Marine Acquisition Just Got Smarter

ION and Fugro-Geoteam advance towed streamer operations.

Contributed by ION Geophysical

The latest imaging requirements necessitate more complex configurations, such as 4-D and wide-azimuth, and an increased number and length of streamer cables towed closely together for denser spatial sampling. While these techniques improve data quality, they also cause efficiency and resource challenges.

ION is developing Intelligent Acquisition (IA) to simplify and automate operations while enabling complex survey geometries for improved image quality. This approach centralizes all available data to automatically control acquisition and maximize image quality, efficiency, and safety. By integrating traditionally disparate technology, IA dynamically positions the spread to optimal parameters and reduces the complexity of configuring, controlling, and monitoring acquisition while decreasing cycle time and cost.

Committed to providing a technical edge to oil and gas companies, Fugro-Geoteam has begun to outfit its modern seismic fleet with three advanced technologies from ION's Intelligent Acquisition portfolio:

- DigiFIN lateral streamer control;
- Orca command and control; and
- DigiSTREAMER solid streamer data acquisition system

Advancing positioning

Fugro-Geoteam deployed DigiFIN on four of its modern seismic vessels, including the flagship *Geo Celtic*. DigiFIN controls lateral streamer movement in a dynamic marine environment. Despite strong sea currents, DigiFIN streamer steering maintained tight, uniform separation among all 10 cables for repeatable, finely sampled seismic data and minimal infill during a recent 3-D survey. Svein Dale, technical manager of Fugro-Geoteam, said, "Our crews are very satisfied with the performance of DigiFIN, which contributed to both an increase in acquisition efficiency and safe towing of 10 streamers in challenging ocean currents."

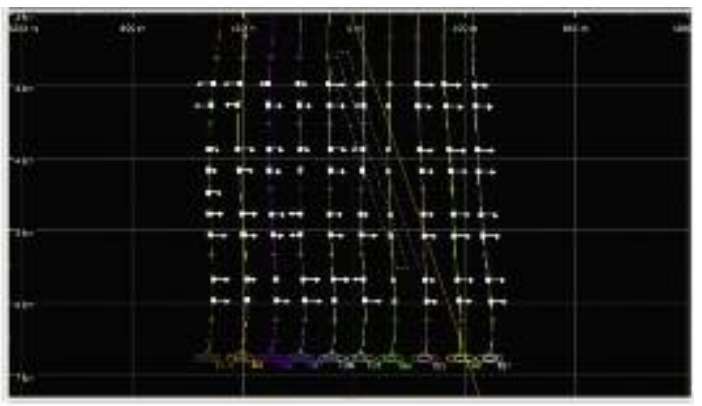

Figure 1. Orca display of DigiFIN even streamer separation *(Image courtesy of ION Geophysical)*

Advancing command and control

Fugro recently upgraded a third vessel in its fleet to Orca, ION's next-generation command and control software system. Orca streamlines data management and provides greater automation and control across the seismic workflow, from 2-D surveys to complex, multi-vessel programs. "Orca is considered to be invaluable for undertaking an increasing number of complex survey geometries involving multiple vessels," Dale said.

Advancing data acquisition

Fugro-Geoteam successfully deployed ION's first DigiSTREAMER data acquisition system for a 2-D survey in the North Sea. DigiSTREAMER provides continuous acquisition in an extended weather window using low-noise, solid-streamer technology. "ION's DigiSTREAMER system was delivered, installed, and mobilized on time and has been in robust production since April," said Dale.

Dave Moffat, senior vice president of Marine Imaging Systems at ION, added, "We are pleased to have achieved a number of recent milestones with Fugro related to our intelligent approach to marine acquisition. ION is committed to helping marine contractors realize productivity gains from their seismic operations and deliver better image quality to oil and gas companies operating in the most complex offshore environments."

ION and Fugro-Geoteam plan to continue collaborating on marine acquisition technologies to meet today's complex survey requirements and address the exploration and production challenges of tomorrow.

To learn more about Intelligent Acquisition and ION's latest technologies, visit booth 1442 for presentations Nov. 10 at 2:20 p.m., or Nov. 12 at 10:20 a.m. ■

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conferences, visualize and share complex data, recruit and interview employees and contractors, design and prototype products, remotely manage systems and facilities, and even operate machinery and vehicles."

Often mistakenly thought to be a technology that is priced in the stratosphere, AVC is actually so down-to-earth in cost that it can pay for itself over the course of a single project, even a relatively short one. Take, for example, the case of an Asian-based geologist who was able to avoid an extremely costly, distant trip to the home office and still review a projected drilling model, complete with rotations, pans, and zooming using AVC. Even more compelling cost-savings are possible during crisis responses. For instance, one simulation of efforts to restore production after a hurricane showed that the much more rapid response and collaborative analysis enabled by AVC could have saved some US $1.5 million over conventional practices.

AVC can be deployed on precisely the scale that suits a given company's needs and budgets. A popular application is the virtual operations room, enabling personnel who are not physically present at a meeting to be "virtually" present and collaborate in real time. This allows those who are traveling, working on projects in distant locations from the site of a meeting, or those who are working at their residences to work together as if they are in the same room. Data (or well) rooms for viewing large amounts of data and training rooms led by realistic avatars are other useful applications.

In the most creative deployment yet – and one that some believe offers tremendous safety and training benefits – at least one major multinational oil company is developing open-space models of entire operations, both upstream and downstream, a present-day manifestation of the digital oilfield that many once thought was well off in the future.

Stop by HP booth 729 to learn more. ■