

GEOSPACE@WORK

PRODUCTS AND SERVICES **AT WORK** IN THE WORLD

VOLUME 7, NO. 1
SUMMER 2014

Geospace Wireless: Getting Things Done

Advances in technology, especially ones with the potential to fundamentally change the way things get done often have a difficult time finding acceptance. Wireless seismic acquisition technology has not escaped these trials, but the operational and economic benefits of wireless acquisition are helping, especially with its acceptance internationally. Customers who overcome their reluctance to use wireless technology, like Geospace's GSX system and have learned to trust its quality assurance tools have found that they are able to collect high fidelity data in areas where conventional cabled seismic acquisition systems either cannot operate, or are just not commercially feasible.

In Serbia, GSX wins over real-time loyalists

Until recently, operators in Europe have been among the most hesitant to adopt Geospace's GSX wireless technology because it means giving up real-time data monitoring. The reluctance is understandable, given that real-time data visibility represented a crew's window into how a system was operating and where problems were occurring. Shooting – without that constant reassurance that good data was coming in – required a new mindset

and a confidence in the quality control tools in the GSX system.

KGF is a Russian-owned geophysical contractor based in the city of Kaliningrad. The company operates both land and transition zone crews in the Baltic Sea basin and had been using cabled systems with “see it as you go” real time data for many years. They weren't an instant sell on the idea of operating without real-time data, but the GSX system's many

advantages eventually won them over. In the past year, KGF has completed two successful projects in the Serbian Republic using GSX modules and GS-ONE single element geophone.

“It took time for KGF to become comfortable with the idea of operating without real-time data for QC,” says Peter Bakman, Director Sales and Marketing, FSU countries. “But the logistical advantages of the system and its rock-solid track

Serbia: Project at a Glance

- **Technology:** GSX modules and GS-ONE geophones
- **Scope:** 2 crews, 14,000 channels covering 1510 sq km of 3D data
- **Terrain:** farms and populous villages, asphalt roadways, rivers and canals

record for reliability and data accuracy gave them the confidence they needed in the end – and I think everyone has been very happy with the decision.”

That GSX and GS-ONE geophone technology was able to overcome this operator's reservations is testament not only to its compelling operational benefits, but also to its proven reliability in projects all around the world.

Data quality trumps familiarity

Using GSX systems requires a different approach to quality control. Rather than using the data stream itself to monitor system health, stations can be tested at deployment, and periodically during the survey according to the operator's needs. Crews on the ground or in helicopters interrogate the units for test results using GSX Line Viewer technology to identify any faults in satellite reception, ambient noise, low batteries or other problems that impact data collection.



“On GSX surveys, our customers see results well below the contractually allowable number of missing traces,” says Jorgen Skjott, V.P Sales for Geospace. “The level of reliability is more than acceptable to the users. That’s what really moved the needle for GSX. Not only does it dramatically reduce the system complexity, cost and risk of projects – the data is excellent, even without real-time monitoring.”

The challenging logistics of these Serbian projects added to the appeal of the wireless GSX system. The area encompassed multiple agricultural villages patched with private farms, numerous rivers and canals with few bridges,

and even small oil fields in production. Those features would make deploying and maintaining a heavy and cumbersome cabled system costly and difficult at best.

Both crews started operations in December 2013 both projects were completed two months ahead of schedule. Even with recent flooding in the area, each crew achieved an average 500-700 shot point/day production rate. Maximum productivity reached 1,180 shot points/day. “Both KGF and its customer have been giving us good grades, and they are bidding out new wireless projects – proof-positive of their new confidence in this approach,” adds Skjott.

Bolivia: Project at a Glance

- **Technology:** GSX modules and GS-ONE geophones
- **Scope:** 27,500 channels covering 545 sq km of 3D data
- **Terrain:** steep, craggy mountains and cliffs
- **Duration:** 50 days to complete



GSX overcomes big hurdles in South America’s largest-ever wireless acquisition

For contractor SAE, it wasn’t a new technology paradigm that stood in the way of its next acquisition success – it was dizzying mountains, dense jungle and tons of cables. For this company and others like it, GSX wireless technology is opening up huge areas of previously unexplored terrain where cabled systems simply can’t be operated economically.

In less than two months, SAE wrapped up a massive shoot in Bolivia (27,500 channels) that represents the largest wireless 3D shoot in South America to date.

Reliability has been excellent, and the time and expense the company has saved by using wireless nodes is virtually incalculable.

The Bolivian landscape is imposing by any measure, with sheer cliffs and tall peaks on every horizon. The contractor not only needed freedom from cables so its crews could easily navigate the terrain without heavy loads and install units with ease, it also wanted maximum battery life to minimize hands-on maintenance throughout the project.

“For this customer, the GSX’s 45-day battery life was a huge advantage,” says Edwin Jimeno, Geospace Seismic Sales Manager, Latin America. “They could lay out and shoot the entire project without having to go back into this challenging terrain to recharge batteries – that was a huge edge.”

SAE will be moving rapidly on to its next wireless project using GSX and GS-ONE technology. This time, the terrain will be thick, wet jungles with dense canopy in Peru – another environment where wireless freedom is a must. This 19,000-channel project will be another first, representing the largest wireless acquisition ever undertaken in Peru.



PRESIDENT'S PAGE

Opening New Frontiers

We have often written and talked about the tremendous benefits our equipment brings to the contractors in terms of greater efficiencies and reliability and to the oil and gas exploration companies in terms of the quality of data received. What has been less emphasized, but is equally important, is that our equipment is enabling our clients to explore in areas that they would not have considered previously.

Exploration companies have long wanted to explore mountainous regions in South America, using cabled equipment was extraordinarily difficult and expensive. Jungles, swamps and estuaries also proved to be zones that were frequently too complicated to consider.

And while those might conjure up images of a wild frontier, contractors were equally stymied by cities and towns where heavy automobile traffic precluded the use of cables.

Today, all of these regions and more are now accessible with new wireless seismic acquisition systems. One by one, areas that had been crossed off the maps are now up for consideration.

Wireless acquisition has opened new frontiers and opened new mindsets for explorationists.

Twenty years ago, clients believed that they had to have real-time return of data to be sure that they were actually recording each shot. Twenty years ago, systems were so unreliable that clients had every right to be concerned that the data might not be returning over cables that had been chewed in the night, struck by lightning, dragged off line by animals or dug up by farmers.

Today, our GSX units are so unobtrusive and operate so reliably that our clients find that after checking them once or twice, they have the confidence to let them perform as advertised - recording data for days at a time. This has opened a new frontier in the explorationist's mindset. No longer are the majority of days spent checking on the reliability of the system. Now, operators can concentrate on maximizing the amount of data acquired and achieving the survey's goals in the quickest amount of time possible.

Breaking New Ground in Eastern Europe, Russia and South America

We are extraordinarily proud of the benefits and efficiencies we have provided our clients and are gratified to see these advantages recognized in Eastern Europe, Russia, and around the globe. Our equipment is being used by well-known companies to image towns, escarpments and mountain ranges. In South America, our equipment was recently deployed to conduct the largest channel survey on that continent - 27,500 channels - truly a huge accomplishment in a very challenging environment.

OBX Extends Marine Survey Capabilities

Our OBX system is also opening frontiers in marine surveys. Our units are able to be placed in high traffic areas, without interrupting operations, in environmentally sensitive areas, without any disruption to fragile marine ecosystems. And the data recorded in all these instances is the finest available.

All of us at Geospace take great pride in offering an array of products that allow our clients to pursue the projects of their dreams. Continuing to help them reach those objectives is the foundation of our own dreams.



Rick Wheeler



Quality control tools like Geospace's GSX Line Viewer give the contractor confidence in the GSX system's reliability.

GEOSPACE *in the* COMMUNITY

Stepping Out Against Breast Cancer

Kudos and thanks to the 83 employees who signed up for the Making Strides Against Breast Cancer walk held on Saturday May 10 at Reliant Park.

Making Strides Against Breast Cancer events are a celebration of survivorship - an occasion to express hope and a shared determination to make this breast cancer's last century.

Geospace employees stepped up in more ways than one, buying ribbons, constructing a wall of hope (pictured at left), and buying raffle tickets, popcorn and treats for this important cause. With company matching funds, all that hard work raised a whopping \$14,650 for the fight!



Supporting SIRE

Geospace was pleased and honored to participate in the SIRE annual gala this year at the Omni Galleria.

SIRE pairs therapy horses with more than 220 children and adults with disabilities each week - including America's Wounded Warriors - to facilitate physical, cognitive and emotional health.

In addition to the sheer joy of spending time with these wonderful animals, participants build

strength and independence that supports life beyond the arena - at school, at work and in the community.

Our gala contingent included Rick and Joan Wheeler, Tom and Becky McEntire, Mike and Cindy Sheen and Robbin and Heather Adams. The quilt, displayed here by Tom McIntire (left) and Rick Wheeler, was part of a silent auction.



Geospace@Work
is published by
Geospace Technologies
Marketing.
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