

# Acquisition Optimization Services

## Customized Services for Optimizing Marine Seismic Operations

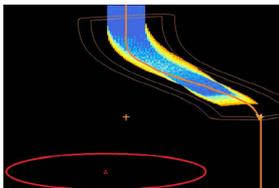
- 40+ years of experience worldwide
- Expertise in 3D, 4D and WATS
- Comprehensive analysis at each stage of a survey's life cycle
- Optimized acquisition efficiency
- Expert software and development team

As a leading provider of advanced offshore solutions for the marine seismic industry, ION provides customized acquisition software and services to oil companies and seismic contractors.

The company utilizes specialist expertise to provide new and emerging technologies. Our team of experts employs on-demand development resources to enhance data quality and improve the productivity of all seismic survey types.



Optimal strategy for close pass acquisition



Advanced modeling of anticipated data



Reduced HSE risk in complex SIMOPS situations

### Pre-survey Services

- Pre-survey planning confirms whether a complete, high-quality baseline dataset is available for future phases
- Comparison of different equipment configurations and source strategies helps to establish the data quality that can be achieved for any given scenario. Strategies can then be revised to ensure that the required data quality can be met
- Detailed obstruction modeling ensures that the impact of each obstruction is known and a strategy to optimize data quality has been established
- ION experts undertake in-depth investigations on multiple survey configurations and acquisition scenarios to ensure the most efficient strategy is used infield. This facilitates cost-effective and safe operations that meet the required technical standard

### 3D Services

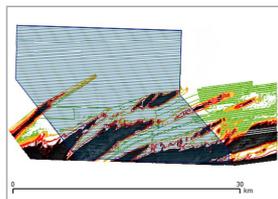
- Acquisition Specialists are closely involved in a range of complex 3D surveys including wide azimuth and multi-vessel acquisition, and surveys in environmentally sensitive areas
- Swaths of similar feather are acquired with the company's innovative 3D Multi Swath approach
- Infill is reduced by structuring the coverage to leave data gaps in predictable locations, appearing as full pass requirements rather than scattered through the dataset
- This technique is used alongside the newly developed common mid-point (CMP) footprint technology, facilitating enhanced planning
- ION goes beyond the conventional race track technique to acquire data in a cost effective manner with minimal infill requirements

### Key Features

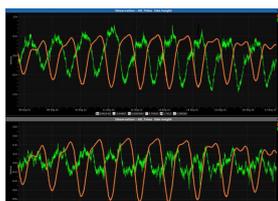
- World-class toolkit
- Unique expertise
- Survey optimization
- Feather prediction
- Intelligent modeling
- Coverage analysis
- Repeatability assessment
- Obstruction modeling
- Undershoot planning
- Line prioritization
- Multi Swath acquisition

### Applications

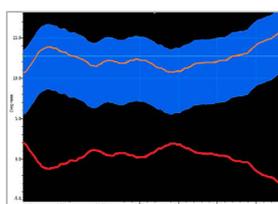
- 4D
- 3D
- WATS
- 4D WATS
- Multi-vessel
- SIMOPS
- Shallow water
- Survey design
- Viability studies



Shallow water analysis at various tide states



Comprehensive analysis of observed infield current components



Feather Aperture analysis

#### 4D Services

- ION Acquisition Specialists have infield experience on over 100 4D programs in a range of unique and challenging environments including the North Sea, West Africa, the Persian Gulf, Malaysia, Russia, Australia, and South America
- As part of the onboard service, our Acquisition Specialists ensure effective implementation of the agreed acquisition strategy, while dynamically reacting to specific challenges of the monitor area
- Enhanced current predictions are utilized in conjunction with ION's Feather Aperture planning technique, allowing a greater range of acquisition options without compromising repeatability
- Each line has a defined Feather Aperture based on the contribution of unique and duplicate bin columns. This ensures that the required coverage is achieved but also allows it to be acquired with a range of feathers
- This technique is combined with comprehensive management of simultaneous operations, to produce optimal shooting plans with suitably prioritized acquisition. Marlin™, ION's custom-built SIMOPS management solution, is used to improve situational awareness for all infield operations and ensures minimal disruption to concurrent activities

#### Reporting

- Online reporting via dashboards and Web Service allows onshore managers to follow survey progress, production statistics, and QC attributes such as source repeatability
- Vessel and equipment positions are logged, providing a full auditable database of positional information. Environmental observations (e.g., MMO) can be imported, with detailed records appearing in a Gantt Chart and GIS map
- This provides a valuable common operational picture for daily and weekly update calls between shore, vessel and other infield infrastructure

#### Global Presence/ Experience

- North Sea
- Barents Sea
- Mauritania
- Ghana
- Nigeria
- Congo
- Angola
- South Africa
- Mozambique
- Qatar
- Canada
- Guyana
- Mexico
- Russia
- Myanmar
- Malaysia
- West Australia
- New Zealand

#### Further Reading

- Swath Matching Case Study – 3D acquisition over Mid North Sea High
- Multi Swath Method: An Unconventional Yet Efficient Way to Acquire 3D Seismic Surveys, Webinar
- Planning for Success: Acquiring Australia's first 4D time lapse survey over a gas field, Pluto Reservoir, North West Shelf (Fitzpatrick, J., and Pemberton, G.), EAGE 2017 Extended Abstract
- Managing Simultaneous Operations During Seismic Acquisition (Pemberton G., Darling S., Koehler C. and McDonald E), EAGE First Break Volume 33, pp75-81, November 2015



#### About ION

Leveraging innovative technologies, ION delivers powerful data-driven decision-making to offshore energy and maritime operations markets, enabling clients to optimize operations and deliver superior returns. Learn more [iongeo.com](http://iongeo.com)