

STATEMENT OF DAN HOYDYSH

**CO-CHAIR OF THE COMPUTER COALITION FOR RESPONSIBLE
EXPORTS**

**ON BEHALF OF THE COMPUTER COALITION FOR RESPONSIBLE
EXPORTS**

SUBMITTED TO

THE SENATE GOVERNMENTAL AFFAIRS COMMITTEE

UNITED STATES SENATE

MAY 26, 2000

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**BEFORE THE SENATE GOVERNMENTAL AFFAIRS COMMITTEE
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Mr. Chairman, Members of the Committee.

Good Morning. My name is Dan Hoydysh. I am Director, Trade, Public Policy & Government Affairs of the Unisys Corporation. I also have the privilege of serving as Co-Chair of the Computer Coalition for Responsible Exports (CCRE) and am testifying today on CCRE's behalf (a curriculum vitae and required disclosures are attached). I want to thank you for providing me and the CCRE with the opportunity to share our views on U.S. computer export controls.

The CCRE is an alliance of American computer companies and allied associations established to inform policy makers and the public about the nature of the computer industry -- its products, market trends, and technological advances.

CCRE Members include Apple Computer, Inc., Compaq Computer Corporation, Dell Computer Corporation, Hewlett-Packard Company, IBM Corporation, Intel Corporation, NCR Corporation, SGI, Sun Microsystems, Inc., Unisys Corporation, the American Electronics Association (AEA), the Computer and Communications Industry Association (CCIA), the Computer Systems Policy Project (CSPP), Electronic Industries Alliance (EIA), and the Information Technology Industry Council (ITI).

The CCRE is committed to promoting and protecting U.S. national security interests, and seeks to work in close partnership with the Congress and the Executive Branch to ensure that America's economic, national security, and foreign policy goals are realized. CCRE also believes that a strong, internationally competitive computer industry is critical to ensuring that U.S. national and economic security objectives are achieved and that U.S. economic and technological leadership is maintained.

The U.S. computer industry has a long history of cooperation with the U.S. government on security-related high technology issues. They take their responsibilities in the area very seriously. CCRE members strongly believe that U.S. national security is tied to U.S. technological leadership. U.S. computer companies also devote hundreds of employees and millions of dollars annually to complying with export control regulations. It is not our role, however, to define U.S. national security needs - - that is for the Congress and the Executive Branch. Rather, we do and will continue to provide the Congress and Executive Branch with information concerning the rapidly changing technology and international market conditions that we believe they will need to take into consideration in shaping up-to-date and effective U.S. export control policies for computers.

In our testimony today we want to make the following key points given the trends in computer performance over the foreseeable future: (1) a responsive and efficient export control regime is essential to maintain U.S. leadership in the information technology industry; (2) a 6-month delay in implementing adjustments to the computer export controls is too long and a considerably shorter period should be adopted by this Congress; and (3) technological and market realities both support the Administration's February announcement to update the Tier III export control thresholds and confirm the need for a further update.

I. The Export Control System Needs to be Changed

As you know, the U.S. computer industry continues to be a driving force behind our continued economic growth and job creation and is responsible for one-third of real economic growth. U.S. computer companies need to innovate, grow, and compete in new markets. The industry's strength and vitality have been important factors in maintaining our national security. Export controls can have profound effects on the health of such industries and on their contributions to the national security. The Defense Science Board's Task Force on Globalization and Security, an independent Federal Advisory Committee to the Department of

Defense, comprising many distinguished experts in national security, specifically points out the role between export controls and the health of the U.S. computer industry:

Exports are now the key to growth and good health. In the computer and communications satellite industries, for example, between 50% and 60% of all revenues come from foreign sales. Any significant restriction on exports would likely slow corporate growth and limit the extent to which profits can be put back into research and development on next-generation technology. . . . If U.S. high-tech exports are restricted in any significant manner, it could well have a stifling effect on the U.S. military's rate of technological advancement.

DSB Report at 27.

CCRE believes that in the long term fundamental reform of the computer export controls is necessary. As the computer industry's experience with the present export control regime clearly shows, there is a need for a more efficient and responsive new computer export control system. A performance based computer export control system is proving difficult to administer given the rapid advances in computer performance levels and the global availability of components and know-how. In light of this reality, we urge that the Congress and the Executive Branch, with the support and assistance of the computer and other high-tech industries, continue their bipartisan consideration of new methods of achieving the national security goals presently associated with computer export controls.

In the short term, however, the CCRE supports the ongoing effort to modernize and reauthorize the Export Administration Act (EAA), but believes that the EAA should adequately reflect current foreign policy, national security and market realities. The result of past efforts failing to reauthorize the EAA has been an increasingly outdated U.S. export control regime built on the remains of a Cold War-era statute. S. 1712, the Export Administration Act of 1999,

presents a valuable first step to clear away conflicting export control systems and modernize the U.S. export control regime to reflect market realities.

II. The Process for Updating Export Controls on Computers Should be Streamlined

In 1997, the House Armed Services Committee correctly predicted that export controls on computers would need to be updated periodically. Consequently, the Congress provided a means for adjusting those controls in the FY 1998 NDAA. That process, however, includes a waiting period of 6 months before new export control thresholds become effective. The 6 month waiting period has, however, proved to be too long for the rapid changes that take place in our industry.

Just last week the U.S. House of Representatives overwhelmingly approved an amendment to the National Defense Authorization Act for FY 2001 that would shorten the waiting period from 180 days to 60 days before new rules governing computer export controls can take effect. The House approved the amendment by a 415-8 vote. The amendment was offered by House Rules Committee Chairman David Dreier (R-CA), Armed Services Committee Ranking Member Ike Skelton (D-MO), International Relations Committee Chairman Ben Gilman (R-NY), and Ellen Tauscher (D-CA). The amendment was also supported by Armed Services Chairman Floyd Spence (R-SC). The House vote is a clear recognition that the six-month waiting period is not consistent with technological and competitive reality. The support for the amendment by those members concerned about U.S. national security supports the notion that the reduction will actually help strengthen national security by ensuring that U.S. companies maintain their technological preeminence, upon which the U.S. military superiority ultimately depends.

In addition, when the Senate Banking Committee reauthorized the Export Administration Act last year, it also recognized (i) that a 6-month waiting period is too long for an industry, like the computer industry, that needs to get its latest products to market before foreign competitors capture those markets, and (ii) that a considerably shorter waiting period would still protect the national security. Since then, Senators Harry Reid (D-NV) and Robert Bennett (R-UT) have also offered separate legislation in the Senate, S. 2539, that would reduce the waiting period.

The House of Representatives, the Senate Banking Committee, and Senators Reid and Bennet are correct. A shorter waiting period will still give the Congress adequate time to review the national security ramifications of any changes in the U.S. computer export control laws and allow the U.S. computer industry a chance to compete in some of the most important emerging markets in the world.

The House NDAA Amendment and the other initiatives would make the waiting period more reasonable and bring it into line with other waiting periods for changing national security export controls. For example, 6 months is considerably longer than the 30-day waiting period established by Congress to remove defense articles from the Munitions List (a list of defense articles and services that are subject to export controls, including such items as artillery, launch vehicles, missiles, rockets, torpedoes, warships, aircraft and tanks).

Indeed, recent events have demonstrated clearly that the 6-month waiting period is so long that it is impossible for the computer export controls to keep pace with current technological and market realities. Last fall Apple Computer began marketing its new single-processor personal computer whose power exceeded the then current computer export control threshold. Apple was unable to sell those new G4 computer systems in over 50 countries because the export control adjustments made in July did not become effective until January. IBM was in a similar predicament with its new Aptiva personal computer line. We believe that

this recent experience in the harm caused by a 6-month delay in adjusting the export control threshold demonstrates clearly the urgent need to reduce the waiting period from 6 months.

Furthermore, it is quite clear that foreign computer companies are positioned to take advantage of markets closed to U.S. computer companies while the U.S. companies are waiting for the 6-month waiting period to run its course. If U.S. companies have to wait until the export controls are updated as much as six months later, foreign computer companies selling comparable computers will reap the significant benefit of being “first to market.” As you know, for high technology products being “first to market” is a critical commercial fact of life. The U.S. computer industry will soon be facing a crisis when computer systems with the new Intel Itanium™ come on the market, but are still controlled by outdated export control thresholds. At present, at least five foreign firms (NEC, Siemens, Hitachi, Fujitsu, and Bull) have already indicated that they intend to market computer systems with the Itanium. Those foreign computer companies will reap all the advantages of “first to market” in some of the most important growing markets in the world, while our computer companies face the barriers of the pre-export notification and licensing process. Once lost, foreign markets will be very hard to recover.

According to the DSB, export controls under these circumstances could very well harm the national security:

DoD should attempt to protect for the purposes of maintaining military advantage only those capabilities and technologies of which the U.S. is the sole possessor and whose protection is deemed necessary to preserve an essential military capability. Protection of capabilities and technologies readily available on the world market is, at best, unhelpful to the maintenance of military dominance, and, at worst, counterproductive (e.g., by undermining the industry upon which U.S. military-technological supremacy depends).

DSB Report at vii.

This change is critically important to the U.S. computer industry. We urge you to support these initiatives to reduce the NDAA waiting period.

III. The Technological and Market Realities of the Global Computer Industry Support the February Announced Update and Confirm the Need for Another Update this Year

In February, the President announced that the computer export control threshold for Tier III countries would be increased from 6,500 MTOPS to 12,500 MTOPS in light of the widely available computers that would be performing in that range. The update will take effect six months later, following the 6-month waiting period. Unfortunately, because of the 6-month waiting period, this recent update to 12,500 MTOPS will quickly be out of date because Intel's new microprocessor, the Itanium, will soon be available - domestically and overseas. The Itanium will be used primarily in widely available multiprocessor business computer systems. The business computers at issue are used in such businesses as banks, telephone companies, productions and engineering facilities, offices, as well as in providing the backbone of the Internet and e-commerce. Four-way multiprocessor Itanium systems are presently projected to perform above 23,700 MTOPS. Another update of the Tier III computer export controls is therefore necessary as soon as possible to take into account these new widely available products.

The business computers at issue are widely available because (A) of the increasing power of widely available microprocessors, that (B) are employed in increasingly common multiprocessor systems (with correspondingly higher performance levels) that are widely used in business applications, and (C) global computer market trends mean that multi-processor computers are so widely available that many are now commodities.

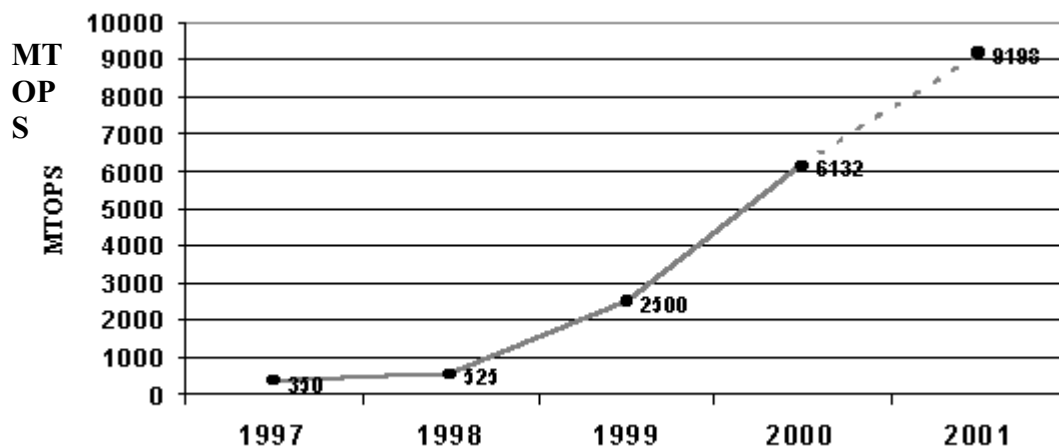
A. Increasing Processing Performance Trends Support the February Proposal to Adjust the Computer Export Controls

The recent increases in microprocessor performance are one of the main factors supporting the proposed adjustment and the need for another adjustment. The performance of microprocessors (chips) -- the brains of the computer -- continues to improve dramatically. Gordon Moore, the former CEO of Intel once observed “that the power of semiconductor technology doubles every 18 months.” However, the pace of technological advance is accelerating even faster.

In March of 1999 the Pentium® III Xeon™ microprocessor, then the state-of-the-art mass market processor used in multiprocessor systems, performed at 1167 MTOPS (500 MHZ). Eighteen months later the state-of-the-art mass market microprocessor is forecast to be Intel’s Itanium, with performance of 5622 MTOPS. *Thus in 18 months, instead of doubling, the performance of mass market microprocessors will have quintupled - increased by almost 500%.*

The following table demonstrates the performance level of widely available single microprocessors made by Intel and other companies: The impact of the Itanium is readily apparent in the sudden increase this year.

Performance of Widely Available Single Microprocessors



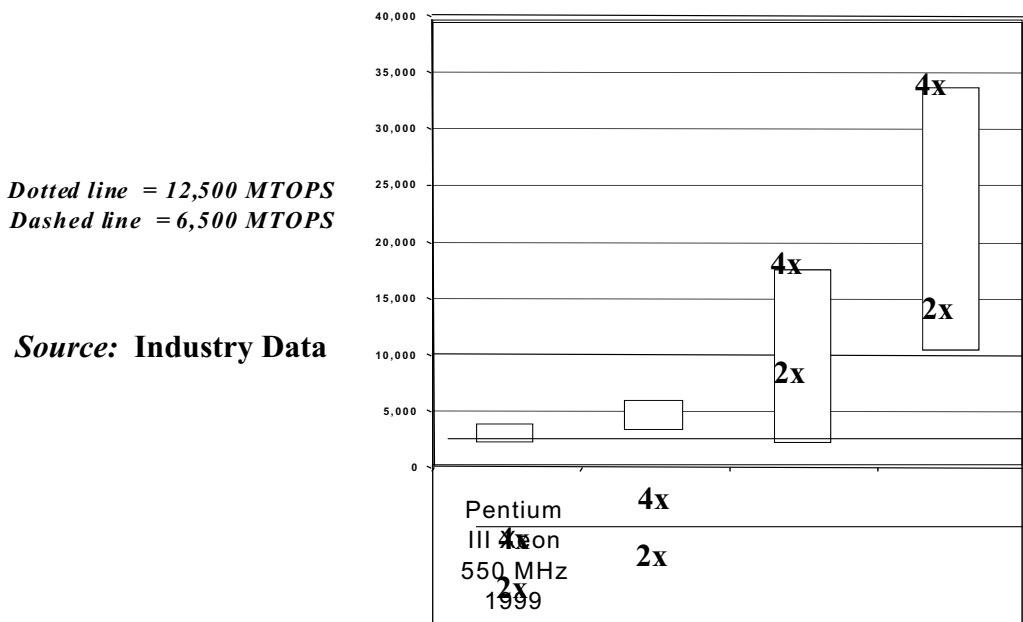
Source: Industry data based on Intel & other microprocessors

B. The Trend of Increasing Performance Through the Use of Multiprocessor Systems Supports the February Announcement and the Need for Further Adjustments this Year.

Another major factor supporting the February announcement and confirming the need for another update is the increasing usage of multiprocessor computer systems. Multiprocessor systems using the latest microprocessors are now widely available on the world market. According to projections in the Gartner Group Report, this year over 4.3 million computers that can accommodate two processors, over 500,000 computers that can accommodate 4 processors, and over 125,000 computers that can accommodate 8 processors will be sold world-wide. The Gartner Group Report projects that by the end of this year, the installed worldwide base of computer systems that can accommodate 2, 4, 6, and 8 processors should be approximately 14 million, while by the end of 2001 there will be over 20 million such computers installed worldwide.

The following chart and examples using Intel technology illustrate the dramatic increases in widely available multi-processor power that is resulting in an ever increasing number of computers performing in the range covered by the President's proposal and forecast to perform above the recent update.

Power of Widely Available US and foreign computer systems



A review of the present widely available microprocessors available domestically and overseas clearly shows that the February announced update was necessary. Today the 550 MHZ Intel Pentium III Xeon, which performs at about 1300 MTOPS, is the basic building block of multiprocessor servers using Intel architecture. A computer system using two 550 MHZ Intel Pentium III Xeon microprocessors performs at about 2400 MTOPS, while one using four microprocessors performs at about 4600 MTOPS, and one using eight microprocessors performs at about 9000 MTOPS. It is projected that the 550 MHZ Intel Pentium III Xeon will very soon be replaced by the 750 MHZ Intel Pentium III Xeon (1750 MTOPS), with computer systems using two of those microprocessors performing at 3250 MTOPS, while one using four microprocessors will perform at 6250 MTOPS, and one using eight microprocessors will perform at 12,250 MTOPS.

However, this year it is also expected that the Intel Itanium microprocessor will soon be available for use in multiprocessor servers using Intel architecture. By the end of this year,

systems with two Itanium microprocessors are projected to perform at just under 12,000 MTOPS, while one with four microprocessors is projected to perform just under 24,000 MTOPS. Furthermore, in the second half of next year the follow-on to the Itanium is projected to have a 2-way performance of just under 18,000 MTOPS, and a 4-way performance of just under 36,000 MTOPS. In addition, the follow-on to the Pentium, the Foster, will also soon be widely available. In the first half of next year an 8-way Foster is projected to perform just under 27,000 MTOPS. The February announced update to 12,500 MTOPS will clearly fail to cover these widely available systems. Unless we are prepared to concede some of the most important growing markets in the world to foreign manufacturers providing these systems, the computer export controls will need another update as soon as possible to cover the expected sales of these systems.

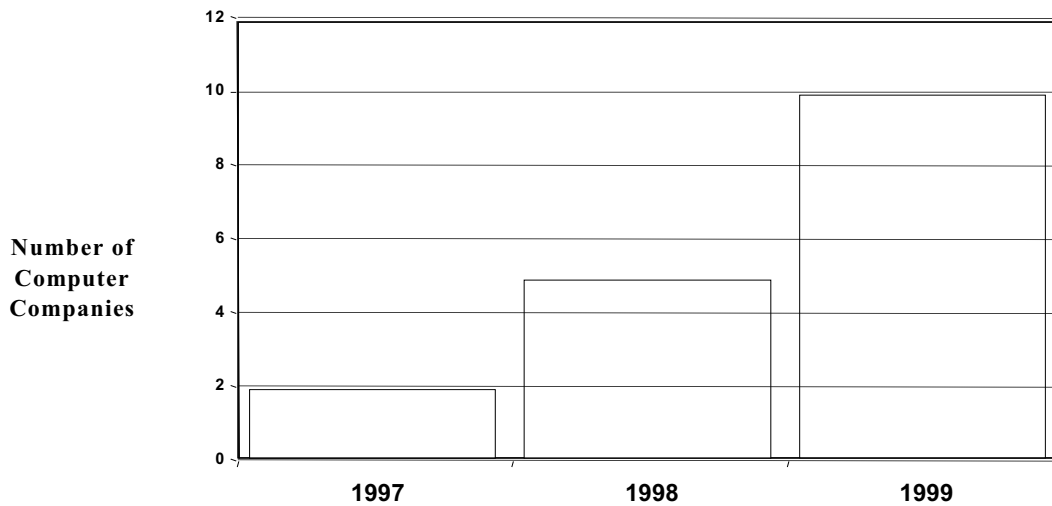
C. Global Computer Market Trends of Increasing Use of Multiprocessor Systems Support the February Announcement and the Need for Another Adjustment

Any review of proposals to adjust computer export controls should take into account global computer market trends - - both the foreign availability of multiprocessor computers, as well as the foreign capability to manufacture computers that would be subject to export controls. In addition, the overseas installed base of computers that would be subject to export controls is also relevant to the effectiveness of any export control regime.

(1) Foreign Availability and Capability

The number of foreign computer companies and the number of products they offer that compete at higher performance levels is increasing all the time as computer technology continues to advance and is available overseas and at relatively low cost. The chart on the next page shows the increasing number of foreign computer companies that are marketing servers and

workstations that can perform in the range covered by the proposed adjustment to the computer export control laws.



Source: GartnerGroup for 1997-1999.

***Companies that have announced they will market Intel Itanium computers in multiprocessor configurations pending Itanium release in July 2000.**

Computer companies in France (Bull), Japan (Hitachi, NEC, Fujitsu, Mitsubishi and Toshiba), Taiwan (Acer and AST), Germany (Siemens and Comparex), and Italy (Olivetti) are all making 2 and 4-way multiprocessor computers. Many of these companies are already marketing or have announced that they will be selling 8-way computers (e.g. Bull, Comparex, NEC, Hitachi, Fujitsu, and Siemens). (See Attachment 1 for specific details on these foreign computers.)

Most significantly, it should also be noted that NEC, Siemens, Hitachi, Fujitsu, and Bull have already indicated that they will be employing the Intel Itanium in multi-chip computers.

Thus, even before its release, it is clear that this new powerful microprocessor will be available in multiprocessor systems worldwide.

Indeed, the Gartner Group Report forecasts that this year foreign computer manufacturers will sell over 20,000 eight-way configurable computers, almost 140,000 four-way configurable computers, and almost 950,000 two-way configurable computers. In 2001, the Gartner report projects that over 1,300,000 two-way computers and over 150,000 four-way computers will be manufactured by foreign computer companies. Many of these foreign computer systems will be using widely available microprocessors that will have performances for 4-way configurations above 20,000 MTOPS.

The DSB Report explicitly discusses foreign capability based on uncontrollable commodity microprocessors:

Microprocessors, which are the essential ingredient for high-performance computers (HPCs), have long been a commodity product widely available on the world market from a vast range of sources. Chip-maker Intel alone has over 50,000 authorized dealers worldwide.

DSB Report at 26-27.

In addition, foreign end-users can also achieve high performance levels, in excess of the thresholds in the February announcement, through networking commercial off-the-shelf inexpensive computers. Indeed, this view is supported by a statement from the Cox Committee Report:

According to officials at the Lawrence Livermore National Laboratory, networking represents only a ten percent additional cost over the cost of computing hardware for large systems. Thus, up to approximately 50,000 MTOPS, the computing capability available to any country today is limited only by the amount of money that is available to be spent on commercial-off-the-shelf networking.

(Cox Committee Report, Volume 1, Chapter 3/Technical Afterword, at 158). Furthermore, the Cox Committee Report notes that there are networking technology installations in 17 foreign countries, including India, Israel, and the PRC. (Id.) The DSB Report also considered the impact of clustering:

The technology to "cluster" these computers (i.e. link them together to multiply their computing power) is also available online. Through clustering, it is possible to create computer systems ranging in computing power from 4,000-100,000 MTOPS (millions of theoretical operations per second)-equivalent to the supercomputers currently under strict export controls.

DSB Report at 26-27.

Finally, it should be noted that our foreign competition are not constrained by export controls to the same extent as is the U.S. computer industry. The end of the Cold War and the demise of effective multilateral export controls has essentially freed our foreign competition from such constraints. Indeed, the DSB remarked on just this point when it examined the effectiveness of U.S. export controls:

In the wake of CoCom's dissolution, a chasm has developed between the U.S. and many of its Western allies, who no longer view China as a threat and have relaxed or lifted dual-use export restrictions to China accordingly.

DSB Report at 26. The DSB also commented on the effectiveness of today's multilateral controls.

[M]ultilateral controls today are for all practical purposes ineffective at manipulating global access to dual-use technologies

Id.

(2) Foreign Installed Base

As computer technology advances and is spread around the world, the installed base of computers that can perform above current export control thresholds will continue to grow. In addition to providing data on technology advances, the Gartner Group Report also provided data on international market trends. The Report shows that there is presently a large overseas

installed base of servers and workstations, many of which perform in the range covered by the proposal. The following chart shows the increasing foreign installed base.

The Gartner Group Report forecasts that by the end of this year, over eight million multiprocessor servers and workstations will have been sold overseas by U.S. and foreign computer manufacturers. The Report also forecasts that by the end of this year over one million computers that can be configured with up to four microprocessors will have been sold overseas.

Accordingly, the large installed base of computers outside the United States cannot be ignored when considering changes to the computer export controls. The larger the installed base -- the more difficult it is to implement an effective export control system.

V. Conclusion

The discussion above concerning the changing performance levels of business computers and the intense global competition confronting the U.S. computer industry clearly shows that there is a present and clear need for long-term changes as well as immediate updates in the export control regime for computers and that such changes are consistent with the national security. CCRE is committed to working with the Congress and the Executive Branch in determining the adjustments that will be necessary in light of the technological and market realities.

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Attachment 1

FOREIGN COMPETITION

There is substantial foreign commercial availability of multiprocessor systems comparable to U.S. multiprocessor systems. For example, the following systems are on the market this year:

Acer (Taiwan) Altos 21000 with up to four Intel Pentium III Xeon processors at 550 MHz. Forthcoming Altos servers will run at over 600 MHz.

AST (Taiwan) Premium 2000H with up to two Pentium III processors at up to 700 MHz.

ATEC (Thailand) Nexus™ 700 with dual Pentium III 450 MHz processors.

Compaq (Germany) S1000-890 with up to 8 Pentium III Xeon processors.

Fujitsu (Japan) Teamserver T890ie with up to 8 Pentium III Xeon 550 MHz processors.

Fujitsu Siemens (Germany) GP7000f Model 2000 with up to 64 SPARC64 processors. Primergy N800 & K800 with up to 8 Pentium III Xeon 550 MHz processors. Celsius 630 workstation with up to 2 Pentium III Xeon 550 MHz processors.

Groupe Bull (France) EPC2400 with up to 32 nodes and 24 Power PC RS64 III processors per node. HV8600 with up to 8 Pentium III Xeon processors.

Hitachi (Japan) MP6000 with up to 8 ACE2 processors.

Legend (China) WanQuan 4000 server with 4 processors.

NEC (Japan) Supercomputer SX4 with up to 512 processors.

Tatung (Taiwan) TNS-3000PS & 3000 PW with up to 2 Pentium III 800 MHz processors. TNS 3000XW & XS workstations with up to 2 Pentium III Xeon 800 MHz processors.

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Attachment 2

Curriculum Vitae of Dan Hoydysh

Dan Hoydysh is Director of Trade Policy and Government Affairs for the Unisys Corporation. He is responsible for maintaining liaison with the Congress and the Executive Branch on trade issues that affect Unisys business objectives.

Dan also serves as Co-Chair of the Computer Coalition for Responsible Exports - - an alliance of American computer companies and high-tech trade associations established to inform policy makers and the public about the nature of the global computer industry - - its products, market trends, and technology advances.

Before coming to Unisys, Dan worked for the Bureau of Export Administration (U.S. Department of Commerce), where he was responsible for developing export control policy for computers and negotiating multilateral export control agreements.

Dan has a Masters Degree of Science in Atmospheric Physics from New York University and a J.D. degree from the Columbus School of Law (The Catholic University of America).