

**Union Calendar No. 97**

103D CONGRESS  
1ST SESSION

**H. R. 1757**

**[Report No. 103-173]**

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**A BILL**

To provide for a coordinated Federal program to accelerate development and dissemination of applications of high-performance computing and high-speed networking, and for other purposes.

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JULY 13, 1993

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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1ST SESSION**H. R. 1757****[Report No. 103-173]**

To provide for a coordinated Federal program to accelerate development and dissemination of applications of high-performance computing and high-speed networking, and for other purposes.

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**IN THE HOUSE OF REPRESENTATIVES**

APRIL 21, 1993

Mr. BOUCHER (for himself, Mr. BOEHLERT, Mr. BROWN of California, Mr. VALENTINE, Mr. TRAFICANT, Mr. HAYES, Mr. BACCHUS of Florida, Mr. CRAMER, Mr. BARCIA, Mr. KLEIN, Mr. FINGERHUT, Mr. McHALE, Ms. ESHOO, Ms. EDDIE BERNICE JOHNSON of Texas, Mr. HINCHEY, Mr. COLEMAN, Mr. WISE, Mr. BLACKWELL, and Mr. KANJORSKI) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

JUNE 15, 1993

Additional sponsors: Mr. PAYNE of New Jersey, Mr. TOWNS, and Mr. MACHTLEY

JULY 13, 1993

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italic]

[For text of introduced bill, see copy of bill as introduced on April 21, 1993]

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**A BILL**

To provide for a coordinated Federal program to accelerate development and dissemination of applications of high-

performance computing and high-speed networking, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “National Information*  
5 *Infrastructure Act of 1993”.*

6 **SEC. 2. FINDINGS.**

7 *The Congress finds that—*

8 *(1) high-performance computing and high-speed*  
9 *networks have proven to be powerful tools for improv-*  
10 *ing America’s national security, industrial competi-*  
11 *tiveness, research capabilities, and ability to make a*  
12 *wide array of information available for a variety of*  
13 *applications;*

14 *(2) Federal programs, such as the High-Perform-*  
15 *ance Computing Program and National Research and*  
16 *Education Network established by Congress in 1991,*  
17 *are vital to the maintenance of United States leader-*  
18 *ship in high-performance computing and high-speed*  
19 *network development, particularly in the defense and*  
20 *research sectors;*

21 *(3) high-performance computing and high-speed*  
22 *networking have the potential to expand dramatically*  
23 *access to information in many fields, including edu-*  
24 *cation, libraries, government information dissemina-*

1     *tion, and health care, if adequate resources are de-*  
2     *voted to the research and development activities need-*  
3     *ed to do so;*

4             *(4) high-performance computing and high-speed*  
5     *networking have the potential to expand opportunities*  
6     *for participation for Americans who have disabilities*  
7     *and to improve equality of opportunity, full partici-*  
8     *pation, independent living, and economic self-suffi-*  
9     *ciency for Americans with disabilities;*

10            *(5) the Federal Government should ensure that*  
11     *the applications achieved through research and devel-*  
12     *opment efforts such as the High-Performance Comput-*  
13     *ing Program directly benefit all Americans;*

14            *(6) the Federal Government should stimulate the*  
15     *development of computing and networking applica-*  
16     *tions and support wider access to network resources*  
17     *so that the benefits of applications so developed can*  
18     *reach the intended users throughout the Nation, in-*  
19     *cluding users with disabilities; and*

20            *(7) a coordinated, interagency undertaking is*  
21     *needed to identify and promote applications of com-*  
22     *puting and networking advances developed by the*  
23     *High-Performance Computing Program which will*  
24     *provide large economic and social benefits to the Na-*  
25     *tion, including new tools for teaching, the creation of*



1           “(2) develop a Plan for Computing and  
2           Networking Applications (hereafter in this title re-  
3           ferred to as the ‘Plan’) describing the goals and pro-  
4           posed activities of the applications program estab-  
5           lished under paragraph (1), taking into consideration  
6           the recommendations of the advisory committee on  
7           high-performance computing and applications estab-  
8           lished under section 101(b).

9           The President shall designate the Federal agencies and de-  
10          partments which shall participate in the applications pro-  
11          gram established under paragraph (1). The applications  
12          program may be administered as part of the Program estab-  
13          lished under section 101.

14          “(b) COLLABORATION WITH NON-FEDERAL ENTI-  
15          TIES.—To the maximum extent possible, the applications  
16          program shall involve cost sharing and partnerships among  
17          participating Federal departments and agencies, State and  
18          local governments, and private sector entities.

19          “(c) INTEROPERABLE INFORMATION SYSTEMS.—In se-  
20          lecting projects for support under this title, special consider-  
21          ation shall be given to projects which will promote develop-  
22          ment of interconnected and interoperable information sys-  
23          tems.



1       *carry out the specific responsibilities set forth in*  
2       *paragraph (2) of this subsection.*

3       “(c) *PROGRESS IN IMPLEMENTING PLAN.—(1) Accom-*  
4       *panying the initial submission of the Plan shall be—*

5               “(A) *a summary of the achievements of Federal*  
6       *efforts during the preceding fiscal year to develop*  
7       *computing and networking applications and to ad-*  
8       *vance the technologies on which the applications de-*  
9       *pend; and*

10              “(B) *any recommendations regarding additional*  
11       *action or legislation which may be required to assist*  
12       *in implementing the Plan.*

13       “(2) *Accompanying each subsequent submission of the*  
14       *Plan shall be—*

15              “(A) *a summary of the achievements of Federal*  
16       *efforts since the previous submission of the Plan to de-*  
17       *velop computing and networking applications and to*  
18       *advance the technologies on which the applications de-*  
19       *pend, including an estimate of the number and the*  
20       *demographic diversity of users served in each applica-*  
21       *tion;*

22              “(B) *an evaluation of the progress made toward*  
23       *achieving the goals and priorities established under*  
24       *subsection (b)(1);*

1           “(C) a summary of problems encountered in im-  
2           plementing the Plan; and

3           “(D) any recommendations regarding additional  
4           action or legislation which may be required to assist  
5           in implementing the Plan.

6   **“SEC. 303. RESPONSIBILITIES OF THE FEDERAL COORDI-**  
7                   **NATING COUNCIL FOR SCIENCE, ENGINEER-**  
8                   **ING, AND TECHNOLOGY.**

9           “The Federal Coordinating Council for Science, Engi-  
10          neering, and Technology shall—

11           “(1) develop the Plan as provided in section  
12          301(a)(2);

13           “(2) coordinate the activities of Federal agencies  
14          and departments undertaken pursuant to the Plan  
15          and report at least annually to the President, through  
16          the Chairman of the Council, on any recommended  
17          changes in agency or departmental roles that are  
18          needed better to implement the Plan; and

19           “(3) assess, prior to the President’s submission to  
20          the Congress of the annual budget estimate, each  
21          agency and departmental budget estimate for consist-  
22          ency with the Plan and make the results of that as-  
23          sessment available to the appropriate elements of the  
24          Executive Office of the President, particularly the  
25          Office of Management and Budget.

1 **“SEC. 304. NOTIFICATION REQUIREMENT.**

2       “(a) *REQUIREMENT.*—Each Federal agency and de-  
3 *partment designated by the President under section 301(a)*  
4 *as a participant in the applications program shall, as part*  
5 *of its annual request for appropriations to the Office of*  
6 *Management and Budget—*

7               “(1) *identify each element of its activities*  
8 *which—*

9                       “(A) *contributes primarily to the implemen-*  
10 *tation of the Plan; or*

11                       “(B) *contributes primarily to the achieve-*  
12 *ment of other objectives but aids Plan implemen-*  
13 *tation in important ways; and*

14               “(2) *identify the portion of its request for appro-*  
15 *priations that is allocated to each such element.*

16       “(b) *OFFICE OF MANAGEMENT AND BUDGET RE-*  
17 *VIEW.*—The Office of Management and Budget shall review  
18 *each submission received under this section in light of the*  
19 *goals, priorities, and agency and departmental responsibil-*  
20 *ities set forth in the Plan. The President’s annual budget*  
21 *request shall include a statement of the portion of each ap-*  
22 *propriate agency or department’s annual budget request*  
23 *that is allocated to efforts to achieve the goals and priorities*  
24 *established under section 302(b)(1).*

1 **“SEC. 305. NETWORK ACCESS.**

2 “(a) *CONNECTIONS PROGRAM.*—*The Plan shall include*  
3 *programs administered by the National Science Foundation*  
4 *to—*

5 “(1) *foster the development of network services in*  
6 *local communities which will connect institutions of*  
7 *education at all levels, libraries, museums, and State*  
8 *and local governments to each other; and*

9 “(2) *provide funds for the purchase of network*  
10 *services to entities described in paragraph (1), or or-*  
11 *ganizations representing such entities, to connect to*  
12 *the Internet.*

13 *Such program shall include funding for the acquisition of*  
14 *required hardware and software and for the establishment*  
15 *of broadband connections to the Internet. Not more than*  
16 *75 percent of the cost of any project for which an award*  
17 *is made under this subsection shall be provided under this*  
18 *Act.*

19 “(b) *TRAINING.*—*The Plan shall include programs ad-*  
20 *ministered by the National Science Foundation and other*  
21 *appropriate agencies and departments to train teachers,*  
22 *students, librarians, and State and local government per-*  
23 *sonnel in the use of computer networks and the Internet.*  
24 *Training programs for librarians shall be designed to pro-*  
25 *vide skills and training materials needed by librarians to*  
26 *instruct the public in the use of hardware and software for*

1 *accessing and using computer networks and the Internet.*  
2 *Training programs shall include programs designed for in-*  
3 *dividuals with disabilities.*

4 “(c) *REPORT.—The Director shall, within one year*  
5 *after the date of enactment of this title, submit a report*  
6 *to Congress which shall include—*

7 “(1) *findings of an examination of the extent to*  
8 *which the education and library communities and*  
9 *State and local government have access to the*  
10 *Internet, including the numbers and the geographic*  
11 *distribution, by type, of institutions having access,*  
12 *and including the numbers of institutions having*  
13 *human/computer interfaces suitable for use by indi-*  
14 *viduals with disabilities;*

15 “(2) *a statement of the extent to which*  
16 *broadband connections to the Internet exist for the*  
17 *education and library communities and State and*  
18 *local governments, including the numbers and the geo-*  
19 *graphic distribution, by type, of institutions having*  
20 *access;*

21 “(3) *an assessment of the factors limiting access*  
22 *by institutions of education at all levels, libraries,*  
23 *and State and local governments to the Internet and*  
24 *an estimate of the cost of providing universal*

1       *broadband access for those institutions to the Internet;*  
2       *and*

3             “(4) *recommendations for collaborative programs*  
4       *among Federal, State, and local governments and the*  
5       *private sector to expand connectivity to the Internet*  
6       *for educational institutions, libraries, and State and*  
7       *local governments.*

8       “(d) *AUTHORIZATION OF APPROPRIATIONS.—From*  
9       *sums otherwise authorized to be appropriated, there are au-*  
10       *thorized to be appropriated to the National Science Foun-*  
11       *dation for the purposes of this section, \$15,000,000 for fiscal*  
12       *year 1994, \$30,000,000 for fiscal year 1995, and*  
13       *\$50,000,000 for fiscal year 1996.*

14       **“SEC. 306. RESEARCH IN SUPPORT OF APPLICATIONS.**

15       “(a) *IN GENERAL.—The Plan shall specify the basic*  
16       *and applied research and human resource development ac-*  
17       *tivities in areas, such as computer science and engineering,*  
18       *mathematics, computer visualization, and human cog-*  
19       *niton, that will provide the foundation for achieving the*  
20       *applications included in the Plan. The Plan shall include*  
21       *basic and applied research activities related to the long-*  
22       *range social and ethical implications of applications of*  
23       *high-speed networking and high-performance computing.*  
24       *The Plan shall specify those activities included in the Pro-*

1 *gram under title I which contribute to the development of*  
2 *applications included in the Plan.*

3       “(b) *NETWORK SECURITY AND PRIVACY.*—*The Plan*  
4 *shall specify research programs needed to create means to—*

5               “(1) *ensure the security and privacy of trans-*  
6 *missions over the Internet and the integrity of digital*  
7 *information accessed via the Internet; and*

8               “(2) *facilitate the management and protection of*  
9 *copyrighted information which is accessed via the*  
10 *Internet.*

11       “(c) *EASE OF INTERNET USE.*—*The Plan shall specify*  
12 *research programs needed to develop and demonstrate*  
13 *human/computer interfaces that will simplify access to and*  
14 *use of the Internet by nonspecialists in computing and*  
15 *networking technologies and by individuals with disabili-*  
16 *ties.*

17       “(d) *AUTHORIZATION OF APPROPRIATIONS.*—*From*  
18 *sums otherwise authorized to be appropriated, there are au-*  
19 *thorized to be appropriated for the purposes of this section,*  
20 *\$6,000,000 for fiscal year 1994, \$15,000,000 for fiscal year*  
21 *1995, \$20,000,000 for fiscal year 1996, \$20,000,000 for fis-*  
22 *cal year 1997, and \$20,000,000 for fiscal year 1998.*

23 **“SEC. 307. APPLICATIONS FOR EDUCATION.**

24       “(a) *IN GENERAL.*—*The Plan shall specify projects to*  
25 *develop and apply computing and networking technologies*

1 *for use in education at all levels from early childhood edu-*  
2 *cation through higher education, including projects for the*  
3 *education and training of individuals with disabilities. The*  
4 *National Science Foundation shall be the lead agency for*  
5 *implementing the activities required by this section, and*  
6 *shall consult with the Department of Education in imple-*  
7 *menting those activities. Activities under this section shall*  
8 *include—*

9           “(1) *projects, including support for acquisition*  
10 *of required computer hardware and software, that*  
11 *demonstrate the educational value of the Internet, in-*  
12 *cluding cost effectiveness, in providing for advances*  
13 *in distance learning and electronic classrooms, facili-*  
14 *tating nationwide communication among educators*  
15 *and students, access to databases of information in*  
16 *digital format, and access to innovative curricular*  
17 *materials;*

18           “(2) *development, testing, and evaluation of com-*  
19 *puter systems, computer software, and computer net-*  
20 *works for—*

21                   “(A) *teacher training, including teachers in*  
22 *special education programs; and*

23                   “(B) *informal education outside of school,*  
24 *including workforce training in mathematics,*

1           *science, and technology and in specific job-relat-*  
2           *ed skills, including literacy; and*

3           “(3) *development, testing, and evaluation of ad-*  
4           *vanced educational software and of network-based in-*  
5           *formation resources.*

6           “(b) *ELEMENTARY AND SECONDARY EDUCATION.—In*  
7           *accordance with subsection (a), applications for elementary,*  
8           *secondary, and vocational/technical education shall be de-*  
9           *signed to complement and strengthen ongoing national,*  
10          *State, and local educational restructuring and reform ac-*  
11          *tivities and shall include—*

12           “(1) *projects in computing and networking*  
13          *that—*

14                   “(A) *provide for network connections among*  
15                   *elementary and secondary schools in local re-*  
16                   *gions and connections to the Internet to enable*  
17                   *students and teachers to—*

18                           “(i) *communicate with their peers;*

19                           “(ii) *communicate with educators and*  
20                           *students in institutions of higher education;*  
21                           *and*

22                           “(iii) *access educational materials and*  
23                           *other computing resources;*

24                   “(B) *address the needs of rural populations*  
25                   *and of urban communities; and*

1           “(C) address the needs of individuals with  
2           disabilities;

3           “(2) collection and dissemination of information  
4           about ongoing elementary and secondary educational  
5           projects, including special education projects, based  
6           on application of computing and networking tech-  
7           nologies, and about other educational resources avail-  
8           able over the Internet;

9           “(3) development and evaluation of undergradu-  
10          ate courses in the educational applications of comput-  
11          ing and networking for the instruction of students  
12          preparing for teaching careers, including courses that  
13          will ensure the early familiarization and training of  
14          these students in the use of the Internet; and

15          “(4) development, testing, and evaluation of edu-  
16          cational software designed for collaborative use over  
17          the Internet, including tools that will enable class-  
18          room teachers easily to adapt software to local condi-  
19          tions.

20          “(c) COOPERATION.—In carrying out the requirements  
21          of this section, the National Science Foundation, the De-  
22          partment of Education, and other Federal agencies partici-  
23          pating in such activities shall work with the computer hard-  
24          ware, computer software, and communications industries,  
25          authors and publishers of educational materials, State edu-

1 cation departments, and local school districts, as appro-  
2 priate.

3 “(d) *AUTHORIZATION OF APPROPRIATIONS.*—From  
4 sums otherwise authorized to be appropriated, there are au-  
5 thorized to be appropriated to the National Science Foun-  
6 dation for the purposes of this section, \$16,000,000 for fiscal  
7 year 1994, \$45,000,000 for fiscal year 1995, \$60,000,000  
8 for fiscal year 1996, \$75,000,000 for fiscal year 1997, and  
9 \$75,000,000 for fiscal year 1998.

10 **“SEC. 308. APPLICATIONS FOR HEALTH CARE.**

11 “(a) *IN GENERAL.*—The Plan shall specify projects to  
12 develop and apply high-performance computing and high-  
13 speed networking technologies for use in the health care sec-  
14 tor, with the goal of improving the quality and enhancing  
15 the cost-effectiveness of health care. Special consideration  
16 shall be given to applications that are designed to lower  
17 health care costs. The Department of Health and Human  
18 Services, through the National Institutes of Health and the  
19 Centers for Disease Control and Prevention, shall be the  
20 lead agency for implementing the activities required by this  
21 section.

22 “(b) *CLINICAL INFORMATION SYSTEMS.*—In accord-  
23 ance with subsection (a), applications related to clinical in-  
24 formation systems shall include—

1           “(1) testbed networks for linking hospitals, clin-  
2           ics, doctor’s offices, medical schools, medical libraries,  
3           and universities to enable health care providers and  
4           researchers to share medical images and to develop  
5           computer-based records;

6           “(2) software and visualization technology for  
7           visualizing the human anatomy and analyzing diag-  
8           nostic images and records;

9           “(3) virtual reality technology for simulating  
10          surgical and medical procedures;

11          “(4) collaborative technology to allow several  
12          health care providers in remote locations to provide  
13          real-time treatment to patients;

14          “(5) interactive technologies to allow health care  
15          providers to monitor, evaluate, and treat patients in  
16          nonclinical settings;

17          “(6) database technology to provide health care  
18          providers with access to relevant medical information  
19          and literature;

20          “(7) database technology for storing, accessing  
21          and transmitting patients’ medical records while pro-  
22          tecting the accuracy and privacy of those records;

23          “(8) numerical simulation of chemical inter-  
24          actions relevant to reducing the time and cost of drug  
25          development;

1           “(9) *three dimensional geometric modeling and*  
2           *artificial intelligence methods for interpreting an*  
3           *array of medical images; and*

4           “(10) *complex simulations of sociological popu-*  
5           *lations affected disproportionately by selected diseases*  
6           *or disorders.*

7           “(c) *HEALTH INFORMATION TO THE PUBLIC.—In ac-*  
8           *cordance with subsection (a), applications related to deliv-*  
9           *ery of health information to the public shall include—*

10           “(1) *development, testing, and evaluation of*  
11           *database and network technologies for the storage of*  
12           *consumer-oriented, interactive, multimedia materials*  
13           *for health promotion, and for the distribution of such*  
14           *materials to public access points, such as community*  
15           *health and human service agencies, Centers for Inde-*  
16           *pendent Living established by the Rehabilitation Act*  
17           *of 1973, organizations established by title I of the*  
18           *Technology-Related Assistance for Individuals with*  
19           *Disabilities Act of 1988, schools, and public libraries;*

20           “(2) *pilot programs to develop, test, and evaluate*  
21           *the effectiveness and cost efficiency of interactive,*  
22           *multimedia materials to assist patients in deciding*  
23           *among health care options;*

24           “(3) *development and demonstration of human/*  
25           *computer interfaces to allow nonspecialists in com-*

1     *puting and networking technologies ease of access to*  
2     *and use of databases of health information and net-*  
3     *works providing health information service; and*

4             *“(4) development, testing, and evaluation of*  
5     *database and network access technologies to provide*  
6     *individuals with health information, including health*  
7     *risk appraisal, preventative medical advice, and dis-*  
8     *ease treatment options, which is oriented to nonhealth*  
9     *professionals and which is customized to take into*  
10    *consideration an individual’s medical history.*

11            *“(d) HEALTH DELIVERY SYSTEMS AND POPULATION*  
12    *DATA SETS.—In accordance with subsection (a), applica-*  
13    *tions for health delivery systems and for gathering popu-*  
14    *lation data sets shall include—*

15             *“(1) testbed networks and software that permits*  
16     *collaborative communication among local public and*  
17     *private health and human service providers, such as*  
18     *health centers, clinics, entitlement offices, and school-*  
19     *based clinics, to enable health and human service pro-*  
20     *viders to work together in delivering coordinated serv-*  
21     *ices for at-risk populations;*

22             *“(2) pilot programs to develop high speed com-*  
23     *munications networks and software for providing*  
24     *health care providers with—*

1           “(A) immediate, on-line access to up-to-date  
2           clinic-based health promotion and disease pre-  
3           vention recommendations from the Centers for  
4           Disease Control and Prevention and other Public  
5           Health Service agencies; and

6           “(B) a two-way communications link with  
7           prevention specialists in State and local health  
8           departments, and other agencies with informa-  
9           tion germane to clinic-based health promotion  
10          and disease prevention; and

11          “(3) development, testing, and evaluation of  
12          database technologies to provide clinicians with access  
13          to information to guide and assist them in providing  
14          diagnosis, providing treatment, and providing advice  
15          regarding health promotion and disease prevention to  
16          patients, and to facilitate the gathering of systematic  
17          population data sets in compatible formats on the ef-  
18          ficacy of treatments and on national health trends.

19          “(e) AUTHORIZATION OF APPROPRIATIONS.—From  
20          sums otherwise authorized to be appropriated, there are au-  
21          thorized to be appropriated to the Secretary of Health and  
22          Human Services for the purposes of this section,  
23          \$22,000,000 for fiscal year 1994, \$54,000,000 for fiscal year  
24          1995, \$72,000,000 for fiscal year 1996, \$90,000,000 for fis-  
25          cal year 1997, and \$90,000,000 for fiscal year 1998.

1 **“SEC. 309. APPLICATIONS FOR LIBRARIES.**

2       “(a) *IN GENERAL.*—*The Plan shall specify projects to*  
3 *develop technologies for ‘digital libraries’ of electronic infor-*  
4 *mation. The National Science Foundation shall be the lead*  
5 *agency for implementing the activities required by this sec-*  
6 *tion, and in implementing this section shall take into ac-*  
7 *count the needs of individuals with disabilities.*

8       “(b) *DIGITAL LIBRARIES.*—*In accordance with sub-*  
9 *section (a), activities to support the development of digital*  
10 *libraries shall include—*

11               “(1) *development of advanced data storage sys-*  
12 *tems capable of storing hundreds of trillions of bits of*  
13 *data and giving thousands of users simultaneous and*  
14 *nearly instantaneous access to that information;*

15               “(2) *development of high-speed, highly accurate*  
16 *systems for converting printed text, page images,*  
17 *graphics, and photographic images into electronic*  
18 *form;*

19               “(3) *development of database software capable of*  
20 *quickly searching, filtering, and summarizing large*  
21 *volumes of text, imagery, data, and sound;*

22               “(4) *encouragement of the development and*  
23 *adoption of common standards and, where appro-*  
24 *priate, common formats for electronic data;*

1           “(5) development of computer-based means to  
2 categorize and organize electronic information in a  
3 variety of formats;

4           “(6) training of database users and librarians in  
5 the use of and development of electronic databases;

6           “(7) development of means for simplifying the  
7 utilization of networked databases distributed around  
8 the Nation and around the world;

9           “(8) development of visualization methods for  
10 quickly browsing large volumes of imagery; and

11           “(9) development of means for protecting copy-  
12 righted material in electronic form, including, if tech-  
13 nologically feasible, systems with capabilities for elec-  
14 tronically identifying copyrighted works and for elec-  
15 tronically indicating whether any permission which  
16 is required by title 17, United States Code, has been  
17 granted by the copyright owner.

18           “(c) DEVELOPMENT OF PROTOTYPES.—In accordance  
19 with subsection (a), the Plan shall provide for the develop-  
20 ment of prototype digital libraries to serve as testbeds for  
21 the systems, software, standards, and methods developed  
22 under subsection (b). The development of prototype digital  
23 libraries may involve nonprofit, private institutions that  
24 collect and maintain specimens, materials, or other items  
25 used in research, such as natural history museums. The pro-

1 *totype digital libraries shall be accessible by the public via*  
2 *the Internet. In carrying out this subsection, an evaluation*  
3 *shall be conducted of the suitability and utility of distribut-*  
4 *ing electronic information over the Internet, including cata-*  
5 *logging and evaluating the kinds of uses and determining*  
6 *barriers that impair use of the Internet for this purpose.*

7       “(d) *DEVELOPMENT OF DATABASES OF REMOTE-*  
8 *SENSING IMAGES.—The National Aeronautics and Space*  
9 *Administration shall develop databases of software and re-*  
10 *mote-sensing images to be made available over computer*  
11 *networks.*

12       “(e) *AUTHORIZATION OF APPROPRIATIONS.—From*  
13 *sums otherwise authorized to be appropriated, there are au-*  
14 *thorized to be appropriated—*

15               “(1) *to the National Science Foundation for the*  
16 *purposes of this section, \$8,000,000 for fiscal year*  
17 *1994, \$16,000,000 for fiscal year 1995, \$22,000,000*  
18 *for fiscal year 1996, \$32,000,000 for fiscal year 1997,*  
19 *and \$32,000,000 for fiscal year 1998; and*

20               “(2) *to the National Aeronautics and Space Ad-*  
21 *ministration for the purposes of this section,*  
22 *\$4,000,000 for fiscal year 1994, \$8,000,000 for fiscal*  
23 *year 1995, \$10,000,000 for fiscal year 1996,*  
24 *\$12,000,000 for fiscal year 1997, and \$12,000,000 for*  
25 *fiscal year 1998.*

1 **“SEC. 310. APPLICATIONS FOR GOVERNMENT INFORMA-**  
2 **TION.**

3 “(a) *IN GENERAL.*—*The Plan shall specify projects*  
4 *needed to develop and apply high-performance computing*  
5 *and high-speed networking technologies to provide improved*  
6 *public access to information generated by Federal, State,*  
7 *and local governments, including access by individuals with*  
8 *disabilities.*

9 “(b) *LEAD AGENCY.*—*The President shall designate a*  
10 *lead agency for implementing the activities required by this*  
11 *section. The lead agency shall issue policy guidelines de-*  
12 *signed to foster—*

13 “(1) *a diversity of public and private sources*  
14 *for, and a competitive marketplace in, information*  
15 *products and services based on government informa-*  
16 *tion; and*

17 “(2) *dissemination of government information to*  
18 *the public on a timely, equitable, and affordable basis*  
19 *and in a manner that will promote the usefulness of*  
20 *the information to the public.*

21 “(c) *PROJECTS.*—*In accordance with subsection (a),*  
22 *projects shall be undertaken which—*

23 “(1) *connect depository libraries and other*  
24 *sources of government information to the Internet to*  
25 *enable—*

1           “(A) access to Federal Government informa-  
2           tion and databases in electronic formats;

3           “(B) access to State or local government in-  
4           formation;

5           “(C) access to related resources which en-  
6           hance the use of government information, includ-  
7           ing databases available through State projects  
8           funded pursuant to the Technology-Related As-  
9           sistance for Individuals with Disabilities Act of  
10          1988; and

11          “(D) linkages with other libraries and insti-  
12          tutions to enhance use of government informa-  
13          tion; and

14          “(2) demonstrate, test, and evaluate technologies  
15          to increase access to and to facilitate effective use of  
16          government information and databases for support of  
17          research and education, economic development, and  
18          an informed citizenry.

19          “(d) FEDERAL INFORMATION LOCATOR.—In accord-  
20          ance with subsection (a), an information locator system  
21          shall be established which is accessible by the public via the  
22          Internet and which provides citations to Federal informa-  
23          tion and guidance on how to obtain such information.

24          “(e) AUTHORIZATION OF APPROPRIATIONS.—From  
25          sums otherwise authorized to be appropriated, there are au-

1 *thorized to be appropriated for the purposes of this section,*  
2 *\$4,000,000 for fiscal year 1994, \$12,000,000 for fiscal year*  
3 *1995, \$16,000,000 for fiscal year 1996, \$21,000,000 for fis-*  
4 *cal year 1997, and \$21,000,000 for fiscal year 1998.”.*

5 **SEC. 4. HIGH-PERFORMANCE COMPUTING AND APPLICA-**  
6 **TIONS ADVISORY COMMITTEE.**

7 *Section 101(b) of the High-Performance Computing*  
8 *Act of 1991 is amended to read as follows:*

9 *“(b) HIGH-PERFORMANCE COMPUTING AND APPLICA-*  
10 *TIONS ADVISORY COMMITTEE.—(1) The Director shall es-*  
11 *tablish an advisory committee on high-performance com-*  
12 *puting and applications consisting of non-Federal mem-*  
13 *bers, including representatives of the research and library*  
14 *communities, education at all levels, consumer and public*  
15 *interest groups, network providers, and the computer hard-*  
16 *ware, computer software, telecommunications, publishing,*  
17 *and information industries, who are specially qualified to*  
18 *provide the Director with advice and information on high-*  
19 *performance computing and on applications of computing*  
20 *and networking. The recommendations of the advisory com-*  
21 *mittee shall be considered in reviewing and revising the*  
22 *Program described in this section and the Plan required*  
23 *by section 301(a)(2). The advisory committee shall provide*  
24 *the Director with an independent assessment of—*

1           “(A) progress in implementing the Program de-  
2           scribed in this section and the Plan required by sec-  
3           tion 301(a)(2);

4           “(B) the need to revise the Program described in  
5           this section and the Plan required by section  
6           301(a)(2);

7           “(C) the balance between the components of the  
8           activities undertaken pursuant to this Act;

9           “(D) whether the research, development and dem-  
10          onstration projects undertaken pursuant to this Act  
11          are—

12                 “(i) helping to maintain United States  
13                 leadership in computing and networking tech-  
14                 nologies and in the application of those tech-  
15                 nologies; and

16                 “(ii) promoting competitive private sector  
17                 markets in the provision of products and services  
18                 related to these technologies and their applica-  
19                 tions;

20          “(E) whether the applications developed under  
21          title III are successfully addressing the needs of the  
22          targeted populations, including assessment of the  
23          number of users served by those applications; and

24          “(F) other issues identified by the Director.



1 *Space Administration, the Department of Education, and*  
2 *other agencies participating in the Program shall support*  
3 *the establishment of the National Research and Education*  
4 *Network Program. The Network Program shall consist of*  
5 *the following components:*

6           “(1) *Research and development of networking*  
7 *software and hardware required for developing high-*  
8 *performance data networking capabilities with the*  
9 *goal of achieving the transmission of data at a speed*  
10 *of one gigabit per second or greater.*

11           “(2) *Federal experimental test bed networks*  
12 *for—*

13                   “(A) *developing and demonstrating ad-*  
14 *vanced networking technologies resulting from*  
15 *the activities described in paragraph (1), includ-*  
16 *ing any reasonably necessary assessment of the*  
17 *reliability of such technologies under realistic op-*  
18 *erating conditions; and*

19                   “(B) *providing connections and associated*  
20 *network services for purposes consistent with this*  
21 *Act which require levels of network capabilities*  
22 *not commercially available.*

23           “(3) *Provision of support for researchers, edu-*  
24 *cators, and students to obtain access to and use of the*  
25 *Internet to allow for communication with other indi-*

1 *viduals in the research and education communities*  
2 *and to allow for access to high-performance comput-*  
3 *ing systems, electronic information resources, other re-*  
4 *search facilities, and libraries.*

5 *“(b) TEST BED NETWORK CHARACTERISTICS.—The*  
6 *test bed networks shall—*

7 *“(1) be developed and deployed in coordination*  
8 *with the computer hardware, computer software, tele-*  
9 *communications, and information industries;*

10 *“(2) be designed, developed, and operated in col-*  
11 *laboration with potential users in government, indus-*  
12 *try, and research institutions and educational insti-*  
13 *tutions;*

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

18 *“(4) be designed and operated in a manner*  
19 *which promotes and encourages research and develop-*  
20 *ment leading to the creation of commercial data*  
21 *transmission standards, enabling the establishment of*  
22 *privately developed high-speed commercial networks;*

23 *“(5) be designed and operated so as to ensure the*  
24 *application of laws that provide network and infor-*  
25 *mation resources security, including those that protect*

1 *copyright and other intellectual property rights, and*  
2 *those that control access to data bases and protect na-*  
3 *tional security;*

4 *“(6) have accounting mechanisms which allow*  
5 *users or groups of users to be charged for their usage*  
6 *of copyrighted materials available over the test bed*  
7 *networks and, where appropriate and technically fea-*  
8 *sible, for their usage of the test bed networks; and*

9 *“(7) be interoperable with Federal and non-Fed-*  
10 *eral computer networks, to the extent appropriate, in*  
11 *a way that allows autonomy for each component net-*  
12 *work.*

13 *“(c) NETWORK ACCESS.—The Federal agencies and de-*  
14 *partments participating in activities under this section*  
15 *shall develop a plan with specific goals for implementing*  
16 *the requirements of subsection (a)(3), including provision*  
17 *for financial assistance to educational institutions, public*  
18 *libraries, and other appropriate entities. This plan shall be*  
19 *submitted to the Congress not later than one year after the*  
20 *date of enactment of the National Information Infrastruc-*  
21 *ture Act of 1993. Each year thereafter, the Director shall*  
22 *report to Congress on progress in implementing subsection*  
23 *(a)(3).*

24 *“(d) RESTRICTION ON USE OF TEST BED NET-*  
25 *WORKS.—(1) The Federal test bed networks shall not be used*

1 *to provide network services that are not related to the activi-*  
2 *ties under paragraphs (1) and (2) of subsection (a) and*  
3 *that could otherwise be provided satisfactorily using com-*  
4 *mercially available network services. Determination of sat-*  
5 *isfactory availability shall include consideration of geo-*  
6 *graphic access to and affordability of service, and timeliness*  
7 *and technical performance standards in providing services.*

8       “(2) *The requirements of paragraph (1) shall take ef-*  
9 *fect on the date set forth in the report required under para-*  
10 *graph (3).*

11       “(3) *Six months following the date of enactment of the*  
12 *National Information Infrastructure Act of 1993, the Direc-*  
13 *tor, after consultation with the Federal agencies and de-*  
14 *partments supporting Federal test bed networks, shall pro-*  
15 *vide a report to Congress which—*

16               “(A) *describes the technical developments nec-*  
17 *essary to allow implementation of paragraph (1);*

18               “(B) *determines the earliest feasible date for im-*  
19 *plementing paragraph (1); and*

20               “(C) *sets forth that date as the date on which*  
21 *paragraph (1) shall take effect.*

22 *Should the Director subsequently determine that, for tech-*  
23 *nical reasons, the requirements of paragraph (1) can not*  
24 *be imposed on that date, the Director shall, not less than*  
25 *3 months prior to that date, report to Congress on the rea-*

1 *sons for the delay in imposing the requirements of para-*  
2 *graph (1), and shall set forth a new date on which para-*  
3 *graph (1) shall take effect.*

4       “(e) *ADVANCED RESEARCH PROJECTS AGENCY RE-*  
5 *SPONSIBILITY.—As part of the Program, the Department of*  
6 *Defense, through the Advanced Research Projects Agency,*  
7 *shall support research and development of advanced fiber*  
8 *optics technology, switches, and protocols needed to develop*  
9 *the Network Program.*

10       “(f) *INFORMATION SERVICES.—The Director shall as-*  
11 *sist the President in coordinating the activities of appro-*  
12 *priate agencies and departments to promote the develop-*  
13 *ment of information services that could be provided over*  
14 *the Internet consistent with the purposes of this Act. These*  
15 *services may include the provision of directories of the users*  
16 *and services on computer networks, data bases of unclassi-*  
17 *fied Federal scientific data, training of users of data bases*  
18 *and computer networks, and technology to support com-*  
19 *puter-based collaboration that allows researchers and edu-*  
20 *cators around the Nation to share information and instru-*  
21 *mentation.*

22       “(g) *USE OF GRANT FUNDS.—All Federal agencies*  
23 *and departments are authorized to allow recipients of Fed-*  
24 *eral research grants to use grant moneys to pay for com-*  
25 *puter networking expenses.*

1       “(h) *LIMITATION ON USE OF FUNDS.*—Development of  
2 *data communications networks pursuant to this Act shall*  
3 *be through purchase of standard commercial transmission*  
4 *and network services from vendors whenever feasible, and*  
5 *by contracting for customized services when such purchase*  
6 *is not feasible, in order to minimize Federal investment in*  
7 *network hardware and software.”.*

8       **SEC. 6. COMPETITIVE PROCUREMENTS.**

9       *Title II of the High-Performance Computing Act of*  
10 *1991 is amended by adding at the end the following new*  
11 *section:*

12       **“SEC. 209. COMPETITIVE PROCUREMENTS.**

13       *“The Competition in Contracting Act shall apply to*  
14 *all procurements under this Act of \$25,000 or greater.”.*

15       **SEC. 7. CONFORMING AMENDMENTS.**

16       *The High-Performance Computing Act of 1991 is*  
17 *amended—*

18               *(1) in section 3(1)—*

19                       *(A) by amending subparagraph (A) to read*  
20 *as follows:*

21                               *“(A) accelerate progress toward a univer-*  
22 *sally accessible high-capacity and high-speed*  
23 *data network for the Nation;”;* and

24                       *(B) by striking “Network” and inserting in*  
25 *lieu thereof “Internet” in subparagraph (C);*

1           (2) in section 4—

2                   (A) by redesignating paragraphs (1), (2),  
3                   (3), (4), and (5) as paragraphs (2), (7), (8),  
4                   (10), and (12), respectively;

5                   (B) by inserting before paragraph (2), as so  
6                   redesignated by subparagraph (A) of this para-  
7                   graph, the following new paragraph:

8                   “(1) ‘broadband’ means a transmission rate for  
9                   digital information on a communications network  
10                   which exceeds the maximum rate possible for trans-  
11                   mission of digital information on normal copper tele-  
12                   phone wires;”;

13                   (C) by inserting after paragraph (2), as so  
14                   redesignated by subparagraph (A) of this para-  
15                   graph, the following new paragraphs:

16                   “(3) ‘disabilities’ means functional limitations of  
17                   hearing, vision, movement, manipulation, speech, and  
18                   interpretation of information;

19                   “(4) ‘educational institutions’ includes institu-  
20                   tions of early childhood education, elementary and  
21                   secondary education, postsecondary education, and  
22                   vocational/technical education;

23                   “(5) ‘education at all levels’ includes early child-  
24                   hood education, elementary and secondary education,

1 *postsecondary education, and vocational/technical*  
2 *education;*

3 “(6) ‘Federal test bed networks’ means the Fed-  
4 eral experimental test bed networks described in sec-  
5 tion 102(a)(2);”;

6 (D) by inserting after paragraph (8), as so  
7 redesignated by subparagraph (A) of this para-  
8 graph, the following new paragraph:

9 “(9) ‘Internet’ means the network of both Federal  
10 and non-Federal interoperable packet switched data  
11 networks;”;

12 (E) by amending paragraph (10), as so re-  
13 designated by subparagraph (A) of this para-  
14 graph, to read as follows:

15 “(10) ‘Network Program’ means the National  
16 Research and Education Network Program established  
17 under section 102;”;

18 (F) by inserting after such paragraph (10)  
19 the following new paragraph:

20 “(11) ‘Nondevelopmental item’ has the meaning  
21 given such term in section 2325(d) of title 10, United  
22 States Code; and”;

23 (3) in section 101(a)(2)(A) and (B), by striking  
24 “Network” and inserting in lieu thereof “Federal test  
25 bed networks”;

1           (4) in section 101(a)(2)(C), by inserting “the  
2           private sector, States, and” after “computer networks  
3           of”;

4           (5) in section 101(a)(4)(C), by striking “estab-  
5           lishment of the Network” and inserting in lieu thereof  
6           “Network Program”;

7           (6) in section 201(a)(2), by striking “Network”  
8           both places it appears and inserting in lieu thereof  
9           “Internet”;

10          (7) in section 201(a)(3), by striking “Network”  
11          and inserting in lieu thereof “Internet for the pur-  
12          poses of this Act”;

13          (8) in section 201(a)(4), by inserting “consistent  
14          with section 102,” before “assist regional networks”;

15          (9) in section 202(b), by striking “\$134,000,000”  
16          and inserting in lieu thereof “\$111,000,000”; and

17          (10) in section 203(e)(1), by striking  
18          “\$138,000,000” and inserting in lieu thereof  
19          “\$124,000,000”.

20   **SEC. 8. USE OF DOMESTIC PRODUCTS.**

21          (a) *PROHIBITION AGAINST FRAUDULENT USE OF*  
22          “MADE IN AMERICA” LABELS.—(1) A person shall not in-  
23          tentionally affix a label bearing the inscription of “Made  
24          in America”, or any inscription with that meaning, to any

1 *product sold in or shipped to the United States, if that*  
2 *product is not a domestic product.*

3       (2) *A person who violates paragraph (1) shall not be*  
4 *eligible for any contract for a procurement carried out with*  
5 *amounts authorized under this Act, or under any amend-*  
6 *ment made by this Act, including any subcontract under*  
7 *such a contract pursuant to the debarment, suspension, and*  
8 *ineligibility procedures in subpart 9.4 of chapter 1 of title*  
9 *48, Code of Federal Regulations, or any successor proce-*  
10 *dures thereto.*

11       (b) *COMPLIANCE WITH BUY AMERICAN ACT.—(1) Ex-*  
12 *cept as provided in paragraph (2), the head of each agency*  
13 *which conducts procurements shall ensure that such pro-*  
14 *curements are conducted in compliance with sections 2*  
15 *through 4 of the Act of March 3, 1933 (41 U.S.C. 10a*  
16 *through 10c, popularly known as the “Buy American Act”).*

17       (2) *This subsection shall apply only to procurements*  
18 *made for which—*

19           (A) *amounts are authorized by this Act, or by*  
20 *any amendment made by this Act, to be made avail-*  
21 *able; and*

22           (B) *solicitations for bids are issued after the date*  
23 *of enactment of this Act.*

24       (3) *The Director of the Office of Science and Tech-*  
25 *nology Policy, before January 1, 1995, shall report to the*

1 *Congress on procurements covered under this subsection of*  
2 *products that are not domestic products.*

3 (c) *DEFINITION.—For the purposes of this section, the*  
4 *term “domestic product” means a product—*

5 (1) *that is manufactured or produced in the*  
6 *United States; and*

7 (2) *at least 50 percent of the cost of the articles,*  
8 *materials, or supplies of which are mined, produced,*  
9 *or manufactured in the United States.*

10 (d) *PURCHASE OF AMERICAN MADE EQUIPMENT AND*  
11 *PRODUCTS.—*

12 (1) *SENSE OF CONGRESS.—It is the sense of*  
13 *Congress that any recipient of a grant under this Act,*  
14 *or under any amendment made by this Act, should*  
15 *purchase, when available and cost-effective, American*  
16 *made equipment and products when expending grant*  
17 *monies.*

18 (2) *NOTICE TO RECIPIENTS OF ASSISTANCE.—In*  
19 *allocating grants under this Act, or under any*  
20 *amendment made by this Act, the appropriate agency*  
21 *or department shall provide to each recipient a notice*  
22 *describing the statement made in paragraph (1) by*  
23 *the Congress.*

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