OPTIMIZED ACQUISITION PLANNING AND SURVEY DESIGN SERVICES

Ensure geophysical integrity, risk mitigation and operational efficiencies (both time and costs) of your operational planning and survey design goals by utilizing the expertise and experience of ION’s MESA Services team. Our experts provide collaborative and customized services to meet specific project targets.

Tiered Services Offering

- **Tier 1** services include detailed evaluation of planned and existing surveys
- **Tier 2** services, in addition to Tier 1, provide for expert new and comparative survey designs
- **Tier 3** services add advanced designs through structural play illumination studies and advanced ray tracing beyond MESA commercial software offerings
- **Operations planning and implementation services** offer detailed operational planning through ION’s proprietary SimSurvey™ simulation software allowing real-time operational reconfiguration due to unanticipated circumstances

**Tier 1 and 2 Services Analysis**

- **Merged Survey Fold Analysis**
- **Merged Survey Offset Distribution Analysis**

**SimSurvey | Operations Planning and Execution Services Via SimSurvey Seismic Simulation Tool**

- Time and motion analysis for comparison of various operational scenarios providing time and cost estimates
- Animation of vessel/crew movements through project lifecycle - multi-line deployment, acquisition and retrieval
- Flexible parameterization; number of vessels, crew size, vessel speeds, turn radius analysis and unit costs
- XPS Export of simulations to MESA + operations control software + Excel for multiple run analyses

**Two Source Vessel Simulation**

**Line Sequential Turns**

**Optimized Turns**

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**Time to Complete Survey [Days]**

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<th>RUN #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>Days</td>
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**Cost to Complete Survey [$]**

<table>
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<tbody>
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<td>500000</td>
<td>300000</td>
<td>100000</td>
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**Receiver Cost ($)**

**Source Cost ($)**
Illumination Analysis Service | Seismic Acquisition Design, Attributes and Processing

- Comprehensive tools for analyzing onshore and offshore seismic surveys
- Ability to import SEG-Y velocity volumes for honoring complex velocity variations
- Flexible and efficient ray tracing algorithm for accurate illumination results
- ION’s computational resources for reducing turnaround time

Whether optimizing seismic acquisition designs or supporting imaging processes, seismic modeling is an essential geophysical tool for reducing both technical and economic risk in exploration projects.

ION offers customized solutions for all geophysical studies that require seismic illumination analysis as a feasibility step. To achieve this, our specialists will combine comprehensive seismic acquisition design tools with an in-house ray tracing solution based on MESA Expert.

ION has been delivering innovative solutions to the energy industry for over 50 years, and is the leading provider of real-time, multi-vessel positioning and control systems. For further information contact MESAsupport@iongeo.com

About ION
ION is a technology leader with a strong history of innovation. Leveraging innovative technologies, ION creates value through data capture, analysis and optimization to enhance companies’ critical decision-making abilities and returns. Our offerings are focused on improving E&P decision-making, enhancing reservoir management and optimizing offshore operations.