

(G) invest in basic research and education, and promote the inclusion of high-performance computing into educational institutions at all levels; and

(H) promote greater collaboration among government, Federal laboratories, industry, high-performance computing centers, and universities;

(2) improving the interagency planning and coordination of Federal research and development on high-performance computing and maximizing the effectiveness of the Federal Government's high-performance computing network research and development programs;

(3) promoting the more rapid development and wider distribution of networking management and development tools; and

(4) promoting the rapid adoption of open network standards.

(Pub. L. 102-194, § 3, Dec. 9, 1991, 105 Stat. 1594; Pub. L. 105-305, § 3(b), Oct. 28, 1998, 112 Stat. 2920.)

#### AMENDMENTS

1998—Pub. L. 105-305, § 3(b)(1), substituted “Purposes” for “Purpose” as section catchline.

Pub. L. 105-305, § 3(b)(2), substituted “purposes of this chapter are” for “purpose of this chapter is” in introductory provisions.

Par. (1)(A). Pub. L. 105-305, § 3(b)(3), redesignated subpar. (B) as (A) and struck out former subpar. (A) which read as follows: “establish a high-capacity and high-speed National Research and Education Network;”.

Par. (1)(B). Pub. L. 105-305, § 3(b)(3), (4), redesignated subpar. (C) as (B) and substituted “Internet” for “Network”. Former subpar. (B) redesignated (A).

Par. (1)(C) to (I). Pub. L. 105-305, § 3(b)(3), (5), redesignated subpars. (D) to (I) as (C) to (H), respectively, and struck out “and” at end of par. (H).

Par. (2). Pub. L. 105-305, § 3(b)(6), substituted “network research and development programs;” for “efforts.”

Pars. (3), (4). Pub. L. 105-305, § 3(b)(7), added pars. (3) and (4).

#### § 5503. Definitions

As used in this chapter, the term—

(1) “Director” means the Director of the Office of Science and Technology Policy;

(2) “Grand Challenge” means a fundamental problem in science or engineering, with broad economic and scientific impact, whose solution will require the application of high-performance computing resources and multidisciplinary teams of researchers;

(3) “high-performance computing” means advanced computing, communications, and information technologies, including supercomputer systems, high-capacity and high-speed networks, special purpose and experimental systems, applications and systems software, and the management of large data sets;

(4) “Internet” means the international computer network of both Federal and non-Federal interoperable data networks;

(5) “Network” means a computer network referred to as the National Research and Education Network established under section 5512 of this title;

(6) “Program” means the National High-Performance Computing Program described in section 5511 of this title; and

(7) “Program Component Areas” means the major subject areas under which related individual projects and activities carried out under the Program are grouped.

(Pub. L. 102-194, § 4, Dec. 9, 1991, 105 Stat. 1595; Pub. L. 105-305, § 7(b), Oct. 28, 1998, 112 Stat. 2924; Pub. L. 110-69, title VII, § 7024(a)(2), Aug. 9, 2007, 121 Stat. 689.)

#### AMENDMENTS

2007—Par. (2). Pub. L. 110-69, § 7024(a)(2)(A), inserted “and multidisciplinary teams of researchers” after “high-performance computing resources”.

Par. (3). Pub. L. 110-69, § 7024(a)(2)(B), struck out “scientific workstations,” after “technologies, including” and “(including vector supercomputers and large scale parallel systems)” after “supercomputer systems”, substituted “applications” for “and applications”, and inserted “, and the management of large data sets” after “systems software”.

Par. (4). Pub. L. 110-69, § 7024(a)(2)(C), struck out “packet switched” before “data networks”.

Par. (7). Pub. L. 110-69, § 7024(a)(2)(D)–(F), added par. (7).

1998—Pars. (4) to (6). Pub. L. 105-305 added par. (4) and redesignated former pars. (4) and (5) as (5) and (6), respectively.

#### SUBCHAPTER I—HIGH-PERFORMANCE COMPUTING RESEARCH AND DEVELOPMENT

#### § 5511. National High-Performance Computing Program

##### (a) National High-Performance Computing Program

(1) The President shall implement a National High-Performance Computing Program, which shall—

(A) provide for long-term basic and applied research on high-performance computing, including networking;

(B) provide for research and development on, and demonstration of, technologies to advance the capacity and capabilities of high-performance computing and networking systems, and related software;

(C) provide for sustained access by the research community throughout the United States to high-performance computing and networking systems that are among the most advanced in the world in terms of performance in solving scientific and engineering problems, including provision for technical support for users of such systems;

(D) provide for widely dispersed efforts to increase software availability, productivity, capability, security, portability, and reliability;

(E) provide for high-performance networks, including experimental testbed networks, to enable research and development on, and demonstration of, advanced applications enabled by such networks;

(F) provide for computational science and engineering research on mathematical modeling and algorithms for applications in all fields of science and engineering;

(G) provide for the technical support of, and research and development on, high-performance computing systems and software required to address Grand Challenges;

(H) provide for educating and training additional undergraduate and graduate students in

software engineering, computer science, computer and network security, applied mathematics, library and information science, and computational science; and

(I) provide for improving the security of computing and networking systems, including Federal systems, including providing for research required to establish security standards and practices for these systems.

(2) The Director shall—

(A) establish the goals and priorities for Federal high-performance computing research, development, networking, and other activities;

(B) establish Program Component Areas that implement the goals established under subparagraph (A), and identify the Grand Challenges that the Program should address;

(C) provide for interagency coordination of Federal high-performance computing research, development, networking, and other activities undertaken pursuant to the Program;

(D) submit to the Congress an annual report, along with the President's annual budget request, describing the implementation of the Program;

(E) develop and maintain a research, development, and deployment roadmap covering all States and regions for the provision of high-performance computing and networking systems under paragraph (1)(C); and

(F) consult with academic, State, industry, and other appropriate groups conducting research on and using high-performance computing.

(3) The annual report submitted under paragraph (2)(D) shall—

(A) provide a detailed description of the Program Component Areas, including a description of any changes in the definition of or activities under the Program Component Areas from the preceding report, and the reasons for such changes, and a description of Grand Challenges addressed under the Program;

(B) set forth the relevant programs and activities, for the fiscal year with respect to which the budget submission applies, of each Federal agency and department, including—

- (i) the Department of Agriculture;
- (ii) the Department of Commerce;
- (iii) the Department of Defense;
- (iv) the Department of Education;
- (v) the Department of Energy;
- (vi) the Department of Health and Human Services;
- (vii) the Department of the Interior;
- (viii) the Environmental Protection Agency;
- (ix) the National Aeronautics and Space Administration;
- (x) the National Science Foundation; and
- (xi) such other agencies and departments as the President or the Director considers appropriate;

(C) describe the levels of Federal funding for the fiscal year during which such report is submitted, and the levels proposed for the fiscal year with respect to which the budget submission applies, for each Program Component Area;

(D) describe the levels of Federal funding for each agency and department participating in the Program, and for each Program Component Area, for the fiscal year during which such report is submitted, and the levels proposed for the fiscal year with respect to which the budget submission applies; and

(E) include an analysis of the progress made toward achieving the goals and priorities established for the Program and the extent to which the Program incorporates the recommendations of the advisory committee established under subsection (b).

**(b) Advisory committee**

(1) The President shall establish an advisory committee on high-performance computing, consisting of geographically dispersed non-Federal members, including representatives of the research, education, and library communities, network and related software providers, and industry representatives in the Program Component Areas, who are specially qualified to provide the Director with advice and information on high-performance computing. The recommendations of the advisory committee shall be considered in reviewing and revising the Program. The advisory committee shall provide the Director with an independent assessment of—

(A) progress made in implementing the Program;

(B) the need to revise the Program;

(C) the balance between the components of the Program, including funding levels for the Program Component Areas;

(D) whether the research and development undertaken pursuant to the Program is helping to maintain United States leadership in high-performance computing, networking technology, and related software; and

(E) other issues identified by the Director.

(2) In addition to the duties outlined in paragraph (1), the advisory committee shall conduct periodic evaluations of the funding, management, coordination, implementation, and activities of the Program. The advisory committee shall report not less frequently than once every 2 fiscal years to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on its findings and recommendations. The first report shall be due within 1 year after August 9, 2007.

(3) Section 14 of the Federal Advisory Committee Act shall not apply to the advisory committee established under this subsection.

**(c) Office of Management and Budget**

(1) Each Federal agency and department participating in the Program shall, as part of its annual request for appropriations to the Office of Management and Budget, submit a report to the Office of Management and Budget which—

(A) identifies each element of its high-performance computing activities which contributes directly to the Program Component Areas or benefits from the Program; and

(B) states the portion of its request for appropriations that is allocated to each such element.

(2) The Office of Management and Budget shall review each such report in light of the goals,

priorities, and agency and departmental responsibilities set forth in the annual report submitted under subsection (a)(2)(D) of this section, and shall include, in the President's annual budget estimate, a statement of the portion of each appropriate agency's or department's annual budget estimate relating to its activities undertaken pursuant to the Program.

(Pub. L. 102-194, title I, §101, Dec. 9, 1991, 105 Stat. 1595; Pub. L. 104-66, title I, §1052(k), Dec. 21, 1995, 109 Stat. 719; Pub. L. 105-305, §4, Oct. 28, 1998, 112 Stat. 2921; Pub. L. 110-69, title VII, §7024(a)(1)(B)-(D), Aug. 9, 2007, 121 Stat. 686-689.)

#### REFERENCES IN TEXT

Section 14 of the Federal Advisory Committee Act, referred to in subsec. (b)(3), is section 14 of Pub. L. 92-463, which is set out in the Appendix to Title 5, Government Organization and Employees.

#### AMENDMENTS

2007—Subsec. (a)(1)(A) to (I). Pub. L. 110-69, §7024(a)(1)(B)(i), added subpars. (A) to (I) and struck out former subpars. (A) and (B) which read as follows:

“(A) establish the goals and priorities for Federal high-performance computing research, development, networking, and other activities; and

“(B) provide for interagency coordination of Federal high-performance computing research, development, networking, and other activities undertaken pursuant to the Program.”

Subsec. (a)(2). Pub. L. 110-69, §7024(a)(1)(B)(ii), redesignated par. (3) as (2) and struck out former par. (2) which provided additional requirements for the National High-Performance Computing Program.

Subsec. (a)(2)(A) to (F). Pub. L. 110-69, §7024(a)(1)(B)(iii), added subpars. (A) to (F), redesignated former subpars. (A) and (C) as (D) and (F), respectively, and struck out former subpar. (B) which read as follows: “provide for interagency coordination of the Program; and”.

Subsec. (a)(3). Pub. L. 110-69, §7024(a)(1)(B)(iv)(I), substituted “paragraph (2)(D)” for “paragraph (3)(A)” in introductory provisions.

Pub. L. 110-69, §7024(a)(1)(B)(ii), redesignated par. (4) as (3). Former par. (3) redesignated (2).

Subsec. (a)(3)(A). Pub. L. 110-69, §7024(a)(1)(B)(iv)(II), amended subpar. (A) generally. Prior to amendment, subpar. (A) read as follows: “include a detailed description of the goals and priorities established by the President for the Program;”.

Subsec. (a)(3)(C). Pub. L. 110-69, §7024(a)(1)(B)(iv)(III), substituted “each Program Component Area” for “specific activities, including education, research, hardware and software development, and support for the establishment of the Network”.

Subsec. (a)(3)(D). Pub. L. 110-69, §7024(a)(1)(B)(iv)(IV), (V), inserted “, and for each Program Component Area,” after “participating in the Program” and “and” after “applies;”.

Subsec. (a)(3)(E), (F). Pub. L. 110-69, §7024(a)(1)(B)(iv)(VI), (VII), redesignated subpar. (F) as (E), inserted “and the extent to which the Program incorporates the recommendations of the advisory committee established under subsection (b)” after “for the Program”, and struck out former subpar. (E) which read as follows: “include the report of the Secretary of Energy required by section 5523(d) of this title; and”.

Subsec. (b). Pub. L. 110-69, §7024(a)(1)(C), added subsec. (b) and struck out heading and text of former subsec. (b). Text consisted of pars. (1) to (5) which contained provisions similar to those now contained in par. (1).

Subsec. (c)(1)(A). Pub. L. 110-69, §7024(a)(1)(D)(i), substituted “Program Component Areas or” for “Program or”.

Subsec. (c)(2). Pub. L. 110-69, §7024(a)(1)(D)(ii), substituted “subsection (a)(2)(D)” for “subsection (a)(3)(A)”.

1998—Subsec. (a)(2)(A), (B). Pub. L. 105-305, §4(a), amended subpars. (A) and (B) generally. Prior to amendment, subpars. read as follows:

“(A) provide for the establishment of policies for management and access to the Network;

“(B) provide for oversight of the operation and evolution of the Network;”.

Subsec. (b). Pub. L. 105-305, §4(b), struck out “High-performance computing” before “advisory committee” in heading.

1995—Subsec. (a)(4)(D) to (F). Pub. L. 104-66 struck out “and” at end of subpar. (D), added subpar. (E), and redesignated former subpar. (E) as (F).

#### CHANGE OF NAME

Committee on Science and Technology of House of Representatives changed to Committee on Science, Space, and Technology of House of Representatives by House Resolution No. 5, One Hundred Twelfth Congress, Jan. 5, 2011.

#### TERMINATION OF ADVISORY COMMITTEES

Advisory committees established after Jan. 5, 1973, to terminate not later than the expiration of the 2-year period beginning on the date of their establishment, unless, in the case of a committee established by the President or an officer of the Federal Government, such committee is renewed by appropriate action prior to the expiration of such 2-year period, or in the case of a committee established by the Congress, its duration is otherwise provided for by law. See section 14 of Pub. L. 92-463, Oct. 6, 1972, 86 Stat. 776, set out in the Appendix to Title 5, Government Organization and Employees.

#### DELEGATION OF FUNCTIONS

President's Council of Advisors on Science and Technology to serve as the advisory committee identified in sections 5511(b) and 5513(b) of this title and to be known as the President's Innovation and Technology Advisory Committee when so serving, see section 2(a)(iii) of Ex. Ord. No. 13539, set out as a note under section 6601 of Title 42, The Public Health and Welfare.

#### EX. ORD. NO. 13035. PRESIDENT'S INFORMATION TECHNOLOGY ADVISORY COMMITTEE

Ex. Ord. No. 13035, Feb. 11, 1997, 62 F.R. 7131, as amended by Ex. Ord. No. 13092, July 24, 1998, 63 F.R. 40167; Ex. Ord. No. 13113, Feb. 10, 1999, 64 F.R. 7489; Ex. Ord. No. 13200, Feb. 11, 2001, 66 F.R. 10183; Ex. Ord. No. 13215, May 31, 2001, 66 F.R. 30285; Ex. Ord. No. 13305, May 28, 2003, 68 F.R. 32323, provided:

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the High-Performance Computing Act of 1991 (Public Law 102-194) (“Act”) [15 U.S.C. 5501 et seq.], as amended by the Next Generation Internet Research Act of 1998 (Public Law 105-305) (“Research Act”) [see Short Title of 1998 Amendment note set out under section 5501 of this title], and in order to establish an advisory committee on high-performance computing and communications, Information Technology [sic], and the Next Generation Internet, it is hereby ordered as follows:

SECTION 1. *Establishment.* There is established the “President's Information Technology Advisory Committee” (“Committee”). The Committee shall consist of not more than 30 nonfederal members appointed by the President, including representatives of the research, education, and library communities, network providers, and representatives from critical industries. Members appointed prior to June 1, 2001, shall serve until December 1, 2001, unless reappointed by the President. Members appointed or reappointed on or after June 1, 2001, shall serve for no more than 2 years from the date of their appointment, unless their period of service is extended by the President. The President shall designate two co-chairs from among the members of the Committee. A co-chair may serve for a term of

2 years or until the end of his or her service as a member of the Committee, whichever is the shorter period.

SEC. 2. *Functions.* (a) The Committee shall provide the National Science and Technology Council (NSTC), through the Director of the Office of Science and Technology Policy ("Director"), with advice and information on high-performance computing and communications, information technology, and the Next Generation Internet. The Committee shall provide an independent assessment of:

(1) progress made in implementing the High-Performance Computing and Communications (HPCC) Program;

(2) progress in designing and implementing the Next Generation Internet initiative;

(3) the need to revise the HPCC Program;

(4) balance among components of the HPCC Program;

(5) whether the research and development undertaken pursuant to the HPCC Program is helping to maintain United States leadership in advanced computing and communications technologies and their applications; and

(6) other issues as specified by the Director.

(b) The Committee shall carry out its responsibilities under the Research Act in the manner described in the Research Act.

SEC. 3. *Administration.* To the extent permitted by law and subject to the availability of appropriations, the Department of Defense shall provide the financial and administrative support for the Committee. Further, the Director of the National Coordination Office for Computing Information, and Communications ("Director of the NCO") shall provide such coordination and technical assistance to the Committee as the co-chairs of the Committee may request.

(a) The heads of executive agencies shall, to the extent permitted by law, provide to the Committee such information as it may require for the purpose of carrying out its functions.

(b) The co-chairs may, from time to time, invite experts to submit information to the Committee and may form subcommittees or working groups within the Committee to review specific issues.

(c) Members of the Committee shall serve without compensation but shall be allowed travel expenses, including per diem in lieu of subsistence, as authorized by law for persons serving intermittently in the Government service (5 U.S.C. 5701-5707).

SEC. 4. *General.* (a) Notwithstanding any other Executive order, the functions of the President under the Federal Advisory Committee Act, as amended [5 U.S.C. App.], except that of reporting to the Congress, that are applicable to the Committee shall be performed by the Director of the NCO in accordance with guidelines that have been issued by the Administrator of General Services.

(b) The Committee shall terminate June 1, 2005, unless extended by the President prior to such date.

## § 5512. National Research and Education Network

### (a) Establishment

As part of the Program, the National Science Foundation, the Department of Defense, the Department of Energy, the Department of Commerce, the National Aeronautics and Space Administration, and other agencies participating in the Program shall support the establishment of the National Research and Education Network, portions of which shall, to the extent technically feasible, be capable of transmitting data at one gigabit per second or greater by 1996. The Network shall provide for the linkage of research institutions and educational institutions, government, and industry in every State.

### (b) Access

Federal agencies and departments shall work with private network service providers, State

and local agencies, libraries, educational institutions and organizations, and others, as appropriate, in order to ensure that the researchers, educators, and students have access, as appropriate, to the Network. The Network is to provide users with appropriate access to high-performance computing systems, electronic information resources, other research facilities, and libraries. The Network shall provide access, to the extent practicable, to electronic information resources maintained by libraries, research facilities, publishers, and affiliated organizations.

### (c) Network characteristics

The Network shall—

(1) be developed and deployed with the computer, telecommunications, and information industries;

(2) be designed, developed, and operated in collaboration with potential users in government, industry, and research institutions and educational institutions;

(3) be designed, developed, and operated in a manner which fosters and maintains competition and private sector investment in high-speed data networking within the telecommunications industry;

(4) be designed, developed, and operated in a manner which promotes research and development leading to development of commercial data communications and telecommunications standards, whose development will encourage the establishment of privately operated high-speed commercial networks;

(5) be designed and operated so as to ensure the continued application of laws that provide network and information resources security measures, including those that protect copyright and other intellectual property rights, and those that control access to data bases and protect national security;

(6) have accounting mechanisms which allow users or groups of users to be charged for their usage of copyrighted materials available over the Network and, where appropriate and technically feasible, for their usage of the Network;

(7) ensure the interoperability of Federal and non-Federal computer networks, to the extent appropriate, in a way that allows autonomy for each component network;

(8) be developed by purchasing standard commercial transmission and network services from vendors whenever feasible, and by contracting for customized services when not feasible, in order to minimize Federal investment in network hardware;

(9) support research and development of networking software and hardware; and

(10) serve as a test bed for further research and development of high-capacity and high-speed computing networks and demonstrate how advanced computers, high-capacity and high-speed computing networks, and data bases can improve the national information infrastructure.

### (d) Defense Advanced Research Projects Agency responsibility

As part of the Program, the Department of Defense, through the Defense Advanced Research Projects Agency, shall support research and de-