

## Union Calendar No. 432

109<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

# H. R. 4941

**[Report No. 109-729, Part I]**

To reform the science and technology programs and activities of the Department of Homeland Security, and for other purposes.

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### IN THE HOUSE OF REPRESENTATIVES

MARCH 14, 2006

Mr. REICHERT (for himself and Mr. PASCRELL) introduced the following bill; which was referred to the Committee on Homeland Security

DECEMBER 8, 2006

Additional sponsors: Mr. BRADLEY of New Hampshire, Ms. HARMAN, Mr. DENT, Mr. SIMMONS, Mr. MCCAUL of Texas, Mr. DANIEL E. LUNGREN of California, and Mr. SHAYS

DECEMBER 8, 2006

Reported with an amendment and referred to the Committee on Science for a period ending not later than December 8, 2006, for consideration of such provisions of the bill and amendment as fall within the jurisdiction of that committee pursuant to clause 1(o), rule X. Referred to the Committee on Energy and Commerce for a period ending not later than December 8, 2006, for consideration of such provisions of the bill and amendment as fall within the jurisdiction of that committee pursuant to clause 1(f), rule X

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

DECEMBER 8, 2006

Committees on Science and Energy and Commerce discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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# A BILL

To reform the science and technology programs and activities of the Department of Homeland Security, 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 “Homeland Security*  
5 *Science and Technology Enhancement Act of 2006”.*

6 **SEC. 2. NATIONAL STANDARDS FOR HOMELAND SECURITY**  
7 **EQUIPMENT AND TRAINING.**

8       *(a) AMENDMENT.—Title III of the Homeland Security*  
9 *Act of 2002 (6 U.S.C. 181 et seq.) is amended by adding*  
10 *at the end the following new section:*

11 **“SEC. 314. NATIONAL STANDARDS FOR HOMELAND SECU-**  
12 **RITY EQUIPMENT AND TRAINING.**

13       *“(a) EQUIPMENT STANDARDS.—*

14           *“(1) IN GENERAL.—The Secretary, acting*  
15 *through the Under Secretary for Science and Tech-*  
16 *nology, and in consultation with other components of*  
17 *the Department, as appropriate, and the National In-*  
18 *stitute of Standards and Technology, shall support*  
19 *the development, promulgation, and updating as nec-*

1        *essary of national voluntary consensus standards for*  
2        *the performance, use, and validation of equipment*  
3        *used by Federal, State, and local government and*  
4        *nongovernment emergency response providers, and by*  
5        *the components of the Department. Such standards—*

6                *“(A) shall be, to the maximum extent prac-*  
7                *ticable, consistent with any existing voluntary*  
8                *consensus standards;*

9                *“(B) shall take into account, as appro-*  
10                *priate, new types of terrorism threats and re-*  
11                *sponsibilities of the Department that may not*  
12                *have been contemplated when such existing*  
13                *standards were developed;*

14                *“(C) shall be focused on maximizing inter-*  
15                *operability, interchangeability, durability, flexi-*  
16                *bility, efficiency, efficacy, portability, sustain-*  
17                *ability, and safety; and*

18                *“(D) shall cover all appropriate uses of the*  
19                *equipment.*

20                *“(2) REQUIRED CATEGORIES.—In carrying out*  
21                *paragraph (1), the Secretary shall specifically con-*  
22                *sider national voluntary consensus standards for the*  
23                *performance, use, and validation of the following cat-*  
24                *egories of equipment:*

25                *“(A) Thermal imaging equipment.*

1           “(B) *Radiation detection and analysis*  
2 *equipment.*

3           “(C) *Biological detection and analysis*  
4 *equipment.*

5           “(D) *Chemical detection and analysis*  
6 *equipment.*

7           “(E) *Decontamination and sterilization*  
8 *equipment.*

9           “(F) *Personal protective equipment, includ-*  
10 *ing garments, boots, gloves, and hoods and other*  
11 *protective clothing.*

12           “(G) *Respiratory protection equipment.*

13           “(H) *Interoperable communications, includ-*  
14 *ing wireless and wireline voice, video, and data*  
15 *networks.*

16           “(I) *Explosive detection and analysis equip-*  
17 *ment, and technologies and methods to mitigate*  
18 *the impact of explosive devices or materials.*

19           “(J) *Containment vessels.*

20           “(K) *Contaminant-resistant vehicles.*

21           “(L) *Aerial platforms.*

22           “(M) *Special rescue equipment.*

23           “(N) *Screening and patrolling technologies.*

1           “(O) *Such other equipment for which the*  
2           *Secretary determines that national voluntary*  
3           *consensus standards would be appropriate.*

4           “(3) *CERTIFICATION AND ACCREDITATION.—The*  
5           *Secretary, in carrying out this subsection, and in co-*  
6           *ordination with the Director of the National Institute*  
7           *of Standards and Technology, may support the cer-*  
8           *tification of equipment and the accreditation of lab-*  
9           *oratories to conduct testing and evaluation.*

10          “(4) *EQUIPMENT STANDARDS AND ACQUI-*  
11          *TIONS.—*

12                 “(A) *DEPARTMENT SUPPORTED ACQUI-*  
13                 *TIONS.—If an applicant for financial assistance*  
14                 *provided by the Department proposes to use such*  
15                 *financial assistance to upgrade or purchase new*  
16                 *equipment or systems that do not meet or exceed*  
17                 *any applicable national voluntary consensus*  
18                 *standards, the applicant shall include in its ap-*  
19                 *plication for financial assistance an explanation*  
20                 *of why such equipment or systems will serve the*  
21                 *needs of the applicant better than equipment or*  
22                 *systems that meet or exceed such standards.*

23                 “(B) *DEPARTMENT ACQUISITIONS.—When*  
24                 *an operational unit of the Department proposes*  
25                 *to upgrade or purchase new equipment or sys-*

1            *tems, the head of that unit shall consult with the*  
2            *Under Secretary for Science and Technology on*  
3            *whether such equipment or systems meet or ex-*  
4            *ceed any applicable national voluntary con-*  
5            *sensus standards and whether there is need for*  
6            *the Department to support the development or*  
7            *updating of applicable national voluntary con-*  
8            *sensus standards.*

9            “(b) *TRAINING STANDARDS.*—

10            “(1) *IN GENERAL.*—*The Secretary, acting*  
11            *through the Under Secretary for Science and Tech-*  
12            *nology, and in consultation with other components of*  
13            *the Department, as appropriate, shall support the de-*  
14            *velopment, promulgation, and regular updating as*  
15            *necessary of national voluntary consensus standards*  
16            *for training for Federal, State, and local government*  
17            *and nongovernment emergency response providers and*  
18            *Department personnel, including training that will*  
19            *enable them to use equipment effectively and appro-*  
20            *priately in carrying out their responsibilities. Such*  
21            *standards shall give priority to providing training*  
22            *to—*

23            “(A) *enable Federal, State, and local gov-*  
24            *ernment and nongovernment emergency response*  
25            *providers and Department personnel to prevent,*

1           *prepare for, respond to, mitigate against, and re-*  
2           *cover from terrorist threats, including threats*  
3           *from chemical, biological, radiological, and nu-*  
4           *clear weapons and explosive devices capable of*  
5           *inflicting significant human casualties, and*  
6           *other emergencies; and*

7           *“(B) familiarize Federal, State, and local*  
8           *government and nongovernment emergency re-*  
9           *sponse providers and Department personnel with*  
10          *the proper use of equipment, including software,*  
11          *developed pursuant to the standards developed*  
12          *under subsection (a).*

13          *“(2) REQUIRED CATEGORIES.—In carrying out*  
14          *paragraph (1), the Secretary specifically shall include*  
15          *the following categories of activities:*

16                 *“(A) Regional planning.*

17                 *“(B) Joint exercises.*

18                 *“(C) Intelligence collection, analysis, and*  
19                 *sharing.*

20                 *“(D) Decisionmaking protocols for incident*  
21                 *response and alarms.*

22                 *“(E) Emergency notification of affected*  
23                 *populations.*

1                   “(F) *Detection of biological, nuclear, radio-*  
2                   *logical, and chemical weapons of mass destruc-*  
3                   *tion.*

4                   “(G) *Screening and patrolling procedures.*

5                   “(H) *Such other activities for which the*  
6                   *Secretary determines that national voluntary*  
7                   *consensus training standards would be appro-*  
8                   *priate.*

9                   “(3) *CONSISTENCY.—In carrying out this sub-*  
10                  *section, the Secretary shall ensure that—*

11                  “(A) *training standards for Federal, State,*  
12                  *and local government and nongovernment emer-*  
13                  *gency response providers are consistent with the*  
14                  *principles of emergency preparedness for all haz-*  
15                  *ards; and*

16                  “(B) *training standards for Department*  
17                  *personnel are consistent with the*  
18                  *counterterrorism and traditional responsibilities*  
19                  *of the Department.*

20                  “(c) *CONSULTATION WITH STANDARDS ORGANIZA-*  
21                  *TIONS.—In supporting the development, promulgation, and*  
22                  *updating of national voluntary consensus standards for*  
23                  *equipment for and training under this section, the Sec-*  
24                  *retary shall consult with relevant public and private sector*  
25                  *groups, including—*



1           “(1) *the National Institute of Standards and*  
2           *Technology;*

3           “(2) *the National Fire Protection Association;*

4           “(3) *the National Association of County and*  
5           *City Health Officials;*

6           “(4) *the Association of State and Territorial*  
7           *Health Officials;*

8           “(5) *the American National Standards Institute;*

9           “(6) *the National Institute of Justice;*

10          “(7) *the Inter-Agency Board for Equipment*  
11          *Standardization and Interoperability;*

12          “(8) *the National Public Health Performance*  
13          *Standards Program;*

14          “(9) *the National Institute for Occupational*  
15          *Safety and Health;*

16          “(10) *ASTM International;*

17          “(11) *the International Safety Equipment Asso-*  
18          *ciation;*

19          “(12) *the Emergency Management Accreditation*  
20          *Program; and*

21          “(13) *to the extent the Secretary considers ap-*  
22          *propriate, other national voluntary consensus stand-*  
23          *ards development organizations, other interested Fed-*  
24          *eral, State, and local agencies, and other interested*  
25          *persons.*

1       “(d) *COORDINATION WITH SECRETARIES OF HHS*  
2 *AND TRANSPORTATION.*—*In supporting the development,*  
3 *promulgation, and updating of any national voluntary con-*  
4 *sensus standards under this section for equipment for or*  
5 *training of emergency response providers that involve or re-*  
6 *late to health or emergency medical services professionals,*  
7 *including emergency medical professionals, the Secretary*  
8 *shall coordinate activities under this section with the Sec-*  
9 *retary of Health and Human Services and the Secretary*  
10 *of Transportation.*

11       “(e) *CONSISTENCY WITH THE NATIONAL TECHNOLOGY*  
12 *TRANSFER AND ADVANCEMENT ACT.*—*In carrying out this*  
13 *section, the Secretary shall comply with section 12(d) of the*  
14 *National Technology Transfer and Advancement Act (15*  
15 *U.S.C. 272 note).”.*

16       “(b) *TABLE OF CONTENTS AMENDMENT.*—*The table of*  
17 *contents of the Homeland Security Act of 2002 is amended*  
18 *by adding after the item relating to section 313 the fol-*  
19 *lowing new item:*

      “*Sec. 314. National standards for homeland security equipment and training.*”.

20 **SEC. 3. TECHNOLOGY DEVELOPMENT AND TRANSFER.**

21       “(a) *ESTABLISHMENT OF TECHNOLOGY CLEARING-*  
22 *HOUSE.*—*Not later than 90 days after the date of enactment*  
23 *of this Act, the Secretary shall complete the establishment*  
24 *of the Technology Clearinghouse under section 313 of the*  
25 *Homeland Security Act of 2002.*

1       **(b) TRANSFER PROGRAM.**—*Section 313 of the Home-*  
2 *land Security Act of 2002 (6 U.S.C. 193) is amended—*

3           *(1) in subsection (b)(3), by striking “subsection*  
4 *(c)(2)” and inserting “subsection (e)(2)”;*

5           *(2) by adding at the end of subsection (b) the fol-*  
6 *lowing new paragraph:*

7           *“(6) The establishment of a homeland security*  
8 *technology transfer program to facilitate the identi-*  
9 *fication, modification, and commercialization of tech-*  
10 *nology and equipment for use by Federal, State, and*  
11 *local governmental agencies, emergency response pro-*  
12 *viders, and the private sector to prevent, prepare for,*  
13 *or respond to acts of terrorism or other emergencies.”;*

14           *(3) by redesignating subsection (c) as subsection*  
15 *(e); and*

16           *(4) by inserting after subsection (b) the following*  
17 *new subsections:*

18       **“(c) ELEMENTS OF THE TECHNOLOGY TRANSFER PRO-**  
19 *GRAM.—The activities of the program described in sub-*  
20 *section (b)(6) shall include—*

21           *“(1) identifying available technologies that have*  
22 *been, or are in the process of being, developed, tested,*  
23 *evaluated, or demonstrated by the Department, other*  
24 *Federal agencies, the private sector, or foreign govern-*  
25 *ments and international organizations, and reviewing*

1       *whether such technologies may be useful in assisting*  
2       *Federal, State, and local governmental agencies,*  
3       *emergency response providers, or the private sector to*  
4       *prevent, prepare for, respond to, or recover from acts*  
5       *of terrorism or other emergencies; and*

6               “(2) *communicating to Federal, State, and local*  
7       *governmental agencies, emergency response providers,*  
8       *or the private sector the availability of such tech-*  
9       *nologies, as well as the technology’s specifications, sat-*  
10       *isfaction of appropriate standards, and the appro-*  
11       *priate grants available from the Department to pur-*  
12       *chase such technologies.*

13       “(d) *RESPONSIBILITIES OF UNDER SECRETARY FOR*  
14       *SCIENCE AND TECHNOLOGY.—In support of the activities*  
15       *described in subsection (c), the Under Secretary for Science*  
16       *and Technology shall—*

17               “(1) *conduct or support, based on the Depart-*  
18       *ment’s current risk assessments, research, develop-*  
19       *ment, demonstrations, tests, and evaluations, as ap-*  
20       *propriate, of technologies identified under subsection*  
21       *(c)(1), including of—*

22                       “(A) *any necessary modifications to such*  
23       *technologies for use by emergency response pro-*  
24       *viders; and*

1           “(B) incorporation of human factors in the  
2           development and suggested use of such tech-  
3           nologies;

4           “(2) ensure that the technology transfer activities  
5           throughout the Directorate of Science and Technology  
6           are coordinated, including the technology transfer as-  
7           pects of projects and grants awarded to the private  
8           sector and academia;

9           “(3) consult with the other Under Secretaries of  
10          the Department, the Director of the Federal Emer-  
11          gency Management Agency, and the Director of the  
12          Domestic Nuclear Detection Office on an ongoing  
13          basis;

14          “(4) consult with Federal, State, and local emer-  
15          gency response providers;

16          “(5) consult with government agencies and  
17          standards development organizations as appropriate;

18          “(6) enter into agreements and coordinate with  
19          other Federal agencies, foreign governments, and na-  
20          tional and international organizations as appro-  
21          priate, in order to maximize the effectiveness of such  
22          technologies or to facilitate commercialization of such  
23          technologies;

24          “(7) consult with existing technology transfer  
25          programs and Federal and State training centers that

1       *research, develop, test, evaluate, and transfer military*  
2       *and other technologies for use by emergency response*  
3       *providers; and*

4               “(8) *establish a working group in coordination*  
5       *with the Secretary of Defense to advise and assist the*  
6       *technology clearinghouse in the identification of mili-*  
7       *tary technologies that are in the process of being de-*  
8       *veloped, or are developed, by the Department of De-*  
9       *fense or the private sector, which may include—*

10               “(A) *representatives from the Department of*  
11       *Defense or retired military officers;*

12               “(B) *nongovernmental organizations or pri-*  
13       *vate companies that are engaged in the research,*  
14       *development, testing, or evaluation of related*  
15       *technologies or that have demonstrated prior ex-*  
16       *perience and success in searching for and identi-*  
17       *fying technologies for Federal agencies;*

18               “(C) *Federal, State, and local emergency re-*  
19       *sponse providers; and*

20               “(D) *as appropriate, other organizations,*  
21       *other interested Federal, State, and local agen-*  
22       *cies, and other interested persons.”.*

23       *(c) REPORT.—Not later than 1 year after the date of*  
24       *enactment of this Act, the Under Secretary for Science and*  
25       *Technology shall transmit to the Congress a description of*

1 *the progress the Department has made in implementing the*  
2 *provisions of section 313 of the Homeland Security Act of*  
3 *2002, as amended by this Act, including a description of*  
4 *the process used to review unsolicited proposals received as*  
5 *described in subsection (b)(3) of such section.*

6       (d) *SAVINGS CLAUSE.—Nothing in this section (in-*  
7 *cluding the amendments made by this section) shall be con-*  
8 *strued to alter or diminish the effect of the limitation on*  
9 *the authority of the Secretary of Homeland Security under*  
10 *section 302(4) of the Homeland Security Act of 2002 (6*  
11 *U.S.C. 182(4)) with respect to human health-related re-*  
12 *search and development activities.*

13 **SEC. 4. HOMELAND SECURITY SCIENCE AND TECHNOLOGY**  
14 **ADVISORY COMMITTEE.**

15       Section 311(j) of the Homeland Security Act of 2002  
16 (6 U.S.C. 191(j)) is amended to read as follows:

17       “(j) *TERMINATION.—The Department of Homeland*  
18 *Security Science and Technology Advisory Committee shall*  
19 *terminate 10 years after its establishment.”.*

20 **SEC. 5. REGIONAL TECHNOLOGY INTEGRATION PROGRAM.**

21       (a) *AMENDMENT.—Title III of the Homeland Security*  
22 *Act of 2002 (6 U.S.C. 181 et seq.) is amended by adding*  
23 *at the end the following:*

1 **“SEC. 315. REGIONAL TECHNOLOGY INTEGRATION PRO-**  
2 **GRAM.**

3       “(a) *IN GENERAL.*—*The Under Secretary for Science*  
4 *and Technology, in coordination with the Under Secretary*  
5 *for Preparedness, shall provide technical guidance, train-*  
6 *ing, and other assistance, as appropriate, to support the*  
7 *transfer and integration of homeland security technologies*  
8 *and protocols in urban and other high risk jurisdictions*  
9 *determined by the Secretary to be at consistently high levels*  
10 *of risk from terrorist attack.*

11       “(b) *ACTIVITIES.*—*The program supported under sub-*  
12 *section (a) shall work to—*

13               “(1) *facilitate the transition of innovative tech-*  
14 *nologies and operational concepts, including those de-*  
15 *scribed in subsection (c);*

16               “(2) *integrate new technologies with existing in-*  
17 *frastructure, systems, and concepts;*

18               “(3) *identify capability and technology gaps for*  
19 *future research, development, test, and evaluation;*

20               “(4) *evaluate system performance, life cycle, and*  
21 *human factor issues; and*

22               “(5) *disseminate lessons learned to other commu-*  
23 *nities.*

24       “(c) *INNOVATIVE TECHNOLOGIES AND OPERATIONAL*  
25 *CONCEPTS.*—*The innovative technologies and operational*  
26 *concepts referred to in subsection (b)(1) include—*



1           “(1) *detection systems for weapons of mass de-*  
2           *struction;*

3           “(2) *emergency management information sys-*  
4           *tems;*

5           “(3) *situational awareness;*

6           “(4) *information sharing;*

7           “(5) *atmospheric transport and dispersion mod-*  
8           *eling;*

9           “(6) *public alerts and warnings;*

10          “(7) *aerial platforms; and*

11          “(8) *emergency medical support.*

12          “(d) *COORDINATION.—In setting priorities for and*  
13          *carrying out the activities under this section, the Under*  
14          *Secretary for Science and Technology shall consult and co-*  
15          *ordinate with appropriate governors, mayors, other State*  
16          *and local government officials, and first responders.”.*

17          “(b) *TABLE OF CONTENTS AMENDMENT.—The table of*  
18          *contents of the Homeland Security Act of 2002 is amended*  
19          *by adding after the item relating to section 314 the fol-*  
20          *lowing new item:*

          “*Sec. 315. Regional technology integration program.”.*

21          **SEC. 6. CYBERSECURITY RESEARCH AND DEVELOPMENT.**

22          “(a) *AMENDMENT.—Title III of the Homeland Security*  
23          *Act of 2002 (6 U.S.C. 181 et. seq.) is amended by adding*  
24          *at the end the following new section:*

1 **“SEC. 316. CYBERSECURITY RESEARCH AND DEVELOPMENT.**

2       “(a) *IN GENERAL.*—*The Under Secretary for Science*  
3 *and Technology shall support research and development, in-*  
4 *cluding fundamental, long-term research, in cybersecurity*  
5 *to improve the ability of the United States to prevent, pro-*  
6 *tect against, detect, respond to, and recover from cyber at-*  
7 *tacks, with emphasis on research and development relevant*  
8 *to large-scale, high-impact attacks.*

9       “(b) *ACTIVITIES.*—*The research and development sup-*  
10 *ported under subsection (a) shall include work to—*

11               “(1) *advance the development and accelerate the*  
12 *deployment of more secure versions of critical infor-*  
13 *mation systems, including—*

14                       “(A) *fundamental Internet protocols and*  
15 *architectures, including for the domain name*  
16 *system and routing protocols; and*

17                       “(B) *control systems used in critical infra-*  
18 *structure sectors;*

19               “(2) *improve and create technologies for detect-*  
20 *ing attacks or intrusions, including monitoring tech-*  
21 *nologies;*

22               “(3) *improve and create mitigation and recovery*  
23 *methodologies, including techniques for containment*  
24 *of attacks and development of resilient networks and*  
25 *systems that degrade gracefully; and*

1           “(4) *develop and support infrastructure and*  
2           *tools to support cybersecurity research and develop-*  
3           *ment efforts, including modeling, testbeds, and data*  
4           *sets for assessment of new cybersecurity technologies.*

5           “(c) *COORDINATION.—In carrying out this section, the*  
6           *Under Secretary for Science and Technology shall coordi-*  
7           *nate activities with—*

8           “(1) *the Assistant Secretary for Cybersecurity*  
9           *and Telecommunications; and*

10           “(2) *other Federal agencies, including the Na-*  
11           *tional Science Foundation, the Defense Advanced Re-*  
12           *search Projects Agency, the Information Assurance*  
13           *Directorate of the National Security Agency, and the*  
14           *National Institute of Standards and Technology, to*  
15           *identify unmet needs and cooperatively support ac-*  
16           *tivities, as appropriate.*

17           “(d) *NATURE OF RESEARCH.—Activities under this*  
18           *section shall be carried out in accordance with section*  
19           *306(a) of this Act.*

20           “(e) *AUTHORIZATION OF APPROPRIATIONS.—There are*  
21           *authorized to be appropriated to carry out this section such*  
22           *sums as may be necessary for fiscal year 2007.”.*

23           “(b) *TABLE OF CONTENTS AMENDMENT.—The table of*  
24           *contents of the Homeland Security Act of 2002 is amended*

1 *by adding after the item relating to section 315 the fol-*  
2 *lowing new item:*

*“Sec. 316. Cybersecurity research and development.”.*

3 **SEC. 7. STANDARDS FOR CRITICAL INFRASTRUCTURE IN-**  
4 **FORMATION SYSTEMS.**

5 *(a) AMENDMENT.—Title III of the Homeland Security*  
6 *Act of 2002 (6 U.S.C. 181 et. seq.) is amended by adding*  
7 *at the end the following new section:*

8 **“SEC. 317. STANDARDS FOR CRITICAL INFRASTRUCTURE**  
9 **INFORMATION SYSTEMS.**

10 *“(a) STANDARDS PROGRAM.—The Under Secretary for*  
11 *Science and Technology shall establish a program to sup-*  
12 *port the development and promulgation of national vol-*  
13 *untary consensus standards for requirements, performance*  
14 *testing, and user training with respect to critical infra-*  
15 *structure information systems.*

16 *“(b) PURPOSE.—The standards developed under sub-*  
17 *section (a) shall be designed to assist State and local juris-*  
18 *dictions, including those in urban and other areas at con-*  
19 *sistently high levels of risk from terrorist attack, and emer-*  
20 *gency response providers to acquire and implement critical*  
21 *infrastructure information systems and to store and access*  
22 *information regarding critical infrastructure to be used in*  
23 *responding to acts of terrorism or other emergencies.*

24 *“(c) REQUIREMENTS.—The standards developed under*  
25 *subsection (a) shall be designed to facilitate—*

1           “(1) *the interoperability of systems to enable*  
2 *sharing of information in a variety of formats and*  
3 *across stakeholders at the Federal, State, and local*  
4 *levels;*

5           “(2) *the ease of deployment of the systems to the*  
6 *field;*

7           “(3) *the ability to retrieve situational awareness*  
8 *information in real-time;*

9           “(4) *the integrity, security, and accessibility of*  
10 *stored information;*

11           “(5) *the application of human factors science in*  
12 *the development of the system;*

13           “(6) *the availability and content of training pro-*  
14 *grams for potential users; and*

15           “(7) *meeting any other requirements determined*  
16 *by the Under Secretary to be appropriate.*

17           “(d) *REPORTS.—The Under Secretary for Science and*  
18 *Technology shall submit to Congress—*

19           “(1) *6 months after the date of enactment of this*  
20 *section, a report describing the plan for carrying out*  
21 *the program under this section, which shall include a*  
22 *schedule for the development of national voluntary*  
23 *consensus standards for critical infrastructure infor-*  
24 *mation systems; and*

1           “(2) 12 months after the date of enactment of  
2           this section, a report which shall include a descrip-  
3           tion of—

4                   “(A) the steps taken under this program  
5                   and the funding dedicated to this program; and

6                   “(B) the steps that have been or will be  
7                   taken to promote the adoption of the standards  
8                   by appropriate standard-setting organizations.

9           “(e) *DEFINITIONS.*—*In this section—*

10                   “(1) the term ‘critical infrastructure information  
11                   systems’ means software programs that store, manage,  
12                   and display information about critical infrastructure  
13                   to support situational awareness and real-time deci-  
14                   sionmaking of law enforcement, fire services, emer-  
15                   gency medical services, emergency management agen-  
16                   cies, other emergency response providers, and critical  
17                   infrastructure facility stakeholders. Critical infra-  
18                   structure information may include maps and other  
19                   geospatial information, emergency plans, interior and  
20                   exterior imagery, entry and exit points, and any  
21                   other information about infrastructure or facilities  
22                   that may be beneficial to users of critical infrastruc-  
23                   ture information systems; and

24                   “(2) the term ‘critical infrastructure’ has the  
25                   meaning given that term in section 1016(e) of the

1        *Uniting and Strengthening America by Providing*  
 2        *Appropriate Tools Required to Intercept and Obstruct*  
 3        *Terrorism (USA PATRIOT ACT) Act of 2001 (42*  
 4        *U.S.C. 5195c(e)).”.*

5        *(b) TABLE OF CONTENTS AMENDMENT.—The table of*  
 6        *contents of the Homeland Security Act of 2002 is amended*  
 7        *by adding after the item relating to section 316 the fol-*  
 8        *lowing new item:*

*“Sec. 317. Standards for critical infrastructure information systems.”.*

9        **SEC. 8. SCHOLARSHIP AND FELLOWSHIP PROGRAMS AT**  
 10                                    **THE DEPARTMENT OF HOMELAND SECURITY.**

11        *(a) IN GENERAL.—Title III of the Homeland Security*  
 12        *Act of 2002 (6 U.S.C. 181 et. seq.) is amended by adding*  
 13        *at the end the following new section:*

14        **“SEC. 318. SCHOLARSHIP AND FELLOWSHIP PROGRAMS.**

15                    *“(a) IN GENERAL.—The Secretary, acting through the*  
 16        *Under Secretary for Science and Technology, shall encour-*  
 17        *age the development of an adequate supply of people trained*  
 18        *in and performing research in science, technology, engineer-*  
 19        *ing, and mathematical fields relevant to homeland security.*

20                    *“(b) RESPONSIBILITIES.—In carrying out this section,*  
 21        *the Secretary may support—*

22                    *“(1) programs at the undergraduate, graduate,*  
 23        *and postdoctoral levels, including at Historically*  
 24        *Black Colleges and Universities that are Part B insti-*  
 25        *tutions as defined in section 322(2) of the Higher*

1        *Education Act of 1965 (20 U.S.C. 1061(2)) and mi-*  
2        *nority institutions (as defined in section 365(3) of*  
3        *that Act (20 U.S.C. 1067k(3))); and*

4                *“(2) internship programs that take advantage of*  
5        *the homeland security research infrastructure avail-*  
6        *able to the Department, including laboratories owned*  
7        *or operated by the Department, the Department of*  
8        *Energy National Laboratories, and University Cen-*  
9        *ters of Excellence.”.*

10        *(b) TABLE OF CONTENTS AMENDMENT.—The table of*  
11        *contents of the Homeland Security Act of 2002 is amended*  
12        *by adding after the item relating to section 317 the fol-*  
13        *lowing new item:*

*“Sec. 318. Scholarship and fellowship programs.”.*

14        **SEC. 9. REPORTS AND DEMONSTRATION PROJECT ON SUR-**  
15                        **VEILLANCE CAMERA PROGRAMS.**

16        *(a) INVENTORY OF SURVEILLANCE SYSTEMS.—Not*  
17        *later than 120 days after the date of enactment of this Act,*  
18        *the Under Secretary for Science and Technology, in con-*  
19        *sultation with the Chief Privacy Officer and the Officer for*  
20        *Civil Rights and Civil Liberties, shall transmit a report*  
21        *to Congress on existing visual surveillance systems sup-*  
22        *ported or utilized by the Department of Homeland Security.*  
23        *The report shall, for each system—*



1           (1) *describe the goals of the system, such as ter-*  
2           *rorism prevention, emergency response, and law en-*  
3           *forcement;*

4           (2) *describe any potential uses of the system be-*  
5           *yond its stated goals and if the system has been used*  
6           *in any of those ways;*

7           (3) *describe the rules governing how visual infor-*  
8           *mation generated by the system is collected, stored,*  
9           *analyzed, and disseminated; and*

10          (4) *describe the role of Federal, State, and local*  
11          *governments and private entities in the operation of*  
12          *the system and use of the data generated by the sys-*  
13          *tem.*

14          (b) *SYSTEMS COVERED.—The visual surveillance sys-*  
15          *tems covered in the report required under subsection (a)*  
16          *shall include all systems for which—*

17               (1) *the Department provided funds for develop-*  
18               *ment, procurement, or implementation of the system;*  
19               *or*

20               (2) *the Department has access to the data gath-*  
21               *ered through the system.*

22          (c) *EVALUATION OF SURVEILLANCE SYSTEMS.—Not*  
23          *later than 1 year after the transmittal of the report under*  
24          *subsection (a), the Under Secretary for Science and Tech-*  
25          *nology, in consultation with the Chief Privacy Officer and*

1 *the Officer for Civil Rights and Civil Liberties, shall trans-*  
2 *mit a report to Congress evaluating the use and effectiveness*  
3 *of existing visual surveillance systems supported or utilized*  
4 *by the Department of Homeland Security. The report shall,*  
5 *for at least 6 systems that are representative of the systems*  
6 *listed in the report under subsection (a)—*

7           (1) *evaluate the effectiveness of the system in*  
8 *meeting its stated goals;*

9           (2) *review the privacy policies and implications*  
10 *of the system;*

11           (3) *review the civil rights and civil liberties poli-*  
12 *cies and implications of the system;*

13           (4) *describe any lessons learned from the imple-*  
14 *mentation of the system; and*

15           (5) *describe any remaining questions about the*  
16 *effectiveness and the privacy and civil liberties impli-*  
17 *cations of such systems that cannot be addressed by*  
18 *this evaluation of surveillance systems and that may*  
19 *require demonstration programs to study.*

20 *(d) DEMONSTRATION PROJECT.—*

21           (1) *IN GENERAL.—Not sooner than 120 days*  
22 *after the transmittal of the report required under sub-*  
23 *section (c), and based on the results of that evalua-*  
24 *tion, the Under Secretary for Science and Technology,*  
25 *in consultation with the Chief Privacy Officer and the*

1        *Officer for Civil Rights and Civil Liberties of the De-*  
2        *partment of Homeland Security, may establish a*  
3        *demonstration project to assess the effectiveness and*  
4        *the privacy and civil liberties implications of uti-*  
5        *lizing visual surveillance systems to enhance home-*  
6        *land security.*

7            (2) *BEST PRACTICES.—The demonstration*  
8        *project established under paragraph (1) shall thor-*  
9        *oughly consider and incorporate best practices from*  
10       *within the United States and abroad, including from*  
11       *the United Kingdom, Israel, Canada, and Australia.*

12           (3) *MASS TRANSIT SECURITY.—If visual surveil-*  
13       *lance of a mass transit facility is included in the*  
14       *demonstration project under paragraph (1), the*  
15       *Under Secretary for Science and Technology shall*  
16       *consult with the Assistant Secretary for the Transpor-*  
17       *tation Security Administration and shall ensure that*  
18       *the goals of the demonstration project are consistent*  
19       *with the research and development requirements of the*  
20       *National Strategy for Transportation Security.*

21           (e) *DEFINITION.—In this section, the term “visual sur-*  
22       *veillance” means the use of recording devices with the capa-*  
23       *bility to obtain, store, or analyze video or static images,*  
24       *with the exception of data gathered via satellite systems.*

1 **SEC. 10. PRIVACY AND CIVIL RIGHTS AND CIVIL LIBERTIES**  
2 **ISSUES IN TECHNOLOGY DEVELOPMENT.**

3 (a) *IN GENERAL.*—*Title III of the Homeland Security*  
4 *Act of 2002 (6 U.S.C. 181 et. seq.) is amended by adding*  
5 *at the end the following new section:*

6 **“SEC. 319. PRIVACY AND CIVIL RIGHTS AND CIVIL LIB-**  
7 **ERTIES ISSUES IN TECHNOLOGY DEVELOP-**  
8 **MENT.**

9 “*Not later than 180 days after the date of enactment*  
10 *of this section, the Under Secretary for Science and Tech-*  
11 *nology, the Chief Privacy Officer, and the Officer for Civil*  
12 *Rights and Civil Liberties shall transmit to Congress a*  
13 *joint plan for how privacy and civil rights and civil lib-*  
14 *erties issues will be considered in technology research and*  
15 *development programs at the Department, including how*  
16 *such issues will be taken into account in defining require-*  
17 *ments for technology performance and use of technologies*  
18 *in pilot programs.”.*

19 (b) *TABLE OF CONTENTS AMENDMENT.*—*The table of*  
20 *contents of the Homeland Security Act of 2002 is amended*  
21 *by adding after the item relating to section 318 the fol-*  
22 *lowing new item:*

“*Sec. 319. Privacy and civil rights and civil liberties issues in technology devel-*  
*opment.”.*

1 **SEC. 11. SCIENCE AND TECHNOLOGY STRATEGIC PLAN.**

2       (a) *STRATEGIC PLAN.*—Not later than 180 days after  
3 the date of enactment of this Act, the Under Secretary for  
4 Science and Technology shall transmit to Congress a stra-  
5 tegic plan for the science and technology activities of the  
6 Department of Homeland Security. The plan shall in-  
7 clude—

8           (1) *statement of the overall mission of the*  
9       *Science and Technology Directorate;*

10          (2) *a prioritized list of objectives and the specific*  
11       *capabilities, including technologies and associated*  
12       *protocols, expertise, and facilities, needed to meet*  
13       *these objectives;*

14          (3) *a description of the processes and risk-based*  
15       *methodologies used to prioritize these objectives;*

16          (4) *a list of activities, including any long-term*  
17       *basic research programs, that the Under Secretary for*  
18       *Science and Technology will carry out to meet these*  
19       *objectives and develop the specific capabilities de-*  
20       *scribed under paragraph (2);*

21          (5) *a description of the metrics to be used for an-*  
22       *ual review of the activities;*

23          (6) *a description of all related programs and ac-*  
24       *tivities, within the Department or at other Federal*  
25       *agencies, with which the activities will be coordinated;*  
26       *and*

1           (7) a description of the processes used to ensure  
2           that factors associated with manpower and infra-  
3           structure are considered during technology develop-  
4           ment.

5           (b) *REGULAR UPDATING.*—At the end of the fiscal year  
6           that occurs 5 years after the date of enactment of this Act,  
7           and every 5 years thereafter, the Under Secretary for  
8           Science and Technology shall transmit to Congress an up-  
9           date of this strategic plan.

10 **SEC. 12. REPORTS TO CONGRESS ON SOCIAL AND BEHAV-**  
11 **IORAL RESEARCH FOR HOMELAND SECURITY.**

12           (a) *REPORT ON THE USE OF SOCIAL AND BEHAVIORAL*  
13 *RESEARCH.*—Not later than 1 year after the date of enact-  
14 *ment of this Act, the Secretary of Homeland Security shall*  
15 *transmit to Congress a report on the Department’s use of*  
16 *social and behavioral research, including—*

17                   (1) a compilation of the instances in which the  
18           Department has made use of—

19                           (A) social and behavioral research in De-  
20                           partment programs in preparedness and re-  
21                           sponse, including risk communication activities,  
22                           response plans, and training and guidance for  
23                           decisionmakers;

1           (B) social and behavioral research, includ-  
2           ing human factors research, in Department tech-  
3           nology development and acquisition programs;

4           (C) social and behavioral research in devel-  
5           opment of Department programs for informing  
6           the general public on how to prepare for, protect  
7           against, respond to, and mitigate the effects, both  
8           physical and psychological, of acts of terrorism,  
9           natural disasters, or other emergencies; and

10          (D) social and behavioral research regard-  
11          ing emergency preparedness and response, search  
12          and rescue, evacuation, and sheltering-in-place  
13          procedures for populations with special needs,  
14          including persons with disabilities, health prob-  
15          lems, language barriers, and income barriers, the  
16          elderly, and children in relevant Department  
17          programs;

18          (2) specific citations or references to the social  
19          and behavioral research on which the Department has  
20          relied; and

21          (3) a plan for how the Department will ensure  
22          greater incorporation of social and behavioral re-  
23          search in program and communication activities in  
24          the near and long term.

1           **(b) REPORT ON GAPS IN NEEDED SOCIAL AND BEHAV-**  
2 *IORAL RESEARCH.*—Not later than 180 days after the  
3 *transmittal of the report under subsection (a), the Under*  
4 *Secretary for Science and Technology shall transmit to*  
5 *Congress a report identifying any gaps in the social and*  
6 *behavioral research needed to support the Department’s*  
7 *mission, and providing a plan to address such gaps.*

8           **(c) CONSULTATION.**—In preparing the reports under  
9 *subsections (a) and (b), the Secretary and the Under Sec-*  
10 *retary for Science and Technology shall consult with other*  
11 *government agencies supporting social and behavioral re-*  
12 *search and nongovernmental experts in these fields.*

13 **SEC. 13. GUIDE FOR RESEARCHERS ON THE HOMELAND SE-**  
14 **CURITY IMPLICATIONS OF RESEARCH.**

15           **(a) IN GENERAL.**—The Under Secretary for Science  
16 *and Technology shall enter into an arrangement with the*  
17 *National Research Council of the National Academy of*  
18 *Sciences to prepare a guide for researchers to raise aware-*  
19 *ness in the scientific community about potential homeland*  
20 *security implications of their work and how laws and regu-*  
21 *lations apply to such research.*

22           **(b) TOPICS.**—The topics covered in the guide prepared  
23 *under subsection (a) shall include—*

24                   (1) *international conventions;*



1           (2) *United States statutes, regulations, and*  
2           *guidelines, including those covering biological mate-*  
3           *rials;*

4           (3) *the potential for legitimate research to be*  
5           *misused;*

6           (4) *responsibilities of the scientific community to*  
7           *reduce opportunities for misuse;*

8           (5) *case studies and examples; and*

9           (6) *any other topics determined by the Under*  
10          *Secretary for Science and Technology to be appro-*  
11          *priate.*

12          (c) *DISSEMINATION.—The Under Secretary for Science*  
13          *and Technology shall transmit the guide prepared by the*  
14          *National Research Council under this section to Congress*  
15          *within 1 year of the date of enactment of this Act, and shall*  
16          *encourage the distribution of the guide throughout the home-*  
17          *land security and life sciences research communities, espe-*  
18          *cially to students.*

19          **SEC. 14. PROJECT 25 STANDARDS COMPLIANCE.**

20          *The Under Secretary for Science and Technology,*  
21          *working with the Director of the National Institute of*  
22          *Standards and Technology and other appropriate Federal*  
23          *agencies, shall support assessment of compliance of first re-*  
24          *sponder communications equipment with the Project 25*  
25          *standards established by the Association of Public Safety*

1 *Communications Officials International. The results of such*  
2 *assessments shall be made publicly available, in a manner*  
3 *to best assist first responder agencies in selecting such*  
4 *equipment.*

5 **SEC. 15. RAIL SECURITY RESEARCH AND DEVELOPMENT.**

6       (a) *ESTABLISHMENT OF RESEARCH AND DEVELOP-*  
7 *MENT PROGRAM.—The Secretary of Homeland Security,*  
8 *through the Under Secretary for Science and Technology,*  
9 *in coordination with the Assistant Secretary of Homeland*  
10 *Security (Transportation Security Administration) and the*  
11 *Departmental Privacy Officer, and in consultation with the*  
12 *Secretary of Transportation, shall carry out a research and*  
13 *development program for the purpose of improving rail and*  
14 *mass transit security that may include research and devel-*  
15 *opment projects to—*

16               (1) *reduce the vulnerability of passenger trains,*  
17 *stations, and equipment to explosives and hazardous*  
18 *chemical, biological, and radioactive substances;*

19               (2) *test new emergency response and recovery*  
20 *techniques and technologies;*

21               (3) *develop improved freight technologies, includ-*  
22 *ing—*

23                       (A) *technologies for sealing rail cars;*

24                       (B) *automatic inspection of rail cars;*

25                       (C) *communication-based train controls;*

1                   (D) signal system integrity at switches;

2                   (E) emergency response training including  
3 training in a tunnel environment;

4                   (F) security and redundancy for critical  
5 communications, electrical power, computer, and  
6 train control systems; and

7                   (G) technologies for securing bridges and  
8 tunnels;

9                   (4) test wayside detectors that can detect tam-  
10 pering with railroad equipment;

11                   (5) support enhanced security for the transpor-  
12 tation of hazardous materials by rail;

13                   (6) mitigate damages in the event of a cyber at-  
14 tack; and

15                   (7) address other vulnerabilities and risks identi-  
16 fied by the Secretary.

17           (b) *COORDINATION WITH OTHER RESEARCH INITIA-*  
18 *TIVES.*—*The Secretary of Homeland Security shall ensure*  
19 *that the research and development program authorized by*  
20 *this section is consistent with the National Strategy for*  
21 *Transportation Security and the Transportation Sector*  
22 *Specific Plan, and shall to the greatest extent possible lever-*  
23 *age other ongoing research and development security related*  
24 *initiatives at the National Academy of Sciences; the De-*  
25 *partment of Homeland Security; the Department of Trans-*

1 *portation, including University Transportation Centers*  
2 *and other institutes, centers, and simulators funded by the*  
3 *Department of Transportation; the Technical Support*  
4 *Working Group; other Federal agencies; and other Federal*  
5 *and private research laboratories and research entities with*  
6 *the capability to conduct both practical and theoretical re-*  
7 *search and technical systems analysis.*

8       *(c) PRIVACY AND CIVIL RIGHTS AND CIVIL LIBERTIES*  
9 *ISSUES.—In carrying out research and development*  
10 *projects under this section, the Under Secretary for Science*  
11 *and Technology shall consult with the Chief Privacy Officer*  
12 *and the Officer for Civil Rights and Civil Liberties as ap-*  
13 *propriate and in accordance with the plan required by sec-*  
14 *tion 319 of the Homeland Security Act of 2002. Pursuant*  
15 *to sections 222 and 705 of the Homeland Security Act of*  
16 *2002, the Chief Privacy Officer shall conduct privacy im-*  
17 *pact assessments and the Officer for Civil Rights and Civil*  
18 *Liberties shall conduct reviews, as appropriate, for research*  
19 *and development initiatives developed pursuant to this sec-*  
20 *tion.*

21       *(d) AUTHORIZATION OF APPROPRIATIONS.—There are*  
22 *authorized to be appropriated to the Secretary of Homeland*  
23 *Security to carry out this section such sums as may be nec-*  
24 *essary for each of fiscal years 2007 through 2009. Amounts*

- 1 *made available pursuant to this subsection shall remain*
- 2 *available until expended.*

Union Calendar No. 432

109<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

**H. R. 4941**

[Report No. 109-729, Part I]

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## **A BILL**

To reform the science and technology programs and activities of the Department of Homeland Security, and for other purposes.

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DECEMBER 8, 2006

Committees on Science and Energy and Commerce discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed