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Subsea Cables for Observing the Ocean and Earth: An Update

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JTF SMART Subsea Cables (Joint Task Force, Science Monitoring And Reliable Telecommunications) is working to integrate environmental sensors (temperature, pressure, seismic acceleration) into submarine telecommunications cables. This will support climate and ocean observation, sea level monitoring, observations of Earth structure, tsunami and earthquake early warning and disaster risk reduction, with relevance to the CTBTO monitoring mission. Recent advances include regional SMART pilot systems that are initial steps to trans-ocean and global implementation. Building on the OceanObs'19 conference and community white paper (DOI 10.3389/fmars.2019.00424), this overview and description of the status of ongoing projects will include: The InSea wet demonstration project off Sicily at the EMSO Western Ionian Facility; Vanuatu and New Caledonia; Indonesia's Makassar Strait systems working toward systems for the Sumatra-Java megathrust zone and in the inner waters; and the CAM-2 triangle system connecting Lisbon, Azores and Madeira. Observing system design studies are reviewed. Funding reflects a blend of government, development bank, and commercial contributions. In addition to these 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.

Promotional text

SMART Subsea Cables is integrating environmental sensors into submarine telecommunications cables to support climate and ocean observation, sea level monitoring, observations of Earth structure, tsunami and earthquake early warning and disaster risk reduction.

Primary author: Mr HOWE, Bruce (University of Hawai'i at Mānoa, HI, USA)

Presenter: Mr HOWE, Bruce (University of Hawai'i at Mānoa, HI, USA)

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