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SGI Supercomputer places DownUnder GeoSolutions at the forefront of oil and gas exploration

Global seismic processing and interpretation solutions company, **DownUnder** GeoSolutions (DUG), has announced the purchase of high performance computing (HPC) hardware from SGI.

DUG says the SGI custom solution, powered by Intel® Xeon® processors and Intel® Xeon Phi™ coprocessors, will significantly accelerate their turnaround times for processing seismic data. This will in turn benefit DUG customers by assisting to bring oil and gas projects on-line earlier, potentially saving them millions of dollars.

With its previous computing systems, all of DUG's heavier workloads would take anywhere from hours to months to run. To change this, DUG turned to SGI to provide a solution that would accelerate these processes. As a result, after working closely with Intel and SGI, DUG has deployed a customised **SGI** Rackable® HPC environment, including 3,800 Intel Xeon Phi coprocessors, making it one of the largest commercial deployments of Xeon Phi coprocessors. This provides DUG with an added compute capacity of up to six peak petaflops.



Xeon Phi coprocessors (Click here to view enlarged image)

Dr. Matt Lamont, DUG's Managing Director commented: "We've already started to see dramatic improvements in turn-around times when we compare our upgraded machines to those without co-processors. Our time migration now runs more than 10 times faster. Our depth migration runs six times faster. DUG has also seen its Reverse Time Migration (RTM) run significantly faster

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through this new technology."

SGI's collaboration with Intel and Dug has created a customised solution that gives DUG the best combination of performance, density and power consumption for its needs.

Lamont added that SGI has worked closely with DUG for more than 10 years, creating a trusted relationship based on innovation and service reliability. "During this period, SGI has developed a thorough understanding of our business and the needs of our clients," said Lamont.

"In a market where cost and time is tight, DUG continues its commitment to development, innovation and research. Combining the Intel Xeon Phi coprocessors with our proprietary software, <u>DUG Insight</u>, we're able to provide our customers with one of the most powerful geo-processing production systems to date," added Lamont.

"Our Intel Xeon Phi powered solutions enable interactive processing and imaging from each of our geophysicists' individual computers. A testing regime that once took weeks can now be achieved in days. Production on the cluster that once took from weeks to months now takes days."

"DUG's innovative use of Intel Xeon Phi coprocessors is enabling its geophysicists to work with large seismic data sets interactively," said Charles Wuischpard, VP and GM of Workstations and HPC at Intel.

"In an industry where time is invaluable, the Intel Xeon Phi-based SGI system allows DUG to test more and faster, leading to better results in a much shorter period of time. Its integration of Intel Xeon Phi coprocessors has enabled them to quickly adapt its existing code and immediately pass this value on to its customers."

"SGI is excited to further build on its 10-year history with DUG, helping them realise significant performance improvement, through our reliable, industry-leading hardware," said Jorge Titinger, President and CEO of SGI. "We look forward to expanding our partnership with DUG as we both continue to find innovative solutions to today's most complex problems in the oil and gas industry."

The SGI custom-built, high performance workstations have dual socket Intel Xeon E5-2660 v2 processors coupled with dual Intel Xeon Phi 7120A coprocessors, with 16 GB of onboard memory per Xeon Phi and 256 GB of system memory. Local storage is provided by 24 TB of disk and each custom solution is connected by a 10 GB non-blocking network.

SGI, Intel and DUG will jointly showcase the systems at SEG Denver, 26-31 October, in Denver, Colorado.

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