

OSIP Launch: Building a Next-Generation Monitoring Platform for High Flow Tidal Environments

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The Ocean Sensor Innovation Platforms (OSIP) project is developing and deploying next-generation monitoring infrastructure for high-flow tidal environments at the Fundy Ocean Research Centre for Energy (FORCE). Supported through Natural Resources Canada and advanced through collaboration among FORCE, Acadia University, the Confederacy of Mainland Mi'kmaq, Fisheries and Oceans Canada, industry, and technical partners, OSIP combines a retrofitted floating platform and a seabed platform to support autonomous environmental monitoring in Minas Passage.

This presentation describes the technical evolution of the OSIP floating platform from an earlier tidal-energy concept into a purpose-built sensor platform. It highlights the engineering decisions, repairs, retrofits, and system integrations required to support operation in a high-flow, high-turbulence setting, including structural adaptation, power and communications architecture, payload integration, deployment and servicing strategy, and data systems for acquisition, storage, and discoverability.

The talk will also outline the instrument suite being deployed across the OSIP platforms, including optical and acoustic systems, telemetry-related infrastructure, and supporting environmental sensors, and will discuss how the platforms have been designed as upgradeable field infrastructure capable of accommodating iterative improvements as research and monitoring needs evolve.

By the time of presentation, OSIP is expected to be deployed and generating operational lessons from the site. For technical and industry audiences, the presentation will provide a case study in platform retrofit, offshore sensor integration, and autonomous data-system development, while demonstrating the growing field capabilities available at FORCE to support tidal-energy research, environmental monitoring, and future project deployment.