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Video game chip could unlock deepest oil

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MADRID: A computer chip designed for video game consoles could be used to find trillions of dollars of oil, a study has found. Repsol said the speed of the cell allows for seismic data to be gathered six-times faster than present methods, allowing for imaging at depths which have not been achieved before.

Teaming up with Barcelona Supercomputing Center, the Spanish oil group tested a system powered by the Cell Broadband Engine which could scour for reserves at depths of 30,000 feet (9,144 m). If deployed in the Gulf of Mexico, for example, an estimated 56 billion barrels of oil equivalent could be discovered.

At US\$130 per barrel, that would be worth over US\$7 trillion and would meet the entire U.S. demand for oil and gas for about five years. The pair put the video game chip, PowerXCell 8i, into use in a process known as Reverse Time Migration (RTM), a sophisticated subsurface imaging tool.

RTM has already proven essential for imaging areas of complex subsurface geological structure, such as the rich hydrocarbon provinces of the deep waters of the Gulf of Mexico, offshore Brazil and West Africa, the company said. These basins are the new frontiers in oil exploration, where significant oil reserves are present below thick masses of salt that have made seismic imaging difficult.

Repsol's director of Geophysics Francisco Ortigosa said, "The new technology will accelerate and streamline oil and gas exploration in these promising regions by several orders of magnitude compared to current industry methods. Fidelity of the RTM images reduces the risks associated with oil exploration in these prolific but complex areas.

"However, the universal use of this technology is limited by processing speed. The IBM PowerXCell 8i processor's unparalleled speed for the imaging algorithm allows extensive use of the technology. By speeding up seismic imaging, we foresee a revolution in exploration that will be comparable to the revolution in medical imaging technologies, such as MRIs, that today routinely yield detailed images from inside the body."

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