

Improving Productivity in Land Acquisition Scorpion Delivers Standard-Setting Static and Lightning Protection

SEGMENT	Land acquisition
REGION	Kansas, USA
TECHNOLOGIES	Scorpion cable-based land acquisition system

THE CHALLENGE

Frequent static and lightning storms and cable faults caused by animal chews negatively affect data integrity and operational efficiency

In 2006, Paragon Geophysical Services, Inc., a geophysical contractor operating seismic crews in the Midwest region of the United States, needed a land acquisition system capable of efficiently recording data in an area affected by frequent static and high energy pulses and animal chews to the line cables. Operating conventional acquisition systems, the crews were unable to sustain recording for as long as needed or to quickly troubleshoot the telemetry interruptions and cable faults common in this environment. The bottom line was less shots per day and the recorded data having noise bursts due to telemetry interruptions when using conventional technology.

THE SOLUTION

Scorpion with its advanced telemetry architecture, metal-housed ground electronics and user-friendly Microsoft® Windows® interface

I/O introduced Scorpion, its next generation cable-based land acquisition system, to operate in the most punishing environments. Scorpion's proprietary network architecture, combined with enhanced software and hardware features, deliver a host of benefits that record quality seismic data quickly and reliably to positively impact your field productivity.

Scorpion's advanced telemetry architecture and associated software enables seismic crews to sustain data recording longer when operating in proximity to static and high energy pulse conditions. Its robust command telemetry eliminates timing sync errors. The metal housing of the system's ground electronics units provides superior energy dissipation. Its circuitry design also provides protection when ground electronics units are not properly grounded due to operational challenges.



Typical central electronics configuration in recording truck.



Kansas, USA

"Operationally Paragon is very pleased with the system's over-all flexibility, ease of troubleshooting and Source Driven features - all definitely enhance our crews' productivity. We also are able to significantly reduce the amount of time it takes to lay out and move spreads using the single-point VectorSeis receiver. And when it comes to support, I/O is just so solid; you know they're going to be there when you need them."

John H. Beury III
Owner and President
Paragon Geophysical Services, Inc.

In addition to more up-time for recording, Scorpion's telemetry architecture ensures the integrity of the recorded data. Scorpion eliminates noise bursts due to telemetry interruptions through the automatic retransmission of data packets. Scorpion checks each data packet at every ground electronics unit to assure data integrity. Lost or interpolated data commonly encountered with conventional system performance is a thing of the past.

Scorpion's intuitive, Windows-based user interface ensures ease of use and seamless access to and management of all survey parameters from a single window. The system's robust, layered map displays enable the quick pinpointing of ground electronics and cable faults, allowing observers to efficiently and safely deploy line staff and repair crews. Additionally, built-in data path and bi-directional power delivery can provide redundancy capabilities for continuous acquisition operations through most cable faults.

THE RESULTS:

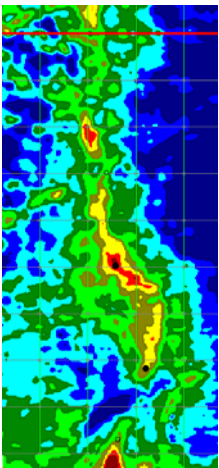
Scorpion provides error-free data recording and more shots per day

In the past, when using conventional systems, Paragon crews were required to wait out storms, negatively affecting productivity. During a recent thunderstorm in proximity to the survey, John Aguilar, Operations Manager of Paragon, noted that he had no line crashes and was able to keep the crew running continuously while a nearby storm moved on past. He was impressed with the new system's ability to keep recording without the usual timing sync errors that typically shuts down seismic crews in these conditions.

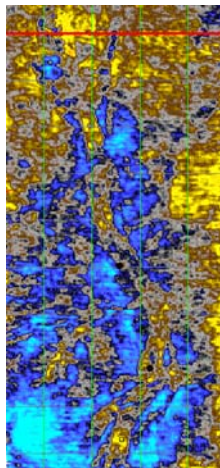
According to Jeff Logan, IT Manager of Paragon, I/O's metal boxes are very rugged and hold up well to the rough treatment they often get in the field. This includes seeing less damage from lightning strikes when storms move right over a line spread – in most cases the energy is dissipated to the ground before causing any damage to the ground electronics.



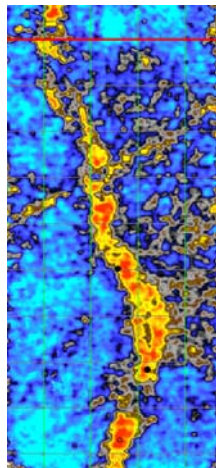
Paragon has also been extremely pleased with the system's ease of use and simplified troubleshooting capabilities. According to the observer, Terry Clark, the Windows-based operating system is user friendly and has allowed him to get up to speed and navigate the system quickly. And the system's ability to allow observers to effectively multi-task has significantly increased his productivity when it comes to managing and troubleshooting the spread. He also found the extensive Help materials very useful when needing additional assistance.



P Structure



P RMS Amp



C Max. Neg Amp

Paragon has seen a productivity lift using the system across all of the surveys that they are shooting in Kansas. Additionally, their oil and gas company clients are very pleased with the high-quality, P-wave data being delivered using Scorpion.

Full-wave imaging enables oil and gas customers to reduce the risk of their exploration and drilling programs.

FIRST ALERT
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