



Ocean Networks Canada's "Oceans 2.0" Data Management System

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Ocean Networks Canada (ONC) is a world-leading organization supporting ocean discovery and technological innovation. ONC is a not-for-profit society that operates and manages innovative cabled observatories on behalf of the University of Victoria. These observatories supply continuous power and Internet connectivity to various scientific instruments located in coastal, deep-ocean, and Arctic environments. ONC's cabled arrays host hundreds of sensors distributed in, on and above the seabed along with mobile and land-based assets strategically located, instruments that address key scientific and policy issues (subsea earthquakes and tsunamis, ocean acidification, marine biodiversity, etc.) within a wide range of environments.

ONC built Oceans 2.0, a unique digital infrastructure that manages vast amounts of complex data streams. Oceans 2.0 is big data because of the continuously increasing volume (currently at 450 terabytes), the variety of data types (hundreds of instrument types and over 5000 individual sensors), the data structures that enable rapid access and delivery of analytically-derived alerts, the consistency of data through an instrument management system with robust and rich metadata, as well as automatic and manual quality assurance/quality control,.

This presentation will highlight the capabilities of ONC's Oceans 2.0 sensor network data management in its ability to host and distribute data for third parties, including features for attribution and access restrictions. Other in-progress projects that enhance ONC's data curation and interoperability capabilities will also be noted.