

THE WHITE HOUSE

WASHINGTON

December 28, 2001

Dear Mr. Chairman:

In accordance with the provisions of section 1211(d) of the National Defense Authorization Act for Fiscal Year 1998 (Public Law 105-85), I hereby notify you of my decision to establish a new level for the notification procedure for digital computers set forth in section 1211(a) of Public Law 105-85. The new level will be 190,000 millions of theoretical operations per second (MTOPS). In accordance with the provisions of section 1211(e), I hereby notify you of my decision to remove Latvia from the list of countries covered under section 1211(b). The attached report provides the rationale supporting these decisions and fulfills the requirements of Public Law 105-85, sections 1211(d) and (e).

I have made these changes based on the recommendation of the Departments of State, Defense, Commerce, and Energy.

Sincerely,

A handwritten signature in black ink, appearing to read "Bob Stump", written in a cursive style.

The Honorable Bob Stump
Chairman
Committee on Armed Services
House of Representatives
Washington, D.C. 20515

SUMMARY OF FINDINGS
WITH RESPECT TO CRITERIA SET FORTH IN
SUBSECTIONS 1211(D) AND (E) OF
THE NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 1998 (P.L. 105-85)

This report provides information to Congress required under the FY 1998 National Defense Authorization Act (NDAA), section 1211 et. seq. Section 1211 provides in pertinent part, that when the President changes control levels governing prior notification for computer exports to Tier 3 countries, or removes a country from Tier 3 status in the Department of Commerce's Export Administration Regulations, he must report and justify such changes to the Congress. The President's report is required to address: (1) the extent to which digital computers of a composite theoretical performance falling between the baseline established in the 1998 Act or intermediate adjustments, and the new level, are available from other countries; (2) all potential uses of military significance to which computers at the new level could be applied; (3) the impact of such uses on the national security interests of the United States; and (4) the justification for moving countries from Tier 3 to Tier 1.

1. The policy objectives of U.S. computer export controls are twofold: (1) to limit the acquisition of computational capabilities by potential adversaries and countries of proliferation concern; and (2) to ensure that U.S. domestic industries supporting computational capabilities important for national security could compete in markets representing limited security or proliferation risks. Over the last few years, the effectiveness of U.S. export controls in meeting these policy objectives has been severely challenged by market and technological changes in the computer and microprocessor industries.

As a result, the Administration is conducting a comprehensive review of export controls on computer hardware. The review will attempt to identify a controllable class of high-end computer systems of greater military sensitivity, and examine options, including alternative metrics, for controlling such systems. The Administration will also look at better defining software applications of concern for advanced military applications and the effectiveness of clustering of computers.

In the interim, the Administration will raise the Tier 3 licensing level to 190,000 MTOPS, based on the availability by

early 2002 of new 32-way Itanium-based servers and other comparable 32-way servers. Intel's powerful 64-bit Itanium microprocessor has entered volume production and is being incorporated into an extensive range of configurations by domestic and foreign computer companies. Among the original equipment manufacturers with Itanium-based server lines are Bull, Compaq, Dell, Fujitsu-Siemens, Hitachi, Hewlett Packard, IBM, Mitsubishi, NEC, and Unisys. Additional U.S. and foreign companies have plans to introduce Itanium-based products in the near future, and other microprocessor manufacturers also have powerful new microprocessors of similar performance levels entering volume production for use in servers.

The server product lines of these companies are highly scalable up to 32 processors and are widely available on the commercial market. Such servers utilizing 32 Itanium 800 Mhz processors approach a composite theoretical performance of 190,000 MTOPS. Although the market for these systems has been dampened somewhat by the slackening world economy, a significant domestic and international market remains in the financial and e-business sectors for high-end servers of up to 32 processors.

In addition, the trends in computer clustering using off the shelf computer hardware, interconnect technology, and public domain operating systems have continued to accelerate over the past year. The impact of clustering will be assessed in the course of the Administration's review of computer export controls.

2. The United States Government uses computers in virtually all military and national security applications including the design, development, and production of weapon systems, military operations, cryptanalysis, and nuclear weapons design and simulation. A majority of the computers used for these purposes fall below the 190,000 MTOPS threshold.

Previous reports to Congress have provided detailed information on the level of computing required to perform national security applications in the fields of image and signal processing, computational fluid dynamics, and computational electromagnetics and acoustics. The information was based on assessments conducted in 1995 and 1998. Since the studies were conducted, the demand for computing power for national security applications has risen along with the demand in the commercial sector. Computing power has increased about five fold since the late 1990's. Thus, some applications that were previously

conducted on computers at 21,000 MTOPS are now being conducted on systems around 100,000 MTOPS.

During the current review of computer hardware controls, the Administration has identified a number of very high end national security applications that require computational levels well above 190,000 MTOPS. Computers that perform above this level provide very high levels of reliable computational throughput that are required for certain cutting-edge conventional weapons applications, such as: significant increases in grid resolutions for modeling of ocean currents and the ocean floor for submarine operations; simulation at the billion (vice million) atom level of the fracture properties of new ceramic materials for armor; modeling in 3-D (vice 2-D) of impacts on reinforced bunkers for development of better bunker penetrators; and modeling of air/water flows over an entire aircraft or vessel, as opposed to merely discrete parts, in high-speed maneuvers. The Administration is examining the feasibility of protecting our ability to execute these unique applications through more focused controls.

3. It is important to note that potential adversaries have access to enormous amounts of computing power from the worldwide commercial market, power that could be used to pursue a wide range of military and other national security work. The United States seeks to maintain a technological lead in part by controlling high-end computer systems that are not widely available and that provide the United States with critical tools for advanced military design and development.

The new Tier 3 threshold retains controls on very high end computers that are used by the Departments of Defense and Energy to conduct research, development and simulations on the most advanced military systems and for nuclear stockpile stewardship. As previously noted, computers above 190,000 MTOPS are used for high end ocean modeling, materials processing, armor/shielding design, and computational fluid dynamics. The United States Government is focusing on these applications, and identifying possible options for controlling the computing power required to pursue these critical applications. The United States hopes to prevent Tier 3 countries from pursuing these national security applications with the same degree of rigor and reliability as the U.S. military, thus helping to preserve U.S. strategic and tactical advantages.

That said, Administration and outside experts acknowledge that a number of enabling capabilities are required for high security-risk countries to pursue successfully the acquisition of military capabilities that would threaten U.S. interests. These capabilities include the application code, valid suites of test software and test input data, as well as the expertise necessary to use the code and interpret results. The previously referenced 1998 assessment found that a country without an established track record of pursuing a particular application over a multi-year period, and without demonstrated ability to develop and effectively use associated software code and data, will find little or no value in a high-performance computer.

In addition, previous reports to Congress have noted that even if a country develops the expertise to design advanced systems, e.g., an advanced aircraft, and has access to a high performance computer to assist in this effort (i.e., for research, testing, and simulation), the computer is only one element in the process of actually producing, testing, and operating effectively a military system. For example, manufacturing advanced aircraft requires machine tools, composite materials, manufacturing expertise, integration knowledge, and extensive prototype testing. Further, an adversary also would need the doctrine, training and logistical support required to deploy an effective force that would threaten U.S. interests.

4. The United States takes into account several factors in assigning foreign countries within the three-tier framework of national export controls on computers, including: national security and proliferation concerns (e.g., whether the country is pursuing missile or weapons of mass destruction programs); membership in, or adherence to, international nonproliferation regimes; whether they have effective export controls; and their security and political relationship with the United States and other countries.

Since the last Section 1211 report to Congress, agencies have continued to monitor closely the status of several countries that have been under serious consideration for inter-tier movement. Latvia has made notable progress in conforming to international nonproliferation norms and export control standards, and it has satisfied U.S. concerns with the administration and enforcement of the Latvian export control system. Based on the recommendation of the Departments of State, Defense, Commerce, and Energy, Latvia will be moved from Tier 3 to Tier 1, effective 120 days from the date of delivery of this report to the appropriate Congressional committees.

While not a member of the Missile Technology Control Regime, Australia Group, or Wassenaar Arrangement, the Government of Latvia (GOL) has unilaterally adopted national controls comparable to those of these nonproliferation regimes. Latvia is a signatory to the Nuclear Nonproliferation Treaty, the Chemical Weapons Convention, the Biological Weapons Convention, and is a member of the Nuclear Suppliers Group, and the International Atomic Energy Agency.

Latvia has implemented comprehensive, legally based national export controls that meet international standards, and it continues to improve the effectiveness of these controls. Overall coordination of the control of strategic goods is the responsibility of the State Secretary at the Foreign Ministry. The Latvian Development Agency (LDA) is a non-governmental institution, accountable to the GOL, and is responsible for pre-license checks, preparation of licenses, control of strategic goods, delivery verification and the maintenance of a database of customers, goods, and issued documents. Latvian export control authorities employ the highest level of automation and database tracking in the region. Latvia also maintains the largest number of operational radiation monitors of the Baltic states, and Latvian law requires a greater level of proficiency in their use than is common in the United States.

Latvia has been an active participant in, and beneficiary of, extensive U.S. export control cooperation and assistance programs. In addition, the GOL has addressed previous United States Government concerns regarding the effectiveness and integrity of export enforcement in Latvia. Latvia cooperates with the United States and other major trading partners in enforcing export controls and is a valued security partner in European and global contexts.