

**SEC. 3. DEFINITIONS.**

In this Act:

(1) HIGH-END COMPUTING SYSTEM.—

(A) IN GENERAL.—The term “high-end computing system” means a computing system with performance that substantially exceeds commonly available systems.

(B) INCLUSIONS.—The term “high-end computing system” includes a system described in subparagraph (A) that is based on a variety of architectures, including vector, reconfigurable logic, streaming, processor-in-memory, and multithreading architectures.

(2) INSTITUTION OF HIGHER EDUCATION.—The term “institution of higher education” has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(3) SECRETARY.—The term “Secretary” means the Secretary of Energy, acting through the Director of the Office of Science of the Department of Energy.

(4) ULTRASCALE SCIENTIFIC COMPUTING CAPABILITY.—The term “ultrascale scientific computing capability” means a computing capability supporting open scientific research in the United States that is at least 100 times such computing capability in existence on the date of enactment of this Act.

**SEC. 4. HIGH-END COMPUTING SYSTEMS PROGRAM.**

(a) IN GENERAL.—In addition to any other authority provided by law, the Secretary shall carry out a program of research and development (involving software and hardware) to advance high-end computing systems.

(b) DUTIES.—In carrying out the program, the Secretary shall—

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

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

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

(4) in accordance with subsection (c), develop, plan, construct, acquire, or operate equipment or facilities for the use of investigators conducting research and development on an ultrascale scientific computing capability;

(5) support technology transfer to the private sector and others in accordance with applicable law; and

(6) ensure that the program is coordinated with relevant activities in industry and other Federal agencies, including the National Nuclear Security Administration, the National Science Foundation, the Defense Advanced Research Projects Agency, and the National Security Agency.

(c) ULTRASCALE SCIENTIFIC COMPUTING CAPABILITY.—

(1) IN GENERAL.—As part of the program carried out under this Act, the Secretary shall develop, plan, construct, acquire, or operate a coordinated set of facilities for investigators to develop an ultrascale scientific computing capability for—

(A) scientific research and development using high-end computing systems; and

(B) developing potential advancements in high-end computing system architecture and software.

(2) ADMINISTRATION.—In carrying out this subsection, the Secretary shall—

(A) support multiple high-end computing system architectures; and

(B) conduct research on the basis of proposals (including proposals that are submitted by industry, institutions of higher

education, national laboratories, or any Federal agency) for research on problems that would particularly benefit from large computing power, even as the reliability of new hardware and software components are being evaluated.

(d) HIGH-END SOFTWARE DEVELOPMENT CENTER.—

(1) IN GENERAL.—As part of the program carried out under this Act, the Secretary shall develop, plan, construct, acquire, or operate at least 1 High-End Software Development Center.

(2) DUTIES.—A Center shall concentrate efforts to develop, test, maintain, and support optimal algorithms, programming environments, tools, languages, and operating systems for high-end computing systems.

(3) STAFF.—A Center shall include—

(A) a regular research staff, to create a centralized knowledge-base for high-end software development; and

(B) a rotating staff of researchers from other institutions and industry to assist in the coordination of research efforts and promote technology transfer to the private sector.

(4) USE OF EXPERTISE.—The Secretary shall use the expertise of a Center to assess research and development in high-end computing system architecture.

(5) LOCATION.—The location of a Center shall be determined by a competitive proposal process administered by the Secretary.

(e) PEER REVIEW.—Each grant, contract, cooperative agreement, and financial assistance awarded under this section shall be made only after independent peer review.

(f) CLASSIFIED RESEARCH OR FACILITIES.—No funds under this section may be used to directly support classified research or facilities.

**SEC. 5. AUTHORIZATION OF APPROPRIATIONS.**

(a) IN GENERAL.—In addition to amounts made available for high-end computing systems under other provisions of law, there are authorized to be appropriated to the Secretary to carry out this Act—

(1) \$150,000,000 for fiscal year 2005;

(2) \$155,000,000 for fiscal year 2006;

(3) \$160,000,000 for fiscal year 2007;

(4) \$165,000,000 for fiscal year 2008; and

(5) \$170,000,000 for fiscal year 2009.

(b) ULTRASCALE SCIENTIFIC COMPUTING CAPABILITY.—Of the funds made available under subsection (a), \$100,000,000 is authorized to be appropriated for each fiscal year to carry out section 4(c).

(c) HIGH-END SOFTWARE DEVELOPMENT CENTER.—Of the funds made available under subsection (a), \$10,000,000 is authorized to be appropriated for each fiscal year to carry out section 4(d).

**SUBMITTED RESOLUTIONS**

**SENATE CONCURRENT RESOLUTION 96—COMMEMORATING THE 150TH ANNIVERSARY OF THE FIRST MEETING OF THE REPUBLICAN PARTY IN RIPON, WISCONSIN**

Mr. FEINGOLD (for himself and Mr. KOHL) submitted the following concurrent resolution; which was considered and agreed to:

S. CON. RES. 96

Whereas on March 20, 1854, 50 men, 3 women, and 1 child assembled in a simple frame schoolhouse, now known as the Little White Schoolhouse, in Ripon, Wisconsin, to advocate the creation of a new political party under the name “Republican”;

Whereas this March 20, 1854, meeting in Ripon, Wisconsin was the first of many grassroots meetings that led to the formal founding of the Republican Party;

Whereas the city of Ripon is commemorating the 150th anniversary of the first meeting of the Republican Party with a celebration entitled “From Schoolhouse to White House; a Celebration of Active Citizenship,” which includes a series of civic and educational events;

Whereas the Little White Schoolhouse is listed on the National Registry of Historic Places, was designated by the Department of the Interior as a National Historic Landmark on May 30, 1974, and attracts visitors from around the world; and

Whereas the Little White Schoolhouse serves as a symbol of civic responsibility and grassroots political activism: Now, therefore, be it

*Resolved by the Senate (the House of Representatives concurring),* That Congress commemorates the 150th anniversary of the first meeting of the Republican Party in Ripon, Wisconsin.

**AMENDMENTS SUBMITTED AND PROPOSED**

SA 2692. Mrs. HUTCHISON (for herself, Mr. BROWNBACK, Mr. BUNNING, Mr. CHAMBLISS, and Mr. FITZGERALD) submitted an amendment intended to be proposed by her to the bill S. 1637, to amend the Internal Revenue Code of 1986 to comply with the World Trade Organization rulings on the FSC/ETI benefit in a manner that preserves jobs and production activities in the United States, to reform and simplify the international taxation rules of the United States, and for other purposes; which was ordered to lie on the table.

SA 2693. Mr. KENNEDY submitted an amendment intended to be proposed by him to the concurrent resolution S. Con. Res. 95, setting forth the congressional budget for the United States Government for fiscal year 2005 and including the appropriate budgetary levels for fiscal years 2006 through 2009; which was ordered to lie on the table.

SA 2694. Mr. KENNEDY submitted an amendment intended to be proposed by him to the concurrent resolution S. Con. Res. 95, supra; which was ordered to lie on the table.

SA 2695. Mr. KENNEDY submitted an amendment intended to be proposed by him to the concurrent resolution S. Con. Res. 95, supra; which was ordered to lie on the table.

SA 2696. Mr. KENNEDY submitted an amendment intended to be proposed by him to the concurrent resolution S. Con. Res. 95, supra; which was ordered to lie on the table.

SA 2697. Mr. DEWINE (for himself and Mr. LEAHY) submitted an amendment intended to be proposed by him to the concurrent resolution S. Con. Res. 95, supra; which was ordered to lie on the table.

SA 2698. Mrs. FEINSTEIN (for herself and Mr. GRAHAM of Florida) submitted an amendment intended to be proposed by her to the bill S. 1637, to amend the Internal Revenue Code of 1986 to comply with the World Trade Organization rulings on the FSC/ETI benefit in a manner that preserves jobs and production activities in the United States, to reform and simplify the international taxation rules of the United States, and for other purposes; which was ordered to lie on the table.

SA 2699. Mr. KENNEDY (for himself and Mr. ROCKEFELLER) submitted an amendment intended to be proposed by him to the concurrent resolution S. Con. Res. 95, setting forth the congressional budget for the United States Government for fiscal year 2005 and including the appropriate budgetary levels for fiscal years 2006 through 2009; which was ordered to lie on the table.