DARPA looks to four organizations to prototype next generations of supercomputers

Posted by John Keller

ARLINGTON, Va., 10 Aug. 2010. Military computer scientists at the U.S. I Research Projects Agency (DARPA) in Arlington, Va., are looking to induce NVIDIA Corp. in Santa Clara, Calif.; Intel Corp. in Hillsboro, Ore.; the Mass Technology Computer Science and Artificial Intelligence Laboratory in Cambridge; Sandia National Laboratory in Albuquerque, N.M. to develop technologies extreme-scale computers that will be 1,000-times more powerful than today supercomputers.

DARPA also chose Georgia Institute of Technology in Atlanta to lead an applications, benchmarks evaluating the UHPC extreme-scale -- or exascale -- supercomputing systems under development.

DARPA is sponsoring this work as part of its Ubiquitous High Performance Computing (UHPC) pro innovative, revolutionary generation of computing systems that overcomes the limitations of current...
The goal of DARPA's UHPC program is to re-invent high-performance computing. It plans to develop architectures and programming models that are 100 to 1,000 times more energy efficient, with high performance that are easier to program than current systems. Prototype UHPC systems are expected to be commercialized in the first half of the decade.

All U.S. Department of Defense (DOD) sensors, platforms, and missions depend heavily on computational power, officials point out. The ability to increase performance, however, is limited by high power consumption in current systems.

DARPA is looking to the UHPC program to develop high-performance computers that require less computation.

Computer graphics expert NVIDIA Corp. is leading one of the UHPC teams, which includes sup-pliers Cray Inc. in Seattle; Oak Ridge National Laboratory in Oak Ridge, Tenn., and six U.S. universities.

"The DARPA UHPC program is attacking technical issues that are key to the future of high performance computing," says Steve Scott, Cray's senior vice president, chief technology officer and principal investigator on the team.