

# Rules and Regulations

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## DEPARTMENT OF COMMERCE

### Bureau of Industry and Security

15 CFR Parts 734, 742, 743, 744, 772, 774

[Docket No. 100413184-0299-01]

RIN 0694-AE91

### Wassenaar Arrangement 2009 Plenary Agreements Implementation: Categories 1, 2, 3, 4, 5 Part I, 6, 7, and 9 of the Commerce Control List, Definitions, Reports

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

**ACTION:** Final rule.

**SUMMARY:** The Bureau of Industry and Security (BIS) maintains the Commerce Control List (CCL), which identifies items subject to Department of Commerce export controls. This final rule revises the Export Administration Regulations (EAR) to implement changes made to the Wassenaar Arrangement's List of Dual Use Goods and Technologies (Wassenaar List) maintained and agreed to by governments participating in the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual Use Goods and Technologies (Wassenaar Arrangement, or WA) at the December 2009 WA Plenary Meeting (the Plenary). The Wassenaar Arrangement advocates implementation of effective export controls on strategic items with the objective of improving regional and international security and stability. To harmonize with the changes made to the Wassenaar List at the Plenary, this rule revises the EAR by amending certain entries that are controlled for national security reasons in Categories 1, 2, 3, 4, 5 Part I (telecommunications), 6, 7, and 9, revising reporting requirements, and

adding, removing and amending EAR Definitions.

The changes agreed to at the Plenary that pertain to Export Control Classification Numbers (ECCNs) 5A002, 5D002, 6A002, 6A003, 8A002 and all related ECCNs will be implemented in a separate rule because of the sensitivity of the items and complexity of procedures and controls for these items. The changes agreed to at the Plenary that pertain to raising the Adjusted Peak Performance (APP) for digital computers in ECCN 4A003 will be implemented in a separate rule when the President's report for High Performance Computers has been sent to Congress that sets forth the new APP in accordance with the National Defense Authorization Act for FY1998.

**DATES:** *Effective Date:* This rule is effective: *September 7, 2010.*

**FOR FURTHER INFORMATION CONTACT:** For general questions contact Sharron Cook, Office of Exporter Services, Bureau of Industry and Security, U.S. Department of Commerce at 202-482-2440 or by e-mail: [scCook@bis.doc.gov](mailto:scCook@bis.doc.gov).

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Category 6: Chris Costanzo at 202-482-0718 (optics), John Varesi 202-482-1114 (sensors & cameras) and Mark Jaso at 202-482-0987 (lasers).

Category 7: Daniel Squire at 202-482-3710.

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### SUPPLEMENTARY INFORMATION:

#### Background

In July 1996, the United States and thirty-three other countries gave final approval to the establishment of a new multilateral export control arrangement called the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual Use Goods and Technologies (Wassenaar Arrangement or WA). 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 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 a common understanding of the risks associated with the transfers of these items. For more information on the Wassenaar Arrangement go to <http://www.wassenaar.org/>.

### Revisions to the Commerce Control List

This rule revises a number of entries on the Commerce Control List (CCL) to implement the changes to the Wassenaar List of Dual Use Goods and Technologies agreed to at the December 2009 WA Plenary meeting. This rule also revises language to provide a complete or more accurate description of controls in certain ECCNs, as submitted by the Task Force for Editorial Issues (TFEI) and agreed to at the WA Plenary. The following ECCNs are amended by this rule: 1A001, 1A002, 1B001, 1C002, 1C006, 1C007, 1C008, 1C010, 1C011, 1E002, 2B006, 3A001, 3A002, 3B001, 4A001, 4A003, 4D001, 4D993, 4E001, 5A001, 5B001, 5D001, 5E001, 6A001, 6A005, 6A006, 6A008, 6C004, 6D003, 6E993, 7A005, 7B001, 7D003, 7E004, 9A001, 9A003, 9B002, 9D003, and 9E003. ECCN 4D003 is removed by this rule. These changes are described in more detail below.

#### Category 1—Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins

ECCN 1A001 is amended by adding a Chemical Abstracts Service (CAS) number and the phrase “having all of the following” to paragraph b to clarify the text.

ECCN 1A002 is amended by:

Revising Note 1 at the beginning of the Items paragraph to change the size of composite structures or laminates used for the repair of “civil aircraft,” to address the increasing usage of carbon materials in commercial aircraft. The current size limit set forth in this ECCN limits the ability of airlines to repair aircraft successfully and in a timely manner because of the time needed to obtain an export license for sizes other than those allowed without license under Note 1 of this ECCN.

ECCN 1B001 is amended by:

—Revising the heading to more precisely describe what is in the

entry, by adding the phrases “or inspection”, “structures or laminates”, and “fibrous or filamentary materials” specified by”; and removing the phrase “fibers, prepregs, performs or”.

- Revising the Missile Technology (MT) control paragraph in the License Requirements section by replacing the phrase “entire entry except 1B001.d.4 and .f” with the phrase “entire entry, except 1B001.d.4, e and f” and removing the Note that follows the MT control paragraph.
- In 1B001.a, adding a comma after “filament winding machines” and adding the term “primary servo positioning” before axes, which is defined in the technical note of the newly added paragraph 1B001.g.
- In 1B001.b, moving “tow placement machines” to 1B001.g to remove machines capable of more complex airframe and missile structures from this paragraph; moving a comma to correct the punctuation; replacing the phrase “two \* \* \* axes” with “five \* \* \* axes” to focus the control on those capable of manufacturing complex “composite” airframe or missile structures; and adding the term ‘primary servo positioning’ before axes to indicate which axes this control pertains to.
- Adding a new paragraph 1B001.g for tow placement machines previously specified by 1B001.b, to establish a separate paragraph for machines capable of more complex airframe and missile structures. This new paragraph is subject to MT controls, as well as National Security (NS) and Anti-Terrorism (AT) controls.
- Adding a new technical note to define ‘primary servo positioning’ throughout 1B001.

ECCN 1C002 is amended by adding the phrase “the powder or particulate” before “material controlled by 1C002.c” in 1C002.b in order to clarify which type of materials are controlled.

ECCN 1C006 is amended by adding a CAS number(s) to paragraph 1C006.c for clarity.

ECCN 1C007 is amended by adding a CAS number to paragraph 1C007.f for clarity.

ECCN 1C008 is amended by adding CAS numbers to paragraphs b.1.a, b.2.a, b.2.b, and b.2.c for clarity.

ECCN 1C010 is amended by:

- Deleting part of the Heading to remove the text beginning with the phrase “which can be used in organic \* \* \*”. This text is ambiguous and did not contribute to the original intent of the control, and could be interpreted to limit the scope of the control.

- Making editorial changes to 1C010.a.1 and a.2, b.1 and b.2, c.1 and c.2 to remove words that do not add substance or clarity to the control text in these paragraphs.
- Revising the control parameters in 1C010.b.1 “specific modulus” and b.2 “specific tensile strength” for carbon “fibrous or filamentary materials” because of foreign availability outside of WA member countries and to recognize industry improvements to the processing of these materials.
- Revising size of the structures or laminate in the Note to 1C010.b for repair of civil aircraft because a high percentage of the damages to civil aircraft have long, thin, and shallow characteristics caused by ground equipment. Revising the size of these structures or laminate makes them more accessible for the repair of civil aircraft, from an export licensing perspective.
- Adding a new paragraph b to the note to 1C010.b to decontrol certain short carbon fibers that are the product of chopping, milling or cutting, because material properties of 1C010 carbon fibers shorter than 25.0 mm are significantly reduced.
- Revising 1C010.e to have a more consistent format, to treat phenolic resins separately from other resins, and to add a note to direct the public to the correct control text for preforms that are not impregnated (*i.e.*, dry).
- Revising the technical note describing “glass transition temperature” to read “Dynamic Mechanical Analysis glass transition temperature (DMA Tg),” to reflect the new term as used in 1C010.e. This rule also implements a new measurement standard ASTM D 7028 in this technical note, which measures the DMA Tg on a cured laminate with clear data interpretation instructions, to reduce errors and inconsistencies associated with measuring resin DMA Tg.

ECCN 1C011 is amended by adding a CAS number(s) to paragraph 1C011.c for clarity.

ECCN 1E002 is amended by adding a CAS number(s) to paragraph 1E002.c.1.c.1 for clarity.

Annex to Category 1 “List of Explosives (See ECCNs 1A004 and 1A008)” is amended by adding CAS number(s) to paragraphs 6 and 35 through 42.

### Category 2—Materials Processing

- ECCN 2B006 is amended by adding capitalization for correct format and adding a technical note to indicate the required configuration of Coordinate Measuring Machines (CMM) when

calculating the maximum permissible error of indication parameter.

### Category 3—Electronics

ECCN 3A001 is amended by:

- Adding a hyphen in the word “space-qualified” in paragraphs 3A001.b.1.a.4.c and e.4, to correct the format of the term.
- Removing the word “density” after output power in paragraph 3A001.b.8.b in order to remove a word that WA never intended to include in this paragraph.
- Adding 3A001.b.11 to control items moved to ECCN 3A001 from 3A002.b. This move makes it clear that the “electronic assemblies” controlled by this entry are components, and not instruments, which is how the assemblies were characterized incorrectly in 3A002.b.

ECCN 3A002 is amended by:

- Revising the License Exception section to remove references to 3A002.b to harmonize with the movement of 3A002.b to 3A001.b.11.
- Adding a hyphen in the word “space-qualified” in paragraph 3A002.a.3.b, g.1 and g.3, to correct the format of the term.
- Removing and reserving 3A002.b and incorporating the “frequency synthesizer” “electronic assemblies” controlled by that entry into new paragraph 3A001.b.11. This move makes it clear that these “frequency synthesizer” “electronic assemblies” are components and not instruments, which is how the assemblies were characterized incorrectly in 3A002.b.
- Revising the parameters in paragraph 3A002.e to relax the controls on network analyzers to more accurately differentiate between commercial or civilian applications and applications of strategic concern.

ECCN 3B001 is amended by:

- Revising the control parameters for anisotropic plasma dry etching equipment in 3B001.c to clearly apply the control parameter to device nodes of 65 nm or below in order to make the control of this equipment consistent with current integrated circuit production sizes, to maintain control on more advanced equipment in this ECCN, and to remove controls on older equipment and spare parts that are no longer of proliferation concern.
- Revising the control parameter for automatic loading multi-chamber Central Wafer Handling (CWH) systems in 3B001.e to relax controls on two classes of CWH systems that have been found to be of less

proliferation concern and to place the focus on more advanced CWH.

- Adding technical notes for 3B001.e to provide definitions of two terms used in the control text in order to remove ambiguity in the control.

#### Category 4—Computers

ECCN 4A001 is amended by:

- Removing a reference to 4A001.b from the Limited Value Shipment (LVS) paragraph of the License Exception section, because paragraph 4A001.b is removed by this rule.
- Adding a reference to Category 5 Part 2 to the Related Controls paragraph in the List of Items Controlled section, to correspond with the removal of 4A001.b, described below.
- Removing and reserving 4A001.b, which stated “Having the characteristics or performing functions exceeding the limits in Category 5, Part 2 (“Information Security”)”, because such hardware and software is controlled under 5A002 and 5D002 in Category 5, Part 2. This change clarifies where this equipment and software is controlled in the CCL.

ECCN 4A003 is amended by:

- Revising the control parameters for equipment specially designed for aggregating the performance of “digital computers” in 4A003.g to move the control threshold up, to account for bi-directional connectivity at double the threshold, as well as to narrow the scope of control to ensure that only the equipment of concern is controlled.

#### Category 4—Product Group D—Software

- Revising the Note at the beginning to remove the sentence, “The control status of ‘software’ for equipment described in this Category is dealt with herein,” because most software for computers contains encryption, which is controlled in Category 5.

ECCN 4D001 is amended by increasing the APP from 0.1 to 0.25 WT in 4D001.b.1 to account for technological advancements in processor technology and to set an APP that will remain relevant for several years.

ECCN 4D003, “Software having characteristics or performing functions exceeding the limits in Category 5, Part 2 (Information Security),” is removed in order to keep all such software controls in Category 5 part 2.

ECCN 4D993 is amended by revising the Heading in order to remove the reference to ECCN 4D003, which is removed by this rule.

ECCN 4E001 is amended by increasing the APP from 0.1 to 0.25 WT in 4E001.b.1 to account for technological advancements in processor technology and to set an APP that will remain relevant for several years.

#### Category 5 Part 1—Telecommunications

Note 1 in the beginning of Category 5 Part 1 is amended by removing the word “lasers”, because a new *nota bene* is added to reference ECCN 6A005 for “lasers” specially designed for telecommunications equipment or systems.

ECCN 5A001 is amended by reinserting back License Exceptions GBS and CIV in the License Exception section. These were inadvertently removed by the Wassenaar 2008 implementation rule on December 11, 2009 (74 FR 66000).

ECCN 5B001 is amended by removing and reserving paragraphs 5B001.b.1 and b.3 in the Items paragraph of the List of Items Controlled section, because these controls are no longer necessary as they have been overtaken by the continued advancement in infrastructure transmission and switching technology, and because of the wide usage of this equipment in commercial applications.

ECCN 5D001 is amended by removing and reserving paragraphs 5D001.d.1 and d.3 in the Items paragraph of the List of Items Controlled section, to harmonize with the removal of 5B001.b.1 and b.3 in this rule.

ECCN 5E001 is amended by:

- Revising the total digital transfer rate from 15 Gbit/s to 50 Gbit/s in paragraph 5E001.c.1, to reflect advancement in infrastructure transmission and switching technology.
- Revising the text in the technical note to 5E001.c.1 to make it clear that the control applies to telecommunication switching equipment and to provide additional detail to clarify the text.
- Adding an additional parameter to the existing parameter in 5E001.c.3 to narrow the scope of control.

#### Category 6—Sensors and Lasers

ECCN 6A001 is amended by:

- Adding 6A001.a.1.e to the list of commodities ineligible for License Exception LVS, because this newly added commodity is on the sensitive list of the Wassenaar Arrangement.
- Revising paragraphs a.1.a and a.1.d in the Items paragraph of the List of Items Controlled section, to clarify the text.
- Adding paragraph a.1.e to the Items paragraph of the List of Items

Controlled section to control active individual sonars, specially designed or modified to detect, locate and automatically classify swimmers or divers. This new control is necessary to close the loophole that exists for these commercial sonar based detection systems that are nearly equivalent to existing military systems.

ECCN 6A005 is amended by:

- Revising the CW output power from “10W” to “15 W” for individual, multiple-transverse mode semiconductor “lasers” in paragraph d.1.b.1 of the Items paragraph because of worldwide technological advancement.
- Replacing the term “arrays” with “bars” because this is a more appropriate term for this control in paragraph d.1.c. The revisions in this rule include adding a definition for “bar” and “stacked array” in the Technical Notes at the end of 6A005.d.1.
- Revising the CW output power from “80 W” to “100 W” for individual semiconductor laser bars in paragraph d.1.c.1, because the power density export controls otherwise applied to these laser bars provide enough control to justify relaxing the export controls for CW output power in this entry.
- Revising paragraph 6A005.d.1.d from a control over “array stacks of semiconductor laser containing at least one array controlled by 6A005.d.1.c” to a control over “semiconductor laser stacked arrays (two-dimensional arrays), having any of the following \* \* \*” and adding control paragraphs that contain a variation of parameters that include: Wavelength, average or Continuous Wave (CW) total output power, average or CW output “power density,” peak pulsed power density, spatial coherent average or CW total output power, because the existing control was inadequate to control lasers of this type that are militarily critical items.

ECCN 6A008 is amended by:

- Removing the resolution parameter (12 reasonable elements per mm) from the Note at the beginning of the Items paragraph pertaining to displays or monitors used for Air Traffic Control (ATC), because today ATC terminals typically use raster scan displays and the removed parameter is not relevant to raster scan terminals.
- Moving the Note after 6A008.f pertaining to Precision Approach Radar (PAR) equipment to the Note at the beginning of the Items paragraph,

for better visibility. The stated intent of paragraph 6A008.f is to capture radar systems that can be used to detect “human movement” or to detect “small sub munitions,” and PARs are not capable of this level of detection.

—Removing the double quotes from around the term “electronically steerable phased array antennae” and removing the word “phased” in 6A008.e, because more advanced radar systems are now using time delay techniques, rather than phase shifters, to electronically steer radar beams. Deletion of the word “phased” will expand the scope of control to capture all electronically steered arrays (ESA), which was the original intent of the control.

Revising the parameter in 6A008.l.4 for data processing subsystems to include controls on radar sensors that are integrated into such subsystems through separate processing equipment such as computers.

ECCN 6C004 is amended by revising 6C004.b and .e to add the Chemical Abstracts Service (CAS) registry numbers for better identification of the chemicals that are controlled.

ECCN 6D003 is amended by:

- Adding paragraph 6D003.a.5 to control software or source code, specially designed for real time processing of acoustic data for detection devices. The software is loaded onto standard commercial PCs and is critical for advanced detection and classification.
- Revising paragraph 6D003.h.1 pertaining to Air Traffic Control (ATC) software to account for technological advancements.

#### Category 7—Navigation and Avionics

ECCN 7A005 is amended by:

- Revising the Heading to capitalize the words associated with the acronym (GNSS), removing the acronyms “GPS and GLONASS,” adding the words “having any of the following,” and moving the parenthetical to the added License Requirements section to harmonize with WA text.
- Adding a License Requirements section that will contain a note stating, “These items are subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls. See 22 CFR part 121.”
- Adding a List of Items Controlled section to harmonize the format with other ECCN entries in the CCL and to provide transparency to the public of the WA text for this ECCN.

ECCN 7B001 is amended by replacing the word “removal” with “disassembly or repair” and removing the phrase “from the SRA” at the end of paragraph 2 in the Related Definitions paragraph of the List of Items Controlled section. This change makes it clear that replacement or removal of gyros, accelerometers, and in some cases the inertial sensor assembly containing these sensors, is considered a “Maintenance Level II” repair. This change also clarifies that these assemblies are generally considered to be Shop Replaceable Assembly (SRA) within the avionics repair industry.

ECCN 7D003 is amended by revising paragraph b.2 to capitalize the words associated with the acronym (GNSS) and delete the parenthetical reference to GPS and GLONASS.

ECCN 7E004 is amended by:

- Adding the word “systems” in two places in the *nota bene* of paragraph b.6 in the Items paragraph, to reflect amendments made in this rule to 9E003;
- Adding double quotes around “Full Authority Digital Engine Control Systems” and “FADEC Systems” in the *nota bene* of paragraph b.6 in the Items paragraph, to reflect amendments made in this rule to 9E003;
- Revising the reference in the *nota bene* in paragraph b.6 of the Items paragraph from “9E003.a.9” to “9E003.h”, to be consistent with the amendments made by this rule to 9E003.

#### Category 9—Aerospace and Propulsion

ECCN 9A001 is amended by:

- Removing text from the Heading to more accurately reflect the scope of what is controlled in this ECCN and replacing “as follows” with “having any of the following”;
- Revising paragraph 9A001.a by adding “or 9E003.h” to be consistent with amendments made by this rule to 9E003. This revision will result in the control of aero gas turbine engines incorporating any of the technologies controlled by 9E003.h.

ECCN 9A003 is amended by revising the heading to add “or 9E003.h” to be consistent with amendments made by this rule to ECCN 9E003. This will result in the control of specially designed assemblies and components incorporating any of the technologies controlled by 9E003.h for gas turbine engine propulsion systems that meet the parameters of ECCN 9A003.

ECCN 9B002 is amended by revising the heading to add “or 9E003.h” as a

consequential change of revision this rule makes to ECCN 9E003. This will result in the control of on-line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, specially designed for the “development” of gas turbine engines, assemblies or components incorporating “technologies” controlled by 9E003.h.

ECCN 9D003 is amended by:

- Adding the word “Systems” in two places in the Heading, and adding double quotes around the term “FADEC Systems” to correctly refer to the term as a system;
- Adding the word “system” and adding double quotes around the term “FADEC system” in the NS and MT license requirement paragraphs in the License Requirements section, for consistency;
- Removing the reference to 9A110 in the MT control paragraph of the License Requirements section, because MT does not apply to 9A110.
- Moving the ending double quote from after “FADEC” to after “FADEC systems” in 9D003.b, for consistency.

ECCN 9E003 is amended by:

- Revising the Significant Item (SI) control paragraph in the License Requirements section, to reflect amendments made by this rule in paragraphs 9E003.a.9, h, and i and to correct the SI scope of license requirements. SI controls now apply to 9E003.a.1. through a.8, a.10, h and i;
- Removing and reserving paragraph a.9 in the Items paragraph of the List of Items Controlled section in order to add a more detailed control for FADEC systems in 9E003.h;
- Redesignating paragraph h as i and adding a new paragraph h in the Items paragraph of the List of Items Controlled section, to add more specific and detailed control paragraphs for “FADEC systems” technology; and
- Revising new paragraph 9E003.i to harmonize references to paragraphs in 9E003 that were revised by this rule.

#### Section 734.4 De minimis U.S. Content

Section 734.4 is amended by removing the phrase “9E003.a.1. through a.11, and .h.” and adding in its place “9E003.a.1 through a.8, a.10, h and i.” in paragraph (a)(4) “Items for which there is no *de minimis* level.” This change is made to harmonize with revisions to paragraphs ECCN 9E003.a.9, h, and i in this rule.

*Section 742.14 Significant Items: Hot Section Technology for the Development, Production or Overhaul of Commercial Aircraft Engines, Components, and Systems*

This rule harmonizes the list of paragraphs under ECCN 9E003 that are controlled for SI reasons with the list in section 742.14. The paragraphs of ECCN 9E003 that are controlled for SI reasons are 9E003.a.1 through a.8, a.10, h and i.

*Section 743.1 Wassenaar Arrangement*

WA has three levels of control of goods: Basic List, Sensitive List, and Very Sensitive List. As a matter of policy, BIS makes certain items on the WA Basic and Sensitive List eligible for license exceptions. However, because of the U.S. obligations under its agreements to the WA, the U.S. must report on SL items exported outside of the WA membership countries. BIS does this by gathering data from its licensing database. However, to collect data on exports made under license exceptions, BIS requires WA reporting on SL items exported under certain license exceptions. As a result of WA making changes to its Sensitive List, this rule makes corresponding changes to the reporting requirements of section 743.1 of the EAR (e.g., replacing 9E003.a.9 with 9E003.h). This rule revises reporting requirements for ECCNs 4D001, 4E001 and 6A003.b.3. For 6A003.b.3, this rule adds the phrase “except imaging cameras specially designed or modified for underwater use.” For 4D001 and 4E001, this rule revises the APP from “0.1 Weighted TeraFLOPS (WT)” to “0.5 WT.” This rule makes editorial revisions to reporting requirements in ECCN 6A003.b.4. This rule adds WA reporting requirements for ECCNs 6D003.a and 9E003.a.1 and a.3. WA reporting requirements may be found in Section 743.1 of the EAR. Editorial revisions are made to the last sentence in section 743.1(c)(2), to provide the correct description of where to find the guidelines for calculating APP in the EAR.

**Supplement No. 2 to Part 744—List of Items Subject to the Military End-Use License Requirement of § 744.21**

As a result of WA removing ECCN 4D003, the entry for ECCN 4D993 is revised to remove the reference to ECCN 4D003 in paragraph (4)(ii) of Supp. No. 2 to part 744 of the EAR. This change should not result in any change in license requirements or applications submitted to BIS.

*Section 772.1 Definitions of Terms as Used in the Export Administration Regulations (EAR)*

As a result of the decisions reached at the 2009 WA Plenary, this rule removes the following terms from section 772.1 of the EAR: CE, Computing Element, Interconnected radar sensors, Personalized smart card, Q-switched laser, and Three Dimensional Vector Rate. This rule also revises references to categories in many definitions as a result of WA decisions. This rule also adds the following terms as a result of WA agreements: “Energetic materials” (Cat 1), “Fuel cell” (Cat 8), and “Laser duration.” There is no category designation for the term “laser duration,” because it is a term used in the definition of two other terms listed in section 772.1 of EAR, specifically, “average output power” and “peak power.” This rule also revises the following terms: “All compensations available” and removes and replaces references to categories in certain defined terms to be consistent with amendments made by this rule. This rule revises the definition of “all compensations available” by adding the phrase “or measuring errors for the particular coordinate measuring machine.” The definition of “Full Authority Digital Engine Control,” has been completely rewritten. Additionally, the note in the term “peak power” is removed because it included a definition for “laser duration,” which will now be defined as separate term in section 772.1. The WA revisions to definitions do not always coincide with the format of the EAR. For example, when WA removes definitions that are used in unilateral ECCNs, BIS does not remove them, or for example, when WA removes a reference to a category of the CCL, BIS still uses the term in a unilateral entry of the category.

**Export Administration Act**

Since August 21, 2001, the Export Administration Act of 1979, as amended, has been in lapse. However, the President, through Executive Order 13222 of August 17, 2001 (3 CFR, 2001 Comp. 783 (2002)), which has been extended by successive Presidential Notices, the most recent being that of August 12, 2010, 75 FR 50681 (August 16, 2010) has continued the EAR in effect under the International Emergency Economic Powers Act (50 U.S.C. 1701–1707).

**Saving Clause**

Shipments of items removed from license exception eligibility or eligibility for export without a license as a result

of this regulatory action that were on dock for loading, on lighter, laden aboard an exporting carrier, or en route aboard a carrier to a port of export, on September 7, 2010, pursuant to actual orders for export to a foreign destination, may proceed to that destination under the previous license exception eligibility or without a license so long as they have been exported from the United States before November 8, 2010. Any such items not actually exported before midnight, on November 8, 2010, require a license in accordance with this regulation.

**Rulemaking Requirements**

1. This final rule has been determined to be significant for purposes of Executive Order 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 two collections of information subject to the PRA. One of the collections 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 other of the collections 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. 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 Jasmeet Sehra, OMB Desk Officer, by e-mail at [Jasmeet.K.Sehra@omb.eop.gov](mailto:Jasmeet.K.Sehra@omb.eop.gov) or by fax to (202) 395–7285; and to the Office of Administration, Bureau of Industry and Security, Department of Commerce, 14th and Pennsylvania Avenue, NW., Room 6622, Washington, DC 20230.

3. This rule does not contain policies with Federalism implications as that term is defined under Executive Order 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)). Immediate implementation of these amendments fulfills the United States' international obligation to the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual Use Goods and Technologies. The Wassenaar Arrangement contributes to international security and regional stability by promoting greater responsibility in transfers of conventional arms and dual use goods and technologies, thus preventing destabilizing accumulations of such items. The Wassenaar Arrangement consists of 40 member countries that act on a consensus basis and the changes set forth in this rule implement agreements reached at the December 2009 plenary session of the WA. Since the United States is a significant exporter of the items in this rule, implementation of this provision is necessary for the WA to achieve its purpose. Any delay in implementation will create a disruption in the movement of affected items globally because of disharmony between export control measures implemented by WA members, resulting in tension between member countries. Export controls work best when all countries implement the same export controls in a timely manner. If this rulemaking was delayed to allow for notice and comment, it would prevent the United States from fulfilling its commitment to the WA in a timely manner and would injure the credibility of the United States in this and other multilateral regimes.

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, 14th and Pennsylvania Ave., NW., Room 2705, Washington, DC 20230.

## List of Subjects

### 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 Part 744

Exports, Reporting and recordkeeping requirements, Terrorism.

### 15 CFR Part 772

Exports.

### 15 CFR Part 774

Exports, Reporting and recordkeeping requirements.

■ Accordingly, parts 734, 742, 743, 744, 772 and 774 of the Export Administration Regulations (15 CFR parts 730–774) are amended as follows:

## 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 August 12, 2010, 75 FR 50681 (August 16, 2010); Notice of November 6, 2009, 74 FR 58187 (November 10, 2009).

■ 2. Section 734.4 is amended by removing the phrase “9E003.a.1 through a.10, and .h.” and adding in its place “9E003.a.1 through a.8, a.10, h and i.” in paragraph (a)(4).

## PART 742—[AMENDED]

■ 3. The authority citation for part 742 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 22 U.S.C. 3201 *et seq.*; 42 U.S.C. 2139a; 22 U.S.C. 7201 *et seq.*; 22 U.S.C. 7210; 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 August 12, 2010, 75 FR 50681 (August 16, 2010); Notice of November 6, 2009, 74 FR 58187 (November 10, 2009).

■ 4. Section 742.14 is amended by revising paragraphs (a) and (b) introductory text to read as follows:

### § 742.14 Significant items: hot section technology for the development, production or overhaul of commercial aircraft engines, components, and systems.

(a) *License requirement.* Licenses are required for all destinations, except Canada, for ECCNs having an “SI” under the “Reason for Control” paragraph. These items include hot section technology for the development, production or overhaul of commercial aircraft engines controlled under ECCN 9E003.a.1 through a.8, a.10, .h and .i, and related controls.

(b) *Licensing policy.* Pursuant to section 6 of the Export Administration Act of 1979, as amended, foreign policy controls apply to technology required for the development, production or overhaul of commercial aircraft engines controlled by ECCN 9E003a.1 through a.8, a.10, .h and .i, and related controls. These controls supplement the national security controls that apply to these items. Applications for export and reexport to all destinations will be reviewed on a case-by-case basis to determine whether the export or reexport is consistent with U.S. national security and foreign policy interests. The following factors are among those that will be considered to determine what action will be taken on license applications:

\* \* \* \* \*

## PART 743—[AMENDED]

■ 5. The authority citation for part 743 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 12, 2010, 75 FR 50681 (August 16, 2010).

■ 6. In § 743.1, revise paragraphs (c)(1)(vi), (c)(1)(ix), and (c)(2) to read as follows:

### § 743.1 Wassenaar Arrangement.

\* \* \* \* \*

(c) \* \* \*

(1) \* \* \*

(vi) Category 6: 6A001.a.1.b (changing 10 kHz to 5 kHz and adding the text “or a sound pressure level exceeding 224 dB (reference 1 μPa at 1 m) for equipment with an operating frequency in the band from 5kHz to 10 kHz inclusive” to the existing text in 6A001.a.1.b.1), and 6A001.a.2.d; 6A002.a.1.a, 6A002.a.1.b, 6A002.a.2.a (changing 350 uA/Im to 700 uA/Im in 6A002.a.2.a.3.a), 6A002.a.3, 6A002.b, 6A002.c (incorporating 6A002.a.2.a or 6A002.a.3 having characteristics described in this

paragraph), 6A002.e; 6A003.b.3 (incorporating 6A002.a.2.a having characteristics described in this paragraph, except imaging cameras specially designed or modified for underwater use), 6A003.b.4 (incorporating 6A002.a.3 having characteristics specified by this paragraph); 6A004.c and d; 6A006.a.1, 6A006.a.2 (having a “noise level” (sensitivity) lower (better) than 2pT rms per square root Hz), 6A006.c.1, 6A006.d (certain items only; see Note to this paragraph); 6A008.d, .h, and .k; 6D001 (for 6A004.c and .d and 6A008.d, .h, and .k); 6D003.a; 6E001 (for equipment and software listed in this paragraph); and 6E002 (for equipment listed in this paragraph);

\* \* \* \* \*

(ix) Category 9: 9B001.b, 9D001 (for 9B001.b and as described in this paragraph), 9D002 (for 9B001.b), 9D004.a, 9D004.c, 9E001 for technology controlled for NS reasons, 9E002, 9E003a.1 to a.5, a.8, and h.

\* \* \* \* \*

(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 0.5 Weighted TeraFLOPS (WT). For the calculation of “APP”, see the Technical Note at the end of Category 4 in the Commerce Control List (Supplement No. 1 to part 774 of the EAR).

\* \* \* \* \*

#### PART 744—[AMENDED]

■ 7. The authority citation for part 744 is revised to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 22 U.S.C. 3201 *et seq.*; 42 U.S.C. 2139a; 22 U.S.C. 7201 *et seq.*; 22 U.S.C. 7210; 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. 12947, 60 FR 5079, 3 CFR, 1995 Comp., p. 356; 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; Notice of August 12, 2010, 75 FR 50681 (August 16, 2010); Notice of November 6, 2009, 74 FR 58187 (November 10, 2009).

■ 8. Supplement No. 2 is amended by revising paragraph (4)(ii) to read as follows:

#### Supplement No. 2 to Part 744—List of Items Subject to the Military End-Use License Requirement of § 744.21

\* \* \* \* \*

(4) \* \* \*  
 (ii) 4D993 “Program” proof and validation “software”, “software” allowing the automatic generation of “source codes”, and operating system “software” that are specially designed for real time processing equipment.

\* \* \* \* \*

#### PART 772—[AMENDED]

■ 9. 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 12, 2010, 75 FR 50681 (August 16, 2010).

■ 10. Section 772.1 is amended by:

■ a. Removing the terms and definitions for “CE”, “Computing Element”, “Interconnected radar sensors”, “Q-switched laser”, and “Three dimensional Vector Rate”;

■ b. Removing the phrase “(Cat 1, 7 and 9)” and adding in its place “(Cat 1, 3 and 7)” in the term “Civil aircraft”;

■ c. Removing the phrase “(Cat 1, 3, and 6)” and adding in its place “(Cat 1, 3, 5P1, and 6)” in the term “Critical temperature”;

■ d. Removing the phrase “(Cat 2, 3, 4, and 5)” and adding in its place “(Cat 4)” in the term “Electronic assembly”;

■ e. Removing the phrase “(Cat 4 and 7)” and adding in its place “(Cat 7)” for “Expert systems”;

■ f. Removing the phrase “(Cat 6)” and adding in its place “(Cat 6 and 8)” for “Focal plane array”;

■ g. Removing the phrase “(Cat 3)” and adding in its place “(Cat 3, 5P1, 5P2)” for “Fractional bandwidth”;

■ h. Adding the terms and definitions for “Energetic materials”, “Fuel cell”, and “Laser duration”;

■ i. Removing the phrase “(Cat 2, 3, 5, 6, and 9)” and adding in its place “(Cat 2, 3, 5P1, 6, 7, 8 and 9)” and removing the phrase ““Q-switched laser”,” in the definition for “laser”;

■ j. Removing the phrase “*Space qualified*. (Cat 3 and 6)” and adding in its place “*Space-qualified*. (Cat 3, 6, and 8)” in “Space-qualified”;

■ k. Removing the phrase “(Cat 1, 3, 6, and 8)” and adding in its place “(Cat 1, 3, 5P1, 6, and 8)” in “superconductive”;

■ l. Revising the terms and definitions for “All compensations available” and “Full Authority Digital Engine Control”;

■ m. Removing the Note in the definition for “peak power”, to read as follows:

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

\* \* \* \* \*

*All compensations available.* (Cat 2) means after all feasible measures available to the manufacturer to minimize all systematic positioning errors for the particular machine-tool model or measuring errors for the particular coordinate measuring machine are considered.

\* \* \* \* \*

*Energetic materials.* (Cat 1) Substances or mixtures that react chemically to release energy required for their intended application. “Explosives”, “pyrotechnics” and “propellants” are \* \* \*

*Fuel cell.* (Cat 8) An electrochemical device that converts chemical energy directly into Direct Current (DC) electricity by consuming fuel from an external source.

\* \* \* \* \*

*Full Authority Digital Engine Control Systems.* (“FADEC Systems”) (Cat 7 and 9) A digital electronic control system for a gas turbine engine that is able to autonomously control the engine throughout its whole operating range from demanded engine start until demanded engine shut-down, in both normal and fault conditions.

\* \* \* \* \*

*Laser duration.* (§ 772.1 of EAR) The time over which a “laser” emits “laser” radiation, which for “pulsed lasers” corresponds to the time over which a single pulse or series of consecutive pulses is emitted.

\* \* \* \* \*

#### PART 774—[AMENDED]

■ 11. 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); 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; 15 U.S.C. 1824a; 50 U.S.C. app. 5; 22 U.S.C. 7201 *et seq.*; 22 U.S.C. 7210; 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 12, 2010, 75 FR 50681 (August 16, 2010).

■ 12. Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, Export Control Classification Number (ECCN) 1A001 is amended by revising introductory text of paragraph b. of the Items paragraph in the List of Items Controlled section, to read as follows:

**Supplement No. 1 to Part 774—The Commerce Control List**

\* \* \* \* \*

**1A001 Components made from fluorinated compounds, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

b. Piezoelectric polymers and copolymers, made from vinylidene fluoride (CAS 75-38-7) materials, controlled by 1C009.a, having all of the following:

\* \* \* \* \*

■ 13. Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1A002 is amended by revising Note 1 in the Items paragraph of the List of Items Controlled section, to read as follows:

**1A002 “Composite” structures or laminates, having any of the following (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

**Note 1:** 1A002 does not control composite structures or laminates made from epoxy resin impregnated carbon “fibrous or filamentary materials,” for the repair of “civil aircraft” structures or laminates, having all of the following:

- a. An area not exceeding 1 m<sup>2</sup>;
- b. A length not exceeding 2.5 m; and
- c. A width exceeding 15 mm.

\* \* \* \* \*

■ 14. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1B001 is amended by revising the Heading, the MT paragraph in the License Requirements section and paragraphs a. and b., and add paragraph g. in the Items paragraph of the List of Items Controlled section, to read as follows:

**1B001 Equipment for the production or inspection of “composite” structures or laminates controlled by 1A002 or “fibrous or filamentary materials” controlled by 1C010, as follows (see List of Items Controlled), and specially designed components and accessories therefor.**

**License Requirements**

\* \* \* \* \*

MT applies to entire entry, MT Column  
except 1B001.d.4, e and f. 1.

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

a. Filament winding machines, of which the motions for positioning, wrapping and winding fibers are coordinated and programmed in three or more ‘primary servo positioning’ axes, specially designed for the manufacture of “composite” structures or laminates, from “fibrous or filamentary materials”;

b. Tape-laying machines, of which the motions for positioning and laying tape or sheets are coordinated and programmed in five or more ‘primary servo positioning’ axes, specially designed for the manufacture of “composite” airframe or “missile” structures;

g. Tow-placement machines, of which the motions for positioning and laying tows or sheets are coordinated and programmed in two or more ‘primary servo positioning’ axes, specially designed for the manufacture of “composite” airframe or missile structures.

**Technical Note:** For the purpose of 1B001, ‘primary servo positioning’ axes control, under computer program direction, the position of the end effector (i.e., head) in space relative to the work piece at the correct orientation and direction to achieve the desired process.

■ 15. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1C002 is amended by revising the introductory text to paragraph b. in the Items of the List of Items Controlled section, to read as follows:

**1C002 Metal alloys, metal alloy powder and alloyed materials, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

b. Metal alloys, as follows, made from the powder or particulate material controlled by 1C002.c:

\* \* \* \* \*

■ 16. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1C006 is amended by revising paragraph c.1. in the Items paragraph of the List of Items Controlled section, to read as follows:

**1C006 Fluids and lubricating materials, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

c. \* \* \*

c.1. Dibromotetrafluoroethane (CAS 25497-30-7, 124-73-2, 27336-23-8);

\* \* \* \* \*

■ 17. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1C007 is amended by revising paragraph f.1. in the Items paragraph of the List of Items Controlled section, to read as follows:

**1C007 Ceramic base materials, non-“composite” ceramic materials, ceramic-“matrix” “composite” materials and precursor materials, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

f. \* \* \*

f.1. Al<sub>2</sub>O<sub>3</sub> (CAS 1344-28-1); or

\* \* \* \* \*

■ 18. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1C008 is amended by revising paragraphs b.1.a, b.2.a, b.2.b, and b.2.c in the Items paragraph of the List of Items Controlled section, to read as follows:

**1C008 Non-fluorinated polymeric substances as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

b. \* \* \*

b.1. \* \* \*

b.1.a. Phenylene (CAS 83-12-5), biphenylene (CAS 259-79-0) or naphthalene (CAS 91-20-3); or

\* \* \* \* \*

b.2. \* \* \*

b.2.a. Terephthalic acid (CAS 100-21-0); b.2.b. 6-hydroxy-2 naphthoic acid (CAS 16712-64-4); or b.2.c. 4-hydroxybenzoic acid (CAS 99-96-7);

\* \* \* \* \*

■ 19. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1

“Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1C010 is amended by revising the Heading and the Items paragraph of the List of Items Controlled section, to read as follows:

**1C010 “Fibrous or filamentary materials” as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

**Items:**

- a. Organic “fibrous or filamentary materials”, having all of the following:
- a.1. “Specific modulus” exceeding  $12.7 \times 10^6$  m; and
  - a.2. “Specific tensile strength” exceeding  $23.5 \times 10^4$  m;

**Note:** 1C010.a does not control polyethylene.

- b. Carbon “fibrous or filamentary materials”, having all of the following:
- b.1. “Specific modulus” exceeding  $14.65 \times 10^6$  m; and
  - b.2. “Specific tensile strength” exceeding  $26.82 \times 10^4$  m;

- Note:** 1C010.b does not control:
- a. “Fibrous or filamentary materials”, for the repair of “civil aircraft” structures or laminates, having all of the following:
    1. An area not exceeding 1 m<sup>2</sup>;
    2. A length not exceeding 2.5 m; and
    3. A width exceeding 15 mm.
  - b. Mechanically chopped, milled or cut carbon “fibrous or filamentary materials” 25.0 mm or less in length.

**Technical Note:** Properties for materials described in 1C010.b should be determined using SACMA recommended methods SRM 12 to 17, ISO 10618 (2004) 10.2.1 Method A or national equivalent tow tests, and based on lot average.

- c. Inorganic “fibrous or filamentary materials”, having all of the following:
- c.1. “Specific modulus” exceeding  $2.54 \times 10^6$  m; and
  - c.2. Melting, softening, decomposition or sublimation point exceeding 1,922 K (1,649 °C) in an inert environment;

**Note:** 1C010.c does not control:

- a. Discontinuous, multiphase, polycrystalline alumina fibers in chopped fiber or random mat form, containing 3% by weight or more silica, with a “specific modulus” of less than  $10 \times 10^6$  m;
  - b. Molybdenum and molybdenum alloy fibers;
  - c. Boron fibers;
  - d. Discontinuous ceramic fibers with a melting, softening, decomposition or sublimation point lower than 2,043 K (1,770 °C) in an inert environment.
- d. “Fibrous or filamentary materials”, having any of the following:
- d.1. Composed of any of the following:
    - d.1.a. Polyetherimides controlled by 1C008.a; or
    - d.1.b. Materials controlled by 1C008.b to 1C008.f; or
    - d.2. Composed of materials controlled by 1C010.d.1.a or 1C010.d.1.b and

“commingled” with other fibers controlled by 1C010.a, 1C010.b or 1C010.c;

e. Fully or partially resin-impregnated or pitch-impregnated “fibrous or filamentary materials” (prepregs), metal or carbon-coated “fibrous or filamentary materials” (preforms) or “carbon fiber preforms”, having all of the following:

- e.1. Having any of the following:
  - e.1.a. Inorganic “fibrous or filamentary materials” controlled by 1C010.c; or
  - e.1.b. Organic or carbon “fibrous or filamentary materials”, having all of the following:
    - e.1.b.1. “Specific modulus” exceeding  $10.15 \times 10^6$  m; and
    - e.1.b.2 “Specific tensile strength” exceeding  $17.7 \times 10^4$  m; and
  - e.2. Having any of the following:
    - e.2.a. Resin or pitch controlled by 1C008 or 1C009.b;
    - e.2.b. Dynamic Mechanical Analysis glass transition temperature (DMA T<sub>g</sub>) equal to or exceeding 453 K (180 °C) and having a phenolic resin; or
    - e.2.c. Dynamic Mechanical Analysis glass transition temperature (DMA T<sub>g</sub>) equal to or exceeding 505 K (232 °C) and having a resin or pitch, not specified by 1C008 or 1C009.b, and not being a phenolic resin;

**Note 1:** Metal or carbon-coated “fibrous or filamentary materials” (preforms) or “carbon fiber preforms”, not impregnated with resin or pitch, are specified by “fibrous or filamentary materials” in 1C010.a, 1C010.b or 1C010.c.

**Note 2:** 1C010.e does not control epoxy resin “matrix” impregnated carbon “fibrous or filamentary materials” (prepregs) for the repair of “civil aircraft” structures or laminates, having all of the following:

1. An area not exceeding 1 m<sup>2</sup>;
2. A length not exceeding 2.5 m; and
3. A width exceeding 15 mm.

**Technical Note:** The Dynamic Mechanical Analysis glass transition temperature (DMA T<sub>g</sub>) for materials controlled by 1C010.e is determined using the method described in ASTM D 7028–07, or equivalent national standard, on a dry test specimen with a minimum 90% degree of cure as defined by ASTM E 2160–04 or equivalent national standard.

■ 20. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1C011 is amended by revising paragraph (c) in the Items paragraph of the List of Items Controlled section, to read as follows:

**1C011 Metals and compounds, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

**Items:**

- c. Guanidine nitrate (CAS 506–93–4);
- \* \* \* \* \*

■ 21. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 “Special Materials and Related Equipment, Chemicals, “Microorganisms,” and Toxins”, ECCN 1E002 is amended by revising paragraph c.1.c.1 in the Items paragraph of the List of Items Controlled section, to read as follows:

**1E002 Other “technology” as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

**Items:**

- \* \* \* \* \*
- c. \* \* \*
  - c.1. \* \* \*
  - c.1.c. \* \* \*
  - c.1.c.1. Zirconia (CAS 1314–23–4) with an average particle size equal to or less than 1 µm and no more than 10% of the particles larger than 5 µm;

\* \* \* \* \*

■ 22. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1 is amended by revising paragraphs 6. and 35. through 42. in the annex that lists explosives located at the end of this category, as follows:

**Annex to Category 1**

*List of Explosives (See ECCNs 1A004 and 1A008)*

- \* \* \* \* \*
6. DADE (1,1-diamino-2,2-dinitroethylene, FOX7) (CAS 145250–81–3);
  - \* \* \* \* \*
  35. Nitrocellulose (containing more than 12.5% nitrogen) (CAS 9004–70–0);
  36. Nitroglycerol (CAS 628–96–6);
  37. Pentaerythritol tetranitrate (PETN) (CAS 78–11–5);
  38. Picryl chloride (CAS 88–88–0);
  39. 2,4,6-Trinitrotoluene (TNT) (CAS 118–96–7);
  40. Nitroglycerine (NG) (CAS 55–63–0);
  41. Triacetone Triperoxide (TATP) (CAS 17088–37–8);
  42. Guanidine nitrate (CAS 506–93–4);
  43. Nitroguanidine (NQ) (CAS 556–88–7).
- \* \* \* \* \*

■ 23. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 2 Materials Processing, ECCN 2B006 is amended by revising paragraph a. in the Items paragraph of the List of Items Controlled section to read as follows:

**2B006 Dimensional inspection or measuring systems, equipment, and “electronic assemblies”, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

**Items:**

- a. Computer controlled or “numerically controlled” Coordinate Measuring Machines

(CMM), having a three dimensional length (volumetric) maximum permissible error of indication (MPEE) at any point within the operating range of the machine (i.e., within the length of axes) equal to or less (better) than  $(1.7 + L/1,000)$   $\mu\text{m}$  (L is the measured length in mm) according to ISO 10360-2 (2001);

**Technical Note:** The MPEE of the most accurate configuration of the CMM specified by the manufacturer (e.g., best of the following: Probe, stylus length, motion parameters, environment) and with “all compensations available” shall be compared to the  $1.7 + L/1,000$   $\mu\text{m}$  threshold.

\* \* \* \* \*

■ 24. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 3 Electronics, ECCN 3A001 is amended by:

■ a. Revising paragraphs b.1.a.4.c, b.8.b, and e.4 the Items paragraph of the List of Items Controlled section; and

■ c. Adding paragraph b.11 in the Items paragraph of the List of Items Control section, to read as follows:

**3A001 Electronic components and specially designed components therefor, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

**Items:**

\* \* \* \* \*

b. \* \* \*

b.1. \* \* \*

b.1.a. \* \* \*

b.1.a.4. \* \* \*

b.1.a.4.c. Being “space-qualified”;

\* \* \* \* \*

b.8. \* \* \*

b.8.b. An average output power to mass ratio exceeding 80 W/kg; and

\* \* \* \* \*

b.11. “Frequency synthesizer” “electronic assemblies” having a “frequency switching time” from one selected frequency to another as specified by any of the following:

b.11.a. Less than 312 ps;

b.11.b. Less than 100  $\mu\text{s}$  for any frequency change exceeding 1.6 GHz within the synthesized frequency range exceeding 3.2 GHz but not exceeding 10.6 GHz;

b.11.c. Less than 250  $\mu\text{s}$  for any frequency change exceeding 550 MHz within the synthesized frequency range exceeding 10.6 GHz but not exceeding 31.8 GHz;

b.11.d. Less than 500  $\mu\text{s}$  for any frequency change exceeding 550 MHz within the synthesized frequency range exceeding 31.8 GHz but not exceeding 43.5 GHz; or

b.11.e. Less than 1 ms within the synthesized frequency range exceeding 43.5 GHz.

**N.B.:** For general purpose “signal analysers,” signal generators, network analysers and microwave test receivers, see 3A002.c, 3A002.d, 3A002.e and 3A002.f, respectively.

\* \* \* \* \*

e. \* \* \*

e.4. Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels, and solar arrays, which are “space-qualified,” having a minimum average efficiency exceeding 20% at an operating temperature of 301 K (28 °C) under simulated ‘AM0’ illumination with an irradiance of 1,367 Watts per square meter ( $\text{W}/\text{m}^2$ );

**Technical Note:** ‘AM0,’ or ‘Air Mass Zero,’ refers to the spectral irradiance of sunlight in the earth’s outer atmosphere when the distance between the earth and sun is one astronomical unit (AU).

\* \* \* \* \*

■ 25. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 3 Electronics, ECCN 3A002 is amended by:

■ a. Revising the License Exception section;

■ b. Removing the phrase “space qualified” and adding in its place “space-qualified” in the Related Controls paragraph, and paragraphs a.3.b, g.1 and g.3 in the Items paragraph of the List of Items Controlled section;

■ c. Removing and reserving paragraph b. in the Items paragraph of the List of Items Controlled section;

■ d. Revising paragraph e. in the Items paragraph of the List of Items Controlled section to read as follows:

**3A002 General purpose electronic equipment and accessories therefor, as follows (see List of Items Controlled).**

\* \* \* \* \*

**License Exceptions**

LVS: \$3000: 3A002.a, .e, .f, .g; \$5000:

3A002.c to .d.

GBS: Yes for 3A002.a.1.

CIV: Yes for 3A002.a.1 (provided all of the

following conditions are met: (1) Bandwidths do not exceed: 4 MHz per track and have up to 28 tracks or 2 MHz per track and have up to 42 tracks; (2) Tape speed does not exceed 6.1 m/s; (3) They are not designed for underwater use; (4) They are not ruggedized for military use; and (5) Recording density does not exceed 653.2 magnetic flux sine waves per mm).

**List of Items Controlled**

\* \* \* \* \*

**Items:**

\* \* \* \* \*

e. Network analyzers having any of the following:

e.1. Maximum operating frequency exceeding 43.5 GHz and output power exceeding 31.62 mW (15 dBm); or

e.2. Maximum operating frequency exceeding 70 GHz;

\* \* \* \* \*

■ 26. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 3 Electronics, ECCN 3B001 is amended by revising paragraphs c. and e. in the Items paragraph of the List of Items Controlled section to read as follows:

**3B001** Equipment for the manufacturing of semiconductor devices or materials, as follows (see List of Items Controlled) and specially designed components and accessories therefor.

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

**Items:**

\* \* \* \* \*

c. Anisotropic plasma dry etching equipment having all of the following:

c.1. Designed or optimized to produce critical dimensions of 65 nm or less; and

c.2. Within-wafer non-uniformity equal to or less than 10%  $3\sigma$  measured with an edge exclusion of 2 mm or less;

\* \* \* \* \*

e. Automatic loading multi-chamber central wafer handling systems having all of the following:

e.1. Interfaces for wafer input and output, to which more than two functionally different ‘semiconductor process tools’ controlled by 3B001.a, 3B001.b, 3B001.c or 3B001.d are designed to be connected; and

e.2. Designed to form an integrated system in a vacuum environment for ‘sequential multiple wafer processing’;

**Note:** 3B001.e does not control automatic robotic wafer handling systems specially designed for parallel wafer processing.

**Technical Notes:** 1. For the purpose of 3B001.e, ‘semiconductor process tools’ refers to modular tools that provide physical processes for semiconductor production that are functionally different, such as deposition, etch, implant or thermal processing.

2. For the purpose of 3B001.e, ‘sequential multiple wafer processing’ means the capability to process each wafer in different ‘semiconductor process tools’, such as by transferring each wafer from one tool to a second tool and on to a third tool with the automatic loading multi-chamber central wafer handling systems.

\* \* \* \* \*

■ 27. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 4—Computers, ECCN 4A001 is amended by:

■ a. Revising the LVS paragraph in the License Exceptions section, as set forth below;

■ b. Revising the Related Controls paragraph in the List of Items Controlled section, as set forth below;

■ c. Removing and reserving paragraph b. in the Items paragraph of the List of Items Controlled section.

**4A001 Electronic computers and related equipment, having any of the following (see List of Items Controlled), and “electronic assemblies” and specially designed components therefor.**

\* \* \* \* \*

**License Exceptions**

LVS: \$5000 for 4A001.a; N/A for MT.

\* \* \* \* \*

List of Items Controlled

Unit: \* \* \*

Related Controls: See also 4A101 and 4A994. See Category 5—Part 2 for electronic computers and related equipment performing or incorporating “information security” functions as the primary function. Equipment designed or rated for transient ionizing radiation is subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls. (See 22 CFR part 121.)

\* \* \* \* \*

■ 28. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 4—Computers, ECCN 4A003 is amended by revising paragraph g. in the Items paragraphs of 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.

List of Items Controlled

\* \* \* \* \*

Items:

\* \* \* \* \*

g. Equipment specially designed for aggregating the performance of “digital computers” by providing external interconnections which allow communications at unidirectional data rates exceeding 2.0 Gbyte/s per link.

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

■ 29. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 4—Computers, Product Group D is amended by revising the Note to read as follows:

\* \* \* \* \*

D. SOFTWARE

Note: The control status of “software” for the “development”, “production”, or “use” of equipment described in other Categories is dealt with in the appropriate Category.

\* \* \* \* \*

■ 30. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 4—Computers, ECCN 4D001 is amended by revising paragraph b.1 in the Items paragraphs of the List of Items Controlled section to read as follows:

4D001 “Software” as follows (see List of Items Controlled).

\* \* \* \* \*

List of Items Controlled

\* \* \* \* \*

Items:

\* \* \* \* \*

b. \* \* \*

b.1. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 0.25 Weighted TeraFLOPS (WT);

\* \* \* \* \* ■ 31. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 4—Computers, ECCN 4D003 is removed.

■ 32. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 4—Computers, ECCN 4D993 is amended by revising the Heading to read as follows:

4D993 “Program” proof and validation “software”, “software” allowing the automatic generation of “source codes”, and operating system “software” that are specially designed for real time processing equipment (see List of Items Controlled).

\* \* \* \* \*

■ 33. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 4—Computers, ECCN 4E001 is amended by revising paragraph b.1. in the Items paragraphs of the List of Items Controlled section to read as follows:

4E001 “Technology” as follows (see List of Items Controlled).

\* \* \* \* \*

List of Items Controlled

\* \* \* \* \*

Items:

\* \* \* \* \*

b. \* \* \*

b.1. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 0.25 Weighted TeraFLOPS (WT);

\* \* \* \* \* ■ 34. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 5 Telecommunications and “Information Security”, Part I Telecommunications, is amended by:

- a. Revising Note 1 at the beginning of Category 5 Part I; and
■ b. Adding a Nota bene (N.B.) after Note 1 at the beginning of Category 5 Part I, to read as follows:

Category 5—Telecommunications and “Information Security”

I. Telecommunications

Notes: 1. The control status of components, test and “production” equipment, and “software” therefor which are specially designed for telecommunications equipment or systems is determined in Category 5, Part 1.

N.B.: For “lasers” specially designed for telecommunications equipment or systems, see ECCN 6A005.

\* \* \* \* \*

■ 35. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 5 Telecommunications and “Information Security”, Part I Telecommunications, ECCN 5A001 is amended by revising the

License Exception section to read as follows:

5A001 Telecommunications systems, equipment, components and accessories, as follows (see List of Items Controlled).

\* \* \* \* \*

License Exceptions

LVS: N/A for 5A001.a, b.5, and e; \$5000 for 5A001b.1, b.2, b.3, b.6, d, f, g, and h; \$3000 for 5A001.c. GBS: Yes, except 5A001.a, b.5, and e. CIV: Yes, except 5A001.a, b.3, b.5, and e.

\* \* \* \* \* ■ 36. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 5 Telecommunications and “Information Security”, Part I Telecommunications, ECCN 5B001 is amended by removing and reserving paragraphs b.1 and b.3 in the Items paragraph of the List of Items Controlled section.

■ 37. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 5 Telecommunications and “Information Security”, Part I Telecommunications, ECCN 5D001 is amended by revising paragraph d. in the Items paragraph of the List of Items Controlled section to read as follows:

5D001 “Software” as follows (see List of Items Controlled).

\* \* \* \* \*

List of Items Controlled

\* \* \* \* \*

Items:

\* \* \* \* \*

d. “Software” specially designed or modified for the “development” of any of the following telecommunication transmission or switching equipment:

- d.1. [Reserved]
d.2. Equipment employing a “laser” and having any of the following:
d.2.a. A transmission wavelength exceeding 1,750 nm; or
d.2.b. Employing analog techniques and having a bandwidth exceeding 2.5 GHz; or

Note: 5D001.d.2.b does not control “software” specially designed or modified for the “development” of commercial TV systems.

- d.3. [Reserved]
d.4. Radio equipment employing Quadrature-Amplitude-Modulation (QAM) techniques above level 256.

■ 38. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 5 Telecommunications and “Information Security”, Part I Telecommunications, ECCN 5E001 is amended by revising paragraphs c.1 and c.3 in the Items paragraph of the List of Items Controlled section to read as follows:

5E001 “Technology” as follows (see List of Items Controlled).

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

c. \* \* \*

c.1. Equipment employing digital techniques designed to operate at a "total digital transfer rate" exceeding 50 Gbit/s;

**Technical Note:** For telecommunication switching equipment the "total digital transfer rate" is the unidirectional speed of a single interface, measured at the highest speed port or line.

\* \* \* \* \*

c.3. Equipment employing "optical switching" and having a switching time less than 1 ms; or

\* \* \* \* \*

- 39. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 6 Sensors, ECCN 6A001 is amended by:
  - a. Revising the LVS paragraph of the License Exceptions section;
  - b. Revising paragraphs a.1.a and a.1.d in the Items paragraph of the List of Items Controlled section; and
  - c. Adding paragraph a.1.e to the Items paragraph of the List of Items Controlled section, to read as follows:

**6A001 Acoustic systems, equipment and components, as follows (see List of Items Controlled).**

\* \* \* \* \*

**License Exceptions**

LVS: \$3000; N/A for 6A001.a.1.b.1 object detection and location systems having a transmitting frequency below 5 kHz or a sound pressure level exceeding 210 dB (reference 1 µPa at 1 m) for equipment with an operating frequency in the band from 30 kHz to 2 kHz inclusive; 6A001.a.1.e, 6A001.a.2.a.1, a.2.a.2, 6A001.a.2.a.3, a.2.a.5, a.2.a.6, 6A001.a.2.b; processing equipment controlled by 6A001.a.2.c, and specially designed for real time application with towed acoustic hydrophone arrays; a.2.e.1, a.2.e.2; and bottom or bay cable systems controlled by 6A001.a.2.f and having processing equipment specially designed for real time application with bottom or bay cable systems; \$5,000; 6A001.c.

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

a. \* \* \*

a.1. \* \* \*

a.1.a. Bathymetric survey systems designed for sea bed topographic mapping and having all of the following:

a.1.a.1. Designed to take measurements at an angle exceeding 20° from the vertical;

a.1.a.2. Designed to measure seabed topography at seabed depths exceeding 600 m; and

a.1.a.3. Designed to provide any of the following:

a.1.a.3.a. Incorporation of multiple beams any of which is less than 1.9°; or

a.1.a.3.b. Data accuracies of better than 0.3% of water depth across the swath averaged over the individual measurements within the swath;

\* \* \* \* \*

a.1.d. Acoustic systems and equipment, designed to determine the position of surface vessels or underwater vehicles and having all of the following, and specially designed components therefor:

a.1.d.1. Detection range exceeding 1,000 m; and

a.1.d.2. Positioning accuracy of less than 10 m rms (root mean square) when measured at a range of 1,000 m;

**Note:** 6A001.a.1.d includes:

a. Equipment using coherent "signal processing" between two or more beacons and the hydrophone unit carried by the surface vessel or underwater vehicle;

b. Equipment capable of automatically correcting speed-of-sound propagation errors for calculation of a point.

a.1.e. Active individual sonars, specially designed or modified to detect, locate and automatically classify swimmers or divers, having all of the following:

a.1.e.1. Detection range exceeding 530 m;

a.1.e.2. Positioning accuracy of less than 15 m rms (root mean square) when measured at a range of 530 m; and

a.1.e.3. Transmitted pulse signal bandwidth exceeding 3 kHz;

N.B.: For diver detection systems specially designed or modified for military use, see the U.S. Munitions List in the International Traffic in Arms Regulations (ITAR) (22 CFR part 121).

**Note:** For 6A001.a.1.e, where multiple detection ranges are specified for various environments, the greatest detection range is used.

\* \* \* \* \*

- 40. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 6 Sensors, ECCN 6A005 is amended by revising paragraph d.1 in the Items paragraph of the List of Items Controlled section, to read as follows:

**6A005 "Lasers" (other than those described in 0B001.g.5 or .h.6), components and optical equipment, as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

d. \* \* \*

d.1. Semiconductor "lasers" as follows:

**Notes:**

1. 6A005.d.1 includes semiconductor "lasers" having optical output connectors (e.g., fiber optic pigtails).

2. The control status of semiconductor "lasers" specially designed for other equipment is determined by the control status of the other equipment.

d.1.a. Individual single-transverse mode semiconductor "lasers" having any of the following:

d.1.a.1. Wavelength equal to or less than 1,510 nm and average or CW output power, exceeding 1.5 W; or

d.1.a.2. Wavelength greater than 1,510 nm and average or CW output power, exceeding 500 mW;

d.1.b. Individual, multiple-transverse mode semiconductor "lasers" having any of the following:

d.1.b.1. Wavelength of less than 1,400 nm and average or CW output power, exceeding 15 W;

d.1.b.2. Wavelength equal to or greater than 1,400 nm and less than 1,900 nm and average or CW output power, exceeding 2.5 W; or

d.1.b.3. Wavelength equal to or greater than 1,900 nm and average or CW output power, exceeding 1 W;

d.1.c. Individual semiconductor "laser" 'bars' having any of the following:

d.1.c.1. Wavelength of less than 1,400 nm and average or CW output power, exceeding 100 W;

d.1.c.2. Wavelength equal to or greater than 1,400 nm and less than 1,900 nm and average or CW output power, exceeding 25 W; or

d.1.c.3. Wavelength equal to or greater than 1,900 nm and average or CW output power, exceeding 10 W;

d.1.d. Semiconductor "laser" 'stacked arrays' (two-dimensional arrays) having any of the following:

d.1.d.1. Wavelength less than 1,400 nm and having any of the following:

d.1.d.1.a. Average or CW total output power less than 3 kW and having average or CW output 'power density' greater than 500 W/cm<sup>2</sup>;

d.1.d.1.b. Average or CW total output power equal to or exceeding 3 kW but less than or equal to 5 kW, and having average or CW output 'power density' greater than 350W/cm<sup>2</sup>;

d.1.d.1.c. Average or CW total output power exceeding 5 kW;

d.1.d.1.d. Peak pulsed 'power density' exceeding 2,500 W/cm<sup>2</sup>; or

d.1.d.1.e. Spatially coherent average or CW total output power, greater than 150 W;

d.1.d.2. Wavelength greater than or equal to 1,400 nm but less than 1,900 nm, and having any of the following:

d.1.d.2.a. Average or CW total output power less than 250 W and average or CW output 'power density' greater than 150 W/cm<sup>2</sup>;

d.1.d.2.b. Average or CW total output power equal to or exceeding 250 W but less than or equal to 500 W, and having average or CW output 'power density' greater than 50W/cm<sup>2</sup>;

d.1.d.2.c. Average or CW total output power exceeding 500 W;

d.1.d.2.d. Peak pulsed 'power density' exceeding 500 W/cm<sup>2</sup>; or

d.1.d.2.e. Spatially coherent average or CW total output power, exceeding 15 W;

d.1.d.3. Wavelength greater than or equal to 1,900 nm and having any of the following:

d.1.d.3.a. Average or CW output 'power density' greater than 50 W/cm<sup>2</sup>;

d.1.d.3.b. Average or CW output power greater than 10 W; or

d.1.d.3.c. Spatially coherent average or CW total output power, exceeding 1.5 W; or

d.1.d.4. At least one "laser" 'bar' specified by 6A005.d.1.c;

**Technical Note:** For the purposes of 6A005.d.1.d, 'power density' means the total "laser" output power divided by the emitter surface area of the 'stacked array'.

d.1.e. Semiconductor "laser" 'stacked arrays', other than those specified by 6.A.5.d.1.d., having all of the following:

- d.1.e.1. Specially designed or modified to be combined with other 'stacked arrays' to form a larger 'stacked array'; and
- d.1.e.2. Integrated connections, common for both electronics and cooling;

**Note 1:** 'Stacked arrays', formed by combining semiconductor "laser" 'stacked arrays' specified by 6A005.d.1.e, that are not designed to be further combined or modified are specified by 6A005.d.1.d.

**Note 2:** 'Stacked arrays', formed by combining semiconductor "laser" 'stacked arrays' specified by 6A005.d.1.e, that are designed to be further combined or modified are specified by 6A005.d.1.e.

**Note 3:** 6A005.d.1.e does not apply to modular assemblies of single 'bars' designed to be fabricated into end-to-end stacked linear arrays.

**Technical Notes:** 1. Semiconductor "lasers" are commonly called "laser" diodes.

2. A 'bar' (also called a semiconductor "laser" 'bar', a "laser" diode 'bar' or diode 'bar') consists of multiple semiconductor "lasers" in a one-dimensional array.

3. A 'stacked array' consists of multiple 'bars' forming a two-dimensional array of semiconductor "lasers".

\* \* \* \* \*

■ 41. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 6 Sensors, ECCN 6A008 is amended by revising the Note at the beginning of the Items paragraph, and adding paragraphs c. through l. in the Items paragraph of the List of Items Controlled section, to read as follows:

**6A008 Radar systems, equipment and assemblies, having any of the following** (see List of Items Controlled), and specially designed components therefor.

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

**Note:** 6A008 does not control:

- Secondary surveillance radar (SSR);
- Civil Automotive Radar;
- Displays or monitors used for air traffic control (ATC);
- Meteorological (weather) radar;
- Precision Approach Radar (PAR) equipment conforming to ICAO standards and employing electronically steerable linear (1-dimensional) arrays or mechanically positioned passive antennae.

\* \* \* \* \*

c. Capable of operating simultaneously on more than two carrier frequencies;

d. Capable of operating in synthetic aperture (SAR), inverse synthetic aperture (ISAR) radar mode, or sidelooking airborne (SLAR) radar mode;

e. Incorporating electronically steerable array antennae;

f. Capable of heightfinding non-cooperative targets;

**Note:** 6A008.f does not control precision approach radar (PAR) equipment conforming to ICAO standards.

g. Specially designed for airborne (balloon or airframe mounted) operation and having Doppler "signal processing" for the detection of moving targets;

h. Employing processing of radar signals and using any of the following:

h.1. "Radar spread spectrum" techniques;

or

h.2. "Radar frequency agility" techniques;

i. Providing ground-based operation with a maximum "instrumented range" exceeding 185 km;

**Note:** 6A008.i does not control:

a. Fishing ground surveillance radar;

b. Ground radar equipment specially designed for en route air traffic control, and having all of the following:

1. A maximum "instrumented range" of 500 km or less;

2. Configured so that radar target data can be transmitted only one way from the radar site to one or more civil ATC centers;

3. Contains no provisions for remote control of the radar scan rate from the en route ATC center; and

4. Permanently installed;

c. Weather balloon tracking radars.

j. Being "laser" radar or Light Detection and Ranging (LIDAR) equipment and having any of the following:

j.1. "Space-qualified";

j.2. Employing coherent heterodyne or homodyne detection techniques and having an angular resolution of less (better) than 20  $\mu$ rad (microradians); or

j.3. Designed for carrying out airborne bathymetric littoral surveys to International Hydrographic Organization (IHO) Order 1a Standard (5th Edition February 2008) for Hydrographic Surveys or better, and using one or more lasers with a wavelength exceeding 400 nm but not exceeding 600 nm;

**Note 1:** LIDAR equipment specially designed for surveying is only specified by 6A008.j.3.

**Note 2:** 6A008.j does not apply to LIDAR equipment specially designed for meteorological observation.

**Note 3:** Parameters in the IHO Order 1a Standard 5th Edition February 2008 are summarized as follows:

Horizontal Accuracy (95% Confidence Level) = 5 m + 5% of depth.

Depth Accuracy for Reduced Depths (95% Confidence Level) =  $\pm\sqrt{a^2+(b*d)^2}$  where:

a = 0.5 m = constant depth error, i.e. the sum of all constant depth errors

b = 0.013 = factor of depth dependant error

b\*d = depth dependant error, i.e. the sum of all depth dependant errors

d = depth

Feature Detection = Cubic features > 2 m in depths up to 40 m; 10% of depth beyond 40 m.

k. Having "signal processing" sub-systems using "pulse compression" and having any of the following:

k.1. A "pulse compression" ratio exceeding 150; or

k.2. A pulse width of less than 200 ns; or

l. Having data processing sub-systems and having any of the following:

l.1. "Automatic target tracking" providing, at any antenna rotation, the predicted target position beyond the time of the next antenna beam passage;

**Note:** 6A008.l.1 does not control conflict alert capability in ATC systems, or marine or harbor radar.

l.2. Calculation of target velocity from primary radar having non-periodic (variable) scanning rates;

l.3. Processing for automatic pattern recognition (feature extraction) and comparison with target characteristic data bases (waveforms or imagery) to identify or classify targets; or

l.4. Superposition and correlation, or fusion, of target data in real time from two or more "geographically dispersed" radar sensors to improve the aggregate performance beyond that of any single sensor.

**Note:** 6A008.l.4 does not control systems, equipment and assemblies designed for marine traffic control.

■ 42. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 6 Sensors, ECCN 6C004 is amended by revising paragraph b. and the introductory text to paragraph e. in the Items paragraph of the List of Items Controlled section, to read as follows:

**6C004 Optical materials as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

b. Boules of any of the following electro-optic materials:

b.1. Potassium titanyl arsenate (KTA) (CAS 59400-80-5);

b.2. Silver gallium selenide (AgGaSe<sub>2</sub>) (CAS 12002-67-4); or

b.3. Thallium arsenic selenide (Tl<sub>3</sub>AsSe<sub>3</sub>, also known as TAS) (CAS 16142-89-5);

\* \* \* \* \*

e. Glass, including fused silica, phosphate glass, fluorophosphate glass, zirconium fluoride (ZrF<sub>4</sub>) (CAS 7783-64-4) and hafnium fluoride (HfF<sub>4</sub>) (CAS 13709-52-9) and having all of the following:

\* \* \* \* \*

■ 43. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 6 Sensors, ECCN 6D003 is amended by adding paragraph a.5 and revising paragraph h.1 in the Items paragraph of the List of Items Controlled section, to read as follows:

**6D003 Other "software" as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

Items:

**ACOUSTICS**

- a. \* \* \*
  - a.5. “Software” or “source code”, specially designed for all of the following:
    - a.5.a. “Real time processing” of acoustic data from sonar systems controlled by 6A001.a.1.e; and
    - a.5.b. Automatically detecting, classifying and determining the location of divers or swimmers;
- N.B.: For diver detection “software” or “source code”, specially designed or modified for military use, see the U.S. Munitions List of the International Traffic in Arms Regulations (ITAR) (22 CFR part 121).
- \* \* \* \* \*

**RADAR**

- h. \* \* \*
  - h.1. Air Traffic Control (ATC) “software” application “programs” hosted on general purpose computers located at Air Traffic Control centers and capable of accepting radar target data from more than four primary radars;
- \* \* \* \* \*

■ 44. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 7 Navigation and Avionics, ECCN 7A005 is amended by revising the Heading and adding License Requirements and List of Items Controlled sections, to read as follows:

**7A005 Global Navigation Satellite Systems (GNSS) receiving equipment having any of the following and specially designed components therefor.**

**License Requirements**

These items are subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls. See 22 CFR part 121.

**List of Items Controlled**

Unit: N/A  
 Related Controls: See also 7A105 and 7A994. For equipment specially designed for military use, see Categories XI and XV of the U.S. Munitions List (22 CFR 121).  
 Related Definitions: N/A  
 Items:  
 a. Employing a decryption algorithm specially designed or modified for government use to access the ranging code for position and time; or  
 b. Employing ‘adaptive antenna systems’.

**Note:** 7A005.b does not apply to GNSS receiving equipment that only uses components designed to filter, switch, or combine signals from multiple omnidirectional antennae that do not implement adaptive antenna techniques.

**Technical Note:** For the purposes of 7A005.b ‘adaptive antenna systems’ dynamically generate one or more spatial nulls in an antenna array pattern by signal processing in the time domain or frequency domain.

■ 45. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 7

Navigation and Avionics, ECCN 7B001 is amended by revising paragraph (2) in the Related Definitions paragraph of the List of Items Controlled section to read as follows:

**7B001 Test, calibration or alignment equipment, specially designed for equipment controlled by 7A (except 7A994).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

Related Definition: \* \* \*  
 (2) ‘Maintenance Level II’: The defective LRU is sent to the maintenance workshop (the manufacturer’s or that of the operator responsible for level II maintenance). At the maintenance workshop, the malfunctioning LRU is tested by various appropriate means to verify and localize the defective Shop Replaceable Assembly (SRA) module responsible for the failure. This SRA is removed and replaced by an operative spare. The defective SRA (or possibly the complete LRU) is then shipped to the manufacturer. ‘Maintenance Level II’ does not include the disassembly or repair of controlled accelerometers or gyro sensors.

\* \* \* \* \*

■ 46. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 7 Navigation and Avionics, ECCN 7D003 is amended by revising paragraph b.2 in the Items paragraph of the List of Items Controlled to read as follows:

**7D003 Other “software” as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

Items:  
 \* \* \* \* \*

b. \* \* \*  
 b.2. Global Navigation Satellite Systems (GNSS) reference data; or

\* \* \* \* \*

■ 47. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 7 Navigation and Avionics, ECCN 7E004 is amended by revising paragraph b.6 in the Items paragraph of the List of Items Controlled to read as follows:

**7E004 Other “technology” as follows (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

Items:  
 \* \* \* \* \*

b. \* \* \*  
 b.6. Full authority digital flight control or multisensor mission management systems, employing “expert systems”;  
 N.B.: For “technology” for “Full Authority Digital Engine Control Systems” (“FADEC Systems”), see ECCN 9E003.h.

\* \* \* \* \*

■ 48. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 9, Aerospace and Propulsion, ECCN 9A001 is amended by revising the Heading and introductory text of paragraph a. in the Items paragraph of the List of Items Controlled section to read as follows:

**9A001 Aero gas turbine engines having any of the following (see List of Items Controlled).**

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

Items:  
 a. Incorporating any of the technologies controlled by .a or .h; or

\* \* \* \* \*

■ 49. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 9, Aerospace and Propulsion, ECCN 9A003 is amended by revising the Heading to read as follows:

**9A003 Specially designed assemblies and components, incorporating any of the “technologies” controlled by 9E003.a or 9E003.h, for gas turbine engine propulsion systems having any of the following (see List of Items Controlled).**

\* \* \* \* \*

■ 50. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 9, Aerospace and Propulsion, ECCN 9B002 is amended by revising the Heading to read as follows:

**9B002 On-line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, specially designed for the “development” of gas turbine engines, assemblies or components incorporating “technologies” controlled by 9E003.a or 9E003.h.**

\* \* \* \* \*

■ 51. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 9, Aerospace and Propulsion, ECCN 9D003 is amended by revising the Heading, the License Requirements section and paragraph b. in the Items paragraph of the License Requirements section to read as follows:

**9D003 “Software” specially designed or modified for the “use” of “Full Authority Digital Electronic Engine Control Systems” (“FADEC Systems”) for propulsion systems controlled by 9A (except 9A018, 9A990 or 9A991) or equipment controlled by 9B (except 9B990 or 9B991), as follows (see List of Items Controlled).**

**License Requirements**

Reason for Control: NS, MT, AT

Control(s)	Country chart
NS applies to “software” NS Column 1 for “use” of “FADEC systems” for equipment controlled by 9A001 to 9A003.	AT applies to entire entry AT Column 1.
MT applies to “software” MT Column 1 required for the “use” of “FADEC systems” for gas turbine engines controlled by 9A101, or 9A106.	
* * * * *	

**List of Items Controlled**

\* \* \* \* \*

*Items:*

\* \* \* \* \*

b. Fault-tolerant “software” used in “FADEC systems” for propulsion systems and associated test facilities.

■ 52. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 9, Aerospace and Propulsion, ECCN 9E003 is amended by:

- a. Revising the SI paragraph in the License Requirements section;
- b. Removing and reserving paragraph a.9, and adding a note after the reserved a.9 in the Items paragraph of the List of Items Controlled section; and
- c. Redesignating paragraph h. as i. and adding a new paragraph h. in the Items paragraph of the List of Items Controlled; and
- d. Revising newly redesignated paragraph i. in the Items paragraph of the List of Items Controlled section to read as follows:

**9E003 Other “technology” as follows (see List of Items Controlled).**

\* \* \* \* \*

SI applies to 9E003.a.1 through a.8, a.10, .h and .i. See § 742.14 of the EAR for additional information.

\* \* \* \* \*

**List of Items Controlled**

\* \* \* \* \*

*Items:*

a. \* \* \*

a.9. [Reserved]

N.B.: For “FADEC systems”, see 9E003.h.

\* \* \* \* \*

h. “Technology” for gas turbine engine “FADEC systems” as follows:

h.1. “Development” “technology” for deriving the functional requirements for the components necessary for the “FADEC system” to regulate engine thrust or shaft power (e.g., feedback sensor time constants and accuracies, fuel valve slew rate);

h.2. “Development” or “production” “technology” for control and diagnostic components unique to the “FADEC system” and used to regulate engine thrust or shaft power;

h.3. “Development” “technology” for the control law algorithms, including “source code”, unique to the “FADEC system” and used to regulate engine thrust or shaft power.

**Note:** 9E003.h does not apply to technical data related to engine-aircraft integration required by the civil aviation certification authorities to be published for general airline use (e.g., installation manuals, operating instructions, instructions for continued airworthiness) or interface functions (e.g., input/output processing, airframe thrust or shaft power demand).

i. “Technology” not otherwise controlled in 9E003.a.1 through a.8, a.10, and .h and used in the “development”, “production”, or overhaul of hot section parts and components of civil derivatives of military engines controlled on the U.S. Munitions List.

Dated: August 26, 2010.

**Kevin J. Wolf,**

*Assistant Secretary for Export Administration.*

[FR Doc. 2010-21688 Filed 9-3-10; 8:45 am]

**BILLING CODE 3510-33-P**

**SOCIAL SECURITY ADMINISTRATION****20 CFR Part 416**

[Docket No. SSA-2009-0017]

RIN 0960-AD78

**Improvements to the Supplemental Security Income Program—Heroes Earnings Assistance and Relief Tax Act of 2008 (HEART Act)**

**AGENCY:** Social Security Administration.

**ACTION:** Final rule.

**SUMMARY:** We are revising our regulations to incorporate improvements to the Supplemental Security Income (SSI) program made by the HEART Act. The HEART Act changes the way we treat certain cash payments to members of the uniformed services and veterans and the way we treat cash and in-kind payments to AmeriCorps volunteers. In addition, we are making a technical change to our rules to reflect the correct section of the Internal Revenue Code.

**DATES:** These final rules are effective September 7, 2010.

**FOR FURTHER INFORMATION CONTACT:** Eric Skidmore, Office of Income Security Programs, Social Security Administration, 6401 Security Boulevard, Baltimore, MD 21235-6401, (410) 597-1833. For information on eligibility or filing for benefits, call our national toll-free number, 1-800-772-1213 or TTY 1-800-325-0778, or visit our Internet site, Social Security Online, at <http://www.socialsecurity.gov>.

**SUPPLEMENTARY INFORMATION:**

**Electronic Version**

The electronic file of this document is available on the date of publication in the **Federal Register** at <http://www.gpoaccess.gov/fr/index.html>.

**Background**

We are revising our regulations to incorporate changes to the SSI program made by sections 201–203 of the HEART Act, Public Law 110-245. The HEART Act amended the SSI program with respect to SSI benefits payable on or after September 1, 2008 by:

- Treating certain cash payments to members of the uniformed services as earned income, generally providing a higher SSI benefit (section 201(a) of the HEART Act);

- Excluding from countable income and resources certain annuity payments paid by a State (section 202 of the HEART Act); and,

- Excluding any cash or in-kind benefit provided by AmeriCorps State and National and AmeriCorps National Civilian Community Corps (NCCC) from countable income for SSI eligibility and benefit determinations (section 203 of the HEART Act).

The primary goal of the SSI program is to ensure a minimum level of income to persons who are aged 65 or older, blind, or disabled and who have limited income and resources. The law provides that SSI payments can be made only to persons who have income and resources below specified amounts. Therefore, income and resources are major factors in deciding SSI eligibility and the amount of any SSI payments.

The HEART Act changes the way we apply our earned income, unearned income, and resource exclusion rules to uniformed services personnel, veterans and their spouses, and AmeriCorps participants. Under the HEART Act, some payments that we previously counted as unearned income now count as earned income, and some payments are excluded altogether for purposes of SSI eligibility and benefit determinations. Since the changes made by the HEART Act were effective with respect to SSI benefits payable beginning on or after September 1, 2008, we have already updated our operational instructions. We also need to update our rules in order to reflect these statutory changes.

**Explanation of Changes**

We are amending sections 416.1110, 416.1112, 416.1124, 416.1130(b), and 416.1210 of our rules to reflect the changes mandated by sections 201, 202, and 203 of the HEART Act. In addition, we are making a technical change to