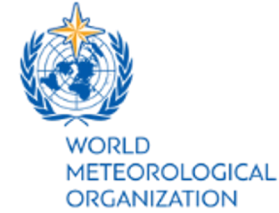




The Global Ocean Observing System



GOOS Project Updates SMART Subsea Cables

Bruce M. Howe, Chair ITU/WMO/UNESCO-IOC SMART Subsea Cables
Ceci Rodriguez Cruz, Director, SMART International Project Office

GOOS 12th Steering Committee meeting, 25 - 27 April 2023

SMART Subsea Cables

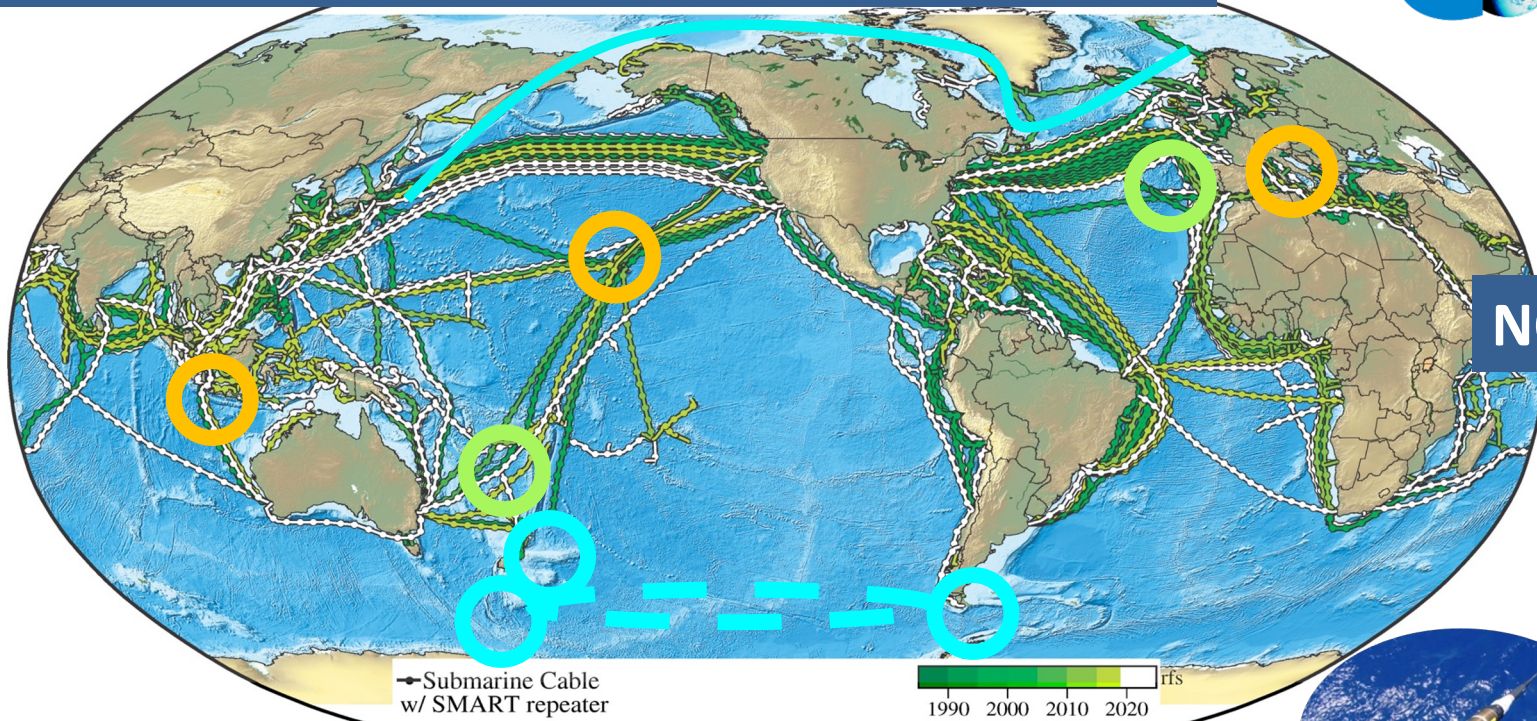
Global Array: Climate, Oceans, Sea Level, Earthquakes, Tsunamis

Create a Planetary sensor, power, Internet network



Share submarine cable infrastructure
Telecom + science

1st order addition to Ocean-Earth observing system



NO Interference ↓ €\$

1.2+ GM
~20,000 repeaters
20 year refresh



repeaters ~70 km

Know the environment – protect the network

Bottom temperature, pressure, seismic acceleration



SMART CAM: 3700 km, install 2025, Gov't €154M
Continent/Portugal-Azores-Madeira ring



SMART Cables: Current Activities

samples

- JTF Workshop, University of Hawaii, January 2023, 150 people (75 in person)
- Attended SubOptic2023 in Bangkok (industry), SMART gaining industry acceptance, SMART Working Group established (along with Seismology using Submarine Cables)
- Met with BMKG in Jakarta. BRIN has 1 operating pilot system (14 months, 50 km, 2 modules)
- Attending ITU Study Group 15/Q8 Optical Fiber submarine cables – draft G.smart recommendation (April 2023) – **ITU Standards**
- Europe May-June 2023 – Portugal Workshop (w/ ONRG), SN EMEA Industry, Geneva, Paris, Vienna, Berlin
- Moore SMART Cable project – ocean OSSEs, V-NC progress, setting up SMART IPO
- Refresh the JTF
 - New Chairs, vice chairs, co-Chairs, members/organizations/stakeholder
 - Data Management Committee (interface WMO, IOC, GOOS)
 - Sensor Working Group
- IOC Paris SMART Liaison Officer



SMART 5 year timeline

2023

International Project Office; JTF Workshop, SubOptic, ICPC, Europe Liaison, Portugal Workshop
Antarctica and Arctic planning, proposals for additional funding
CIF – V-NC and CAM; RFP NZ-Chatham
Draft Data management plan, with OCG
Moore – first science results, OSSESs

2024

CIF MEDUSA (SMART) and NZ-Chatham
Antarctica underway
Bench data systems, V-NC and CAM
GOOS "home" plan for SMART
Moore – science results, start graduate education, training

2025

RFS - V-NC
SMART = emerging GOOS component

2026

RFS – CAM, MEDUSA
Data management, best practices docs

2027

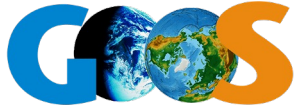
RFS - NZ-Chatham
SMART = full GOOS Component
IPO of Federated SMART systems, within GOOS
Funding, permit, legal, security **precedents**,
processes – steady state
9 systems in pipeline:
3 RFP, 3 CIF, 3 RFS



SMART Cables and GOOS

We could use help with the following:

- Designated GOOS liaison
- Designated Ocean Decade liaison
- Strengthen connections with WMO
- Promise of OD funding matchmaking?
- Assist in interacting with GOOS Co-Design Programme
- Activate UN, IOC legal resources to help (telecom – MSR, etc) – need a statement/Legal opinion from IOC for industry
- Formal letters of support from GOOS
 - Assist with coordinating Arctic, Mediterranean, other SMART Cables
 - Develop relations with Multilateral Development Banks - Climate, DRR divisions
 - Develop relations with Government funding – Digital Connectivity a la CEF-2



The Global Ocean Observing System

JTF SMART Subsea Cables

Thank you

goosocean.org

