

New maritime Technologies: challenges and opportunities

Observing the oceans and Earth with submarine telecommunication cables

The goal of JTF SMART Subsea Cables (Joint Task Force, Science Monitoring And Reliable Telecommunications) is to have SMART cables become the world standard, leading to a global network integrating environmental sensors (temperature, pressure, seismic acceleration) into submarine telecommunications cables. SMART Subsea Cables will allow Climate change monitoring including ocean circulation and sea level; Tsunami and earthquake early warning for disaster risk reduction; Seismic monitoring for earth structure and related hazards; Quantifying risk to inform sustainable development of coastal and offshore infrastructure, and Warning of external hazards to cables, and improve routing of cable systems.

Regional SMART cable pilot systems such as the underway SMART Atlantic CAM ring system connecting the Portuguese mainland, Azores and Madeira; cables planned between islands of Indonesia; from New Zealand to the Chatham Islands as well as Antarctica; between Vanuatu and New Caledonia; and others are the initial steps to trans-ocean and global implementation that will influence the final standards and policies for the industry, as well as setting positive precedents in all areas including technical, science, financial, permitting, legal, and security. In addition to the diverse scientific and societal benefits, the telecommunications industry mission of societal connectivity will also benefit because environmental awareness improves both individual cable system integrity and the resilience of the overall global communications network.

[JTF SMART Subsea Cables](#) is sponsored by three United Nations organizations: the International Telecommunications Union, the World Meteorological Organization, and the UNESCO Intergovernmental Oceanographic Commission (ITU/WMO/UNESCO-IOC).

References

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- Vanuatu-New Caledonia - [Leaders signed MOU for 2nd international cable 2022.07.29](#), SMART
- [NZ-Antarctica/McMurdo Base SMART Cable, US National Science Foundation](#) and [workshop report](#) - desk top study just complete (awaiting public report)
- [NZ-Chatham Islands - MBIE report under consideration, w/ SMART](#), and [Science workshop report](#)
- Norway-Japan via Arctic - [Far North Fiber - under consideration, welcome SMART](#). [NORDUNet PolarConnect Video](#).
- [MEDUSA - Lisbon-Egypt - raising funds for SMART portion](#)
- [Indonesia – in-country development – 50 km 2 node single ended system](#)
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- [SMART endorsed as Project of the UN Decade of Ocean Science for Sustainable Development 2021-2030](#), [Supporting Docs](#), [Web page](#), with GOOS, Tsunami
- [Global Ocean Observing System \(GOOS\)](#) accepts Ocean Bottom Pressure as an Essential Ocean Variable; and SMART as a GOOS Project. 2022.11.28.
- [European Union Funding: CEF-2 Digital Global Gateways, Submarine Cables, Call 2](#) 2022.10.12, w/ SMART, outlying territories, €100M, 30-70% of project cost; ([see DG Connect ppt](#)); Call 3 summer 2023