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As seen in
the February
2009 issue of

E&P

EM for the masses

Until recently electromagnetic surveys have been the purview of a select few. One company plans to change that.

As devoted *E&P* readers who devour every word we publish, I'm sure you saw the article in last month's R&D supplement about electromagnetics (EM) and how the technology is still in its infancy. Leon Thomsen of KMS Technologies likened the current generation of EM technology to refraction seismology in the 1920s. The fledgling industry is hamstrung by a general lack of expertise within most oil companies and the continuing work that must be done to truly integrate EM data with other types of exploration information.

In other words, it's not quite ready for commodity status.

But Quasar Geophysical Technologies has plans to do just that. I met with Quasar CEO George Eiskamp and Chief Technology Officer Thomas Nielsen at the recent Society of Exploration Geophysicists' annual meeting in Las Vegas last November, during which they outlined their plans to take EM sensor technology to smaller contractors.

Unable to secure a booth at the sold-out show, the men instead booked a suite at The Hotel at Mandalay Bay and entertained journalists and prospective customers, who arrived to find atop the living room table a full-sized EM receiver prototype, not quite the centerpiece one might expect. According to company literature, the QMax EM3 is "the next-generation ocean-bottom electromagnetic receiver designed to unlock the potential of EM surveys with improved operational efficiency, safety, and more comprehensive data."

Prominent features include the fact that the QMax doesn't require long electric-field arms or on-deck assembly, which results in improved safety and logistics. It also contains a hot-swappable battery/data module for easy and fast on-deck turnarounds. Additionally, standard vertical magnetic-field and vertical electric-field sensors provide more robust datasets. The size of the receivers makes them more hydrodynamic, shortening the drop time and leading to more accurate placement. And Quasar's capacitive electrodes increase

reliability and do not require special handling.

But what's perhaps even more remarkable is the intended use of the sensor. Quasar is not building vessels at some shipyard in Norway or Singapore, nor is it hiring crews to shoot EM surveys. Rather, it hopes to sell the receivers to smaller contractors who don't have the expertise to develop these receivers in-house.

"This will enable a shift by allowing companies that can't develop their own technology to acquire it through us," Eiskamp said. "They'll be our direct customers."

Currently the two prototypes have been tested in test tanks, and deepwater tests are scheduled for early this year. Already the company has worked with oil companies to be sure the

data quality is suitable and with service companies to make sure the equipment is user-friendly.

There is some debate about the ability of a seismic crew to take EM measurements, but already companies are designing equipment that will take both measurements simultaneously. Eiskamp said that Quasar's equipment would dovetail nicely into a seismic survey.

"If the contractor has some level of experience working offshore, this is an easy fit," he said.

Indeed, ease of use is one of the main selling points of the sensor. Since most seismic crews have no experience with EM equipment, Quasar personnel will be on hand to provide technical assistance.

"We plan to develop partnership-like relationships and provide whatever assistance is needed, be as flexible as we can be," he said. "There are no user-serviceable parts in our equipment. Everything has a maintenance program, and we make sure that service and support will meet their needs."

The company, part of Quasar Federal Systems, a member of the Quasar Group, was formed to address the specific needs of the oil and gas industry as well as mineral and other resource exploration companies by supplying enhanced-performance EM survey instrumentation. It is a member of the Scripps Institution of Oceanography Seafloor Electromagnetic Methods Consortium.

For more information, visit www.quasargeo.com. **E&P**

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