
Data will be transmitted from the Indian Ocean to the research vessel Pressure Drop and relayed via Fleet Xpress. CREDIT: NEKTON

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# Fleet Xpress Enables Worldwide Transmission of Deep Sea Images as Inmarsat Supports Nekton Mission

Inmarsat's Fleet Xpress, the world's leading maritime broadband service, has once more been chosen to provide the connectivity backbone enabling images captured by the deep ocean research institute Nekton from the floor of the Indian Ocean to be transmitted to audiences worldwide.

The Nekton Institute is an independent, not-for-profit research institute

working in collaboration with the University of Oxford. It aims to accelerate the scientific exploration and protection of the oceans.

The maritime high-speed broadband service provided connectivity to relay broadcast images from Nekton's submersible off the Seychelles last year. Along with Associated Press, Sky News and Sonardyne, it won the 2019 IBC Innovation Award for Content Distribution and the 2020 Royal Television Society News Technology Award.

The 2020 mission entitled 'First Descent – Midnight Zone' will include a 35-day long voyage starting in mid-March exploring biodiversity around the Maldives, Seychelles and the High Seas. Video, audio and - for the first time - data will be transmitted from the deepest parts of the High Seas in the Indian Ocean to the research vessel Pressure Drop, then relayed via Fleet Xpress to marine science projects focusing on sustainable oceans.

"The ocean is a key part of each Maldivian," said President Ibrahim Mohamid Solih of Maldives. "71% rely on the ocean for their primary source of income. We have committed to a 5-year initiative to advance ocean protection and sustainably develop the blue economy. This expedition will help us establish the long-term sustainability of our economic growth, livelihoods and jobs through establishing marine protected areas to build ocean resilience."

Deep ocean locations are often also the farthest from shoreside support. For high-tech research vessels monitoring and managing subsea activities today, reliable connectivity is becoming an operational as well as a safety need.

"For all practical purposes, until now it has not been possible for research vessels in remote seas to transmit large quantities of data back to base in real time, let alone stream images suitable for high-definition TV broadcast," said Peter Broadhurst, Senior Vice President, Inmarsat. "Nekton's decision to work with Inmarsat has changed that."

Pressure Drop's video-streaming capability has already been proven through her role in the 'Five Deeps Expedition', supporting the world's only manned submersible able to descend to full ocean depth (11,000m). For its new mission, data from submersibles will feed into the 2022 Indian Ocean Summit, where Seychelles and Maldivian governments, and 'First Descent' partners seek to create a sustainable management plan for 2,000,000km$^2$ of ocean.

Part of the Pressure Drop project also sees Inmarsat installing Fleet Data, the maritime industry's first secure IoT platform, which extracts data from sensors and uploads it to a secure central cloud-based database for easy access with no additional airtime cost. Its use will enable the first-ever transmissions of water chemistry and geophysics datasets.

Fleet Data will also allow scientific research to be shared onto an open source platform, with processed datasets made available so that registered marine scientists around the world can participate in a virtual Hackathon to interrogate data and publish findings within two weeks. All datasets will be blockchain-coded to ensure security, transparency, and decentralization.

“One of the biggest issues is that it can take months or even years to published data analysis, by which time data may have less relevance and application. By using Fleet Data we can publish data in an instant via an Inmarsat API: this is ground-breaking for marine science and could accelerate the analysis and publication of ocean data,” said Oliver Steed, Chief Executive, Nekton.

Inmarsat’s yachting partner YachtProjects designed, installed and commissioned Pressure Drop’s management and communications systems, including ECDIS, CCTV and open port capability.

Nekton’s research, sampling and survey technologies fully integrate with shipboard systems, with the YachtProjects’ Seawall package controlling the shipboard network and shaping bandwidth and streaming, with the terminal hardware provided by Intellian Technologies.

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The company has an unrivalled track record of operating the world's most reliable global mobile satellite telecommunications networks, sustaining business and mission critical safety & operational applications for more than 40 years. It is also a major driving force behind technological innovation in mobile satellite communications, sustaining its leadership through a substantial investment and a powerful network of technology and manufacturing partners.

Inmarsat operates across a diversified portfolio of sectors with the financial resources to fund its business strategy and holds leading positions in the Maritime, Government, Aviation and Enterprise satcoms markets, operating consistently as a trusted, responsive and high-quality partner to its customers across the globe.

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**About Nekton**

Nekton is an independent not-for-profit research institute working in collaboration with the University of Oxford and is a UK registered charity. Our goal is to accelerate the scientific exploration and protection of the ocean. Our Missions are undertaken in partnership with ocean nations and supported by our unique alliance of business, government, academia and civil society partners uniting behind a common purpose to send scientists into the deep ocean to discover and protect what's there.

www.nektonmission.org