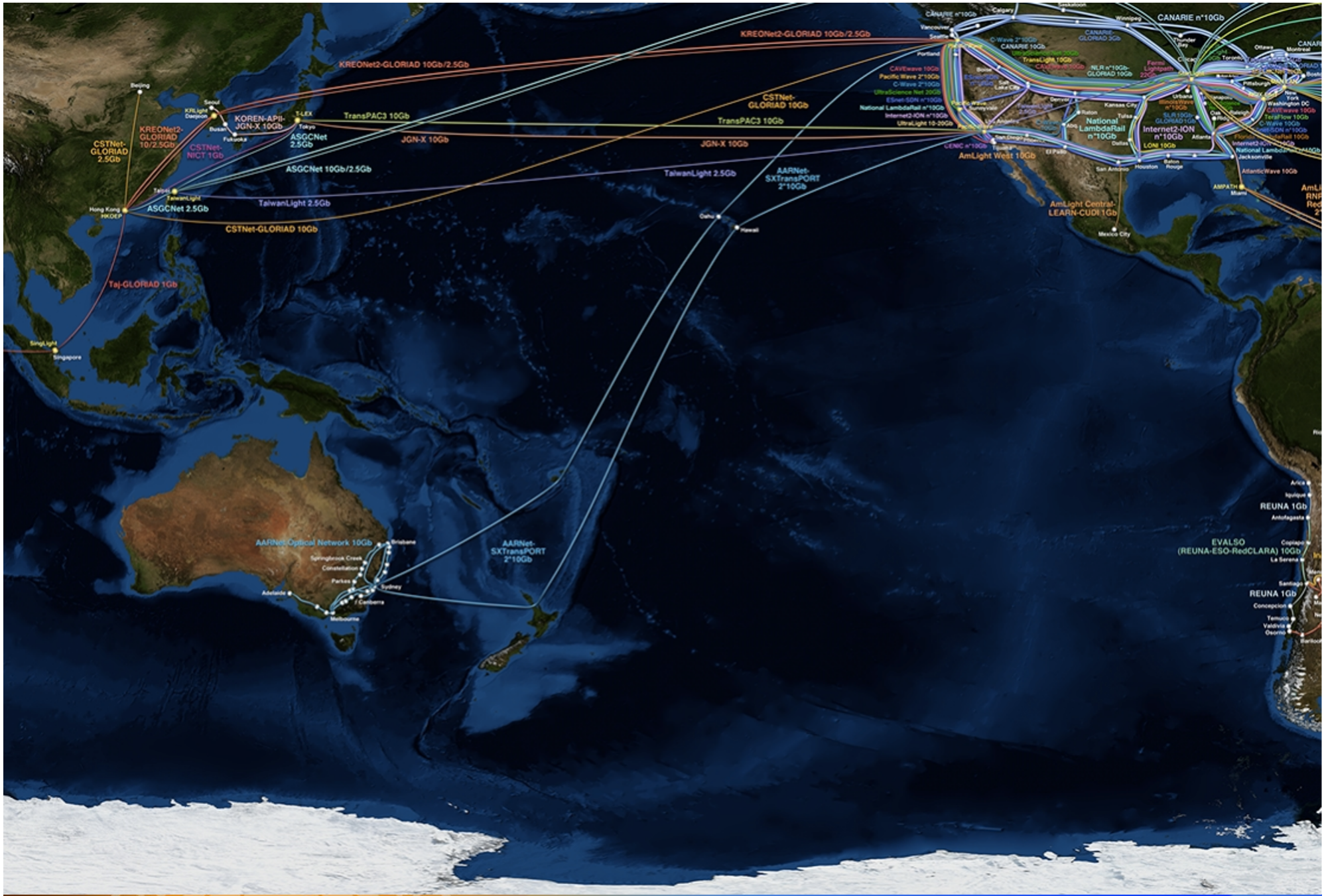

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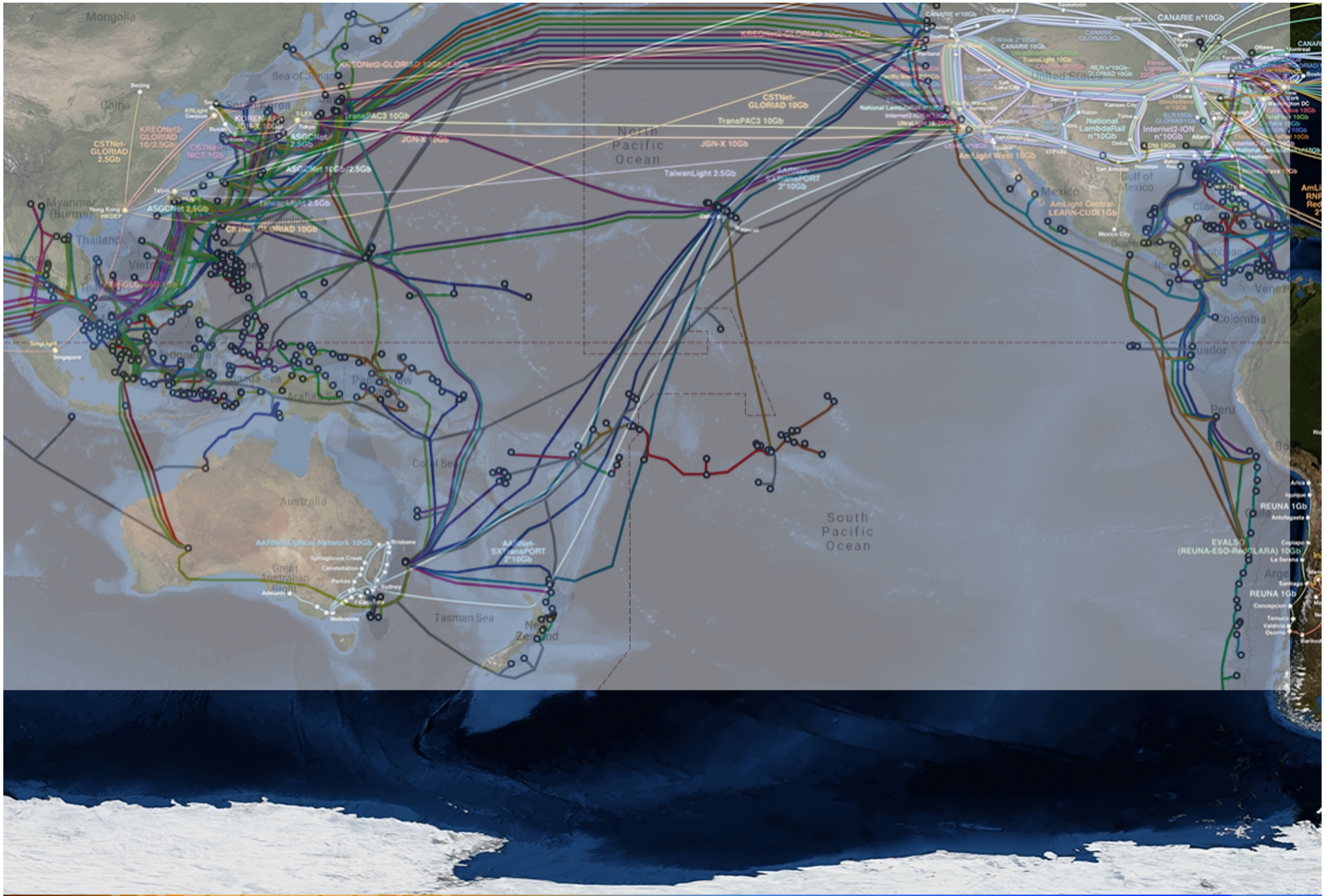

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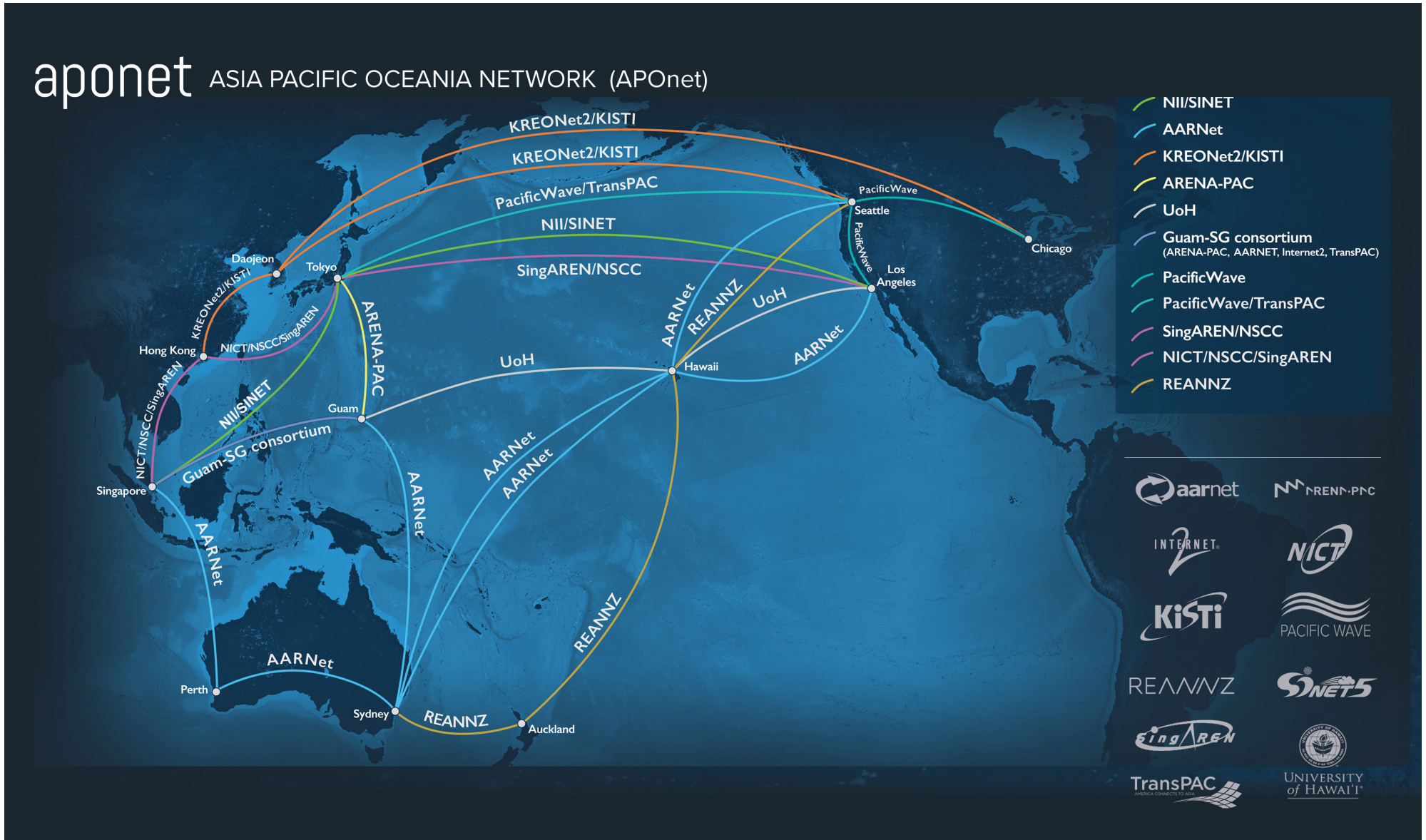
Pacific-wide R&E Network Fabric



MAHALO!