Press Release

European PRO3D Consortium to Focus on Programming 3D Manycore Architectures

New Project Aimed at Developing Holistic System-Design Methodology Spanning Software, Architecture and 3D Integration

GRENOBLE, France — May 3, 2010 — CEA-Leti, coordinator of a new European project called PRO3D to program future 3D manycore architectures, said today that the six partners will focus on developing holistic system-design methodology spanning software, architecture and 3D integration.

Launched by the European Commission in January 2010, the project is designed to demonstrate the effectiveness of 3D manycores by an integrated and concerted effort in key aspects of hardware and software design.

Specific goals of the project include:

- The development of a system software flow that can operate transparently on parallel manycore platforms.
- The Development of formal methods for software design guaranteeing the composability and correct operation of both hardware and software
- The Exploration of the impact of 3D integration for new computing architectures
- The Extension of the software flow to 3D-stacked manycores

PRO3D is built on the world-class R&D expertise of the project's partners to deliver a holistic 3D system-design methodology intended to bring a drastic improvement in productivity, reduce costs and shorten time to market for future embedded computing.

3D stacking enables the project partners to revisit the decade-long architectural tradeoffs between placing processor and memory sub-systems side by side versus placing them vertically and linking them through interconnects that are more than two orders of magnitude more energy efficient and denser than the most advanced off-chip I/O channels.

"With different manycore architectures on the market, the competitive edge can only be gained by taking a truly holistic approach that leverages disruptive advances in fabrication technology while harmonizing innovation in architecture, parallel-programming models and tools," said Laurent Malier, CEO of CEA-Leti. "3D stacking is the highest-potential technology innovation on the horizon for manycore integrated platforms, but it also has distinctive software challenges, like controlling thermal dissipation. These are some of the issues that the PRO3D partners will address."

The PRO3D consortium brings together world-class technology partners leaders with competencies in software, architecture and 3D integration.

- Verimag, Joseph Fourier University, Grenoble 1, France
- ETHZ, Swiss Federal Institute of Technology Zurich
- Alma Mater Studorium, University of Bologna, Italy

- STMicroelectronics, Grenoble, France
- EPFL, Federal Polytechnic School of Lausanne, Switzerland
- CEA-Leti, Grenoble, France.

About CEA-Leti

CEA is a French research and technology public organisation, with activities in four main areas: energy, information technologies, healthcare technologies and defence and security. Within CEA, the Laboratory for Electronics & Information Technology (CEA-Leti) works with companies in order to increase their competitiveness through technological innovation and transfers. CEA-Leti is focused on micro and nanotechnologies and their applications, from wireless devices and systems, to biology and healthcare or photonics. Nanoelectronics and microsystems (MEMS) are at the core of its activities. As a major player in MINATEC excellence centre, CEA-Leti operates 8,000-m² state-of-the-art clean rooms, on 24/7 mode, on 200mm and 300mm wafer standards. With 1,200 employees, CEA-Leti trains more than 150 Ph.D. students and hosts 200 assignees from partner companies. Strongly committed to the creation of value for the industry, CEA-Leti puts a strong emphasis on intellectual property and owns more than 1,400 patent families. In 2008, contractual income covered more than 75 percent of its budget worth 205 M€. For more information, visit www.leti.fr.

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