

107TH CONGRESS  
1ST SESSION

# S. 368

To develop voluntary consensus standards to ensure accuracy and validation of the voting process, to direct the Director of the National Institute of Standards and Technology to study voter participation and emerging voting technology, to provide grants to States to improve voting methods, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

FEBRUARY 15, 2001

Mr. MCCAIN (for himself and Mr. HOLLINGS) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

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## A BILL

To develop voluntary consensus standards to ensure accuracy and validation of the voting process, to direct the Director of the National Institute of Standards and Technology to study voter participation and emerging voting technology, to provide grants to States to improve voting methods, 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 “American Voting  
5 Standards and Technology Act”.

1           **TITLE I—NIST STANDARDS;**  
2                           **STUDY; GRANTS**

3   **SEC. 101. ESTABLISHMENT OF VOTING SYSTEMS STAND-**  
4                           **ARDS PROGRAM.**

5           (a) IN GENERAL.—Section 2(c) of the National Insti-  
6   tute of Standards and Technology Act (15 U.S.C. 272(e))  
7   is amended—

8                   (1) in paragraph (21), by striking “and” at the  
9   end;

10                  (2) by redesignating paragraph (22) as para-  
11   graph (23); and

12                  (3) by inserting after paragraph (21) the fol-  
13   lowing:

14                   “(22) study automated voting systems used in  
15   the United States, including voter registration, vote  
16   casting, and vote counting; and”.

17           (b) DEVELOPING VOTING SYSTEMS STANDARDS.—  
18   The National Institute of Standards and Technology Act  
19   (15 U.S.C. 271 et seq.) is amended—

20                   (1) by redesignating sections 20 through 31 as  
21   sections 21 through 32, respectively; and

22                   (2) by inserting after section 19 the following:

23   **“SEC. 20. VOTING SYSTEMS STANDARDS.**

24                   “(a) The Secretary, through the Director, shall—

1           “(1) have the mission of developing standard  
2 practices, codes, specifications, and voluntary con-  
3 sensus standards needed to assure the accuracy, in-  
4 tegrity, and security of voting systems used in the  
5 United States, including voter registration, vote  
6 casting, and vote counting; and

7           “(2) establish a program with the National Vol-  
8 untary Laboratory Accreditation Program to ac-  
9 credit laboratories, in accordance with regulations  
10 for procedures under such program, to test vote  
11 casting and counting devices for conformance with  
12 standard practices, codes, specifications, and vol-  
13 untary consensus standards developed under para-  
14 graph (1).

15           “(b) For purposes of subsection (a), the term ‘voting  
16 systems’ shall include—

17           “(1) every stage of the voting procedure begin-  
18 ning with voter registration through any necessary  
19 recount of votes; and

20           “(2) systems used in connection with an elec-  
21 tion for the office of President, Vice President, or a  
22 member of Congress.

23           “(c) For purposes of subsection (a), the Secretary is  
24 authorized to cooperate with other departments and agen-

1 cies of the Federal Government, industry organizations,  
 2 State and local governments, and private organizations.”.

3 (c) AUTHORIZATION OF APPROPRIATIONS.—There  
 4 are authorized to be appropriated for fiscal years 2002,  
 5 2003, 2004, and 2005 such sums as may be necessary  
 6 to carry out the purposes of this section.

7 **SEC. 102. STUDY OF VOTING ISSUES.**

8 (a) IN GENERAL.—The Director of the National In-  
 9 stitute of Standards and Technology shall conduct a study  
 10 of—

11 (1) the impact of income of a voter on effective  
 12 participation in the election process;

13 (2) the impact of minority status of a voter  
 14 based on race, gender, or ethnicity on effective par-  
 15 ticipation in the election process;

16 (3) the effect of the use of differing voting ap-  
 17 paratus and of substandard or malfunctioning voting  
 18 machinery on effective participation in, and the in-  
 19 tegrity of, the election process; and

20 (4) any future and emerging technologies for  
 21 use in elections, such as Internet voting.

22 (b) STUDY OF INCOME.—The study conducted under  
 23 subsection (a)(1) shall include the study of the impact of  
 24 various factors on participation in elections by low-income  
 25 voters, including voter registration requirements, edu-

1 cational status, type of voting apparatus available, voting  
2 outreach efforts, and any other factors the Director of the  
3 National Institute of Standards and Technology deems  
4 relevant.

5 (c) COORDINATION.—In conducting studies under  
6 this section, the Director of the National Institute of  
7 Standards and Technology shall cooperate and coordinate  
8 with appropriate Federal, State, and local officials, includ-  
9 ing election officials and other interested groups and indi-  
10 viduals.

11 (d) REPORT.—Not later than 1 year after the date  
12 of enactment of this Act, the Director of the National In-  
13 stitute of Standards and Technology shall report the re-  
14 sults of the study conducted under this section to Con-  
15 gress.

16 (e) AUTHORIZATION OF APPROPRIATIONS.—There  
17 are authorized to be appropriated such sums as may be  
18 necessary to carry out the studies and report under this  
19 section.

20 **SEC. 103. VOTING IMPROVEMENT GRANTS.**

21 (a) MATCHING GRANT TO IMPROVE VOTING METH-  
22 ODS.—

23 (1) AUTHORITY.—The Secretary of Commerce  
24 (referred to in this subsection as the “Secretary”) is  
25 authorized to make matching grants to the State

1 agency responsible for administering elections in a  
2 State or the appropriate local agency responsible for  
3 administering elections in a unit of local government  
4 for the purpose of purchasing new or rehabilitated  
5 voting equipment that improves the ability of the  
6 public to cast a timely and accurate vote.

7 (2) VOTING EQUIPMENT.—Voting equipment  
8 purchased with the proceeds of a grant under para-  
9 graph (1) shall meet the voting systems performance  
10 standards developed by the National Institute of  
11 Standards and Technology under section 20 of the  
12 National Institute of Standards and Technology Act  
13 (15 U.S.C. 271 et seq.).

14 (3) APPLICATION.—The Secretary shall publish  
15 a notice in the Federal Register to notify State and  
16 local agencies regarding the time and manner in  
17 which such State or local agency may apply and to  
18 prescribe criteria for approval of a State or local  
19 agency application.

20 (4) PRIORITY.—In awarding grants under this  
21 subsection, the Secretary shall give priority to appli-  
22 cations which propose to use the funds to place vot-  
23 ing equipment in election precincts that are most in  
24 need of updating and improvement of their voting  
25 system in order to meet voting system performance

1 standards described in paragraph (2), particularly in  
2 areas experiencing the greatest need based on unem-  
3 ployment level, income levels, financial need, or other  
4 indicators of economic distress.

5 (5) MATCHING REQUIREMENT.—

6 (A) IN GENERAL.—The Secretary may not  
7 make a grant to a State or local agency under  
8 this subsection unless that agency agrees that,  
9 with respect to the costs to be incurred by the  
10 agency in carrying out the purpose for which  
11 the grant was awarded, the agency will make  
12 available non-Federal contributions in an  
13 amount equal to 50 percent of the Federal  
14 funds provided under the grant.

15 (B) WAIVER.—The Secretary may waive  
16 the requirement under subparagraph (A) if the  
17 Secretary determines a State or local agency  
18 displays extreme need.

19 (6) AUTHORIZATION OF APPROPRIATIONS.—

20 There are authorized to be appropriated such sums  
21 as may be necessary to carry out the purposes of  
22 this subsection, including grant funds and adminis-  
23 tration costs.

24 (b) BLOCK GRANT FOR VOTER EDUCATION CAM-  
25 PAIGNS.—

1           (1) **AUTHORITY.**—The Secretary of Commerce  
2 is authorized to make grants to the State agency re-  
3 sponsible for administering elections in a State for  
4 the purpose of implementing voter education cam-  
5 paigns.

6           (2) **IMPLEMENTATION.**—Each State agency re-  
7 ceiving funds under paragraph (1) shall make such  
8 funds available to the appropriate State and local  
9 election officials to carry out voter education cam-  
10 paigns.

11           (3) **AUTHORIZATION OF APPROPRIATIONS.**—  
12 There are authorized to be appropriated such sums  
13 as may be necessary to make grants under this sub-  
14 section.

15 **TITLE II—ELECTRONIC COM-**  
16 **MERCE TECHNOLOGY PRO-**  
17 **MOTION**

18 **SEC. 201. FINDINGS.**

19 The Congress makes the following findings:

20           (1) Electronic commerce has been widely em-  
21 braced by industry, both in the United States and  
22 abroad. The volume of commerce conducted over the  
23 Internet, though almost nonexistent just a few years  
24 ago, is expected to top \$1 trillion by 2003, according  
25 to market research reports. Continued growth of this

1 market is vital to the economy of the United States  
2 as well as the global economy.

3 (2) United States industries are at the forefront  
4 of this global revolution, continually evolving and in-  
5 novating to respond to rapidly changing market  
6 needs and conditions. Agility and flexibility are es-  
7 sential elements in their ability to compete and  
8 adapt. These are also the elements required for the  
9 electronic commerce market to sustain its current  
10 phenomenal growth rate.

11 (3) The Federal Government should facilitate  
12 the growth of electronic commerce by allowing the  
13 private sector to continue to take the lead in devel-  
14 oping this dynamic global market, and refraining  
15 from undue regulatory measures whenever possible.  
16 The Government should unambiguously support the  
17 development of electronic commerce as a market-  
18 driven phenomenon, yet also signal its strong desire  
19 to promote and facilitate the growth of the electronic  
20 commerce market.

21 (4) An important enabler for global electronic  
22 commerce is the ability of different systems to com-  
23 municate and exchange data, referred to as system  
24 interoperability. The continued growth of electronic  
25 commerce depends on a fundamental set of technical

1 standards that enable essential technologies to inter-  
2 operate, and on a policy and legal framework that  
3 supports the development that the market demands  
4 in a timely manner.

5 (5) Prompt adoption and deployment of rel-  
6 evant electronic commerce technologies and systems  
7 by Federal agencies allow the Government to share  
8 in the benefits of the electronic commerce revolution,  
9 which can result in reduced cost and increased effi-  
10 ciency, as well as improved quality.

11 (6) Usage of the technologies will enable the  
12 Government to participate more directly and effec-  
13 tively as an active contributor in the collaborative ef-  
14 forts spearheaded by the private sector to develop  
15 the frameworks and standards necessary for systems  
16 and components to interoperate. This has the added  
17 benefit of allowing the Government to intercede as  
18 necessary in a timely manner, either in failure condi-  
19 tions or to remove barriers erected by foreign gov-  
20 ernments.

21 (7) In actively deploying such technologies, the  
22 United States leadership in electronic commerce is  
23 strengthened and, at the same time, establishes a  
24 model for other governments and enables the growth  
25 of the global electronic commerce market.

1           (8) Traditionally, small- and medium-sized en-  
2           terprises play a critical role in enhancing the gross  
3           domestic product associated with a growing eco-  
4           nomic sector. Electronic commerce technologies have  
5           the potential to enable these businesses to enter the  
6           market with lower entry costs and compete more ef-  
7           fectively. The United States Government has an in-  
8           herent interest in ensuring that electronic commerce  
9           technologies are deployed widely by these small- and  
10          medium-sized businesses so that they can remain  
11          competitive in the global economy.

12 **SEC. 202. DEFINITIONS.**

13          In this title:

14           (1) CENTER.—The term “Center” means the  
15          Center of Excellence for Electronic Commerce.

16           (2) DIRECTOR.—The term “Director” means  
17          the Director of the National Institute of Standards  
18          and Technology.

19           (3) INTEROPERABILITY.—The term “interoper-  
20          ability” means the ability of different software sys-  
21          tems, applications, and services to communicate and  
22          exchange data in a predictable and consistent man-  
23          ner.

24           (4) INTEROPERABILITY SPECIFICATION.—The  
25          term “interoperability specification” means the tech-

1 nical documents developed by formal domestic and  
2 international standard organizations, industry con-  
3 sortia, and any other informal industry collabora-  
4 tions, for the purpose of creating interoperable sys-  
5 tems and technologies.

6 (5) INSTITUTE.—The term “Institute” means  
7 the National Institute of Standards and Technology.

8 (6) MATRIX ORGANIZATION.—The term “matrix  
9 organization” means an organizational structure  
10 that is built based on coordinating the needed re-  
11 sources and expertise from other existing functional  
12 organizations.

13 (7) ELECTRONIC COMMERCE TECHNOLOGIES.—  
14 The term “electronic commerce technologies” means  
15 technologies that support the purchasing of goods  
16 and services over the Internet.

17 **SEC. 203. PURPOSES.**

18 The purposes of this title are—

19 (1) to enable the electronic commerce market to  
20 continue its current growth rate and realize its full  
21 potential by supporting the development of relevant  
22 standards and interoperability specifications;

23 (2) to signal strong support of the electronic  
24 commerce market by encouraging the use of elec-



1 development and deployment of electronic commerce  
2 technologies and interoperability specifications;

3 (3) encourage the use of electronic commerce  
4 technologies within Federal agencies and small- and  
5 medium-sized businesses; and

6 (4) work with agencies to ensure that the inter-  
7 ests of the United States Government as user are  
8 represented at both domestic and international meet-  
9 ings pertaining to the setting of interoperability  
10 specifications for electronic commerce technologies.

11 (c) ACTIVITIES.—In carrying out subsection (b), the  
12 Center shall—

13 (1) work with all the affected parts of the Insti-  
14 tute, develop a plan for all efforts related to elec-  
15 tronic commerce at the Institute, and coordinate  
16 these activities on an ongoing basis to achieve the  
17 stated functions;

18 (2) through the Department of Commerce and  
19 the Office of Management and Budget participate in  
20 an inter-agency working group to address issues re-  
21 lated to the introduction and deployment of elec-  
22 tronic commerce technologies in the Federal Govern-  
23 ment;

24 (3) develop systems guidelines and reference  
25 implementations for use by Federal agencies which

1 utilize electronic commerce interoperability specifica-  
2 tions, consistent with section 2(b)(13) of the Na-  
3 tional Institute of Standards and Technology Act  
4 (15 U.S.C. 272(b)(13)) and section 12(d) of the Na-  
5 tional Technology Transfer and Advancement Act of  
6 1995 (15 U.S.C. 272 nt);

7 (4) advise the Secretary of Commerce through  
8 the Under Secretary of Commerce upon encoun-  
9 tering abusive uses of standards in the areas of elec-  
10 tronic commerce; and

11 (5) work through the Department of Com-  
12 merce's Manufacturing Extension Partnership Pro-  
13 gram and coordinate with the Small Business Ad-  
14 ministration and the Department of Agriculture,  
15 consistent with the respective agencies' missions, to  
16 provide technical assistance to small- and medium-  
17 sized businesses on issues related to the deployment  
18 and use of electronic commerce technologies.

19 **SEC. 205. REPORTS.**

20 (a) IN GENERAL.—Within 12 months after the enact-  
21 ment of this Act, the Undersecretary of Technology shall  
22 submit a report to the Committee on Commerce, Science,  
23 and Transportation of the Senate and the Committee on  
24 Science of the House of Representatives on the following  
25 issues concerning electronic commerce:

1           (1) Current efforts and activities on electronic  
2 commerce in the Institute.

3           (2) The current status of deployment of elec-  
4 tronic commerce technologies in the Federal agen-  
5 cies, including any future plans.

6           (3) Issues Federal agencies are expected to en-  
7 counter in widespread deployment of electronic com-  
8 merce technologies.

9           (4) Any legislative revisions to existing Federal  
10 programs necessary to support the advancement of  
11 electronic commerce in both the Federal Government  
12 and industry.

13       (b) REPORT.—Within 1 year after the date of enact-  
14 ment of this Act, the Under Secretary of Technology, in  
15 collaboration with interested agencies and the Office of  
16 Management and Budget, shall submit a report to the  
17 Committee on Commerce, Science, and Transportation of  
18 the Senate and the Committee on Science of the House  
19 of Representatives on the status of the deployment and  
20 use of electronic commerce technologies by Federal agen-  
21 cies.

## 22           **TITLE III—ENTERPRISE** 23           **INTEGRATION**

### 24       **SEC. 301. FINDINGS.**

25           The Congress makes the following findings:

1           (1) Over 90 percent of United States companies  
2 engaged in manufacturing are small and medium-  
3 sized businesses.

4           (2) Most of these manufacturers produce goods  
5 for assemblage into products of large companies.

6           (3) The emergence of the World Wide Web and  
7 the promulgation of international standards for  
8 product data exchange greatly accelerated the move-  
9 ment toward electronically integrated supply chains  
10 during the last half of the 1990's.

11          (4) A major Wall Street firm recently estimated  
12 that the adoption of electronic commerce-based sup-  
13 ply chains in various manufacturing industries can  
14 reduce business costs from 10 percent to 40 percent.

15          (5) European and Asian countries are investing  
16 heavily in electronic enterprise standards develop-  
17 ment, and in preparing their smaller manufacturers  
18 to do business in the new environment. European ef-  
19 forts are well advanced in the aerospace, automotive,  
20 and shipbuilding industries and are beginning in  
21 other industries including home building, furniture  
22 manufacturing, textiles, and apparel.

23          (6) If United States manufacturers are to re-  
24 main competitive, they must match their overseas  
25 competition by making sure that standards, includ-

1       ing application protocols, developed for electronic  
2       business in their industry worldwide reflect their  
3       needs and the needs of their customers and sup-  
4       pliers.

5               (7) Many American small and medium-sized  
6       manufacturers run the risk of losing their largest  
7       customers during the first half of this decade unless  
8       they adopt computer aided design, engineering, and  
9       manufacturing systems in their work places and  
10      learn how to participate with customers and sup-  
11      pliers in integrated electronic enterprises.

12              (8) Application protocols are very complex  
13      standards, often running thousands of pages, and  
14      require the cooperation of entire industries for their  
15      development.

16              (9) The National Institute of Standards and  
17      Technology, because of the electronic commerce ex-  
18      pertise in its laboratories and quality program, its  
19      long history of working cooperatively with manufac-  
20      turers, and the nationwide reach of its manufac-  
21      turing extension program, is in a unique position to  
22      help United States large and smaller manufacturers  
23      alike in their responses to this challenge.

1           (10) It is, therefore, in the national interest for  
2           the National Institute of Standards and Technology  
3           to accelerate its efforts—

4                   (A) in helping major manufacturing indus-  
5           tries develop standards and enterprise integra-  
6           tion processes that are necessary to increase ef-  
7           ficiency and lower costs; and

8                   (B) in making sure that every small or me-  
9           dium-sized manufacturer has the option of up-  
10          grading its manufacturing capabilities to the  
11          point where it can be part of an electronic sup-  
12          ply chain of a major manufacturing industry.

13 **SEC. 302. ENTERPRISE INTEGRATION INITIATIVE.**

14          (a) **ESTABLISHMENT.**—The Director shall establish  
15          an initiative for advancing enterprise integration within  
16          the United States. In carrying out this section, the Direc-  
17          tor shall involve, as appropriate, the various units of the  
18          National Institute of Standards and Technology, including  
19          the National Institute of Standards and Technology lab-  
20          oratories, the Manufacturing Extension Partnership pro-  
21          gram established under sections 25 and 26 of the National  
22          Institute of Standards and Technology Act (15 U.S.C.  
23          278k and 278l), and the Malcolm Baldrige National Qual-  
24          ity Program. This initiative shall begin with product data  
25          management and build upon ongoing efforts of the Na-

1 tional Institute of Standards and Technology and of the  
2 private sector, shall involve consortia that include govern-  
3 ment and industry, and shall be designed to permit enter-  
4 prise integration in each United States major manufac-  
5 turing industry at the earliest possible date.

6 (b) ASSESSMENT.—For each major manufacturing  
7 industry, the Director shall work with industry representa-  
8 tives and organizations currently engaged in enterprise in-  
9 tegration activities, and others as appropriate, to identify  
10 all enterprise integration standards and implementation  
11 activities underway in the United States and abroad. They  
12 shall assess the current state of enterprise integration  
13 within the industry, identify the remaining steps in achiev-  
14 ing enterprise integration, and work toward agreement on  
15 the roles of the National Institute of Standards and Tech-  
16 nology and of the private sector in that process. Within  
17 90 days after the date of the enactment of this Act, the  
18 Director shall report to the Congress on these matters and  
19 on anticipated related National Institute of Standards and  
20 Technology activities for the then current fiscal year.

21 (c) PLANS AND REPORTS.—Within 180 days after  
22 the date of the enactment of this Act, the Director shall  
23 submit to the Congress a plan for enterprise integration  
24 for each major manufacturing industry, developed in con-  
25 junction with that industry and based on the assessment

1 carried out under subsection (b), including milestones for  
2 the National Institute of Standards and Technology por-  
3 tion of the plan, the dates of likely achievement of those  
4 milestones, and anticipated costs to the Government and  
5 industry by fiscal year. Updates of the plans and a  
6 progress report for the past year shall be submitted annu-  
7 ally until for a given industry, in the opinion of the Direc-  
8 tor, enterprise integration has been achieved.

9 (d) AUTHORIZED ACTIVITIES.—In order to carry out  
10 this title and the plans prepared under subsection (c), the  
11 Director may—

12 (1) work with companies and trade associations  
13 within a major manufacturing industry to raise  
14 awareness of enterprise integration activities in the  
15 United States and abroad, including convening meet-  
16 ings;

17 (2) work with an industry on the development  
18 of enterprise integration roadmaps;

19 (3) support the development, testing, promulga-  
20 tion, and adoption of standards, including applica-  
21 tion protocols;

22 (4) support the development, promulgation, in-  
23 tegration, and upgrading of standards related to en-  
24 terprise integration;

1           (5) support pilot projects that include small and  
2 medium-sized businesses for new standards and en-  
3 terprise integration;

4           (6) ensure the training and regular upgrading  
5 of skills of Manufacturing Extension Program em-  
6 ployees;

7           (7) develop tool kits and employee training ma-  
8 terials and take other steps necessary to permit  
9 small and medium-sized businesses to participate in  
10 an integrated enterprise; and

11           (8) set up legal and financial mechanisms to  
12 permit groups of Manufacturing Extension Program  
13 centers to work collectively on modernizing and inte-  
14 grating a company's or industry's supply chain.

15 **SEC. 303. DEFINITIONS.**

16 For purposes of this title—

17           (1) the term “automotive” means land-based  
18 engine-powered vehicles including automobiles,  
19 trucks, busses, trains, defense vehicles, farm equip-  
20 ment, and motorcycles;

21           (2) the term “Director” means the Director of  
22 the National Institute of Standards and Technology;

23           (3) the term “enterprise integration” means the  
24 electronic linkage of manufacturers, assemblers, and  
25 suppliers to enable the electronic exchange of prod-

1 uct, manufacturing, and other business data among  
2 all businesses in a product supply chain, and such  
3 term includes related application protocols and other  
4 related standards;

5 (4) the term “major manufacturing industry”  
6 includes the aerospace, automotive, electronics, ship-  
7 building, construction, home building, furniture, tex-  
8 tile, and apparel industries and such other industries  
9 as the Director designates; and

10 (5) the term “National Institute of Standards  
11 and Technology laboratories” means those institutes  
12 of the National Institute of Standards and Tech-  
13 nology with expertise in electronic commerce, includ-  
14 ing the Manufacturing Engineering Laboratory, the  
15 Building and Fire Research Laboratory, and the In-  
16 formation Technology Laboratory.

17 **SEC. 304. AUTHORIZATION OF APPROPRIATIONS.**

18 There are authorized to be appropriated to the Direc-  
19 tor to carry out functions under this title \$10,000,000 for  
20 fiscal year 2002, \$15,000,000 for fiscal year 2003, and  
21 such sums as may be necessary for subsequent fiscal  
22 years.

○