

(2) review the extent to which the role of each Federal agency and department involved in implementing the Next Generation Internet program is clear and complementary to, and non-duplicative of, the roles of other participating agencies and departments;

(3) assess the extent to which Federal support of fundamental research in computing is sufficient to maintain the Nation's critical leadership in this field; and

(4) make recommendations relating to its findings under paragraphs (1), (2), and (3).

**(c) Reports**

The Advisory Committee shall review implementation of the Next Generation Internet program and shall report, not less frequently than annually, to the President, the Committee on Commerce, Science, and Transportation, the Committee on Appropriations, and the Committee on Armed Services of the Senate, and the Committee on Science, the Committee on Appropriations, and the Committee on Armed Services of the House of Representatives on its findings and recommendations for the preceding fiscal year. The first such report shall be submitted 6 months after October 28, 1998, and the last report shall be submitted by September 30, 2000.

**(d) Authorization of appropriations**

There are authorized to be appropriated for the purposes of this section—

(1) for the Department of Energy, \$22,000,000 for fiscal year 1999 and \$25,000,000 for fiscal year 2000;

(2) for the National Science Foundation, \$25,000,000 for fiscal year 1999 and \$25,000,000 for fiscal year 2000, as authorized in the National Science Foundation Authorization Act of 1998;

(3) for the National Institutes of Health, \$5,000,000 for fiscal year 1999 and \$7,500,000 for fiscal year 2000;

(4) for the National Aeronautics and Space Administration, \$10,000,000 for fiscal year 1999 and \$10,000,000 for fiscal year 2000; and

(5) for the National Institute of Standards and Technology, \$5,000,000 for fiscal year 1999 and \$7,500,000 for fiscal year 2000.

Such funds may not be used for routine upgrades to existing federally funded communication networks.

(Pub. L. 102-194, title I, §103, as added Pub. L. 105-305, §5, Oct. 28, 1998, 112 Stat. 2921; amended Pub. L. 106-65, div. A, title X, §1067(20), Oct. 5, 1999, 113 Stat. 775.)

REFERENCES IN TEXT

Executive Order No. 13035, referred to in subsec. (b), is set out as a note under section 5511 of this title.

Section 7(1) of the Next Generation Internet Research Act of 1998, referred to in subsec. (b)(1)(B)(i), probably means section 7(a)(1) of Pub. L. 105-305, which is set out as a note under section 5501 of this title.

The National Science Foundation Authorization Act of 1998, referred to in subsec. (d)(2), is Pub. L. 105-207, July 29, 1998, 112 Stat. 869. For complete classification of this Act to the Code, see Short Title of 1998 Amendment note set out under section 1861 of Title 42, The Public Health and Welfare, and Tables.

AMENDMENTS

1999—Subsec. (c). Pub. L. 106-65 substituted “Committee on Armed Services of the House” for “Committee on National Security of the House”.

CHANGE OF NAME

Committee on Science of House of Representatives changed to Committee on Science and Technology of House of Representatives by House Resolution No. 6, One Hundred Tenth Congress, Jan. 5, 2007. 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.

SUBCHAPTER II—AGENCY ACTIVITIES

**§ 5521. National Science Foundation activities**

**(a) General responsibilities**

As part of the Program described in subchapter I of this chapter—

(1) the National Science Foundation shall provide computing and networking infrastructure support for all science and engineering disciplines, and support basic research and human resource development in all aspects of high-performance computing and advanced high-speed computer networking;

(2) to the extent that colleges, universities, and libraries cannot connect to the Network with the assistance of the private sector, the National Science Foundation shall have primary responsibility for assisting colleges, universities, and libraries to connect to the Network;

(3) the National Science Foundation shall serve as the primary source of information on access to and use of the Network; and

(4) the National Science Foundation shall upgrade the National Science Foundation funded network, assist regional networks to upgrade their capabilities, and provide other Federal departments and agencies the opportunity to connect to the National Science Foundation funded network.

**(b) Authorization of appropriations**

From sums otherwise authorized to be appropriated, there are authorized to be appropriated to the National Science Foundation for the purposes of the Program \$213,000,000 for fiscal year 1992; \$262,000,000 for fiscal year 1993; \$305,000,000 for fiscal year 1994; \$354,000,000 for fiscal year 1995; and \$413,000,000 for fiscal year 1996.

(Pub. L. 102-194, title II, §201, Dec. 9, 1991, 105 Stat. 1599.)

**§ 5522. National Aeronautics and Space Administration activities**

**(a) General responsibilities**

As part of the Program described in subchapter I of this chapter, the National Aeronautics and Space Administration shall conduct basic and applied research in high-performance computing, particularly in the field of computational science, with emphasis on aerospace sciences, earth and space sciences, and remote exploration and experimentation.

**(b) Authorization of appropriations**

From sums otherwise authorized to be appropriated, there are authorized to be appropriated to the National Aeronautics and Space Administration for the purposes of the Program \$72,000,000 for fiscal year 1992; \$107,000,000 for fiscal year 1993; \$134,000,000 for fiscal year 1994;

\$151,000,000 for fiscal year 1995; and \$145,000,000 for fiscal year 1996.

(Pub. L. 102-194, title II, §202, Dec. 9, 1991, 105 Stat. 1600.)

### § 5523. Department of Energy activities

#### (a) General responsibilities

As part of the Program described in subchapter I of this chapter, the Secretary of Energy shall—

(1) conduct and support basic and applied research in high-performance computing and networking to support fundamental research in science and engineering disciplines related to energy applications; and

(2) provide computing and networking infrastructure support, including—

(A) the provision of high-performance computing systems that are among the most advanced in the world in terms of performance in solving scientific and engineering problems; and

(B) support for advanced software and applications development for science and engineering disciplines related to energy applications.

#### (b) Authorization of appropriations

There are authorized to be appropriated to the Secretary of Energy such sums as are necessary to carry out this section.

(Pub. L. 102-194, title II, §203, Dec. 9, 1991, 105 Stat. 1600; Pub. L. 104-66, title I, §1052(j), Dec. 21, 1995, 109 Stat. 719; Pub. L. 109-58, title IX, §976(b), Aug. 8, 2005, 119 Stat. 903.)

#### AMENDMENTS

2005—Pub. L. 109-58 reenacted section catchline without change and amended text generally, substituting provisions relating to general responsibilities and authorization of appropriations for provisions relating to general responsibilities, establishment of High-Performance Computing Research and Development Collaborative Consortia, transfer of technology to private sector and others, reports on activities, and authorization of appropriations.

1995—Subsec. (d). Pub. L. 104-66 amended heading and text of subsec. (d) generally. Prior to amendment, text read as follows: “Within one year after December 9, 1991, and every year thereafter, the Secretary of Energy shall transmit to the Congress a report on activities taken to carry out this chapter.”

### § 5524. Department of Commerce activities

#### (a) General responsibilities

As part of the Program described in subchapter I of this chapter—

(1) the National Institute of Standards and Technology shall—

(A) conduct basic and applied measurement research needed to support various high-performance computing systems and networks;

(B) develop and propose standards and guidelines, and develop measurement techniques and test methods, for the interoperability of high-performance computing systems in networks and for common user interfaces to systems; and

(C) be responsible for developing benchmark tests and standards for high-performance computing systems and software; and

(2) the National Oceanic and Atmospheric Administration shall conduct basic and applied research in weather prediction and ocean sciences, particularly in development of new forecast models, in computational fluid dynamics, and in the incorporation of evolving computer architectures and networks into the systems that carry out agency missions.

#### (b) High-performance computing and network security

Pursuant to the Computer Security Act of 1987 (Public Law 100-235; 101 Stat. 1724), the National Institute of Standards and Technology shall be responsible for developing and proposing standards and guidelines needed to assure the cost-effective security and privacy of sensitive information in Federal computer systems.

#### (c) Study of impact of Federal procurement regulations

(1) The Secretary of Commerce shall conduct a study to—

(A) evaluate the impact of Federal procurement regulations that require that contractors providing software to the Federal Government share the rights to proprietary software development tools that the contractors use to develop the software; and

(B) determine whether such regulations discourage development of improved software development tools and techniques.

(2) The Secretary of Commerce shall, within one year after December 9, 1991, report to the Congress regarding the results of the study conducted under paragraph (1).

#### (d) Authorization of appropriations

From sums otherwise authorized to be appropriated, there are authorized to be appropriated—

(1) to the National Institute of Standards and Technology for the purposes of the Program \$3,000,000 for fiscal year 1992; \$4,000,000 for fiscal year 1993; \$5,000,000 for fiscal year 1994; \$6,000,000 for fiscal year 1995; and \$7,000,000 for fiscal year 1996; and

(2) to the National Oceanic and Atmospheric Administration for the purposes of the Program \$2,500,000 for fiscal year 1992; \$3,000,000 for fiscal year 1993; \$3,500,000 for fiscal year 1994; \$4,000,000 for fiscal year 1995; and \$4,500,000 for fiscal year 1996.

(Pub. L. 102-194, title II, §204, Dec. 9, 1991, 105 Stat. 1601.)

#### REFERENCES IN TEXT

The Computer Security Act of 1987, referred to in subsec. (b), is Pub. L. 100-235, Jan. 8, 1988, 101 Stat. 1724, which enacted sections 278g-3 and 278g-4 of this title, amended section 272 of this title and section 759 of former Title 40, Public Buildings, Property, and Works, and enacted provisions set out as notes under section 271 of this title and section 1441 of former Title 40. For complete classification of this Act to the Code, see Tables.

### § 5525. Environmental Protection Agency activities

#### (a) General responsibilities

As part of the Program described in subchapter I of this chapter, the Environmental

Protection Agency shall conduct basic and applied research directed toward the advancement and dissemination of computational techniques and software tools which form the core of ecosystem, atmospheric chemistry, and atmospheric dynamics models.

**(b) Authorization of appropriations**

From sums otherwise authorized to be appropriated, there are authorized to be appropriated to the Environmental Protection Agency for the purposes of the Program \$5,000,000 for fiscal year 1992; \$5,500,000 for fiscal year 1993; \$6,000,000 for fiscal year 1994; \$6,500,000 for fiscal year 1995; and \$7,000,000 for fiscal year 1996.

(Pub. L. 102-194, title II, §205, Dec. 9, 1991, 105 Stat. 1602.)

**§ 5526. Role of Department of Education**

**(a) General responsibilities**

As part of the Program described in subchapter I of this chapter, the Secretary of Education is authorized to conduct basic and applied research in computational research with an emphasis on the coordination of activities with libraries, school facilities, and education research groups with respect to the advancement and dissemination of computational science and the development, evaluation and application of software capabilities.

**(b) Authorization of appropriations**

From sums otherwise authorized to be appropriated, there are authorized to be appropriated to the Department of Education for the purposes of this section \$1,500,000 for fiscal year 1992; \$1,700,000 for fiscal year 1993; \$1,900,000 for fiscal year 1994; \$2,100,000 for fiscal year 1995; and \$2,300,000 for fiscal year 1996.

(Pub. L. 102-194, title II, §206, Dec. 9, 1991, 105 Stat. 1602.)

**§ 5527. Miscellaneous provisions**

**(a) Nonapplicability**

Except to the extent the appropriate Federal agency or department head determines, the provisions of this chapter shall not apply to—

- (1) programs or activities regarding computer systems that process classified information; or
- (2) computer systems the function, operation, or use of which are those delineated in paragraphs (1) through (5) of section 2315(a) of title 10.<sup>1</sup>

**(b) Acquisition of prototype and early production models**

In accordance with Federal contracting law, Federal agencies and departments participating in the Program may acquire prototype or early production models of new high-performance computing systems and subsystems to stimulate hardware and software development. Items of computing equipment acquired under this subsection shall be considered research computers for purposes of applicable acquisition regulations.

<sup>1</sup> So in original. Section 2315 of title 10 does not contain a subsec. (a).

(Pub. L. 102-194, title II, §207, Dec. 9, 1991, 105 Stat. 1602.)

**§ 5528. Fostering United States competitiveness in high-performance computing and related activities**

**(a) Findings**

The Congress finds the following:

(1) High-performance computing and associated technologies are critical to the United States economy.

(2) While the United States has led the development of high-performance computing, United States industry is facing increasing global competition.

(3) Despite existing international agreements on fair competition and nondiscrimination in government procurements, there is increasing concern that such agreements are not being honored, that more aggressive enforcement of such agreements is needed, and that additional steps may be required to ensure fair global competition, particularly in high-technology fields such as high-performance computing and associated technologies.

(4) It is appropriate for Federal agencies and departments to use the funds authorized for the Program in a manner which most effectively fosters the maintenance and development of United States leadership in high-performance computers and associated technologies in and for the benefit of the United States.

(5) It is appropriate for Federal agencies and departments to use the funds authorized for the Program in a manner, consistent with the Trade Agreements Act of 1979 (19 U.S.C. 2501 et seq.), which most effectively fosters reciprocal competitive procurement treatment by foreign governments for United States high-performance computing and associated technology products and suppliers.

**(b) Annual report**

**(1) Report**

The Director shall submit an annual report to Congress that identifies—

(A) any grant, contract, cooperative agreement, or cooperative research and development agreement (as defined under section 3710a(d)(1) of this title) made or entered into by any Federal agency or department for research and development under the Program with—

(i) any company other than a company that is either incorporated or located in the United States, and that has majority ownership by individuals who are citizens of the United States; or

(ii) any educational institution or non-profit institution located outside the United States; and

(B) any procurement exceeding \$1,000,000 by any Federal agency or department under the Program for—

(i) unmanufactured articles, materials, or supplies mined or produced outside the United States; or

(ii) manufactured articles, materials, or supplies other than those manufactured in

the United States substantially all from articles, materials, or supplies mined, produced, or manufactured in the United States,

under the meaning of chapter 83 of title 41.

**(2) Consolidation of reports**

The report required by this subsection may be included with the report required by section 5511(a)(3)(A)<sup>1</sup> of this title.

**(c) Application of Buy American Act**

This chapter does not affect the applicability of chapter 83 of title 41 to procurements by Federal agencies and departments undertaken as a part of the Program.

(Pub. L. 102-194, title II, §208, Dec. 9, 1991, 105 Stat. 1603; Pub. L. 110-69, title III, §3002(c)(6), Aug. 9, 2007, 121 Stat. 587.)

REFERENCES IN TEXT

The Trade Agreements Act of 1979, referred to in subsec. (a)(5), is Pub. L. 96-39, July 26, 1979, 93 Stat. 144, as amended. For complete classification of this Act to the Code, see References in Text note set out under section 2501 of Title 19, Customs Duties, and Tables.

Section 5511(a)(3)(A) of this title, referred to in subsec. (b)(2), was redesignated section 5511(a)(2)(D) of this title by Pub. L. 110-69, title VII, §7024(a)(1)(B)(ii), (iii)(II), Aug. 9, 2007, 121 Stat. 687.

CODIFICATION

In subsec. (b)(1)(B), “chapter 83 of title 41” substituted for “title III of the Act of March 3, 1933 (41 U.S.C. 10a-10d; popularly known as the Buy American Act) as amended by the Buy American Act of 1988” on authority of Pub. L. 111-350, §6(c), Jan. 4, 2011, 124 Stat. 3854, which Act enacted Title 41, Public Contracts.

In subsec. (c), “chapter 83 of title 41” substituted for “title III of the Act of March 3, 1933 (41 U.S.C. 10a-10d; popularly known as the Buy American Act), as amended by the Buy American Act of 1988,” on authority of Pub. L. 111-350, §6(c), Jan. 4, 2011, 124 Stat. 3854, which Act enacted Title 41, Public Contracts.

AMENDMENTS

2007—Subsecs. (c), (d). Pub. L. 110-69 redesignated subsec. (d) as (c) and struck out former subsec. (c) which related to review of Supercomputer Agreement.

TERMINATION OF REPORTING REQUIREMENTS

For termination, effective May 15, 2000, of provisions of law requiring submittal to Congress of any annual, semiannual, or other regular periodic report listed in House Document No. 103-7 (in which a report required under subsec. (b)(1) of this section is listed on page 185), see section 3003 of Pub. L. 104-66, as amended, set out as a note under section 1113 of Title 31, Money and Finance.

SUBCHAPTER III—DEPARTMENT OF ENERGY HIGH-END COMPUTING REVITALIZATION

**§ 5541. Definitions**

In this subchapter:

**(1) Center**

The term “Center” means a High-End Software Development Center established under section 5542(d) of this title.

**(2) High-end computing system**

The term “high-end computing system” means a computing system with performance

that substantially exceeds that of systems that are commonly available for advanced scientific and engineering applications.

**(3) Leadership System**

The term “Leadership System” means a high-end computing system that is among the most advanced in the world in terms of performance in solving scientific and engineering problems.

**(4) Institution of higher education**

The term “institution of higher education” has the meaning given the term in section 1001(a) of title 20.

**(5) Secretary**

The term “Secretary” means the Secretary of Energy, acting through the Director of the Office of Science of the Department of Energy.

(Pub. L. 108-423, §2, Nov. 30, 2004, 118 Stat. 2400.)

REFERENCES IN TEXT

This subchapter, referred to in text, was in the original “this Act”, meaning Pub. L. 108-423, Nov. 30, 2004, 118 Stat. 2400, which is classified principally to this subchapter. For complete classification of this Act to the Code, see Short Title note set out under section 5501 of this title and Tables.

CODIFICATION

This section was enacted as part of the Department of Energy High-End Computing Revitalization Act of 2004 which comprises this subchapter, and not as part of the High-Performance Computing Act of 1991 which comprises this chapter.

SHORT TITLE

This subchapter known as the “Department of Energy High-End Computing Revitalization Act of 2004”, see Short Title note set out under section 5501 of this title.

**§ 5542. Department of Energy high-end computing research and development program**

**(a) In general**

The Secretary shall—

(1) carry out a program of research and development (including development of software and hardware) to advance high-end computing systems; and

(2) develop and deploy high-end computing systems for advanced scientific and engineering applications.

**(b) Program**

The program shall—

(1) support both individual investigators and multidisciplinary teams of investigators;

(2) conduct research in multiple architectures, which may include vector, reconfigurable logic, streaming, processor-in-memory, and multithreading architectures;

(3) conduct research on software for high-end computing systems, including research on algorithms, programming environments, tools, languages, and operating systems for high-end computing systems, in collaboration with architecture development efforts;

(4) provide for sustained access by the research community in the United States to high-end computing systems and to Leadership Systems, including provision of technical support for users of such systems;

<sup>1</sup> See References in Text note below.