

# Observing the Ocean and Earth with SMART Subsea Cables

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Wednesday, February 2  
3:30 pm – 4:30 pm Seminar

Holmes Hall 247  
2540 Dole Street



Zoom Meeting ID: 960 4654 5799

Passcode: OREseminar

Scan code for website & Zoom link

## Abstract

JTF SMART Subsea Cables (Joint Task Force, Science Monitoring And Reliable Telecommunications, 1) is working to integrate environmental sensors for ocean bottom temperature, pressure and seismic acceleration into submarine telecommunications cables. The purpose of SMART Cables is supporting climate and ocean observation, sea level monitoring, observations of Earth structure, and tsunami and earthquake early warning and disaster risk reduction. SMART cables will be one of the transformative technologies deployed as part of the 2021-2030 UN Decade for Ocean Science for Sustainable Development Tsunami Programme to fill critical observational gaps for the detection and forecast of tsunamis. Recent advances include regional SMART pilot systems that are the first steps to trans-ocean and global implementation. Building on the OceanObs'19 conference and community white paper (2), an overview and description of the status of ongoing projects will include: The InSea wet demonstration project off Sicily at the EMSO Western Ionian Facility to be installed 2022; Vanuatu and New Caledonia crossing an active tectonic subduction zone; Antarctica; and the CAM-2 system connecting Lisbon, Azores and Madeira in a ring to be installed in 2025. For the latter system, improved earthquake early warning with less loss of life will more than pay for the system (V. Silva, pers. comm.). Funding reflects a blend of government, development bank, and commercial contributions. In addition to notable scientific and societal benefits, the Telecom mission of societal connectivity will benefit as well, as environmental awareness improves both individual cable system integrity as well as that of the overall global communications network.

1. The Joint Task Force SMART Subsea cables is sponsored by three United Nations agencies: the International Telecommunications Union, the World Meteorological Organization, and the UNESCO Intergovernmental Oceanographic Commission (ITU/WMO/UNESCO-IOC). <https://www.itu.int/en/ITU-T/climatechange/task-force-sc>.

2. Howe, B. M., et al, and SMART Cables Joint Task Force, SMART Cables for Observing the Global Ocean: Science and Implementation, *Frontiers in Marine Science*, OceanObs'19 Special Issue, 6, 424. doi: 10.3389/fmars.2019.00424, 2019.