

Defense's investment in supercomputing is a game-changer for Army R&D

U.S. Army

ADELPHI, Md. (Oct. 12, 2012) -- Teams of Army experts have spent the last five months laying the groundwork for a computational powerhouse at the Department of Defense Supercomputing Resource Center, or DSRC, at Aberdeen Proving Ground, Md.

DOD's High-Performance Computing Modernization Program, or HPCMP, announced the historic investment of \$105 million in computer system infrastructure upgrades at the nation's five DOD Supercomputing Resource Centers, May 16.

"The collective [research and development] organizations at APG (Aberdeen Proving Ground) following the 2008 Base Realignment and Closure will have a predictive modeling and simulation capability that was not possible before," said Raju Namburu, chief, Computational Sciences Division, Computational and Information Sciences Directorate, U.S. Army Research Laboratory. "As we transition to the new systems, our support to research challenges most critical to our national defense will remain seamless."

The HPCMP funded two new IBM iDataPlex systems that are built upon Intel's Sandy Bridge processor for the ARL DSRC. The second of the two systems were delivered to ARL's DSRC, Oct. 1.

Putting the power, speed and memory into perspective, the systems' combined storage capacity of six PetaBytes is "enough capacity to store two billion average size MP3 songs," said Thomas Kendall, technical director, ARL DSRC.

"In four hours, the center's computers can perform the same number of mathematical operations as the seven-billion-strong world population can calculate in their lifetimes, if each person completed one operation every second, without rest over a seventy year lifespan," Kendall said. "We are enabling the science of the future."

While the systems are normally upgraded every two to three years, the latest HPCMP upgrade comes along with a modern, better-equipped building, said Lee Ann Brainard, deputy director, ARL DSRC.

"The new building will provide the floor space, power and cooling to house all future ARL DSRC computing resources under one roof, where in previous years we have been spread between two buildings," Brainard said. This DOD Technology Insertion will also "carry us from teraflop computing into the petaflop computing range," she said.

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The ARL DSRC capabilities will enable the recently established Enterprise for Multiscale Research of Materials, in partnership with academia, to scale from atom to continuum.

The ARL DSRC capabilities advantage will also open doors for the Army Test and Evaluation community to address computational intensive requirements, and will strengthen multi-disciplinary computational capabilities across Army R&D, Namburu said.

"Our focus is on the war fighter. We will be able to address most critical computational material science problems we face in the DOD today to better equip the war fighters," Namburu said.

About the U.S. Army Research Laboratory:

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