

Software Design and Productivity (SDP)

NITRD Agencies: NSF, OSD and DoD Service research organizations, NIH, DARPA, NASA, NIST, DOE/NNSA, NOAA

Software producibility: 2006 new start in building, assuring functionality of, managing, and sustaining software, including net-centric and systems of systems – OSD

Common software infrastructure for climate modeling: ESMF collaboration on building high-performance, flexible software infrastructure to increase ease of use, performance, portability, interoperability, and reuse in climate modeling, numerical weather prediction, data assimilation, and other Earth science applications – NASA, NOAA, DOE/SC

Open-source software: Research that enables users to read, modify, and redistribute source code, fostering more efficient development and increased collaboration to improve software quality – NSF, OSD

Planning and Coordination Supporting Request

Software interoperability workshop: To identify barriers to interoperability, centering on challenge problems whose solution requires new interoperability techniques – SDP CG

Large-scale implementation issues: Briefings by Federal IT user agencies with critical requirements for large-scale software applications to identify development issues and software engineering techniques – SDP CG

Software producibility: National Academies study – OSD, NSF

Additional 2006 and 2007 Activities by Agency

NSF: Software design methods; tools for software testing, analysis, and verification; semantics, design, and implementation of programming languages; scalable software architectures; techniques for handling complex combinations of requirements such as meeting real-time constraints and coordinating control in an embedded, failure-prone environment; compiler and runtime complex complex, dynamically changing applications; requirements for the design and construction of successful-by-design information systems; emphasis on interoperability, robustness, reliability, programmer productivity, maintainability, and software-intensive systems

OSD (HPCMPO): Applications software development in areas such as physics-based design, modeling, simulation, testing; institutes on battlespace topics; PET program tools and complex remote visualization, debugging and optimization, interactive computing environments for large datasets

NIH: