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Trio renews Cell/B.E. deal with Georgia Tech

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[Sony](#) Group, [Toshiba](#) Corp. and [IBM](#) Corp, have extended their [Cell Broadband Engine](#) (Cell/B.E.) technology collaboration with Georgia Tech College of Computing.

Through Georgia Tech's efforts, trio's Center of Competence (STI Center) has been responsible for creating and disseminating software optimized for Cell/B.E. systems, and for performing research on the design of Cell/B.E. systems, algorithms and applications. In conjunction with this renewal of the STI Center, Georgia Tech is announcing a series of new research projects that are being undertaken at the center to develop applications and productivity tools based on the Cell/B.E. [microprocessor](#).

The STI Center of Competence was created at Georgia Tech to test the boundaries and demonstrate the extreme performance of the Cell/B.E. architecture. "Today, we are carrying out the vision we always intended - to generate breakthrough innovations using Cell/B.E. technologies working hand-in-hand with researchers at Sony Group, Toshiba and IBM," said David Bader, professor and executive director of high-performance computing in Georgia Tech.

One of the key research challenges that the collaborators will address through continued applied research is the use of Cell/B.E. technology to better monitor an aircraft's structural safety in commercial and military airplanes. Researchers will develop Cell/B.E. based data-processing software that will expeditiously and accurately monitor structural components in flight by measuring and recording an aircraft's vibrations through a distributed network of sensors. Although a commercial signal processing application for airplanes is a long term plan, researchers are working to develop a solid software foundation in the labs.

"IBM has invested in a strategy that applies the use of technology to solve grand challenges with our trusted university partners," said Jai Menon, IBM Fellow, VP, technical strategy and university relations. "In our collaboration with Georgia Tech, we are working together to better predict airline mechanical failures to make flying in airlines safer for passengers like you and me."

New projects

The other joint research projects in productivity enhancements include:

- A useful signal processing kernel needed for oil and gas exploration and seismic monitoring;
- Data compression, used for file compression or reducing the size of messages sent between computers required in multiple industries;
- Financial services applications for consolidated debt optimization, as well as European and American options pricing;
- Encryption libraries for securing communications for privacy;
- High-speed multimedia codecs, such as MPEG2 and JPEG2000 encoders and decoders;
- Bioinformatics, such as DNA sequence alignment and comparison;
- Software productivity enhancement tools that involve a cross-platform profiler, performance estimation and tuning system with IDE type features;
- Single-source automatic translator for generating PPU and SPU codes from a monolithic C/C++ application.

"We anticipate a paradigm shift in computing and our collaboration with the Georgia Tech College of Computing will create innovative applications for Cell/B.E. processors," said Yasu Yokote, general manager, CELL Application Development Center, Sony Corp. "For a year STI Center created at Georgia Tech, they created software productivity enhancement tools, which are valuable for moving legacy code bases to CELL/B.E. and will generate tremendous value to all Cell-based products."

"Within a year of the opening of the Center of Competence at Georgia Tech, researchers are already generating outstanding results on Cell/B.E.," said Mitsuo Saito, chief fellow, Toshiba Corp. semiconductor company. "The future will see growing demand for [multicore processor](#) applications, and we are delighted that the Center is playing a key role in anticipating and responding to such demand."

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