Drawing on over 30 years in-field experience and installed on a significant majority of vessels worldwide, Orca is the industry leading integrated system that centralizes and automates the command and control of all on-board and in-water systems. Orca delivers efficiency improvements in today’s acquisition environment, from 2D and 3D to complex, multi-vessel programs including 4D and WATS.

**KEY COMPONENTS**

- Operational Planning
- Command & Control
- In-field Optimization
- Navigation Processing
- Binning & Spatial Coverage
- Field QC & Analysis
Operational Planning

Orca’s planning functionality combines obstacle information, ocean current models, coverage and repeatability into operational plans to derive the most efficient acquisition plan. It produces clear, concise work schedules for distribution to multiple vessels and third parties within the survey area.

Command & Control

At the heart of the instrument room, Orca’s reliable interfacing provides control and synchronization of the critical systems in the instrument room whatever acquisition is being undertaken. Real-time diagnostics, automated QC, robust logging and reporting give the operators, and clients, the confidence that the highest quality production is being achieved.

KEY FEATURES

<table>
<thead>
<tr>
<th>Surveys</th>
<th>Control / Displays</th>
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<tbody>
<tr>
<td>→ Survey types – source only, 2D, 3D, HR3D, 4D, undershoot, WATS, EM</td>
<td>→ Consolidated user interface for common online/offline tasks</td>
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<tr>
<td>→ Advanced source shooting techniques</td>
<td>→ Real time online coverage</td>
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<td>→ Support for randomized simultaneous shooting</td>
<td>→ Configurable context sensitive graphical and text displays</td>
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<tr>
<td>→ Shooting on turns</td>
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Positioning

→ Real time offline / online network positioning                         | → UKOOA P2/94 & P1/90                                                                |
→ Near real time navigation processing                                   | → OGP P2/11, P1/11 & P6/11                                                          |
→ Coordination & synchronization of multiple vessel steering / shooting   | → Standardized fleet wide reports                                                   |
→ Integrated acoustic positioning during deployment and recovery          | → Customized reports                                                                 |

Interface / Integration

→ Extensive interfacing library covering all common sensor hardware       | → Web access to view progress / reports                                             |
→ Interfacing to major source / recording systems                        | → Integrated Navigation Line Log consolidates reporting across instrument room     |
→ Enhanced integration to acoustic positioning systems                    | → Deliverables automatically generated minutes after end of line                    |
→ Support for enhanced streamer steering via lateral control systems      |                                                                                     |

In-field Optimization

Orca provides intelligent modeling of ocean currents, through the use of tidal data, third party and internally calculated models, providing decision makers with enhanced feather predictions, modeled coverage and line prioritization guidance. This ensures that the most beneficial lines can be acquired at the optimal time, thereby increasing efficiency and quality for the survey being undertaken.
**KEY FEATURES**

→ Line selection based on feather match  → Coverage scenario modeling

→ Feather models derived from multiple sources  → Close pass scenario modeling

→ Fully integrated current prediction  → Intelligent line prioritization

→ Fully integrated streamer shaping prediction  → Acquisition macro planner

→ Import of current data

**Navigation Processing**

Orca’s navigation processing is automatically carried out whilst online, with fully processed deliverables available only minutes after end of line. The Near Real Time (NRT) engine automatically processes the navigation data, providing consistent results with minimal operator input. If required, the processing system allows the user to focus on automatically identified key problem areas and recalculate final positions quickly and efficiently. Full re-processing is possible, but typically not necessary.

**KEY FEATURES**

→ Data import – Orca integration provides automatic data import  → Qualifier provides Quality Assurance that the solution is acceptable

→ Raw data can be imported from P2/94 and P2/11 files.  → Analysis interface facilitates focused problem solving

→ Automatic filtering performed on data during import  → Solution exported as P1/90 or P1/11 file

→ Post processing system uses common algorithms from the online solution  → Comprehensive quality report produced as a standard deliverable

**Binning and Spatial Coverage**

Orca’s coverage functionality is trusted by E&P and seismic companies to provide binning of coverage, attributes and repeatability deliverables. Real-time displays ensure that maximum coverage and repeatability can be achieved online. Offline coverage plots and detailed attribute reports are produced, allowing optimal infill decisions to be made.

**KEY FEATURES**

→ Capability to load data from wide range of sources  → Comprehensive QC

→ Real-time repeatability  → Remote analysis

→ Handles numerous bin expansion techniques  → Wide range of coverage displays and reports
→ **Field QC & Analysis**

Orca’s powerful field QC and analysis functionality provides comprehensive but clear reporting of data quality in real-time and offline. Real-time the focus is on quality assurance (QA) and automatically identifying problem areas, rather than relying upon manual review. Orca’s central database architecture means disparate survey data sources are logged, from which an extensive array of data sources can be queried and QC’d thus allowing meaningful reports to be produced.

### KEY FEATURES

- Automated Quality Assurance → Comprehensive survey wide statistics
- Real-time QC displays → Powerful analysis tools
- Online equipment safety alarms → Multiple QC formats

→ **Added Benefits**

- Support custom operational developments at short notice → 24/7 support
- Comprehensive worldwide support → ISO9001 certified
- Comprehensive training → OHSAS18001 certified

### OPTIMIZATION SOFTWARE AND SERVICES

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<th>Subsurface Illumination</th>
<th>Operational Planning</th>
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<th>In-field Optimization</th>
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<td>Offshore Operations*</td>
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*Offshore Operations including: logistics; Subsea, Umbilicals, Risers and Flowlines (SURF); and construction projects

ION has been delivering solutions to the oil and gas industry for over 40 years, and is the leading provider of real-time, multi-vessel positioning and control systems. For further information contact csl-sales@iongeo.com.