Energy Department Continues Collaborative Supercomputing Investment

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The Department of Energy's (DOE) Office of Science and the National Nuclear Security Administration (NNSA) provide high-performance computing facilities that enable world-class scientific research. Mid April 2015, DOE extended its exascale supercomputer development program under its Collaboration of Oak Ridge, Argonne, and Lawrence Livermore (CORAL) initiative with a third and final contract.

The $525 million **CORAL project** was established in early 2014 with the goal of improving supercomputing investments, streamlining procurement, and reducing development costs for high performance systems that will be five to seven times more powerful than today's top supercomputers. Through collaborating across the department's labs on the effort, DOE aims to help the nation accelerate to next-generation exascale computing. The three CORAL labs specified requirements in a single Request for Proposal (RFP) released in January 2014. The recent $200 million award will deliver Aurora system to the Argonne Leadership Computing Facility, completing the final supercomputer investment of the CORAL initiative. DOE earlier announced a $325 million investment to build state-of-the-art supercomputers at its Oak Ridge and Lawrence Livermore laboratories.

The entire scientific community will have access to the system once it is commissioned in 2018. Key research goals for the Aurora system include: material science, biological science, transportation efficiency, and renewable energy. The next-generation system, Aurora, will use a high-performance computing scalable system framework to provide a peak performance of 180 PetaFLOP/s. The Aurora system will be delivered in 2018. In the interim, Argonne and Intel will also provide the Theta system, to be delivered in 2016, which will help ALCF users transition their applications to the new technology.

Additionally, DOE Under Secretary Orr announced $10 million for a high-performance computing R&D program, DesignForward, led by DOE's Office of Science and NNSA to accelerate the development of next-generation supercomputers. The recent announcement complements the $25.4 million already invested in the first round of program. Through this public-private partnership, technology firms will work with DOE researchers to study and develop software and hardware technologies aimed at maintaining a national lead in scientific computing.

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