US Army Corps of Engineers®
Engineer Research and Development Center

Capability/Service

User Productivity Enhancement, Technology Transfer, and Training (PETTT)

Description

The User Productivity Enhancement, Technology Transfer and Training (PETTT) Program is responsible for gathering and deploying the best ideas, algorithms, and software tools emerging from the national high performance computing (HPC) infrastructure into the Department of Defense (DoD) user community. Its objective is to enhance DoD HPC user productivity by providing world-class technical support and training through strategic partnerships and focused enabling tool development and deployment. The PETTT Program is largely supported by three DoD Supercomputing Resource Centers (DSRCs) of the DoD High Performance Computing Modernization Program: U.S. Army Research Laboratory, Aberdeen Proving Ground, MD; Aeronautical Systems Center, Wright-Patterson Air Force Base, OH; and the U.S. Army Engineer Research and Development Center (ERDC), Vicksburg, MS. This is the first year of a potential 10-year contract with High Performance Technologies, Inc. (HPTi), as the prime contractor to execute and support the PETTT Program.

The PETTT Program has six goals:

- Train and support new and existing DoD HPC users with the knowledge, support and tools to maximize productivity.
- Continually improve the HPCMP computational environment through tool development, transition and deployment.
- Foster collaboration across functional, Service, Agency and national HPC communities.
- Build collaborative computational and computer science software research and development relationships with DoD science and engineering teams.
- Collaborate with DoD users in the development and deployment of key HPC applications.
- Facilitate the application of HPC and high performance networks on new areas of interest to DoD.

Capabilities

HPTi's support of the PETTT Program encompasses the ten DoD computational technology areas:

- Computational Biology, Chemistry and Material Science (CCM).
- Computational Fluid Dynamics (CFD).
- Computational Structural Mechanics (CSM).
- Climate/Weather/Ocean Modeling and Simulation (CWO).
- Environmental Quality Modeling (EQM).

- Computational Electromagnetics and Acoustics (CEA).
- Signal and Image Processing Electronics, Networking and Systems/C41 (ENS).
- Signal/Image Processing (SIP).
- Integrated Modeling and Test Environments (IMT).
- Forces Modeling and Simulation (FMS).

And the three cross-cutting technological areas:

- Advanced Computational Environments (ACE).
- Collaborative and Distance Learning Technologies/User Training Coordination (CDLT/UTC).
- The Online Knowledge Center (OKC).

Supporting Technology

The PETTT Program uses leading-edge HPC computational and computing technology. The program draws on bold and innovative industry/university/ Government effort to provide collaborative assistance and training essential to DoD user support. This support is necessary to address the wide variety of research and development demands arising from the science/technology and test/evaluation programs supporting DoD weapons development and warfighting support systems.

Benefits

The PETTT Program develops, trains, and supports new and existing DoD HPC users with education, knowledge access, and tools to maximize productivity as follows:

- PETTT provides training and collaborative assistance to DoD HPCMP users.
- HPTi provides highly qualified onsites with university reach-back capability to support DoD researchers in the DoD computational technology areas and crosscutting support areas.
- HPTi fields a team of onsite staff located mainly at DSRCs to support user needs. However, onsite staff supports DoD users across the HPCMP, not just those at their home location.
- PETTT provides both short-term assistance (reactionary support) to users to meet emerging immediate needs and longer term user support through preplanned activities. PETTT also conducts training courses at DoD user sites.
- User support is available throughout the year from the HPTi team, while preplanned and training schedules, resulting from expressed user needs, are set yearly.
- DoD HPCMP users may contact the onsite staff any time with current needs for assistance and/or training.

ERDC POC

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