

VectorSeis Ocean II

MARINE IMAGING SYSTEMS

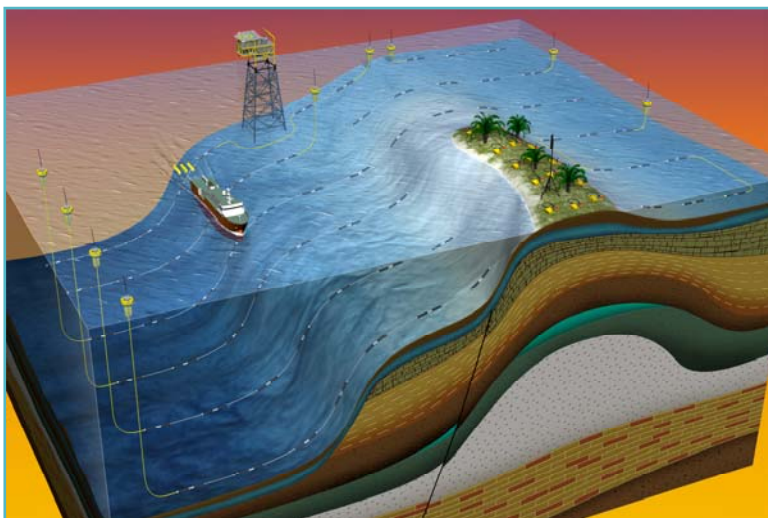
FULL-WAVE SEABED IMAGING

VectorSeis® Ocean II (VSO II) is ION's full-wave re-deployable ocean bottom cable (OBC) acquisition system. VSO II has a buoy-based architecture that eliminates the need for a dedicated recording vessel. Key system elements include VectorSeis digital accelerometer sensors, cable-generated noise reduction technology and robust armored cabling. System command and control is provided by Gator® for simplified and automated vessel navigation, spread positioning, data management and QC across the seismic acquisition workflow. Designed to provide the highest resolution imaging, new enhancements further reduce total cycle time and health, safety and environmental (HSE) exposure.

PROPRIETARY TECHNOLOGY DELIVERS SUPERIOR IMAGING

VSO II records the full seismic wavefield with unsurpassed vector fidelity and coupling to bring broad bandwidth, high signal-to-noise (S/N) ratio data to seabed acquisition.

- VectorSeis tilt-insensitive, MEMS-based 3C sensors record p-wave and s-wave energy with superior vector fidelity and an enhanced high and low (near 0 Hz) frequency response
- Proprietary derivative pressure hydrophone enables proper, more accurate P-Z summation during data processing
- Patented cable de-tensioning technology isolates the cable from the sensor package and enables superior coupling for higher S/N data
- Buoy-based recording overcomes operational limitations on the number of receiver lines that are inherent with systems requiring a recording vessel, enabling flexible, operationally efficient survey designs with denser sampling and full azimuth and offset coverage



→ VSO II provides a step-change in OBC technology and is designed to operate in water depths exceeding 1,000m with suitable handling equipment.



Acquisition Technique of Choice for Development and Production Objectives

With its ability to record broad bandwidth, high signal-to-noise ratio data, VSO has a proven track record for delivering the highest resolution imaging in the marine environment.



The VSO II enhancements that further improve crew productivity and reduce HSE exposure, provide oil & gas companies the opportunity for OBC to be the acquisition technique of choice not only for obstructed areas, but also for surveys with development and production objectives that have been traditionally shot with towed streamer technology.



SHORTER CYCLE TIME THROUGH IMPROVED ACQUISITION PRODUCTIVITY

With its buoy-based architecture, VSO was designed to overcome operational inefficiencies inherent in conventional re-deployable OBC systems that rely on a dedicated recording vessel. New features in VSO II build on this productivity advantage.

- Buoy-based recording reduces operational complexity and ensures that no time is wasted moving a recording vessel and hooking up jumper or transverse cables
- Inter-array jumper cables enable receiver line snaking for short line segments and obstacle avoidance
- Continuous recording capability overcomes interruptions in data acquisition due to intermittent radio transmission in obstructed or congested areas and permits continuous shooting into large spreads and long offsets even when typical radio range is exceeded
- Advanced diagnostic measurements and consolidated reporting tools maximize productivity by streamlining maintenance and fault isolation of cables and sensor nodes
- A back-deck testing capability verifies system functionality during cable deployment, providing the crew with added assurance before the system is wet
- Integrated navigation and seismic control is provided by Gator for efficient spread and positioning management



REDUCED HSE EXPOSURE BY DESIGN

ION is dedicated to providing the industry with seismic recording systems that set new standards when it comes to reducing HSE exposure. VSO II is no exception to this commitment.

- Buoy-based design eliminates the recording vessel found on conventional OBC crews, thus reducing the number of personnel and vessels in the survey area, eliminating the HSE risk associated with hooking up and dragging onboard transverse and jumper cables, and providing operational flexibility to avoid hazardous or no-entry safety zones
- Elimination of the recording vessel also results in a lower OBC crew carbon footprint and reduced marine life disturbance
- Gator command and control system mitigates the risk associated with distributed, multi-vessel operations
- Low-bend radius, steel-armored cable enables the use of fully automated, reel-based handling systems and eliminates the risk of manual cable handling found on conventional OBC systems that are dependent on “squirters” and cable bins
- Advanced diagnostic measurements reduce the need to retrieve the cable to troubleshoot problems

