

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 71**

[Docket FAA 2004–19684; Airspace Docket 04–ANM–24]

**Revision of Class E Airspace; Herlong, CA**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** This final rule will revise the Class E airspace area at Herlong, CA. Additional controlled airspace is necessary for the safety of Instrument Flight Rules (IFR) aircraft during airborne holding. Holding airspace is designed with specific altitudes and lateral boundaries within controlled airspace. This airborne holding procedure is also an integral part of a new Area Navigation (RNAV) Global Positioning System (GPS) Standard Instrument Approach Procedure (SIAP) at the Amedee Army Air Field (AFF), Herlong, CA.

**DATES:** *Effective Date:* 0901 UTC, August 3, 2006.

**FOR FURTHER INFORMATION CONTACT:** Ed Haeseker, Federal Aviation Administration, Western En Route and Oceanic Area Office, Airspace Branch, 1601 Lind Avenue, SW., Renton, WA 98055–4056; telephone (425) 227–2527.

**SUPPLEMENTARY INFORMATION:****History**

On July 12, 2005, the FAA proposed to amend Title 14 Code of Federal Regulations (14 CFR) part 71 by revising Class E airspace at Herlong, CA (70 FR 39973). The proposed action would provide additional controlled airspace for the safety of IFR aircraft executing airborne holding due to weather, traffic congestion, or other operational reasons. This additional controlled airspace is also necessary for the safety of aircraft transitioning to a new RNAV (GPS) and ILS SIAP at Amedee AAF, Herlong, CA.

Interested parties were invited to participate in this rule making proceeding by submitting written comments on the proposal to the FAA. No comments were received. Class E airspace designations are published in paragraph 6005 of FAA Order 7400.9N, dated September 1, 2005, and effective September 15, 2005, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designations listed in this document will be published subsequently in that order.

**The Rule**

This amendment to 14 CFR part 71 revises Class E airspace at Herlong, CA, by providing additional controlled airspace for the safety of IFR aircraft during airborne holding. Holding occurs during adverse weather conditions, traffic congestion, or for other operational reasons. This holding procedure is also an integral part of a new RNAV (GPS) (SIAP) at the Amedee AAF, Herlong, CA.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep the regulations current. Therefore, this regulation: (1) Is not a “significant regulatory action” under Executive Order 12866; (2) is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 71**

Airspace, Incorporation by reference, Navigation (air).

**Adoption of the Amendment**

■ In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

**PART 71—DESIGNATION OF CLASS A, CLASS B, CLASS C, CLASS D, AND CLASS E AIRSPACE AREAS; ROUTES; AND REPORTING POINTS.**

■ 1. The authority citation for 14 CFR part 71 continues to read follows:

**Authority:** 49 U.S.C. 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

**§ 71.1 [Amended]**

■ 2. The incorporation by reference in 14 CFR part 71.1 of the Federal Aviation Administration Order 7400.9N, Airspace Designations and Reporting Points, dated September 01, 2005, and effective September 15, 2005, is amended as follows: Paragraph 6005. Class E airspace areas extending upward from 700 feet or more above the surface of the earth.

\* \* \* \* \*

**ANM CA E5 Herlong, CA [Revised]**  
Amedee VOR/DME

(Lat. 40°16'04" N., long. 120°09'07" W.)

That airspace extending upward from 700 feet above the surface of the earth within an area bounded by a line beginning at lat. 40°20'15" N., long. 119°48'27" W.; to lat. 40°07'58" N., 119°51'47" W.; to lat. 40°11'30" N., long. 120°16'47" W.; to lat. 40°20'32" N., long. 120°14'34" W.; thence to the point of beginning. That airspace extending upward from 1,200 feet above the surface of the earth beginning at lat. 40°00'00" N., long. 120°00'00" W.; west to V452; to lat. 40°30'00" N.; east to lat. 40°30'00" N., long. 119°16'00" W.; south to lat. 40°00'00" N., long. 119°16'00" W.; west to point of beginning.

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Issued in Seattle, Washington, on March 31, 2006.

**R.D. Engelke,**

*Acting Area Director, Western En Route and Oceanic Operations.*

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**DEPARTMENT OF COMMERCE****Bureau of Industry and Security**

**15 CFR Parts 730, 732, 734, 738, 740, 742, 743, 746, 748, 750, 752, 762, 770, 772 and 774**

[Docket No. 060404096–6096–01]

RIN 0694–AD66

**Implementation of New Formula for Calculating Computer Performance: Adjusted Peak Performance (APP) in Weighted TeraFLOPS; Bulgaria; XP and MT Controls**

**AGENCY:** Bureau of Industry and Security, Commerce.

**ACTION:** Final rule.

**SUMMARY:** This final rule amends the Export Administration Regulations to implement the Wassenaar Arrangement's December 2005 agreement to revise the formula for calculating computer performance from Composite Theoretical Performance (CTP) measured in Millions of Theoretical Operations Per Second (MTOPS) to Adjusted Peak Performance (APP) measured in Weighted TeraFLOPS (Trillion Floating point Operations Per Second) (WT). This rule also establishes new control levels in Category 4 of the Commerce Control List (CCL) expressed in WT. In addition, this rule renames License Exception CTP to License Exception APP (Adjusted Peak Performance) to correspond to the new formula. This rule also makes conforming changes to the EAR based on the new computer parameter, such as, revising the parameters for eligibility of License Exception APP.

This rule also moves Bulgaria from Computer Tier 3 to Computer Tier 1, removes High Performance Computer (XP) and Missile Technology (MT) controls from certain Export Control Classification Numbers (ECCNs) in Category 4 of the CCL, and removes the section of the EAR dedicated to various requirements for high performance computers.

**DATES:** *Effective Dates:* This rule is effective on April 24, 2006, with the exception of the movement of Bulgaria from Computer Tier 3 to Computer Tier 1 in section 740.7 of the EAR, which will be effective June 3, 2006.

**FOR FURTHER INFORMATION CONTACT:** For questions of a general nature contact Sharron Cook, Office of Exporter Services, Regulatory Policy Division at (202) 482-2440 or E-Mail: [scook@bis.doc.gov](mailto:scook@bis.doc.gov).

For questions of a technical nature contact Joseph Young, Office of National Security and Technology Transfer Controls at 202-482-4197 or E-Mail: [jyoung@bis.doc.gov](mailto:jyoung@bis.doc.gov).

#### **SUPPLEMENTARY INFORMATION:**

##### **Background**

##### **The Wassenaar Arrangement**

The United States is one of 40 states participating in the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies (Wassenaar Arrangement). The Wassenaar Arrangement contributes to regional and international security and stability by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilizing accumulations of such items. Participating states have committed to exchange information on exports of dual-use goods and technologies to non-participating states for the purposes of enhancing transparency and assisting in developing common understandings of the risks associated with the transfers of these items. In December 2005, the Wassenaar Arrangement met in Plenary session and agreed to implement a new computer performance formula and associated control levels for export control purposes.

##### **Composite Theoretical Performance (CTP) to Adjusted Peak Performance (APP)**

For more than a decade, Composite Theoretical Performance (CTP) has been used for measuring computer performance for the purpose of export control. CTP, expressed in millions of

theoretical operations per second (MTOPS), is difficult to calculate and, because of remarkable changes in computer architecture and semiconductor technology, has significant shortcomings in the ranking of computers. As a result of the limitations of CTP and the continued growth of commodity cluster systems, the Administration conducted a comprehensive review of export controls on computer hardware. In 2004, the Departments of Defense and Energy conducted an assessment of U.S. Government requirements and benchmark tests. The review identified a controllable class of high-end proprietary computer systems, a more effective metric for controlling such systems, and a new proposed control level. As a result, the interagency group concerned, including the Departments of Defense, State, Energy and Commerce, concluded that CTP (measured in MTOPS) has been unable to keep up with advances in computer architecture technology, and no longer meets national security objectives. Specifically, the CTP formula does not adequately distinguish between generic commodity systems and vector systems. The CTP formula imprecisely equates off-the-shelf systems based on low-cost widely available microprocessors—computers with lesser national security significance—with high-end special order high performance computers such as vector systems, which have greater national security significance.

The CTP calculation takes into account short word length operations. As state-of-the-art computers have evolved, capabilities to perform this class of operations have become ubiquitous in multi-media extensions (MMX) in low-cost commodity microprocessors. The requirement to include these operations when using the CTP formula complicates the calculation and overstates the scientific computational capability of these systems by as much as a factor of two.

Even as a formula for this class of computers, CTP has several problems. The CTP formula does not distinguish between architectures, and arguably understates the performance of vector supercomputers relative to aggregations of scalar processors. The inclusion of short word length operations and the current formula for aggregation make the CTP formula unnecessarily complicated to calculate for modern computing architectures, with no offsetting benefit to national security.

Since 1999, a number of alternatives to the CTP formula have been suggested. These ranged from dispensing with a “formula” and simply counting the

number of processors in a computer to implementing more rigorous formulas for measuring computer performance, such as incorporating memory and/or interconnect bandwidth. All of these alternatives raised definitional problems or required even more vendor-proprietary data than is currently necessary for CTP calculations.

The Administration's assessment identified a controllable class of high end proprietary computer systems with the most significant national security applications, a more effective formula for identifying such systems, and a new proposed control level. A formula was needed to draw a clear distinction between vector systems which have significantly more value in national security applications and non-vector systems. It was determined that double precision floating-point computation (DP FP) was the most meaningful measure of HPC performance for export control purposes to distinguish between vector and non-vector systems. This distinction is critical to achieving the nation's computer export control policy objectives. By using DP FP performance as the basis for export controls, the inflation introduced by short word length operands in the formula used for calculating CTP is eliminated and the playing field leveled for competing microprocessor architectures.

The new control formula based on DP FP is Adjusted Peak Performance (APP) measured in Weighted TeraFLOPS (WT). The APP formula allows for much more targeted control of the high-end, special order HPCs, such as vector systems and proprietary cluster systems, which are of the greatest national security significance. The APP formula is derived from existing industry standards and is easier to calculate than the CTP formula. The APP formula will maintain controls on high-end high performance computers (HPCs) capable of computationally intensive national security operations. The APP formula places more weight on vector systems than non-vector systems. Considering the superior performance of vector supercomputers for some important applications and an analysis of applications and the High Performance Linpack benchmarks, a weighting of 0.9 was selected for vector processors. Currently available HPC systems exhibit a wide range of efficiencies. A weighting factor of 0.3 was appropriate for other classes of non-vector export controlled HPC systems. The 0.3 weighting factor is a rough approximation of the relative performance observed between vector and non-vector HPCs over a representative range of applications.

APP provides more consistent treatment for all comparable systems than CTP.

### Setting of the Control Thresholds

The Administration's assessment determined that the appropriate control level for computers using the APP formula is 0.75 WT, which was proposed in the April 2005 meeting of the Wassenaar Arrangement and agreed to at the December 2005 Wassenaar Arrangement Plenary meeting. This determination was based on the Departments of Defense and Energy HPC benchmarks, procurement and usage; the government's ability to control state-of-the-art technology (i.e., proprietary and vector systems); the ability of Tier 3 countries to achieve a given level of performance for range of architectures; and maintenance of a level playing field among comparable products.

The 0.75 WT control level recognizes the foreign availability of the computing capacity illustrated by the Chinese commodity cluster systems currently ranked on the Top-500 List of fastest HPCs in the world. The 0.75 WT level continues to control high-end proprietary HPCs, such as those used by the Department of Defense and the Department of Energy for advanced research, development, and simulation, while removing controls on the lower-end, more widely available systems.

The Wassenaar Arrangement agreed to set the Basic List control level for computer software and technology at 0.04 WT, and this was based on computer chip manufacturer projections of what chips would be in production by the end of 2007, e.g., a 4 GHz, dual core Itanium processor would have an APP of 0.0384 WT. The Wassenaar Sensitive List threshold for computer development and production technology and software was set at 0.1 WT to limit the production of multi-board computer vector systems, such as the 8 way Cray X1 or the 4 way Cray XE.

The EAR also set forth several other computer control levels, for purposes of unilateral anti-terrorism controls and License Exception eligibility, that do not have Wassenaar Arrangement equivalents. This final rule makes conforming changes in these provisions by establishing control levels expressed in WT using the APP formula. These control thresholds were obtained by finding a computer chip that had a CTP equivalent to the CTP threshold control level in the EAR, performing the APP formula on the chip, and then rounding up. For instance, in ECCN 4A994 the CTP threshold is 6 MTOPS. This is very similar in performance to the Intel 386 microprocessor. When the APP formula

is applied to the Intel 386, the APP equals 0.00001 WT (after rounding up).

### National Defense Authorization Act (NDAA) Congressional Notification Requirement

Subsections 1211(d) and (e) of the National Defense Authorization Act (NDAA) for FY 1998 (Pub. L. 105-85, November 18, 1997, 111 Stat. 1932) provides that the President must submit a report to Congress 60 days before adjusting the composite theoretical performance level above which exports of digital computers to Tier 3 countries require a license. The President sent a report to Congress on February 3, 2006 that establishes and provides justification for the 0.75 WT control level using the APP formula.

### Bulgaria

This rule removes Bulgaria from Computer Tier 3 and places it in Computer Tier 1. However, due to the requirements in the 1998 National Defense Authorization Act (NDAA), removing Bulgaria from Computer Tier 3 is not effective until 120 days after the Congress receives a report justifying such a removal. This report was sent to Congress on February 3, 2006. Therefore, the movement of Bulgaria from Computer Tier 3 to Computer Tier 1 will become effective on June 3, 2006.

Bulgaria is a member of the Wassenaar Arrangement, the Missile Technology Control Regime, the Australia Group, and the Nuclear Suppliers Group. Bulgaria is also a member of the North Atlantic Treaty Organization (NATO). Because of the Bulgarian Government's success in strengthening its export control system, it has been determined that moving Bulgaria from Computer Tier 3 to Computer Tier 1 will not decrease the national security of the United States, and may in fact strengthen it by building stronger coalitions with nations that understand the importance of a strong export control program. This revision will result in fewer license applications, because Bulgaria will be eligible for License Exception APP. In addition, the EAR will no longer require NDAA-based recordkeeping and post shipment verification reporting of exports of high performance computers to Bulgaria.

### XP Reason for Control

This rule removes the reason for control related to high performance computers (XP) from ECCNs 4A001, 4A003, 4D001, 4D002, and 4E001. XP controls were implemented on March 25, 1996, 61 FR 12714, in the regulation entitled, "Simplification of Export

Administration Regulations." At the present time, XP controls do not enhance license requirements or license review policies that are already in place under the national security (NS) controls described in § 742.4 of the EAR, the anti-terrorism (AT) controls in various parts of 742, or any other controls in the EAR. The XP control creates more of a burden to the public than assistance. In addition, placing special reporting and recordkeeping requirements in this section is not consistent with the organizational format of the EAR. The EAR has specific parts for special reporting and recordkeeping. For these reasons, this rule removes the reason for control XP from the aforementioned ECCNs. Conforming changes are also made to § 738.2(d)(2)(i)(A) and § 746.3(a)(1) of the EAR.

### Missile Technology Controls

This rule removes the missile technology (MT) control from ECCN 4A003. The MT control in 4A003 applies to digital computers used as ancillary equipment for test facilities and equipment that are controlled by ECCNs 9B005 or 9B005 (both non-MT controlled commodities). This MT control has no corresponding entry on the Missile Technology Control Regime's (MTCR) Annex. The computers that are described on the Missile Technology Control (MTCR) Annex fall under two entries 13.A.1 and 16.A.1. The 13.A.1 entry on the MTCR Annex is for ruggedized or radiation hardened computers and is controlled on the Commerce Control List (CCL) under ECCN 4A101 for MT and AT reasons. The 16.A.1 entry on the MTCR Annex is for hybrid computers for modeling, simulation or design integration of missile or rocket systems or subsystems specified on the MTCR Annex, which is controlled on the CCL under ECCN 4A102 for MT and AT reasons. Therefore, because these computers are controlled under other ECCNs, this rule removes the MT control under ECCN 4A003. Corresponding amendments associated with the removal of the MT controls under ECCN 4A003, include:

a. Removing the last sentence of § 740.7(a)(1) of the EAR, which states that computers controlled for missile technology (MT) reasons are not eligible for License Exception APP. Because the only computers eligible for License Exception APP are classified under 4A003 and this rule removes all MT controls from 4A003, this sentence is not necessary.

b. Removing the phrase "and software" from the last sentence in

§ 740.7(a)(2) of the EAR, which states, "Technology and software for computers controlled for missile technology (MT) reasons are not eligible for License Exception CTP." However, the only eligible software eligible for License Exception APP is classified under 4D001, and there are no existing MT controls in 4D001. However, there are MT controls in 4E001 for technology for items controlled by 4A001.a and 4A101.

c. For the same reasons stated in paragraph (a) above, the last sentence of the first paragraph in § 770.2(l)(1) is removed, which stated, "Computers controlled in this entry for MT reasons are not eligible for License Exception regardless of the CTP of the computer."

d. For the same reasons stated in paragraph (a) above, the phrase "parameters of Missile Technology concern, or" is removed from the first sentence of the second paragraph in § 770.2(l)(1).

e. For the same reasons stated in paragraph (a) above, the second sentence of the second paragraph in § 770.2(l)(1) is removed, which stated, "This License Exception does not authorize the export or reexport of computers controlled for MT purposes regardless of the CTP."

#### *Section 742.12 "High Performance Computers"*

The EAR has contained a section for high performance computers (HPCs) for over a decade. The rapid advance in technology created a high demand for information about export controls for computers among those who were not acquainted with the EAR, i.e., individuals using personal computers. Now that the HPC controls are raised to a level such that only high performance computers of the greatest national security concern require a license for export, BIS expects that it will receive fewer license applications for computers. As a result of this shift, there will be less burden on individual users of personal computers. The license requirements that are stated in 742.12 are redundant to those stated in other parts of the EAR, such as national security (§ 742.4 of the EAR), anti-terrorism (various sections of part 742), or nonproliferation controls found in part 744. For these reasons, this rule removes section 742.12. However, this rule will preserve the recordkeeping requirement for computers, mandated by the National Defense Authorization Act for FY 1998 (section 1212), by combining it with the special reporting requirements in part 743. In addition, this rule moves the post shipment verification reporting and recordkeeping

requirements, mandated by the National Defense Authorization Act of FY 1998 (section 1213) to part 743 "Special Reporting," under a new section 743.2 "High Performance Computers: Post Shipment Verification Reporting." In addition, this rule revises § 762.2(b)(6) of the EAR that referred to the recordkeeping requirements that were in § 742.12 of the EAR, to reference section 743.2 where the recordkeeping requirement has been moved.

In conformance with the removal of § 742.12, this rule revises a phrase in § 734.4(a)(1) of the EAR. The phrase stated "to Computer Tier 4 countries described in § 742.12 of the EAR" and is revised to read "to Cuba, Iran, Libya, North Korea, Sudan, and Syria." All references to Computer Tier 4 are no longer necessary, because the license requirements and license review policy for these countries is found in either part 736, part 746, or part 742 of the EAR depending generally on its status as a country that supports terrorism or its embargo status.

In addition, this rule removes Supplement No. 3 to part 742 "High Performance Computers; Safeguard Conditions and Related Information," because a sample security safeguard plan can be found on BIS's Web site at <http://www.bis.doc.gov/hpcs/SecuritySafeguardPlans.html>. The requirement for this security safeguard plan is added to paragraph (c)(2) of Supplement No. 2 to part 748 "Unique Application and Submission Requirements" of the EAR.

#### *Section 740.7 License Exception APP (Formerly License Exception CTP)*

Because this rule changes the computer formula for determining computer performance from Composite Theoretical Performance (CTP) to Adjusted Peak Performance (APP), this rule revises the license exception symbol for License Exception CTP to "APP." Hereafter, License Exception CTP will be known as License Exception APP. This rule also makes conforming changes throughout the EAR as a result of this change.

This rule also makes "use" technology equal to or less than 0.75 WT eligible for export under License Exception APP to Computer Tier 3 destinations and to Computer Tier 1 destinations, other than the destinations that are listed in § 740.7(c)(3)(i) of the EAR. The 0.75 WT control threshold is consistent with levels agreed to by the Wassenaar Arrangement. The Wassenaar Arrangement agreed that development and production technology and source code for computers with an APP exceeding 0.1 Weighted TeraFLOPS

(WT) is sensitive for conventional arms purposes. Therefore, eligibility under License Exception APP for development and production technology and source code to Computer Tier 3 destinations and to Computer Tier 1 destinations, other than the destinations that are listed in § 740.7(c)(3)(i) of the EAR, is set at an APP of less than or equal to 0.1 WT.

However, eligibility under License Exception APP for development and production technology and source code to Computer Tier 1 destinations listed in § 740.7(c)(3)(i) of the EAR is set at an APP of less than or equal to 0.75 WT, because these destinations are of lesser national security concern.

#### **Supplement No. 2 to Part 748**

This rule clarifies the phrase "according to the principal function of the equipment," by replacing it with references to Notes in Category 5 part 1 and part 2, where the applicant can find information to guide them about Category 5 telecommunication and information security functions. In paragraph (c), this rule deletes the phrase "certifiable multi-level security or certifiable user isolation functions" because this former 5A002 sub-item has been deleted.

This rule also removes paragraph (c)(2), because Category 4 has not contained Advisory Notes for over a decade. In place of text that was in paragraph (c)(2), this rule adds a paragraph describing the security safeguard plan requirement. The United States requires security safeguards for exports, reexports, and in-country transfers of High Performance Computers (HPCs) to ensure that they are used for peaceful purposes. If you are submitting a license application for an export, reexport, or in-country transfer of a high performance computer to or within a destination in Computer Tier 3 (see § 740.7(c)(1) of the EAR) or to Cuba, Iran, Libya, North Korea, Sudan, or Syria you must include with your license application a security safeguard plan signed by the end-user, who may also be the ultimate consignee. This requirement also applies to exports, reexports, and in-country transfers of components or electronic assemblies to upgrade existing "computer" installations in those countries. A sample security safeguard plan is posted on BIS's webpage at <http://www.bis.doc.gov/hpcs/SecuritySafeguardPlans.html>. In addition, this rule makes conforming changes to the table "Information Collection Requirements Under the Paperwork Reduction Act: OMB Control Numbers" in Supplement No. 1 to part

730 to change the reference to where the safeguard requirements are located in the EAR.

*Section 750.4(b) Actions Not Included in Processing Time Calculations*

On May 11, 1995, BIS published a proposed rule for the simplification of the EAR (60 FR 25270) that contained the Acting Secretary of State's determination of December 28, 1993, that five categories of multilaterally controlled items would be controlled under section 6(j). License applications for certain items would be reviewed under the 6(j) procedures. This rule was made final on March 25, 1996 (61 FR 12714). One category of items subject to the new 6(j) procedure was those subject to national security controls, except national security controlled digital computers with a Composite Theoretical

Performance (CTP) of 500 Million Theoretical Operations Per Second (MTOPS) or less. At the time, and until 1998, the NS control level for computers was 260 MTOPS (then it increased to 2,000 MTOPS). So until 1998, computers controlled for NS reasons were not subject to 6(j) requirements if they were between 260 and 500 MTOPS. Although the NS control level for computers was increased several times, this computer level in this section was repeatedly overlooked. This rule corrects this error by removing the exemption for computers with a CTP of 500 MTOPS from a Congressional 30-day notification requirement under section 6(j) of the Export Administration Act, as amended (EAA), prior to the issuance of the license for any digital computers destined to the military, police, intelligence or other sensitive

end-users located in designated terrorist-supporting countries. This exemption has been overtaken by technological advancements, i.e., computers controlled for NS reasons with a CTP of 500 MTOPS no longer exist today. This rule does not change the requirement for Congressional notification for all items controlled for national security reasons to end users set forth above. Computers classified by ECCN 4A003 are controlled for national security reasons when the APP exceeds 0.75 WT, as implemented by this rule.

*Conforming Changes*

This rule makes the following conforming changes:

- With regard to License Exception CTP being changed to License Exception APP:

EAR citation	Subject matter
§ 732.4(b)(3)(iii) and (b)(3)(iv)	Steps regarding License Exceptions.
§ 740.7	License Exception CTP.
§ 743.1(b)(1)	Wassenaar Arrangement special reporting requirements.
§ 746.3(c)	License Exceptions for Iraq.
ECCN 4A003	License Exception section, License Exception CTP.
ECCN 4D001	License Exception section, License Exception CTP.
ECCN 4E01	License Exception section, License Exception CTP.

- With regard to references to the computer metric CTP, without reference to a specific MTOPS limit:

EAR citation	Subject matter
§ 740.11(a)(4)	License Exception GOV.
§ 740.11(c)(4)	License Exception GOV.
§ 743.1(c)(2)	Reference to formula for calculating APP.
§ 743.2 (c)(7)	Information that must be included in the Post Shipment Verification Report.
Supplement No. 1 to part 748, Block 22(b)	Multipurpose Application Instructions.
Supplement No. 2 to part 748, paragraph (c)	Digital Computers, telecommunications, and related equipment.
Supp. No. 1 to part 752, (b)	Instructions for completing form BIS-748P-A.
§ 770.2(l)	Interpretation 12: Computers.
ECCN 4A003.c	Electronic Assemblies.
ECCN 4A994 Note 1 to 4A994.c	Electronic Assemblies.
ECCN 4D001.b.2	Electronic Assemblies.
ECCN 4E001.b.2	Electronic Assemblies.

- With regard to a change in computer metric changes from CTP to APP:

EAR citation	Subject matter	Prior CTP in MTOPS	New APP in WT
§ 734.4(a)(1)	<i>De minimis</i> eligibility for foreign-made computers going to Computer Tier 3 destinations.	190,000	0.75.
§ 734.4(a)(1)	<i>De minimis</i> eligibility for foreign-made computers going to Cuba, Iran, Libya, North Korea, Sudan, and Syria.	28,000	.002.
§ 740.7(c)(3)(ii)	Development and Production technology and source code eligible for deemed exports under License Exception APP to foreign nationals of Tier 1 destinations, other than the destinations that are listed in § 740.7(c)(3)(i).	190,000	0.1.

EAR citation	Subject matter	Prior CTP in MTOPS	New APP in WT
§ 740.7(c)(3)(iii) (new paragraph) .....	Use technology and source code eligible for deemed exports under License Exception APP to foreign nationals of Tier 1 destinations, other than the destinations that are listed in § 740.7(c)(3)(i).	190,000 .....	0.75.
§ 740.7(d)(3)(i) .....	Development and Production technology and source code eligible for deemed exports under License Exception APP to foreign nationals of Tier 3 destinations.	190,000 .....	0.1.
§ 740.7(d)(3)(ii) new paragraph .....	Use technology and source code eligible for deemed exports under License Exception APP to foreign nationals of Tier 3 destinations.	190,000 .....	0.75.
740.9(a)(2)(i)(B)(1) .....	License Exception TMP, Tools of Trade, Sudan, eligible computers under 4A994.	6,500 .....	0.0015.
§ 740.19(a)(2)(iv) .....	License Exception USPL, eligible AT controlled computers (4A994) to U.S. persons in Libya.	12,000 .....	0.003.
Supp. No. 2 to part 742(c)(24) .....	Heading for digital computer license policy destined to designated terrorist supporting countries.	6 .....	0.00001.
Supp. No. 2 to part 742(c)(24)(iv)(A) and (B).	N. Korea license policy for digital computers .....	2,000 .....	0.0004.
§ 743.1(c)(2) .....	Wassenaar Arrangement Special Reporting Requirements for computer technology and software for the development and production of computers.	190,000 .....	0.1.
§ 743.2 (new), moved from 742.12(b)(3)(iv).	Post Shipment Verification Reporting and recordkeeping for Computer Tier 3 destinations.	190,000 .....	0.75.
750.4(b)(6)(ii)(A) .....	Digital Computers not subject to a Congressional 500 notification requirement when the issuance of the license for any military, police, intelligence or other sensitive end-user in designated terrorist-supporting country.	Less than 500 ..	Removed.
ECCN 4A003 .....	License Requirement section, AT controls (refer to ECCN 4A994).	6 and 190,000 ..	0.00001 and 0.75.
ECCN 4A003 .....	License Requirement section, XP controls .....	190,000 .....	Removed.
ECCN 4A003 .....	Note in License Requirement section .....	190,000 .....	0.75 (two times).
ECCN 4A994 .....	ECCN 4A994.b .....	6 .....	0.00001.
ECCN 4A994 .....	ECCN 4A994.f equipment for signal processing or image enhancement.	8.5 .....	0.00001.
ECCN 4D001 .....	License Exception section, TSR .....	190,000 .....	0.1.
ECCN 4E001 .....	License Exception section, TSR .....	190,000 .....	0.1.

• With regard to the placement of the CTP formula:

Because BIS has decided to move the formula for CTP from the end of Category 4 to the end of Category 3, this rule revises the definition of “Composite Theoretical Performance” (“CTP”) to remove references to Category 4, and revises the information about where the formula for CTP may be found. The formula for CTP is no longer necessary in Category 4, because CTP has been replaced by APP throughout Category 4. However, the formula for CTP is still necessary for Category 3, because it is used in 3A991 (License Requirement Note and 3A991.a.1), 3E001 (License Exception CIV), and 3E002 (Heading and License Exception CIV).

• With regard to “computing elements”:

This rule implements an amendment to 4A003.c to revise the term “computing elements” (“CE”) to read “processors.” There are two conforming changes to this revision in § 740.11(a)(4) and § 740.11(c)(4) under License Exception GOV.

*Category 3—Electronics*

This rule moves the technical note on how to calculate the Composite Theoretical Performance (CTP) from the end of Category 4 to the end of Category 3, because the implementation of Adjusted Peak Performance removed all references to CTP in Category 4 and CTP only remains in Category 3.

ECCN 3A991 is amended by revising License Requirement Note 1 to: (1) Spell out the acronym CTP, and (2) Add a reference about where to find information on how to calculate CTP.

ECCNs 3E001 and 3E002 are amended by revising License Exception CIV text to spell out the acronym CTP, for clarification and to indicate that Composite Theoretical Performance is a defined term in section 772.1.

*Implementation of Wassenaar Arrangement Agreements*

The following revisions are consistent with agreements made by the Wassenaar Arrangement to replace the CTP formula for calculating composite theoretical performance with the APP formula:

*Category 4—Computers*

Category 4 is amended by adding the formula for Adjusted Peak Performance (APP) after EAR99.

ECCN 4A001 is amended by:

- a. Removing High Performance Computer (XP) controls from the License Requirements section for reasons set forth above in this background section of the rule; and
- b. Adding in the License Requirement Note a reference to the paragraph (4A001.a.2) that triggers the Wassenaar reporting requirement in § 743.1 of the EAR.

ECCN 4A003 is amended by:

- a. Removing the Missile Technology (MT) and High Performance Computer (XP) controls paragraph in the License Requirement section for reasons set forth above in the background section of this rule;
- b. Revising the parameter and value in 4A003.b from CTP to APP and from 190,000 MTOPS to 0.75 WT; and
- c. Revising the text and parameter in 4A003.c (electronic assemblies) from “computing elements (CE)” to “processors.”

ECCN 4A994 is amended by:

a. Revising the parameter and value in 4A994.b from CTP to APP and from 6 MTOPS to 0.00001 WT;

b. Replacing the reference to CTP with APP in Note 1 to 4A994.c; and

c. Revising the parameter and value in 4A994.f from CTP to APP and from 8.5 MTOPS to 0.00001 WT, because there is little difference between the APP in 4A994.b and this paragraph and BIS believes that it is easier to comply with regulations when numbers are harmonized.

ECCN 4D001 is amended by revising:

a. Removing the High Performance Computer (XP) controls paragraph in the License Requirement section for reasons set forth above in the background section of this rule;

b. Revising the parameter and value in 4D001.b.1 from CTP to APP and from 75,000 MTOPS to 0.04 WT; and

c. Revising the text and parameter in 4D001.b.2 from "computing elements (CE)" to "processors" and the parameter CTP to APP.

ECCN 4D002 is amended by removing the High Performance Computer (XP) controls paragraph in the License Requirement section for reasons set forth above in the background section of this rule.

ECCN 4E001 is amended by revising:

a. Removing the High Performance Computer (XP) controls paragraph in the License Requirement section for reasons set forth above in the background section of this rule;

b. Revising the parameter and value in 4E001.b.1 from CTP to APP and from 75,000 MTOPS to 0.04 WT; and

c. Revising the text and parameter in 4E001.b.2 from "computing elements (CE)" to "processors" and the parameter CTP to APP.

#### Definitions

This rule amends 772.1, Definitions of Terms as Used in the Export Administration Regulations (EAR) by adding the definition of "Adjusted Peak Performance" ("APP").

#### Effect on License Applications

BIS expects that the implementation of the new computer metric Adjusted Peak Performance (APP) will decrease the number of high performance computer (ECCN 4A003.b) license applications received by BIS by about 90 percent (i.e., 6 fewer applications projected) over the next 6 months. The new licensing threshold provides a relaxation of HPC export controls because all computers that are equal to or below 190,000 MTOPS are also below 0.75 WT, while certain computers with performance currently measured as exceeding 190,000 MTOPS do not

exceed 0.75 WT. The amount of relaxation that may occur for any particular family of computers will depend on the technical specifics of the system architecture and the processor used in the family.

#### Other Revisions

This rule also makes an editorial correction to § 770.2(l)(2), Interpretation 12: Computers by removing reference to 4A003.d and 4A003.f, which are currently reserved and not in use.

Although the Export Administration Act expired on August 20, 2001, the President, through Executive Order 13222 of August 17, 2001, 3 CFR, 2001 Comp., p. 783 (2002), as extended by the Notice of August 2, 2005, 70 FR 45273 (August 5, 2005), has continued the Export Administration Regulations in effect under the International Emergency Economic Powers Act.

#### Rulemaking Requirements

1. This final rule has been determined to be not significant for purposes of E.O. 12866.

2. Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with a collection of information, subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) (PRA), unless that collection of information displays a currently valid Office of Management and Budget (OMB) Control Number. This rule involves three collections of information subject to the PRA. The first collection has been approved by OMB under control number 0694-0088, "Multi-Purpose Application," and carries a burden hour estimate of 58 minutes for a manual or electronic submission. The second collection has been approved by OMB under control number 0694-0106, "Reporting and Recordkeeping Requirements under the Wassenaar Arrangement," and carries a burden hour estimate of 21 minutes for a manual or electronic submission. The third collection has been approved by OMB under control number 0694-0073, "Export Controls of High Performance Computers," and carries a burden hour estimate of 78 hours for a manual or electronic submission. This rule is expected to result in an immediate decrease in license applications, and in associated reporting and support documentation requirements, for high performance computers; however, this decrease may be reduced over time as higher performance systems are marketed. Send comments regarding these burden estimates or any other aspect of these collections of

information, including suggestions for reducing the burden, to OMB Desk Officer, New Executive Office Building, Washington, DC 20503; and to the Office of Administration, Bureau of Industry and Security, Department of Commerce, 14th and Pennsylvania Avenue, NW., Room 6883, Washington, DC 20230.

3. This rule does not contain policies with Federalism implications as that term is defined under E.O. 13132.

4. The provisions of the Administrative Procedure Act (5 U.S.C. 553) requiring notice of proposed rulemaking, the opportunity for public participation, and a delay in effective date, are inapplicable because this regulation involves a military and foreign affairs function of the United States (5 U.S.C. 553(a)(1)). Further, no other law requires that a notice of proposed rulemaking and an opportunity for public comment be given for this final rule. Because a notice of proposed rulemaking and an opportunity for public comment are not required to be given for this rule under the Administrative Procedure Act or by any other law, the analytical requirements of the Regulatory Flexibility Act (5 U.S.C. 601 et seq.) are not applicable. Therefore, this regulation is issued in final form. Although there is no formal comment period, public comments on this regulation are welcome on a continuing basis. Comments should be submitted to Sharron Cook, Office of Exporter Services, Bureau of Industry and Security, Department of Commerce, P.O. Box 273, Washington, DC 20044.

#### List of Subjects

##### 15 CFR Part 730

Administrative practice and procedure, Advisory committees, Exports, Reporting and recordkeeping requirements, Strategic and critical materials.

##### 15 CFR Parts 732, 740, 748, 750, and 752

Administrative practice and procedure, Exports, Reporting and recordkeeping requirements.

##### 15 CFR Part 734

Administrative practice and procedure, Exports, Inventions and patents, Research Science and technology.

##### 15 CFR Part 742

Exports, Terrorism.

## 15 CFR Part 743

Administrative practice and procedure, Reporting and recordkeeping requirements.

## 15 CFR Parts 746 and 774

Exports, Reporting and recordkeeping requirements.

## 15 CFR Part 762

Administrative practice and procedure, Business and industry, Confidential business information, Exports, Reporting and recordkeeping requirements.

## 15 CFR Parts 738, 770 and 772

Exports.

■ Accordingly, parts 730, 732, 734, 738, 740, 742, 743, 746, 748, 750, 752, 762, 770, 772 and 774 of the Export Administration Regulations (15 CFR parts 730–799) are amended as follows:

**PART 730—[AMENDED]**

■ 1. The authority citation for part 730 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 10 U.S.C. 7420; 10 U.S.C. 7430(e); 18 U.S.C. 2510 *et seq.*; 22 U.S.C. 287c; 22 U.S.C. 2151 note, Pub. L. 108–175; 22 U.S.C. 3201 *et seq.*; 22 U.S.C. 6004; 30 U.S.C. 185(s), 185(u); 42 U.S.C. 2139a; 42 U.S.C. 6212; 43 U.S.C. 1354; 46 U.S.C. app. 466c; 50 U.S.C. app. 5; Sec. 901–911, Pub. L. 106–387; Sec. 221, Pub. L. 107–56; E.O. 11912, 41 FR 15825, 3 CFR, 1976 Comp., p. 114; E.O. 12002, 42 FR 35623, 3 CFR, 1977 Comp., p. 133; E.O. 12058, 43 FR 20947, 3 CFR, 1978 Comp., p. 179; E.O. 12214, 45 FR 29783, 3 CFR, 1980 Comp., p. 256; E.O. 12851, 58 FR 33181, 3 CFR, 1993 Comp., p. 608; E.O. 12854, 58 FR 36587, 3 CFR, 1993 Comp., p. 179; E.O. 12918, 59 FR 28205, 3 CFR, 1994 Comp., p. 899; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 12947, 60 FR 5079, 3 CFR, 1995 Comp., p. 356; E.O. 12981, 60 FR 62981, 3 CFR, 1995 Comp., p. 419; E.O. 13020, 61 FR 54079, 3 CFR, 1996 Comp., p. 219; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13099, 63 FR 45167, 3 CFR, 1998 Comp., p. 208; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; E.O. 13224, 66 FR 49079, 3 CFR, 2001 Comp., p. 786; E.O. 13338, 69 FR 26751, May 13, 2004; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005); Notice of October 25, 2005, 70 FR 62027 (October 27, 2005).

■ 2. Supplement No. 1 to part 730 is amended by revising “§ 742.12, Supplement No. 3 to part 742, and § 762.2(b)” to read “Supplement No. 2 to part 748, paragraph (c)(2), and § 762.2(b)” in the third column “Reference in the EAR” of row “0694–0073”.

**PART 732—[AMENDED]**

■ 3. The authority citation for part 732 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

**§ 732.4 [Amended]**

■ 4. Section 732.4 is amended by

■ a. Revising the phrase “List-based License Exceptions (LVS, GBS, CIV, TSR, and CTP)” to read “List-based License Exceptions (LVS, GBS, CIV, TSR, and APP) in paragraph (b)(3)(iii); and

■ b. Revising the phrase “under License Exceptions GBS, CIV, LVS, CTP, TSR, or GOV,” to read “under License Exceptions GBS, CIV, LVS, APP, TSR, or GOV,” in paragraph (b)(3)(iv).

**PART 734—[AMENDED]**

■ 1. The authority citation for part 734 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 13020, 61 FR 54079, 3 CFR, 1996 Comp., p. 219; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of November 4, 2004, 69 FR 64637 (November 8, 2004); Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 2. Section 734.4 is amended by revising paragraph (a)(1) to read as follows:

**§ 734.4 De minimis U.S. content.**

(a) *Items for which there is no de minimis level.* (1) There is no *de minimis* level for the export from a foreign country of a foreign-made computer with an Adjusted Peak Performance (APP) exceeding 0.75 Weighted TeraFLOPS (WT) containing U.S.-origin controlled semiconductors (other than memory circuits) classified under ECCN 3A001 to Computer Tier 3; or exceeding an APP of 0.002 WT containing U.S.-origin controlled semiconductors (other than memory circuits) classified under ECCN 3A001 or high speed interconnect devices (ECCN 4A994.j) to Cuba, Iran, Libya, North Korea, Sudan, and Syria.

\* \* \* \* \*

**PART 738—[AMENDED]**

■ 1. The authority citation for part 738 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 10 U.S.C. 7420; 10 U.S.C. 7430(e); 18 U.S.C. 2510 *et seq.*; 22 U.S.C.

287c; 22 U.S.C. 3201 *et seq.*; 22 U.S.C. 6004; 30 U.S.C. 185(s), 185(u); 42 U.S.C. 2139a; 42 U.S.C. 6212; 43 U.S.C. 1354; 46 U.S.C. app. 466c; 50 U.S.C. app. 5; Sec. 901–911, Pub. L. 106–387; Sec. 221, Pub. L. 107–56; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

**§ 738.2 [Amended]**

■ 2. Section 738.2 is amended by removing the phrase “XP Computers” from the list at the end of paragraph (d)(2)(i)(A).

**PART 740—[AMENDED]**

■ 3. The authority citation for part 740 continues to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; Sec. 901–911, Pub. L. 106–387; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 4. Section 740.7 is revised to read as follows:

**§ 740.7 Computers (APP).**

(a) *Scope.* (1) Commodities. License Exception APP authorizes exports and reexports of computers, including “electronic assemblies” and specially designed components therefor controlled by ECCN 4A003, *except* ECCN 4A003.e (equipment performing analog-to-digital conversions exceeding the limits in ECCN 3A001.a.5.a), exported or reexported separately or as part of a system for consumption in Computer Tier countries as provided by this section. When evaluating your computer to determine License Exception APP eligibility, use the APP parameter to the exclusion of other technical parameters in ECCN 4A003.

(2) Technology and software. License Exception APP authorizes exports of technology and software controlled by ECCNs 4D001 and 4E001 specially designed or modified for the “development”, “production”, or “use” of computers, including “electronic assemblies” and specially designed components therefor classified in ECCN 4A003, *except* ECCN 4A003.e (equipment performing analog-to-digital conversions exceeding the limits in ECCN 3A001.a.5.a), to Computer Tier countries as provided by this section. Technology for computers controlled for missile technology (MT) reasons are not eligible for License Exception APP.

(b) *Restrictions.* (1) Related equipment controlled under ECCN 4A003.g may not be exported or reexported under this License Exception when exported or reexported separately from eligible

computers authorized under this License Exception.

(2) Access and release restrictions. (i) *Computers and software.* Computers and software eligible for License Exception APP may not be accessed either physically or computationally by nationals of Cuba, Iran, Libya, North Korea, Sudan, or Syria, except that commercial consignees described in Supplement No. 3 to part 742 of the EAR are prohibited only from giving such nationals user-accessible programmability.

(ii) *Technology and source code.* Technology and source code eligible for License Exception APP may not be released to nationals of Cuba, Iran, Libya, North Korea, Sudan, or Syria.

(3) Computers and software eligible for License Exception APP may not be reexported or transferred (in country) without prior authorization from BIS, *i.e.*, a license, a permissive reexport, another License Exception, or “No License Required”. This restriction must be conveyed to the consignee, via the Destination Control Statement, see § 758.6 of the EAR. Additionally, the end-use and end-user restrictions in paragraph (b)(5) of this section must be conveyed to any consignee in Computer Tier 3.

(4) You may not use this License Exception to export or reexport items that you know will be used to enhance the APP beyond the eligibility limit allowed to your country of destination.

(5) License Exception APP does not authorize exports and reexports for nuclear, chemical, biological, or missile end-users and end-uses subject to license requirements under § 744.2, § 744.3, § 744.4, and § 744.5 of the EAR. Such exports and reexports will continue to require a license and will be considered on a case-by-case basis. Reexports and transfers (in country) to these end-users and end-uses in eligible countries are strictly prohibited without prior authorization.

(6) Foreign nationals in an expired visa status are not eligible to receive deemed exports of technology or source code under this License Exception. It is the responsibility of the exporter to ensure that, in the case of deemed exports, the foreign national maintains a valid U.S. visa, if required to hold a visa from the United States.

(c) *Computer Tier 1 destinations.* (1) Eligible destinations. The destinations that are eligible to receive exports and reexports under paragraph (c) of this section include: Antigua and Barbuda, Argentina, Aruba, Australia, Austria, Bahamas (The), Bangladesh, Barbados, Belgium, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Brunei, Bulgaria,

Burkina Faso, Burma, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Chile, Colombia, Congo (Democratic Republic of the), Congo (Republic of the), Costa Rica, Cote d'Ivoire, Cyprus, Czech Republic, Denmark, Dominica, Dominican Republic, East Timor, Ecuador, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, Gabon, Gambia (The), Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, Indonesia, Ireland, Italy, Jamaica, Japan, Kenya, Kiribati, Korea (Republic of), Latvia, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritius, Mexico, Micronesia (Federated States of), Monaco, Mozambique, Namibia, Nauru, Nepal, Netherlands, Netherlands Antilles, New Zealand, Nicaragua, Niger, Nigeria, Norway, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Rwanda, St. Kitts & Nevis, St. Lucia, St. Vincent and the Grenadines, Sao Tome & Principe, Samoa, San Marino, Senegal, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, Surinam, Swaziland, Sweden, Switzerland, Taiwan, Tanzania, Togo, Tonga, Thailand, Trinidad and Tobago, Turkey, Tuvalu, Uganda, United Kingdom, Uruguay, Vatican City, Venezuela, Western Sahara, Zambia, and Zimbabwe.

(2) Eligible commodities. All computers, including electronic assemblies and specially designed components therefore are eligible for export or reexport under License Exception APP to Tier 1 destinations, subject to the restrictions in paragraph (b) of this section.

(3) Eligible technology and software. (i) Technology and software described in paragraph (a)(2) of this section for computers of unlimited APP are eligible for export or reexport under License Exception APP to: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, or the United Kingdom; and

(ii) “Development” and “production” technology and source code described in paragraph (a)(2) of this section for computers with a APP less than or equal to 0.1 Weighted TeraFLOPS (WT) are eligible for deemed exports under License Exception APP to foreign nationals of Tier 1 destinations, other

than the destinations that are listed in paragraph (c)(3)(i) of this section, subject to the restrictions in paragraph (b) of this section.

(iii) “Use” technology and source code described in paragraph (a)(2) of this section for computers with a APP less than or equal to 0.75 WT are eligible for deemed exports under License Exception APP to foreign nationals of Tier 1 destinations, other than the destinations that are listed in paragraph (c)(3)(i) of this section, subject to the restrictions in paragraph (b) of this section.

(d) *Computer Tier 3 destinations.* (1) Eligible destinations. Eligible destinations under paragraph (d) of this section are: Afghanistan, Albania, Algeria, Andorra, Angola, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia & Herzegovina, Cambodia, China (People's Republic of), Comoros, Croatia, Djibouti, Egypt, Georgia, India, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Macau, Macedonia (The Former Yugoslav Republic of), Mauritania, Moldova, Mongolia, Morocco, Oman, Pakistan, Qatar, Russia, Serbia and Montenegro, Saudi Arabia, Tajikistan, Tunisia, Turkmenistan, Ukraine, United Arab Emirates, Uzbekistan, Vanuatu, Vietnam, and Yemen.

(2) Eligible commodities. None.

(3) Eligible technology and source code. (i) “Development,” and “production” technology and source code described in paragraph (a)(2) of this section for computers with a APP less than or equal to 0.1 Weighted TeraFLOPS (WT) are eligible for deemed exports under License Exception APP to foreign nationals of Tier 3 destinations as described in paragraph (d)(1) of this section, subject to the restrictions in paragraph (b) and the provisions of paragraph (d)(4) of this section.

(ii) “Use” technology and source code described in paragraph (a)(2) of this section for computers with an APP less than or equal to 0.75 WT are eligible for deemed exports under License Exception APP to foreign nationals of Tier 3 destinations as described in paragraph (d)(1) of this section, subject to the restrictions in paragraph (b) and the provisions of paragraph (d)(4) of this section.

(4) Foreign National Review (FNR) requirement for deemed exports. (i) *Submission requirement.* Prior to disclosing eligible technology or source code to a foreign national of a Computer Tier 3 country that is not also a country listed in Country Group B in Supplement No. 1 to part 740 of the EAR under this License Exception, you must submit a Foreign National Review

(FNR) request to BIS, as required under § 748.8(s) of the EAR. Your FNR request must include information about the foreign national required under § 748.8(t) of the EAR and set forth in Supplement No. 2 of part 748 of the EAR.

(ii) *Confirmation of eligibility.* You may not use License Exception APP, until you have obtained confirmation of eligibility by calling the System for Tracking Export License Applications (STELA), see § 750.5 for how to use STELA, or electronically from the Simplified Network Application Procedure (SNAP), see <http://www.bis.doc.gov/SNAP/index.htm> for more information about SNAP.

(iii) *Action by BIS.* Within nine business days of the registration of the FNR request, BIS will electronically refer the FNR request for interagency review, or if necessary return the FNR request without action (e.g., if the information provided is incomplete). Processing time starts at the point at which the notification is registered into BIS's electronic system.

(iv) *Review by other departments or agencies.* The Departments of Defense, State, Energy, and other agencies, as appropriate, may review the FNR request. Within 30 calendar days of receipt of the BIS referral, the reviewing agency will provide BIS with a recommendation either to approve or deny the FNR request. A reviewing agency that fails to provide a recommendation within 30 days shall be deemed to have no objection to the final decision of BIS.

(v) *Action on the FNR Request.* After the interagency review period, BIS will promptly notify the applicant regarding the FNR request, i.e., whether the FNR request is approved, denied, or more time is needed to consider the request.

(e) *Reporting requirements.* See § 743.1 of the EAR for reporting requirements of certain items under License Exception APP.

■ 5. Section 740.9 is amended by revising the phrase "Personal computers (including laptops) controlled under ECCN 4A994 that do not exceed a composite theoretical performance of 6,500 millions of theoretical operations per second" to read "Personal computers (including laptops) controlled under ECCN 4A994 that do not exceed Adjusted Peak Performance (APP) of 0.0015 Weighted TeraFLOPS (WT)" in paragraph (a)(2)(i)(B)(1).

■ 6. Section 740.11 is amended by revising paragraphs (a)(4) and (c)(4) to read as follows:

**§ 740.11 Governments, international organizations, and international inspections under the Chemical Weapons Convention (GOV).**

\* \* \* \* \*

(a) \* \* \*

(4) *Restrictions.* Nationals of countries in Country Group E:1 may not physically or computationally access computers that have been enhanced by "electronic assemblies", which have been exported or reexported under License Exception GOV and have been used to enhance such computers by aggregation of processors so that the APP of the aggregation exceeds the APP parameter set forth in ECCN 4A003.b. of the Commerce Control List in Supplement No. 1 to part 774 of the EAR, without prior authorization from the Bureau of Industry and Security.

\* \* \* \* \*

(c) \* \* \*

(4) *Restrictions.* Nationals of countries in Country Group E:1 may not physically or computationally access computers that have been enhanced by "electronic assemblies", which have been exported or reexported under License Exception GOV and have been used to enhance such computers by aggregation of processors so that the APP of the aggregation exceeds the APP parameter set forth in ECCN 4A003.b. of the Commerce Control List in Supplement No. 1 to part 774 of the EAR, without prior authorization from the Bureau of Industry and Security.

\* \* \* \* \*

**§ 740.19 [Amended]**

■ 7. Section 740.19 is amended by revising the sentence "4A994, for items with CTP levels up to 12,000 MTOPS; and" to read "4A994, for items with an Adjusted Peak Performance (APP) equal to or less than 0.003 Weighted TeraFLOPS; and" in paragraph (a)(2)(iv).

**PART 742—[AMENDED]**

■ 8. The authority citation for part 742 continues to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 18 U.S.C. 2510 *et seq.*; 22 U.S.C. 3201 *et seq.*; 42 U.S.C. 2139a; Sec. 901–911, Pub. L. 106–387; Sec. 221, Pub. L. 107–56; Sec. 1503, Pub. L. 108–11, 117 Stat. 559; E.O. 12058, 43 FR 20947, 3 CFR, 1978 Comp., p. 179; E.O. 12851, 58 FR 33181, 3 CFR, 1993 Comp., p. 608; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Presidential Determination 2003–23 of May 7, 2003, 68 FR 26459, May 16, 2003; Notice of November 4, 2004, 69 FR 64637 (November 8, 2004); Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

**§ 742.12 [Removed]**

■ 9. Section 742.12 is removed and reserved.

**§ 742.19 [Removed]**

■ 10. Section 742.19 is amended by revising the sentence "Digital computers with a CTP above 2000." to read "Digital computers with an Adjusted Peak Performance (APP) exceeding 0.0004 Weighted TeraFLOPS (WT)." in paragraph (b)(1)(xviii).

■ 11. Supplement No. 2 is amended by:

■ a. Revising the phrase "Digital computers with a CTP of 6 or above," to read "Digital computers with an APP of .00001 WT or above," in the heading to paragraph (c)(24);

■ b. Revising the phrase "Computers with a CTP above 2000 MTOPS:" to read "Computers with an APP exceeding 0.0004 WT:" in paragraph (c)(24)(iv)(A); and

■ c. Revising the phrase "Computers with a CTP at or below 2000 MTOPS:" to read "Computers with an APP equal to or less than 0.0004 WT:" in paragraph (c)(24)(iv)(B).

■ 12. Supplement No. 3 is removed and reserved.

**PART 743—[AMENDED]**

■ 13. The authority citation for part 743 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; Pub. L. 106–508; 50 U.S.C. 1701 *et seq.*; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 14. Section 743.1 is amended by revising the phrase "License Exceptions GBS, CIV, TSR, LVS, CTP," to read "License Exceptions GBS, CIV, TSR, LVS, APP," in paragraph (b)(1).

■ 15. Section 743.1 is amended by revising paragraph (c)(2) to read as follows:

**§ 743.1 Wassenaar arrangement.**

\* \* \* \* \*

(c) \* \* \*

(2) Reports for "software" controlled by 4D001 (that is specially designed), and "technology" controlled by 4E001 (according to the General Technology Note in Supplement No. 2 to part 774 of the EAR) are required for the "development" or "production" of computers controlled under 4A001.a.2, or for the "development" or "production" of "digital computers" having an "Adjusted Peak Performance" ("APP") exceeding 0.1 Weighted TeraFLOPS (WT). For the calculation of APP, see the Technical Note for Category 4 in the Commerce Control List

(Supplement No. 2 to part 774 of the EAR).

\* \* \* \* \*

■ 16. Part 743 is amended by adding section 743.2 to read as follows:

**§ 743.2 High Performance Computers: Post Shipment Verification Reporting.**

(a) *Scope.* This section outlines special post-shipment reporting requirements for exports of certain computers to destinations in Computer Tier 3, see § 740.7(d) for a list of these destinations. Post-shipment reports must be submitted in accordance with the provisions of this section, and all relevant records of such exports must be kept in accordance with part 762 of the EAR.

(b) *Requirement.* Exporters must file post-shipment reports and keep records in accordance with recordkeeping requirements in part 762 of the EAR for high performance computer exports to destinations in Computer Tier 3, as well as, exports of commodities used to enhance computers previously exported or reexported to Computer Tier 3 destinations, where the “Adjusted Peak Performance” (“APP”) is greater than 0.75 Weighted TeraFLOPS (WT).

(c) *Information that must be included in each post-shipment report.* No later than the last day of the month following the month in which the export takes place, the exporter must submit the following information to BIS at the address listed in paragraph (d) of this section:

- (1) Exporter name, address, and telephone number;
- (2) License number;
- (3) Date of export;
- (4) End-user name, point of contact, address, telephone number;
- (5) Carrier;
- (6) Air waybill or bill of lading number;
- (7) Commodity description, quantities—listed by model numbers, serial numbers, and APP level in WT; and
- (8) Certification line for exporters to sign and date. The exporter must certify that the information contained in the report is accurate to the best of his or her knowledge.

**Note to Paragraph (c) of this Section:** Exporters are required to provide the PRC End-User Certificate Number to BIS as part of their post-shipment report. When providing the PRC End-User Certificate Number to BIS, you must identify the transaction in the post shipment report to which that PRC End-User Certificate Number applies.

(d) *Mailing address.* A copy of the post-shipment report[s] required under paragraph (b) of this section shall be

delivered to one of the following addresses. Note that BIS will not accept reports sent C.O.D.

(1) For deliveries by U.S. postal service: U.S. Department of Commerce, Bureau of Industry and Security, P.O. Box 273, Washington, DC 20044, Attn: Office of Enforcement Analysis HPC Team, Room 4065.

(2) For courier deliveries: U.S. Department of Commerce, Office of Enforcement Analysis, HPC Team, 14th Street and Constitution Ave., NW., Room 4065, Washington, DC 20230.

**PART 746—[AMENDED]**

■ 17. The authority citation for part 746 continues to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 22 U.S.C. 287c; Sec 1503, Pub. L. 108–11, 117 Stat. 559; 22 U.S.C. 6004; Sec. 901–911, Pub. L. 106–387; Sec. 221, Pub. L. 107–56; E.O. 12854, 58 FR 36587, 3 CFR 1993 Comp., p. 614; E.O. 12918, 59 FR 28205, 3 CFR, 1994 Comp., p. 899; E.O. 13222, 3 CFR, 2001 Comp., p. 783; Presidential Determination 2003–23 of May 7, 2003, 68 FR 26459, May 16, 2003; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

**§ 746.3 [Amended]**

■ 18. Section 746.3 is amended by revising the phrase “NS, MT, NP, CW, CB, RS, CC, EI, SI, or XP reasons.” to read “NS, MT, NP, CW, CB, RS, CC, EI, or SI reasons.” in paragraph (a)(1).

■ 19. Section 746.3 is amended by revising the phrase “following License Exceptions: CIV, CTP, TMP, RPL, GOV, GFT, TSU, BAG, AVS, ENC or KMI.” to read “following License Exceptions: CIV, APP, TMP, RPL, GOV, GFT, TSU, BAG, AVS, ENC or KMI.” in paragraph (c).

**PART 748—[AMENDED]**

■ 20. The authority citation for part 748 continues to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 21. Supplement No. 1 to part 748 is amended by revising paragraph (b) under Block 22 to read as follows:

**Supplement No. 1 to Part 748—BIS–748P, BIS–748P–A: Item Appendix, and BIS–748P–B: End-User Appendix; Multipurpose Application Instructions**

\* \* \* \* \*

Block 22: \* \* \*  
(b) CTP. You must enter the “Adjusted Peak Performance” (“APP”) in this Block if your application includes a digital computer or

equipment containing a computer as described in Supplement No. 2 to this part. Instructions on calculating the APP are contained in a Technical Note at the end of Category 4 in the CCL.

\* \* \* \* \*

■ 22. Supplement No. 2 to part 748 is amended by revising paragraph (c) to read as follows:

**Supplement No. 2 to Part 748—Unique Application and Submission Requirements**

\* \* \* \* \*

(c) *Computers, telecommunications, information security items, and related equipment.* If your license application includes items controlled by both Category 4 and Category 5, your license application must be submitted under Category 5 of the Commerce Control List (§ 774.1 of the EAR)—see Category 5 Part 1 Notes 1 and 2 and Part 2 Note 1. License applications including computers controlled by Category 4 must identify an “Adjusted Peak Performance” (“APP”) in Block 22(b). If the principal function is telecommunications, an APP is not required. Computers, related equipment, or software performing telecommunication or local area network functions will be evaluated against the telecommunications performance characteristics of Category 5 Part 1, while information security commodities, software and technology will be evaluated against the information security performance characteristics of Category 5 Part 2.

If your license application involves items controlled by both Category 4 and Category 5, your license application must be submitted under Category 5—see Category 5 Part 1 Notes 1 and 2 and Part 2 Note 1. License applications involving computers controlled by Category 4 must identify an Adjusted Peak Performance (APP) in Block 22(b). If the principal function is telecommunications, an APP is not required. Computers, related equipment, or software performing telecommunication or local area network functions will be evaluated against the telecommunications performance characteristics of Category 5 Part 1, while information security commodities, software and technology will be evaluated against the information security performance characteristics of Category 5 Part 2.

(1) Requirements for license applications that include computers. If you are submitting a license application to export or reexport computers or equipment containing computers to destinations in Country Group D:1 (See

Supplement No. 1 to part 740 of the EAR), or to upgrade existing computer installations in those countries, you must also include technical specifications and product brochures to corroborate the data supplied in your license application, in addition to the APP in Block 22(b).

(2) Security Safeguard Plan requirement. The United States requires security safeguards for exports, reexports, and in-country transfers of High Performance Computers (HPCs) to ensure that they are used for peaceful purposes. If you are submitting a license application for an export, reexport, or in-country transfer of a high performance computer to or within a destination in Computer Tier 3 (see § 740.7(c)(1) of the EAR) or to Cuba, Iran, Libya, North Korea, Sudan, or Syria you must include with your license application a security safeguard plan signed by the end-user, who may also be the ultimate consignee. This requirement also applies to exports, reexports, and in-country transfers of components or electronic assemblies to upgrade existing "computer" installations in those countries. A sample security safeguard plan is posted on BIS's Web page at <http://www.bis.doc.gov/hpcs/SecuritySafeguardPlans.html>.

#### PART 750—[AMENDED]

■ 23. The authority citation for part 750 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; Sec 1503, Pub.L. 108–11, 117 Stat. 559; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Presidential Determination 2003–23 of May 7, 2003, 68 FR 26459, May 16, 2003; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

#### § 750.4 [Amended]

■ 24. Section 750.4 is amended to remove the phrase “, except digital computers with a Composite Theoretical Performance (CTP) less than 500 MTOPS” in paragraph (b)(6)(ii)(A).

#### PART 752—[AMENDED]

■ 25. The authority citation for part 752 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13020, 61 FR 54079, 3 CFR, 1996 Comp. p. 219; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 26. Supplement No. 2 to part 752 is amended by revising Block 22 paragraph (b) to read as follows:

#### Supplement No. 1 to Part 752— Instructions for Completing Form BIS– 748P–B, “Item Annex”

\* \* \* \* \*

Block 22: \* \* \*

(b) CTP. You must enter the “Adjusted Peak Performance” (“APP”) in this block if you intend to export or reexport a computer or equipment that contains a computer. Instructions on calculating the APP are contained in a Technical Note at the end of Category 4 in the CCL.

\* \* \* \* \*

#### PART 762—[AMENDED]

■ 27. The authority citation for part 762 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 28. Section 762.2 is amended by revising (b)(6) to read as follows:

#### § 762.2 Records to Be Retained.

\* \* \* \* \*

(b) \* \* \*

(6) § 743.2, High Performance Computers

\* \* \* \* \*

#### PART 770—[AMENDED]

■ 29. The authority citation for part 770 continues to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 30. Section 770.2 is amended by revising paragraph (l) to read as follows:

#### § 770.2 Item Interpretations.

\* \* \* \* \*

(l) *Interpretation 12: Computers.* (1) Digital computers or computer systems classified under ECCN 4A003.a, .b, or .c, that qualify for “No License Required” (NLR) must be evaluated on the basis of Adjusted Peak Performance (APP) alone, to the exclusion of all other technical parameters.

Digital computers or computer systems classified under ECCN 4A003.a, .b, or .c that qualify for License Exception APP must be evaluated on the basis of APP, to the exclusion of all other technical parameters, except for ECCN 4A003.e (equipment performing analog-to-digital conversions exceeding the limits in ECCN 3A001.a.5.a). Assemblies performing analog-to-digital conversions are evaluated under Category 3—Electronics, ECCN 3A001.a.5.a.

(2) Related equipment classified under ECCN 4A003.e or .g may be exported or reexported under License Exceptions GBS or CIV. When related equipment is exported or reexported as part of a computer system, NLR or License Exception APP is available for the computer system and the related equipment, as appropriate.

\* \* \* \* \*

#### PART 772—[AMENDED]

■ 31. The authority citation for part 772 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 32. Section 772.1 is amended by:

■ a. Adding in alphabetical order the definitions of “Adjusted Peak Performance (APP)”, and “APP”, as set forth below; and

■ b. Revising the definition of “Composite theoretical performance (CTP)”, as set forth below.

#### § 772.1 Definitions of Terms as Used in the Export Administration Regulations (EAR).

\* \* \* \* \*

“APP” See “Adjusted Peak Performance.” This term may also appear without quotation marks.

“Adjusted Peak Performance” (APP). (Cat 4) An adjusted peak rate at which “digital computers” perform 64-bit or larger floating point additions and multiplications. The formula to calculate APP is contained in a technical note at the end of Category 4 of the Commerce Control List.

\* \* \* \* \*

“Composite theoretical performance”.

(CTP) (Cat 3)—A measure of computational performance given in millions of theoretical operations per second (MTOPS), calculated using the aggregation of “computing elements (CE)”. (see Category 3, Technical Note.) This term may also appear without quotation marks. The formula to calculate the CTP is contained in a technical note titled “Information on How to Calculate “Composite Theoretical Performance” at the end of Category 3 of the CCL.

\* \* \* \* \*

#### PART 774—[AMENDED]

■ 33. The authority citation for part 774 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 10 U.S.C. 7420; 10 U.S.C. 7430(e); 18 U.S.C. 2510 *et seq.*; 22 U.S.C. 287c, 22 U.S.C. 3201 *et seq.*; 22 U.S.C. 6004; 30 U.S.C. 185(s), 185(u); 42 U.S.C. 2139a; 42 U.S.C. 6212; 43 U.S.C. 1354; 46 U.S.C. app.

466c; 50 U.S.C. app. 5; Sec. 901–911, Pub. L. 106–387; Sec. 221, Pub. L. 107–56; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 2, 2005, 70 FR 45273 (August 5, 2005).

■ 34. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3—Electronics, ECCN 3A991 is amended by adding License Requirement notes 1 and 2, to read as follows:

**3A991 Electronic devices and components not controlled by 3A001.**

\* \* \* \* \*

**License Requirements**

Reason for Control: AT

Control(s)	Country chart
AT applies to entire entry ....	AT Column 1.

See §§ 740.19 and 742.20 of the EAR for additional information on Libya.

*License Requirements Notes:* 1. Microprocessors with a “Composite Theoretical Performance” (“CTP”) below 550 MTOPS listed in subparagraphs (a)(2) or (a)(3) of this entry may be shipped NLR (No License Required) when destined to North Korea, provided restrictions set forth in other sections of the EAR (e.g., end-use restrictions), do not apply. See “Information on How to Calculate “Composite Theoretical Performance” (“CTP”)” at the end of Category 3.

2. See 744.17 of the EAR for additional license requirements for commodities classified as 3A991.a.1.

\* \* \* \* \*

■ 35. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3—Electronics, ECCN 3E001 is amended by revising the CIV paragraph of the License Exception section, to read as follows:

**3E001 “Technology” according to the General Technology Note for the “development” or “production” of equipment or materials controlled by 3A (except 3A292, 3A980, 3A981, 3A991 or 3A992), 3B (except 3B991 or 3B992) or 3C.**

\* \* \* \* \*

**License Exceptions**

CIV: Yes for deemed exports, as described in § 734.2(b)(2)(ii) of the EAR, of technology for the development or production of microprocessor microcircuits, micro-computer microcircuits, and microcontroller microcircuits having the characteristics described in 3A001.a.3.c with a “Composite Theoretical Performance”

(“CTP”) less than or equal to 40,000 MTOPS (regardless of word length or access width). Deemed exports under License Exception CIV are subject to a Foreign National Review (FNR) requirement, see § 740.5 of the EAR for more information about the FNR. License Exception CIV does not apply to ECCN 3E001 technology for 3A001.a.3.c required for the development or production of other items controlled under ECCNs beginning with 3A, 3B, or 3C, or to ECCN 3E001 technology also controlled under ECCN 3E003.

TSR: \* \* \*

\* \* \* \* \*

■ 36. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3—Electronics, ECCN 3E002 is amended by revising the CIV paragraph of the License Exception section, to read as follows:

**3E002 “Technology” according to the General Technology Note other than that controlled in 3E001 for the “development” or “production” of “microprocessor microcircuits”, “micro-computer microcircuits” and microcontroller microcircuits having a “composite theoretical performance” (“CTP”) of 530 million theoretical operations per second (MTOPS) or more and an arithmetic logic unit with an access width of 32 bits or more.**

\* \* \* \* \*

**License Exceptions**

CIV: Yes, for deemed exports, as described in § 734.2(b)(2)(ii) of the EAR, of “technology” for the “development” or “production” of general purpose microprocessors with a “Composite Theoretical Performance” (“CTP”) less than or equal to 40,000 MTOPS (regardless of word length or access width). Deemed exports under License Exception CIV are subject to a Foreign National Review (FNR) requirement, see § 740.5 of the EAR for more information about the FNR. License Exception CIV does not apply to ECCN 3E002 technology also required for the development or production of items controlled under ECCNs beginning with 3A, 3B, or 3C, or to ECCN 3E002 technology also controlled under ECCN 3E003.

TSR: \* \* \*

\* \* \* \* \*

■ 37. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3—Electronics is amended by adding a technical note after EAR99, to read as follows:

**Category 3—Electronics**

\* \* \* \* \*

**Information on How To Calculate “Composite Theoretical Performance” (“CTP”)**

*Technical Note:*

**“Composite Theoretical Performance” (“CTP”)**

*Abbreviations Used in This Technical Note*

- “CE” “computing element” (typically an arithmetic logical unit)
- FP floating point
- XP fixed point
- t execution time
- XOR exclusive OR
- CPU central processing unit
- TP theoretical performance (of a single “CE”)
- “CTP” “composite theoretical performance” (multiple “CEs”)
- R effective calculating rate
- WL word length
- L word length adjustment
- \* multiply

Execution time t is expressed in microseconds, TP and “CTP” are expressed in millions of theoretical operations per second (MTOPS) and WL is expressed in bits.

*Outline of “CTP” Calculation Method*

“CTP” is a measure of computational performance given in MTOPS. In calculating the “CTP” of an aggregation of “CEs” the following three steps are required:

1. Calculate the effective calculating rate R for each “CE”;
2. Apply the word length adjustment (L) to the effective calculating rate (R), resulting in a Theoretical Performance (TP) for each “CE”;
3. If there is more than one “CE”, combine the TPs, resulting in a “CTP” for the aggregation.

Details for these steps are given in the following sections.

**Note 1:** For aggregations of multiple “CEs” that have both shared and unshared memory subsystems, the calculation of “CTP” is completed hierarchically, in two steps: First, aggregate the groups of “CEs” sharing memory; second, calculate the “CTP” of the groups using the calculation method for multiple “CEs” not sharing memory.

**Note 2:** “CEs” that are limited to input/output and peripheral functions (e.g., disk drive, communication and video display controllers) are not aggregated into the “CTP” calculation.

The following table shows the method of calculating the Effective Calculating Rate R for each “CE”:

Step 1: *The effective calculating rate R*



<p>For simple logic processors not implementing any of the specified arithmetic operations.</p>	<p>1 ----- <math>3 * t_{log}</math> Where <math>t_{log}</math> is the execute time of the XOR, or for logic hardware not implementing the XOR, the fastest simple logic operation. See Notes X &amp; Z</p>
<p>For special logic processors not using any of the specified arithmetic or logic operations.</p>	<p><math>R = R' * WL/64</math> Where R' is the number of results per second, WL is the number of bits upon which the logic operation occurs, and 64 is a factor to normalize to a 64 bit operation.</p>

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**Note W:** For a pipelined “CE” capable of executing up to one arithmetic or logic operation every clock cycle after the pipeline is full, a pipelined rate can be established. The effective calculating rate (R) for such a “CE” is the faster of the pipelined rate or non-pipelined execution rate.

**Note X:** For a “CE” that performs multiple operations of a specific type in a single cycle (e.g., two additions per cycle or two identical logic operations per cycle), the execution time t is given by:

$$t = \frac{\text{cycle time}}{\text{the number of identical operations per machine cycle}}$$

“CEs” that perform different types of arithmetic or logic operations in a single machine cycle are to be treated as multiple separate “CEs” performing simultaneously (e.g., a “CE” performing an addition and a multiplication in one cycle is to be treated as two “CEs”, the first performing an addition in one cycle and the second performing a multiplication in one cycle). If a single “CE” has both scalar function and

vector function, use the shorter execution time value.

**Note Y:** For the “CE” that does not implement FP add or FP multiply, but that performs FP divide:

$$R_{fp} = \frac{1}{t_{fpdivide}}$$

If the “CE” implements FP reciprocal but not FP add, FP multiply or FP divide, then

$$R_{fp} = \frac{1}{t_{fpreciprocal}}$$

If none of the specified instructions is implemented, the effective FP rate is 0.

**Note Z:** In simple logic operations, a single instruction performs a single logic manipulation of no more than two operands of given lengths. In complex logic operations, a single instruction performs multiple logic manipulations to produce one or more results from two or more operands.

Rates should be calculated for all supported operand lengths considering both pipelined operations (if supported), and non-pipelined operations using the fastest executing instruction for each operand length based on:

1. Pipelined or register-to-register operations. Exclude extraordinarily short execution times generated for operations on a predetermined operand or operands (for example, multiplication by 0 or 1). If no register-to-register operations are implemented, continue with (2).

2. The faster of register-to-memory or memory-to-register operations; if these also do not exist, then continue with (3).

3. Memory-to-memory.  
In each case above, use the shortest execution time certified by the manufacturer.

Step 2: TP for each supported operand length WL

Adjust the effective rate R (or R') by the word length adjustment L as follows:

$$TP = R * L, \text{ where } L = (1/3 + WL/96)$$

**Note:** The word length WL used in these calculations is the operand length in bits. (If an operation uses operands of different lengths, select the largest word length.) The combination of a mantissa ALU and an

exponent ALU of a floating point processor or unit is considered to be one "CE" with a Word Length (WL) equal to the number of bits in the data representation (typically 32 or 64) for purposes of the "CTP" calculation.

This adjustment is not applied to specialized logic processors that do not use XOR instructions. In this case TP = R.

Select the maximum resulting value of TP for:

- Each XP-only "CE" (R<sub>xp</sub>);
- Each FP-only "CE" (R<sub>fp</sub>);
- Each combined FP and XP "CE" (R);
- Each simple logic processor not implementing any of the specified arithmetic operations; and
- Each special logic processor not using any of the specified arithmetic or logic operations.

Step 3: "CTP" for aggregations of "CEs", including CPUs.

For a CPU with a single "CE", "CTP" = TP (for "CEs" performing both fixed and floating point operations TP = max (TP<sub>fp</sub>, TP<sub>xp</sub>))

"CTP" for aggregations of multiple "CEs" operating simultaneously is calculated as follows:

**Note 1:** For aggregations that do not allow all of the "CEs" to run simultaneously, the possible combination of "CEs" that provides the largest "CTP" should be used. The TP of each contributing "CE" is to be calculated at its maximum value theoretically possible before the "CTP" of the combination is derived.

**N.B.:** To determine the possible combinations of simultaneously operating "CEs", generate an instruction sequence that initiates operations in multiple "CEs", beginning with the slowest "CE" (the one needing the largest number of cycles to complete its operation) and ending with the fastest "CE". At each cycle of the sequence, the combination of "CEs" that are in operation during that cycle is a possible combination. The instruction sequence must take into account all hardware and/or architectural constraints on overlapping operations.

**Note 2:** A single integrated circuit chip or board assembly may contain multiple "CEs".

**Note 3:** [RESERVED]

**Note 4:** [RESERVED]

**Note 5:** "CTP" values must be aggregated for multiple "CEs" specially designed to enhance performance by aggregation, operating simultaneously and sharing memory—or multiple memory/"CE"—combinations operating simultaneously utilizing specially designed hardware.

$$\text{"CTP"} = TP_1 + C_2 * TP_2 + \dots + C_n * TP_n$$

Where the TPs are ordered by value, with TP<sub>1</sub> being the highest, TP<sub>2</sub> being the second highest, . . . and TP<sub>n</sub> being the lowest. C<sub>i</sub> is a coefficient determined by the strength of the interconnection between "CEs", as follows:

For multiple "CEs" operating simultaneously and sharing memory:

$$C_2 = C_3 = C_4 = \dots = C_n = 0.75$$

**Note 1:** When the "CTP" calculated by the above method does not exceed 194 MTOPS, the following formula may be used to calculate C<sub>i</sub>:

### 0.75

$$C_i = \frac{\sqrt{m}}{i} \quad (i = 2, \dots, n)$$

$\sqrt{m}$

Where m = the number of "CEs" or groups of "CEs" sharing access.

Provided:

1. The TP<sub>1</sub> of each "CE" or group of "CEs" does not exceed 30 MTOPS;
2. The "CEs" or groups of "CEs" share access to main memory (excluding cache memory) over a single channel; and
3. Only one "CE" or group of "CEs" can have use of the channel at any given time.

**N.B.:** This does not apply to items controlled under Category 3.

**Note 2:** "CEs" share memory if they access a common segment of solid state memory. This memory may include cache memory, main memory or other internal memory. Peripheral memory devices such as disk drives, tape drives or RAM disks are not included.

For Multiple "CEs" or groups of "CEs" not sharing memory, interconnected by one or more data channels:

$$C_i = 0.75 * k_i \quad (i = 2, \dots, 32) \text{ (see Note below)}$$

$$= 0.60 * k_i \quad (i = 33, \dots, 64)$$

$$= 0.45 * k_i \quad (i = 65, \dots, 256)$$

$$= 0.30 * k_i \quad (i > 256)$$

The value of C<sub>i</sub> is based on the number of "CE"s, not the number of nodes.

Where k<sub>i</sub> = min (S<sub>i</sub>/K<sub>r</sub>, 1), and K<sub>r</sub> = normalizing factor of 20 MByte/s. S<sub>i</sub> = sum of the maximum data rates (in units of MByte/s) for all data channels connected to the i<sup>th</sup> "CE" or group of "CEs" sharing memory.

When calculating a C<sub>i</sub> for a group of "CEs", the number of the first "CE" in a group determines the proper limit for C<sub>i</sub>. For example, in an aggregation of groups consisting of 3 "CEs" each, the 22nd group will contain "CE"<sub>64</sub>, "CE"<sub>65</sub> and "CE"<sub>66</sub>. The proper limit for C<sub>i</sub> for this group is 0.60.

Aggregation (of "CEs" or groups of "CEs") should be from the fastest-to-slowest; i.e.:

TP<sub>1</sub> ≥ TP<sub>2</sub> ≥ . . . > TP<sub>n</sub>, and in the case of TP<sub>i</sub> = TP<sub>i + 1</sub>, from the largest to smallest; i.e.: C<sub>i</sub> ≥ C<sub>i + 1</sub>

**Note:** The k<sub>i</sub> factor is not to be applied to "CEs" 2 to 12 if the TP<sub>i</sub> of the "CE" or group of "CEs" is more than 50 MTOPS; i.e., C<sub>i</sub> for "CEs" 2 to 12 is 0.75.

■ 38. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4—Computers, Export Control Classification Number (ECCN) 4A001 is

amended by revising the License Requirements section, to read as follows:

**4A001 Electronic computers and related equipment, and "electronic assemblies" and specially designed components therefor.**

#### License Requirements

*Reason for Control:* NS, MT, AT, NP.

Control(s)	Country chart
NS applies to entire entry ...	NS Column 2.
MT applies to items in 4A001.a when the parameters in 4A101 are met or exceeded.	MT Column 1.
AT applies to entire entry ....	AT Column 1.

NP applies, unless a License Exception is available. See § 742.3(b) of the EAR for information on applicable licensing review policies.

*License Requirement Notes:* See § 743.1 of the EAR for reporting requirements for exports under License Exceptions for 4A001.a.2.

\* \* \* \* \*

■ 39. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4—Computers, Export Control

Classification Number (ECCN) 4A003 is amended by revising the License Requirements section, the License Exceptions section, and the “items” paragraph in the List of Items Controlled section, to read as follows:

**4A003 “Digital computers”, “electronic assemblies”, and related equipment therefor, as follows, and specially designed components therefor.**

**License Requirements**

*Reason for Control:* NS, CC, AT, NP.

Control(s)	Country chart
NS applies to 4A003.b and .c.	NS Column 1.
NS applies to 4A003.a, .e, and .g.	NS Column 2.
CC applies to “digital computers” for computerized finger-print equipment.	CC Column 1.
AT applies to entire entry (refer to 4A994 for controls on “digital computers” with a APP ≥ 0.00001 but ≤ to 0.75 WT).	AT Column 1.

NP applies, unless a License Exception is available. See § 742.3(b) of the EAR for information on applicable licensing review policies.

**Note 1:** For all destinations, except those countries in Country Group E:1 of Supplement No. 1 to part 740 of the EAR, no license is required (NLR) for computers with an “Adjusted Peak Performance” (“APP”) not exceeding 0.75 Weighted TeraFLOPS (WT) and for “electronic assemblies” described in 4A003.c that are not capable of exceeding an “Adjusted Peak Performance” (“APP”) exceeding 0.75 Weighted TeraFLOPS (WT) in aggregation, except certain transfers as set forth in § 746.3 (Iraq). Computers controlled in this entry for MT reasons are not eligible for NLR.

**Note 2:** Special Post Shipment Verification reporting and recordkeeping requirements for exports of computers to destinations in Computer Tier 3 may be found in § 743.2 of the EAR.

**License Exceptions**

LVS: \* \* \*  
GBS: \* \* \*

APP: Yes, for computers controlled by 4A003.a or .b, and “electronic assemblies” controlled by 4A003.c, to the exclusion of other technical parameters, with the exception of 4A003.e (equipment performing analog-to-digital conversions exceeding the limits of 3A001.a.5.a). See § 740.7 of the EAR.

CIV: \* \* \*

**List of Items Controlled**

*Unit:* \* \* \*

*Related Controls:* \* \* \*  
*Related Definitions:* \* \* \*  
*Items:*

**Note 1:** 4A003 includes the following:

- a. Vector processors;
- b. Array processors;
- c. Digital signal processors;
- d. Logic processors;
- e. Equipment designed for “image enhancement”;
- f. Equipment designed for “signal processing”.

**Note 2:** The control status of the “digital computers” and related equipment described in 4A003 is determined by the control status of other equipment or systems provided:

- a. The “digital computers” or related equipment are essential for the operation of the other equipment or systems;
- b. The “digital computers” or related equipment are not a “principal element” of the other equipment or systems; and

**N.B. 1:** The control status of “signal processing” or “image enhancement” equipment specially designed for other equipment with functions limited to those required for the other equipment is determined by the control status of the other equipment even if it exceeds the “principal element” criterion.

**N.B. 2:** For the control status of “digital computers” or related equipment for telecommunications equipment, see Category 5, Part 1 (Telecommunications).

- c. The “technology” for the “digital computers” and related equipment is determined by 4E.

- a. Designed or modified for “fault tolerance”;

**Note:** For the purposes of 4A003.a., “digital computers” and related equipment are not considered to be designed or modified for “fault tolerance” if they utilize any of the following:

- 1. Error detection or correction algorithms in “main storage”;

- 2. The interconnection of two “digital computers” so that, if the active central processing unit fails, an idling but mirroring central processing unit can continue the system’s functioning;

- 3. The interconnection of two central processing units by data channels or by use of shared storage to permit one central processing unit to perform other work until the second central processing unit fails, at which time the first central processing unit takes over in order to continue the system’s functioning; or

- 4. The synchronization of two central processing units by “software” so that one central processing unit recognizes when the other central processing unit fails and recovers tasks from the failing unit.

- b. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 0.75 weighted TeraFLOPS (WT);

- c. “Electronic assemblies” specially designed or modified to be capable of enhancing performance by aggregation

of processors so that the “APP” of the aggregation exceeds the limit in 4A003.b.;

**Note 1:** 4A003.c applies only to “electronic assemblies” and programmable interconnections not exceeding the limit in 4A003.b. when shipped as unintegrated “electronic assemblies”. It does not apply to “electronic assemblies” inherently limited by nature of their design for use as related equipment controlled by 4A003.e.

**Note 2:** 4A003.c does not control “electronic assemblies” specially designed for a product or family of products whose maximum configuration does not exceed the limit of 4A003.b.

- d. [RESERVED]

- e. Equipment performing analog-to-digital conversions exceeding the limits in 3A001.a.5;

- f. [RESERVED]

- g. Equipment specially designed to provide external interconnection of “digital computers” or associated equipment that allows communications at data rates exceeding 1.25 Gbyte/s.

**Note:** 4A003.g does not control internal interconnection equipment (e.g., backplanes, buses) passive interconnection equipment, “network access controllers” or “communication channel controllers”.

■ 40. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4—Computers, Export Control Classification Number (ECCN) 4A994 is amended by revising the “items” paragraph in the List of Items Controlled section, to read as follows:

**4A994 Computers, “electronic assemblies”, and related equipment not controlled by 4A001 or 4A003, and specially designed components therefor**

\* \* \* \* \*

**List of Items Controlled**

*Unit:* \* \* \*

*Related Controls:* \* \* \*

*Related Definitions:* \* \* \*

*Items:*

**Note 1:** The control status of the “digital computers” and related equipment described in 4A994 is determined by the control status of other equipment or systems provided:

- a. The “digital computers” or related equipment are essential for the operation of the other equipment or systems;
- b. The “digital computers” or related equipment are not a “principal element” of the other equipment or systems; and

**N.B. 1:** The control status of “signal processing” or “image enhancement” equipment specially designed for other equipment with functions limited to those required for the other equipment is determined by the control status of the other equipment even if it exceeds the “principal element” criterion.

**N.B. 2:** For the control status of “digital computers” or related equipment for

telecommunications equipment, see Category 5, Part 1 (Telecommunications).

c. The “technology” for the “digital computers” and related equipment is determined by 4E.

a. Electronic computers and related equipment, and “electronic assemblies” and specially designed components therefor, rated for operation at an ambient temperature above 343 K (70° C);

b. “Digital computers” having an “Adjusted Peak Performance” (“APP”) equal to or greater than 0.00001 Weighted TeraFLOPS (WT);

c. “Electronic assemblies” that are specially designed or modified to enhance performance by aggregation of processors, as follows:

c.1. Designed to be capable of aggregation in configurations of 16 or more processors; or

c.2. Having a sum of maximum data rates on all channels available for connection to associated processors exceeding 40 million Byte/s;

**Note 1:** 4A994.c applies only to “electronic assemblies” and programmable interconnections with a “APP” not exceeding the limits in 4A994.b, when shipped as unintegrated “electronic assemblies”. It does not apply to “electronic assemblies” inherently limited by nature of their design for use as related equipment controlled by 4A994.g and 4A994.k.

**Note 2:** 4A994.c does not control any “electronic assembly” specially designed for a product or family of products whose maximum configuration does not exceed the limits of 4A994.b.

d. Disk drives and solid state storage equipment:

d.1. Magnetic, erasable optical or magneto-optical disk drives with a “maximum bit transfer rate” exceeding 25 million bit/s;

d.2. Solid state storage equipment, other than “main storage” (also known as solid state disks or RAM disks), with a “maximum bit transfer rate” exceeding 36 million bit/s;

e. Input/output control units designed for use with equipment controlled by 4A994.d;

f. Equipment for “signal processing” or “image enhancement” having an “Adjusted Peak Performance” (“APP”) equal to or greater than 0.00001 Weighted TeraFLOPS (WT);

g. Graphics accelerators or graphics coprocessors that exceed a “three dimensional vector rate” of 400,000 or, if supported by 2-D vectors only, a “two dimensional vector rate” of 600,000;

**Note:** The provisions of 4A994.g do not apply to work stations designed for and limited to:

a. Graphic arts (e.g., printing, publishing); and

b. The display of two-dimensional vectors.

h. Color displays or monitors having more than 120 resolvable elements per cm in the direction of the maximum pixel density;

**Note 1:** 4A994.h does not control displays or monitors not specially designed for electronic computers.

**Note 2:** Displays specially designed for air traffic control (ATC) systems are treated as specially designed components for ATC systems under Category 6.

i. Equipment containing “terminal interface equipment” exceeding the limits in 5A991.

**Note:** For the purposes of 4A994.i, “terminal interface equipment” includes “local area network” interfaces, modems and other communications interfaces. “Local area network” interfaces are evaluated as “network access controllers”.

j. Equipment specially designed to provide external interconnection of “digital computers” or associated equipment that allows communications at data rates exceeding 80 Mbyte/s.

**Note:** 4A994.j does not control internal interconnection equipment (e.g., backplanes, buses) passive interconnection equipment, “network access controllers” or “communication channel controllers”.

k. “Hybrid computers” and “electronic assemblies” and specially designed components therefor, as follows:

k.1. Containing “digital computers” controlled by 4A003;

k.2. Containing analog-to-digital converters having all of the following characteristics:

k.2.a. 32 channels or more; and

k.2.b. A resolution of 14 bit (plus sign bit) or more with a conversion rate of 200,000 conversions/s or more.

■ 41. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4—Computers, Export Control Classification Number (ECCN) 4D001 is amended by revising the License Requirements section, the License Exemptions section, and the “items” paragraph in the List of Items Controlled section, to read as follows:

**4D001 “Software” specially designed or modified for the “development”, “production” or “use” of equipment or “software” controlled by 4A001 to 4A004, or 4D (except 4D980, 4D993 or 4D994), and other specified software, see List of Items Controlled.**

#### License Requirements

*Reason for Control:* NS, CC, AT, NP.

Control(s)	Country chart
NS applies to “software” for commodities or software controlled by 4A001 to 4A004, 4D001 to 4D003.	NS Column 1.
CC applies to “software” for computerized finger-print equipment controlled by 4A003 for CC reasons.	CC Column 1.
AT applies to entire entry ....	AT Column 1.

NP applies, unless a License Exception is available. See § 742.3(b) of the EAR for information on applicable licensing review policies.

#### License Exceptions

CIV: N/A.

TSR: Yes, except “software” for commodities controlled by ECCN 4A003.b or ECCN 4A003.c is limited to “software” for computers or “electronic assemblies” with an “Adjusted Peak Performance” (“APP”) equal to or less than 0.1 Weighted TeraFLOPS (WT).

APP: Yes to specific countries (see § 740.7 of the EAR for eligibility criteria)

#### List of Items Controlled

*Unit:* \* \* \*

*Related Controls:* \* \* \*

*Related Definitions:* \* \* \*

*Items:*

a. “Software” specially designed or modified for the “development”, “production” or “use” of equipment or “software” controlled by 4A001 to 4A004, or 4D (except 4D980, 4D993 or 4D994).

b. “Software”, other than that controlled by 4D001.a, specially designed or modified for the “development” or “production” of:

b.1. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 0.04 Weighted TeraFLOPS (WT); or

b.2. “Electronic assemblies” specially designed or modified for enhancing performance by aggregation of processors so that the “APP” of the aggregation exceeds the limit in 4D001.b.1.

■ 42. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4—Computers, Export Control Classification Number (ECCN) 4D002 is amended by revising the License Requirements section, to read as follows:

**4D002 “Software” specially designed or modified to support “technology” controlled by 4E (except 4E980, 4E992, and 4E993).**

#### License Requirements

*Reason for Control:* NS, AT, NP.

Control(s)	Country chart
NS applies to entire entry ...	NS Column 1.
AT applies to entire entry ....	AT Column 1.

NP applies, unless a License Exception is available. See § 742.3(b) of the EAR for information on applicable licensing review policies.

\* \* \* \* \*

■ 43. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4—Computers, Export Control Classification Number (ECCN) 4E001 is amended by revising the License Requirements section, the License Exceptions section, and the “items” paragraph in the List of Items Controlled section, to read as follows:

**4E001 “Technology” according to the General Technology Note, for the “development,” “production” or “use” of equipment or “software” controlled by 4A (except 4A980, 4A993 or 4A994) or 4D (except 4D980, 4D993, 4D994), and other specified technology, see List of Items Controlled.**

**License Requirements**

*Reason for Control:* NS, MT, CC, AT, NP.

Control(s)	Country chart
NS applies to “technology” for commodities or software controlled by 4A001 to 4A004, 4D001 to 4D003.	NS Column 1.
MT applies to “technology” for items controlled by 4A001.a and 4A101 for MT reasons.	MT Column 1.
CC applies to “technology” for computerized fingerprint equipment controlled by 4A003 for CC reasons.	CC Column 1.
AT applies to entire entry ....	AT Column 1.

NP applies, unless a License Exception is available. See § 742.3(b) of the EAR for information on applicable licensing review policies.

*License Requirement Notes:* See § 743.1 of the EAR for reporting requirements for exports under License Exceptions.

**License Exceptions**

CIV: N/A

TSR: Yes, except technology for commodities controlled by ECCN 4A003.b or ECCN 4A003.c is limited to technology for computers or electronic assemblies with an “Adjusted Peak Performance” (“APP”) exceeding 0.1 Weighted TeraFLOPS (WT).

APP: Yes to specific countries (see § 740.7 of the EAR for eligibility criteria).

**List of Items Controlled**

*Unit:* \* \* \*

*Related Controls:* \* \* \*

*Related Definitions:* \* \* \*

*Items:*

a. “Technology” according to the General Technology Note, for the “development,” “production,” or “use” of equipment or “software” controlled by 4A (except 4A980, 4A993 or 4A994) or 4D (except 4D980, 4D993, 4D994).

b. “Technology”, other than that controlled by 4E001.a, specially designed or modified for the “development” or “production” of:

b.1. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 0.04 Weighted TeraFLOPS (WT); or

b.2. “Electronic assemblies” specially designed or modified for enhancing performance by aggregation of processors so that the “APP” of the aggregation exceeds the limit in 4D001.b.1.

■ 44. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4—Computers is amended by:

■ (a) Removing the Technical Note “Information on How to Calculate “Composite Theoretical Performance (“CTP”)” that appears after EAR99; and

■ (b) Adding a Technical Note on “Adjusted Peak Performance (APP)” after EAR99, to read as follows:

**Technical Note on “Adjusted Peak Performance” (“APP”)**

APP is an adjusted peak rate at which “digital computers” perform 64-bit or larger floating point additions and multiplications.

**Abbreviations Used in This Technical Note**

n number of processors in the “digital computer”

i processor number (i,...n)

ti processor cycle time (ti = 1/Fi)

Fi processor frequency

Ri peak floating point calculating rate

Wi architecture adjustment factor

APP is expressed in Weighted TeraFLOPS (WT), in units of 1012 adjusted floating point operations per second,

**Outline of “APP” Calculation Method**

1. For each processor i, determine the peak number of 64-bit or larger floating-point operations, FPOi, performed per cycle for each processor in the “digital computer”.

**Note:** In determining FPO, include only 64-bit or larger floating point additions and/or multiplications. All floating point operations must be expressed in operations per processor cycle; operations requiring

multiple cycles may be expressed in fractional results per cycle. For processors not capable of performing calculations on floating-point operands of 64-bits or more the effective calculating rate R is zero.

2. Calculate the floating point rate R for each processor

$$R_i = FPO_i/t_i.$$

3. Calculate APP as

$$APP = W_1 \times R_1 + W_2 \times R_2 + \dots + W_n \times R_n.$$

4. For “vector processors”, Wi = 0.9. For non-“vector processors”, Wi = 0.3.

**Note 1:** For processors that perform compound operations in a cycle, such as an addition and multiplication, each operation is counted.

**Note 2:** For a pipelined processor the effective calculating rate R is the faster of the pipelined rate, once the pipeline is full, or the non-pipelined rate.

**Note 3:** The calculating rate R of each contributing processor is to be calculated at its maximum value theoretically possible before the “APP” of the combination is derived. Simultaneous operations are assumed to exist when the computer manufacturer claims concurrent, parallel, or simultaneous operation or execution in a manual or brochure for the computer.

**Note 4:** Do not include processors that are limited to input/output and peripheral functions (e.g., disk drive, communication and video display) when calculating APP.

**Note 5:** APP values are not to be calculated for processor combinations (inter)connected by “Local Area Networks”, Wide Area Networks, I/O shared connections/devices, I/O controllers and any communication interconnection implemented by “software”.

**Note 6:** APP values must be calculated for (1) processor combinations containing processors specially designed to enhance performance by aggregation, operating simultaneously and sharing memory; or (2) multiple memory/processor combinations operating simultaneously utilizing specially designed hardware.

**Note 7:** A “vector processor” is defined as a processor with built-in instructions that perform multiple calculations on floating-point vectors (one-dimensional arrays of 64-bit or larger numbers) simultaneously, having at least 2 vector functional units and at least 8 vector registers of at least 64 elements each.

Dated: April 12, 2006.

**Matthew S. Borman,**

*Deputy Assistant Secretary for Export Administration.*

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