



DEPARTMENT OF COMMERCE

Bureau of Industry and Security

15 CFR Parts 730, 734, 738, 740, 742, 743, 748, 770, 772, and 774

[160217120-6120-01]

RIN 0694-AG85

Wassenaar Arrangement 2015 Plenary Agreements Implementation, Removal of Foreign National Review Requirements, and Information Security Updates

AGENCY: Bureau of Industry and Security, Commerce.

ACTION: Final rule.

SUMMARY: The Bureau of Industry and Security (BIS) maintains, as part of its Export Administration Regulations (EAR), the Commerce Control List (CCL), which identifies certain items subject to Department of Commerce jurisdiction. This final rule revises the CCL, as well as corresponding parts of the EAR, to implement changes made to the Wassenaar Arrangement's List of Dual-Use Goods and Technologies (WA 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 2015 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. This rule harmonizes the CCL with the changes made to the WA List at the Plenary by revising Export Control Classification Numbers (ECCNs) controlled for national security reasons in each category of the CCL, as well as making other associated changes to the EAR.

The changes to the WA List include raising the Adjusted Peak Performance (APP) for high performance computers. The President's report for High Performance Computers was sent to Congress on June 1, 2016, to set forth the new APP in accordance with the National Defense Authorization Act (NDAA) for FY1998.

This rule also makes changes to the EAR that were not agreed to at the WA Plenary. APP parameters are amended in several places in the EAR by this rule, such as APP parameters in the *de minimis* rules, License Exception APP, and related reporting requirements. BIS is also updating license requirements and policies associated with Category 5 - Part 2, including revising Export Control Classification Numbers 5A992, 5D992 and 5E992. In addition, this rule removes the Foreign National Review requirement associated with deemed exports under License Exceptions APP and CIV.

DATES: This rule is effective: [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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SUPPLEMENTARY INFORMATION: The Supplementary Information is separated into four parts:

Part I – Wassenaar Arrangement Agreement Implementation;

Part II – Information Security Update and Simplification;

Part III – High Performance Computer Adjusted Peak Performance (APP) changes; and

Part IV - Removal of the Foreign National Review (FNR) procedure.

Please note that a particular part of the EAR may be affected by more than one of these Parts and the supplementary information in that Part of the summary will only pertain to the revisions related to that Part.

Part I – Wassenaar Arrangement Agreement Implementation

Background

The Wassenaar Arrangement (Wassenaar or WA) on Export Controls for Conventional Arms and Dual-Use Goods and Technologies is a group of 41 like-minded states committed to promoting responsibility and transparency in the global arms trade, and preventing destabilizing accumulations of arms. As a Participating State, the United States has committed to controlling for export all items on the WA control lists. The lists were first established in 1996 and have been revised annually thereafter. Proposals for changes to the WA control lists that achieve consensus are approved by Participating States at annual Plenary meetings. Participating States are charged with implementing the agreed list changes as soon as possible after approval. The United States' implementation of WA list changes ensures U.S. companies have a level playing field with their competitors in other WA Participating States.

Unless otherwise indicated, the changes to the EAR described below are made in order to implement changes to the WA control lists approved at the December 2015 Plenary meeting.

Revisions to the Commerce Control List related to WA agreements

Revises (58) ECCNs: 0A617, 1A001, 1A002, 1A004, 1A613, 1C001, 1C002, 1C006, 1C008, 1C009, 1C608, 1E001, 1E002, 2B001, 2B006, 3A001, 3A002, 3A101, 3A292, 3B001, 3D001, 3E002, 4A001, 4A003, 4D001, 4E001, 5A001, 5B001, 5D001, 5E001, 5A002, 5B002, 5D002, 5E002, 6A001, 6A002, 6A003, 6A004, 6A005, 6A007, 6A008, 6B004, 6B007, 6C005, 6E003, 7A003, 7A004, 7A008, 7B001, 7B002, 7E004, 8A001, 8A002, 9A001, 9A004, 9A012, 9B001, and 9E003.

Adds (2) ECCNs: 5A003 and 5A004.

License Exception eligibility additions: 3A002.h (LVS \$5,000, GBS, CIV), 5A003 (GOV), 5E002 (TMP)

License Exception eligibility removals: 3B001.c (CIV), 4A003.e (GBS, APP, CIV), 5A004 (formerly 5A002.a.2) (GOV), 8A002.e.2 (GBS, CIV).

Category 0 Nuclear Materials, Facilities, and Equipment [And Miscellaneous Items]

0A617 Miscellaneous “equipment,” materials, and related commodities

ECCN 0A617 is amended by adding double quotes around the term “laser” in paragraph (8) of the Related Controls paragraph in the List of Items Controlled section to clarify the entry and to indicate this is a term defined in Part 772 of the EAR.

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

1A001 “Parts” and “components” made from fluorinated compounds

ECCN 1A001 is amended by removing and reserving paragraph .b and removing paragraph .c from the Items paragraph of the List of Items Controlled section. Paragraph .b controlled piezoelectric polymers and copolymers, made from vinylidene fluoride (CAS 75 38 7) materials and paragraph .c controlled seals, gaskets, valve seats, etc. made from fluoroelastomers and specially designed for “aircraft,” aerospace or missile use. These types of polymers/copolymers and seals/gaskets were controlled because it was thought that their fluorine content gave them

high temperature and chemical resistance. After much testing, this has proven not to be the case, and therefore the need to control them as a strategic good no longer exists.

1A002 “Composite” structures or laminates

ECCN 1A002 is amended by adding double quotes around the term “composite” in the introductory text of Note 1 following paragraph .b.2 in the Items paragraph of the List of Items Controlled section, to indicate this is a term defined in Part 772 of the EAR.

1A004 Protective and detection equipment and “components”

ECCN 1A004 is amended by revising Items paragraphs .a.1, .b.1, and .c.1 by removing the phrase “adapted for use in war” and adding single quotes around the remaining phrase, ‘biological agents’, because the former articulation did not describe the scope of control accurately. This rule narrows the scope of control by adding Technical Note 3, which defines biological agents. Now, only biological agents and equipment that are specially designed or modified to provide protection from or detect biological agents as defined in the technical note are controlled, instead of all biological agents, protection, and detection equipment that are adapted for use in war.

1A613 Armored and protective “equipment” and related commodities

ECCN 1A613 is amended by revising Items paragraph .c by adding “specially designed,” which narrows the scope, but also adding to the list of control “liners, or comfort pads therefor.” This revision stems from the WA agreement for Wassenaar Arrangement Munitions List (WAML) item 13.c, which deleted the vague term “components,” and moved the items listed in the *id est* (i.e.) that included “helmet shell, liner and comfort pads” into the main body of the

sentence. WA also agreed to add a Nota Bene, which this rule adds after Item paragraph .y.1, to alert people to the fact that other components and accessories for helmets may be controlled under other ECCNs on the CCL or on the USML. The term “specially designed” was already in the text of ML 13.c and for consistency is added to 1A613.c.

1C001 Materials “specially designed” for use as absorbers of electromagnetic waves, or intrinsically conductive polymers

ECCN 1C001 is amended by adding double quotes around the term “laser” in two places within the Note to 1C001.b to indicate this is a term defined in Part 772 of the EAR.

1C002 Metal alloys, metal alloy powder and alloyed materials

ECCN 1C002 is amended by revising the Note at the top of the Items paragraph by adding the words “specially formulated” and replacing the word “substrates” with “purposes.” This revision clarifies what is described in the Note as not being controlled in ECCN 1C002, which enhances the effective control of the items that remain in this ECCN.

1C006 Fluids and lubricating materials

ECCN 1C006 is amended by removing and reserving Items paragraph .a, because the hydraulic fluids specified in 1C006.a are either not in use any longer or are being phased out because most hydraulic fluids in use today are commercially available synthetic oil.

1C008 Non-fluorinated polymeric substances

ECCN 1C008 is amended by revising Technical Note 1 at the end of the Items paragraph to add 1C008.f (Polybiphenylenethersulphone) materials to the list of materials to which ‘glass transition temperature (Tg)’ applies in order to clarify the method of determining ‘Tg’ for materials specified by 1C008.f.

1C009 Unprocessed fluorinated compounds

ECCN 1C009 is amended by removing and reserving paragraph .a (copolymers of vinylidene fluoride...), which no longer represents militarily critical materials.

1C608 Energetic materials and related commodities

ECCN 1C608 is amended by replacing the double quotes with single quotes around the term ‘controlled materials’ in the Related Definitions paragraph because the term is not defined in Section 772.1 of the EAR or on the WA List but the definition is included in the Related Definitions paragraph. The WA definition for ‘propellant’ is added to the Related Definitions paragraph, so that the definition will be applied as applicable to items controlled under 1C608. Single quotes are added around the term ‘controlled materials’ in Items paragraphs .c through .h, .j, and .k to indicate the local definition in the Related Definitions paragraph. Single quotes are also added around the terms ‘single base,’ ‘double base,’ ‘triple base,’ ‘sheetstock,’ and ‘carpet rolls,’ because these terms are defined in the Technical Notes following Items paragraph .a.2. The Note below Items paragraph .a.2 to Technical Notes is revised, because definitions of terms belong in Technical Notes, while Notes are reserved for clarifying the scope of controls in the Items paragraph. Single quotes are added around the term ‘propellant’ in Items paragraphs .a and .n, as well as in the Note and Technical Notes below Items paragraph .a.2. Double quotes

are added around the term “pyrotechnic” in Items paragraphs .j and .n to indicate a definition in Part 772 and for consistency with the WA. Single quotes are added around the term ‘mixture’ to indicate the addition of a Technical Note at the end of the Items paragraph that defines the term. CAS numbers are added to Note 1 and 2 for consistency with the WA List.

1E001 “Technology”

ECCN 1E001 is amended by removing reference to “1A001.b and 1A001.c” in the Heading and in the first NS paragraph in the table of the License Requirements section because this rule removes and reserves these paragraphs.

1E002 Other “technology”

ECCN 1E002 is amended by adding double quotes around the term “aircraft” in the Note to 1E002.f to indicate this is a term defined in Part 772 of the EAR.

ANNEX to Category 1 - List of Explosives

The Annex to Category 1 is amended by replacing the period with a semicolon in entry 48, because a new entry 49 is added. Entry 49 is added to list “BTNEN (Bis(2,2,2-trinitroethyl)-nitramine) (CAS 19836-28-3).”

Category 2 - Materials Processing

2B001 Machine tools and any combination thereof

ECCN 2B001 is amended by revising Items paragraphs .a, .b.1 and .b.2.a. The parameters for machine tools for turning and milling are revised to better align with the Unidirectional

Positioning Repeatability (UPR) parameter that was implemented by WA in 2015. Because UPR value is generally proportional to the travel length of axis, WA agreed to set different control values depending on the travel length of machine tools. In addition, Note 2 is added to clarify that 2B001.a does not apply to certain bar machines (Swissturn), because bar machines (Swissturn) are one of the typical examples of machine tools that are classified as controlled items even when their positioning control performances are not as precise as the other types of controlled machine tools.

2B006 Dimensional inspection or measuring systems, equipment, and “electronic assemblies”

ECCN 2B006 is amended by revising the NP Column 1 paragraph in the License Requirements table because the revision to Items paragraph .b made by this rule will make the parameters inconsistent with the Nuclear Suppliers Group list. This rule revises Items paragraph b.1.c in the List of Items Controlled section to adjust the performance threshold to be consistent with the current lithography tool specification 3B001.f.1. Also, this rule revises the Note following the introductory Items paragraph b.1 to point out that the controls for optical-encoders are found in 2B006.b.1.c. Double quotes are added around the term “laser” in the Note to Items paragraph .b.2 to indicate this is a term defined in Part 772 of the EAR.

Category 3 – Electronics

3A001 Electronic items

ECCN 3A001 is amended by revising the Heading to better articulate the scope of control in this ECCN. This rule revises Items paragraph .a.5.a.2 by increasing the output rate parameter to

500 million words per second for 10 bits or more but less than 12 bits, based on the advances in the technology since the last threshold adjustment. For Items paragraphs .a.5.a.3 through .a.5.a.5, the resolution breakout is changed from a resolution of “12 bit” to “12 bit or more, but less than 14 bit,” “more than 12 bit but equal to or less than 14 bit” is changed to “14 bit or more, but less than 16 bit,” and “resolution of more than 14 bit” is changed to “resolution of 16 bit or more.” The output rates are also changed for .a.5.a.4 to “14 bit or more, but less than 16 bit” from 125 to 250 million words per second and for .a.5.a.5 “16 bit or more” from 20 to 65 million words per second.

The introductory text to 3A001.b is amended by replacing the word “components” with “items” to better describe the scope of this paragraph. The energy density is revised from “300 Wh/kg” to “350 Wh/kg” for Items paragraph 3A001.e.1.b “secondary cells.”

Double quotes are added to the term “accuracy” in Items paragraph 3A001.f to indicate this term is defined in Part 772 of the EAR, and the “±” before “1.0 second of arc” is deleted, because the “±” symbol made the parameter unclear.

3A002 General purpose “electronic assemblies,” modules and equipment

ECCN 3A002 is amended by revising the Heading to better reflect the scope of the entry. The License Requirements section is amended by adding Missile Technology (MT) controls, because the MT control for 4A003.e “Equipment performing analog-to-digital conversions exceeding the limits in 3A001.a.5,” is moved to 3A002.h. The National Security (NS) and Anti-terrorism (AT) controls that apply to 4A003.e are already present in 3A002, as NS and AT apply to the entire entry of 3A002. The eligibility paragraphs for License Exceptions LVS (\$5,000), GBS and CIV are amended by adding 3A002.h (unless controlled for MT), in order to maintain

the license exception eligibility this equipment had under 4A003.e. ECCN 3A101 is added to the Related Controls paragraph in the List of Items Controlled section to reference the overlapping MT control of 3A002.h. Items paragraph a.5 “waveform digitizers and transient recorders” is removed and reserved, because the items are now controlled under the newly added Items paragraph 3A002.h. The Nota Bene under a.5 is revised to point to the new location of the control.

Items paragraph 3A002.a.6 “digital instrumentation data recorders ...” is amended by revising the description of the scope to read “digital data recorders.” “Using magnetic disk storage techniques” is deleted because it is replaced by disk or solid-state drive memory as modern digital data recorders can use either or both memory storage technologies. The sample data rate parameter is deleted and continuous throughput is increased to avoid capturing predominantly commercial items. The phrase “sustained continuous throughput” is added to clearly distinguish from “peak data recording rate.” Technical Notes for continuous throughput rate (previously included under 3A002.a.5) are added with the deletion of the term “mass” in Technical Note 3. These parameters more clearly delineate those products that are of military concern.

Lastly, Items paragraph 3A002.h “Electronic assemblies, modules or equipment that perform analog-to-digital conversions,” along with specific parameters, is added to the List of Items Controlled section in order to consolidate where this equipment is controlled and distinguish it from the 3A002.a.6 “digital instrumentation data recorder systems” controls.

3A101 Electronic equipment, devices, “parts,” and “components,” other than those controlled by 3A001

ECCN 3A101 is amended by replacing the reference to 4A003.e with 3A002.h, as well as updating the description of equipment in the Related Controls paragraph in the List of Items Controlled section.

3A292 Oscilloscopes and transient recorders

ECCN 3A292 is amended by replacing the reference to 3A002.a.5 with 3A002.h in the Heading, because of the new location of these controls.

3B001 Equipment for the manufacturing of semiconductor devices or materials

ECCN 3B001 is amended by revising the CIV paragraph in the List Based License Exceptions section to remove paragraph .c “anisotropic plasma dry etching equipment” because WA has agreed to remove and reserve this paragraph as a result of a foreign availability determination.

Items paragraph .e.1 “interfaces for wafer input and output” in the List of Items Controlled section is revised by removing the reference to 3B001.c, which is removed by this rule, and by adding references to 3B001.a.2 and a.3 to add specificity.

Technical Note 1 is revised by removing the word “etch,” after Items paragraph .e.2, because etch equipment is deleted from 3B001.c.

Items paragraph .f.2 is corrected by adding a Note because the Note was inadvertently removed by last year’s WA implementation rule.

Items paragraph .f.3, “lithography equipment ... specially designed for mask making,” is revised and Items paragraph .f.4, “Equipment designed for device processing using direct writing methods,” is added in the List of Items Controlled section to align the feature size metric for all lithography systems.

3D001 Software

ECCN 3D001 is amended by replacing the reference to 3A002.g with 3A002.h because 3D001 is supposed to control software specially designed for the development or production of equipment controlled by 3A001.b to new 3A002.h. The same revision is made to the National Security (NS) control paragraph in the License Requirements table of 3D001. The eligibility paragraph of License Exception CIV is replaced with N/A (Not Applicable), because 3B001.c, which was the only paragraph in the eligibility paragraph, is no longer controlled.

3E002 “Technology” ... other than that controlled in 3E001 for the “development” or “production” of a “microprocessor microcircuit,” “micro-computer microcircuit” and microcontroller microcircuit core ...

ECCN 3E002 is amended by revising the CIV paragraph in the License Exception section to remove the Foreign National Review (FNR) Requirement. This removal is necessary to conform the entry with the removal of the FNR procedure from the EAR as part of this rule.

The Technical Note in Items paragraph .a that revises ‘vector processor unit’ by adding the phrase “and vector registers of at least 32 elements each” to separate short-vectors from traditional supercomputer vectors.

Items paragraph .c is amended by changing the phrase “four 16-bit fixed-point multiply-accumulate results per cycle” to “eight 16-bit fixed-point multiply-accumulate results per cycle” because updating the control threshold for Digital Signal Processors (DSPs) is consistent with advancements in digital signal processing technology.

Prior to the publication of this rule, in the Note to paragraph 3E002.c, the multimedia

extension exemption only applied to digital signal processors even though it is also used in other processor types, such as in x86 processors. Therefore, in this rule, the exemption note is extended to apply to all entries under 3E002; specifically, the reference to 3E002.c is revised to read 3E002. In addition, this Note is enumerated as Note 1 and the existing Notes 1 and 2 are redesignated as Notes 2 and 3.

Category 4 – Computers

Note 3 to Category 4, which is a reminder that computers and related equipment that perform functions specified in Category 5 - Part 2 should be reviewed against Category 5 - Part 2, is removed. This reminder appeared in several places throughout the Commerce Control List and is now a new note with the General Technology and Software Notes in Supplement No. 2 to part 774.

4A001 Electronic computers and related equipment

ECCN 4A001 is amended by revising the Related Controls paragraph in the List of Items Controlled section to remove the reminder to consider Category 5 - Part 2 if the equipment performs or incorporates “information security” functions as primary functions. WA decided to streamline the list by removing the many occurrences of this note and having it appear only with the General Technology and Software Notes, which in the EAR are located in Supplement No. 2 to part 774.

4A003 “Digital computers,” “electronic assemblies,” and related equipment therefor

ECCN 4A003 is amended by removing and reserving 4A003.e “Equipment performing

analog-to-digital conversions exceeding the limits in 3A001.a.5” and adding a Nota Bene to point to the new location for the control in 3A002.h. The License Requirements section is revised by removing the Missile Technology control, which only applied to 4A003.e. Reference to 4A003.e is removed from the List Based License Exceptions section, specifically GBS, APP and CIV, and from Note 1 to Items paragraph .c. Reserved paragraphs .d through .f are now codified as a range of reserved paragraphs.

The last listed item, “Equipment designed for “signal processing,” in Note 1 (located at the beginning of the Items paragraph in the List of Items Controlled section) is removed as a conforming change tracking the removal of 4A003.e.

The “Adjusted Peak Performance” (“APP”) for “digital computers” is raised from 8.0 to 12.5 Weighted TeraFLOPS (WT) in Items paragraph .b in the List of Items Controlled section. The Congressional notification requirement set forth in subsections 1211(d) and (e) of the National Defense Authorization Act (NDAA) for FY 1998 (Pub. L. 105–85, November 18, 1997, 111 Stat. 1932) provides that the President must submit a report to Congress 60 days before adjusting the composite theoretical performance level above which exports of digital computers to Tier 3 countries require a license. The President sent a report to Congress on June 1, 2016 that establishes and provides justification for the 12.5 WT control level using the APP formula.

4D001 “Software” and 4E001 “technology”

ECCNs 4D001 and 4E001 are amended by removing NP from the Reason for Control paragraph and the sentence related to NP controls directly below the License Requirements table in the License Requirements section, as these references erroneously suggest that digital computer technology or software are controlled by the Nuclear Suppliers Group (NSG) for

nonproliferation reasons and consequently require a license from BIS for Nuclear Proliferation (NP) reasons. Digital computer software and technology controls are not controlled by the NSG.

The TSR paragraph in the List Based License Exceptions section is amended by revising the APP from 2.0 to 12.5 WT because of technological advances and in line with changes made elsewhere in this rule.

The Special Conditions for STA paragraph is amended by revising the APP from 2.0 to 12.5 WT because of technological advances and in line with changes made elsewhere in this rule.

Items paragraph .b.1 in the List of Items Controlled section is amended by revising the APP from 1.0 to 6.0 WT and in line with changes made elsewhere in this rule.

Category 5 - Part 1 – “Telecommunications”

Category 5 - Part 1 is amended by removing Nota Bene 2 (N.B.2) at the beginning of the Category and moving this Note to the General Technology and Software Notes in Supplement No. 2 to part 774.

5A001 Telecommunications systems, equipment, “components” and “accessories”

ECCN 5A001.d “electronically steerable phased array antennas” is amended by dividing the operation frequency control parameter into four ranges and adding two new parameters “effective radiated power (ERP)” and “effective isotropic radiated power (EIRP).” The purpose of the revision is to focus or narrow the scope of control and release from control consumer “WiGig” products for indoor use. These “WiGig” products are used as home entertainment alternatives for HDMI cables. Electronically steerable phased array antennas (ESAs) are used in consumer products operating in the un-licensed “60 GHz” band (57-64 GHz) and operate over

short distances (~10 m) in-room. A typical installation would allow a laptop computer to send multi-media signals across a living room to an HD-TV.

5B001 Telecommunication test, inspection and production equipment, “components” and “accessories”

ECCN 5B001 is amended by removing and reserving Items paragraph .b.2.b “performing optical amplification using Praseodymium Doped Fluoride Fiber Amplifiers (PDFFA)” because PDFFA are not widely used in the communications industry due to low efficiency and compatibility problems with silica optical fiber-based communications systems. This rule also revises Item paragraph .b.4 by raising the level for “radio equipment employing Quadrature-Amplitude-Modulation (QAM) techniques” from 256 to 1,024 on the basis of technological advances in QAM techniques.

5D001 “Software”

ECCN 5D001 is amended by revising Items paragraph .d.4 by raising the level for radio equipment employing Quadrature-Amplitude-Modulation (QAM) techniques” from 256 to 1,024 because of technological advances in QAM techniques.

5E001 “Technology”

ECCN 5E001 is amended by removing Items paragraph .c.2.b “performing optical amplification using Praseodymium Doped Fluoride Fiber Amplifiers (PDFFA)” because PDFFA are not widely used in the communications industry due to low efficiency and compatibility problems with silica optical fiber-based communications systems. The Note to Items paragraph

.c.2.c is amended by removing the phrase “specially designed” because the definition of “specially designed” does not apply to technology and this removal harmonizes the CCL with the WA List. This rule also revises Items paragraph .c.4.a by raising the level for radio equipment employing Quadrature-Amplitude-Modulation (QAM) techniques” from 256 to 1,024 on the basis of technological advances in QAM techniques.

Category 5 - Part 2 – “Information Security”

Category 5 - Part 2 is amended by removing and reserving Note 1 and moving the control status Note to the General Technology and Software Notes in Supplement No. 2 to part 774. BIS is making editorial revisions to the phrase “Category 5, part 2” in Notes 2 and 4 by changing it read “Category 5 - Part 2.” In addition, Note 2 is revised by changing the phrase “encryption products” to read “information security” to make the words consistent with the section heading. The introductory text to Note 3 and the Technical Note to paragraph .b.4 of Note 3 are revised to reference two newly added ECCNs: 5A003 and 5A004. Paragraph 1.b in the Note to the Cryptography Note is amended by adding a sentence to the end to clarify that a simple price enquiry is not considered to be a consultation. An undesignated section title is added under the Product Group A title to read “Cryptographic “information security.””

5A002 “Information security” systems, equipment and “components”

ECCN 5A002 is amended by revising the Heading to remove the word “therefor.” Related Controls paragraph 2 is removed to correspond with the revision of ECCNs 5A992 and 5D992 and a new paragraph 2 is added to alert exporters to a related United States Munitions List (USML) control for 5A002.d and .e, and Note 3 paragraph is revised to harmonize with changes

in this rule. The Items paragraph of 5A002 is restructured, including by moving some of the items to newly added ECCNs. The EI control is moved to the License Requirements Table and is revised to replace the referenced paragraphs “.a.1, .a.2, .a.5, .a.6 and .a.9” with “entire entry.” The Note in the beginning of the Items paragraph is moved to the end of Items paragraph .a and amended to only pertain to Items paragraph .a.

5A002.a is amended by adding the word “cryptographic” before the term “information security” to better describe the scope of Items paragraph .a. The Technical Note to 5A002.a is amended by adding the phrase “In Category 5 - Part 2” to clarify the scope of the Technical Note. Items paragraph .a.2 “designed or modified to perform ‘cryptanalytic functions’” is removed and reserved because this control is now located in 5A004.a. A Nota Bene is added to point to the new location of this control. Reserved Items paragraph .a.3 is removed.

The 5A002 exclusion Note is amended by revising “5A002” to read “5A002.a” in the introductory text. The sentence stating, “However, these items are instead controlled under 5A992.” is removed from the introductory text of the Note. 5A992.a and .b are removed by this rule; therefore, items meeting the exclusion Note are now designated EAR99. The reference to new ECCNs 5A003 and 5A004 is added to paragraph (a)(1)(a) of the Technical Note. Many of the paragraphs in this Note are moved. See below for a guide to the reordering of the paragraphs. Paragraph (b) (former paragraph (d)) of the Technical Note is amended by removing “The term” and clarified by adding “in 5A002 Note b.” Paragraph (g) (former paragraph (j)) introductory text is amended by removing all the references to paragraphs in 5A002. Paragraph (h) (former paragraph (k)), is revised by correcting the format of the reference to Category 5 - Part 2. Paragraph (j)(2)(a) (former paragraph (m)(2)(a)), is amended by replacing the word “to” with “in.”

The following is a guide to the movement of the paragraphs within the exclusion Note:

(b), which was “reserved,” is now former paragraph (d)

(c), which was “reserved,” is former paragraph (e)

(d) is former paragraph (f)

(e) is former paragraph (g)

(f) is former paragraph (i)

(g) is former paragraph (j)

(h) which was “reserved” is former paragraph (k)

(i) is former paragraph (l)

(j) is former paragraph (m)

(k), (l) and (m) are removed.

Items paragraphs of ECCN 5A002.a.4, .a.5, .a.6, .a.8 and .a.9 are moved to the following new locations:

.a.4 – 5A003.b

.a.5 – 5A002.e

.a.6 – 5A002.d

.a.8 – 5A003.a

.a.9 – 5A002.c

Items paragraph .a.7, “Non-cryptographic information and communications technology (ICT) security systems and devices that have been evaluated and certified by a national authority to exceed class EAL-6 (evaluation assurance level) of the Common Criteria (CC) or equivalent,” is removed because it is an obsolete certification.

Items paragraph .b is revised by removing the phrase “systems, equipment and components,” because the Header already states what is included in the scope of the control.

Category 5 – Part 2 is amended by adding an undesignated title “non-cryptographic information security” before newly added ECCN 5A003.

5A003 “Systems,” “equipment,” and “components,” for non-cryptographic “information security,”

ECCN 5A003 is added to control items formerly classified as 5A002.a.8 in 5A003.a and formerly classified as 5A002.a.4 in 5A003.b. The same license requirements and license exceptions that applied to those paragraphs are added to 5A003.

Category 5 - Part 2 is amended by adding an undesignated title “defeating, weakening or bypassing information security” before the newly added ECCN 5A004.

5A004 “Systems,” “equipment,” and “components” for defeating, weakening or bypassing “information security”

ECCN 5A004 is added to control items formerly classified as 5A002.a.2 with no change to the license requirements and license exceptions that formerly applied.

5B002 “Information Security” test, inspection, and “production” equipment

ECCN 5B002 is amended by adding references to ECCNs 5A003 and 5A004 in Items paragraphs .a and .b.

5D002 “Software”

ECCN 5D002 is amended by moving the EI controls from the License Requirements Note to the License Requirement table in the License Requirements section. The Related Controls paragraph 1 is removed to correspond with the removal of paragraphs in ECCN 5A992 and 5D992, and paragraph 2 is revised to harmonize with other changes to encryption in this rule. The Note relating to publicly available encryption software is removed because this rule makes publicly available encryption source code not subject to the EAR after the notification requirement of § 742.15(b) has been fulfilled, as well as the corresponding publicly available encryption object code software. The EI controls are also revised by adding new ECCN 5A004. Items paragraphs .a and .c.1 are amended by adding new ECCNs 5A003 and 5A004.

5E002 “Technology”

ECCN 5E002 is amended by moving EI controls into the License Requirements table in the License Requirements section. Additionally, new ECCN 5A004 is added to the EI controls and to Note 2 in the License Requirements Notes in the License Requirements section. Items paragraph .a in the List of Items Controlled section is revised by adding new ECCNs 5A003 and 5A004.

Other EAR Revisions Corresponding to the Category 5 - Part 2 Restructuring

ECCN 5A004 is added to License Exception GOV in §740.11(a)(2)(iii) and (c)(3)(iii) to maintain the license exception restriction for items that have moved from ECCN 5A002 to ECCN 5A004. Despite the movement of ECCN 5A002 items to ECCN 5A003, ECCN 5A003 is not added because it contains items that are no longer controlled for EI reasons.

The Entity List, Supplement No. 4 to part 744, is amended by replacing the reference “5D002

or 5A002.” with “5A002, 5A004 or 5D002.” in the third column “License Requirement,” in the entry “Corporacion Nacional de Telecomunicaciones (CNT) ...” under Ecuador.

Category 6 - Sensors and Lasers

6A001 Acoustic systems, equipment, and “components”

ECCN 6A001 is amended by replacing “positioning accuracy” with “determined position error” in Items paragraphs .a.1.d.2 and .a.1.e.2 in the List of Items Controlled section because this term better conveys the identified performance parameter of this equipment. Double quotes are added around the term “accuracy” in Items paragraphs .a.2.d.1, .b.1.b, and .b.2 in the List of Items Controlled section to indicate that this is a term defined in Part 772 of the EAR. This rule makes an editorial correction by replacing double quotes that were inadvertently removed around the term “components” in the Heading, introductory text of Items paragraphs a, a.1, a.1.d, a.2 and the Note to 6A001.a.2 in the List of Items Controlled section.

6A002 Optical sensors and equipment, and “components” therefor

ECCN 6A002 is amended by adding paragraph .d “Thermopile arrays having less than 5,130 elements” to exclusion Note 2 to 6A002.a.3 in the Items paragraph of the List of Items Controlled section. BIS is making this change because applying the definition of 'microbolometer arrays' in 6A002.a.3.f to thermopile arrays leads to the control of such devices; however, thermopile arrays would never reach the performance of microbolometer arrays.

6A003 Cameras, systems, or equipment, and “components” therefor

ECCN 6A003 is amended by removing paragraph (3) of the Related Controls paragraph in the List of Items Controlled section because the referenced paragraphs, 8A002.d.1 and .e, are removed by this rule. Related Controls paragraphs (4) and (5) are redesignated as (3) and (4).

6A004 Optical equipment and “components”

ECCN 6A004 is amended by adding an exclusion Note to Items paragraph .a.3 in the List of Items Controlled section for mirrors “specially designed” to direct solar radiation for terrestrial heliostat installations. Items paragraphs .d.2.a.3 and .d.2.b are revised by adding the word “(better)” after the word less for consistency and clarity, so people will understand that any measurement that is less than the specified parameter means the item is performing at better than the control level.

6A005 “Lasers,” “components” and optical equipment

The Technical Note that follows Note 2 to 6A005.a.6.b in the Items paragraph of the List of Items Controlled section is amended by replacing the reference “Note 2.a” with “Note 2 a.2” to correct the reference. Items paragraphs .a.6.a.2 and .b.6.b.2 in the List of Items Controlled section are amended by raising the “average output power” from “10” to “30” W and “10” to “50” W. The main parameter of interest for industrial pulsed lasers is “average output power.” A higher average output power has a positive impact on productivity (due to higher repetition rates). For that reason, and in light of the technological progress in the field of industrial Laser Materials Processing (LMP) equipment, the average power is increased while the parameters “pulse energy” and “peak power” (which have a higher relevance for applications of concern) remain unchanged.

The Note to 6A005.c.1 is moved below Items paragraph 6A005.c.1.b.

An exclusion Note is added to Items paragraphs 6A005.d.1.d.1.d and 6A005.d.1.d.2.d to exclude epitaxially-fabricated monolithic devices.

Double quotes are added around the term “laser” in Items paragraphs .e.3, .e.3.c.1, .e.3.c.2, .g.1, .g.2, .g.3 and the Technical Note at the end of the Items paragraph to indicate that this is a term defined in Part 772 of the EAR.

Double quotes are added around the term “accuracy” in Items paragraph f.3 to indicate that this is a term defined in Part 772 of the EAR.

6A007 Gravity meters (gravimeters) and gravity gradiometers

ECCN 6A007 is amended by adding double quotes around the term “accuracy,” in three places (Items paragraphs .a, .b.1 and .b.2 in the List of Items Controlled section) to indicate that this is a term defined in Part 772 of the EAR.

6A008 Radar systems, equipment and assemblies

ECCN 6A008 is amended by adding double quotes around the term “accuracy” in Items paragraph .a.2, adding double quotes around the term “lasers” in Items paragraph .j.3, and adding double quotes around the term “aircraft” in Note 2 of the Technical Notes at the end of the Items paragraph in the List of Items Controlled section. These quotes are added to indicate that the terms are defined in Part 772 of the EAR.

6B004 Optical equipment

ECCN 6B004 is amended by revising Items paragraph 6B004.a to replace the symbol “±” that precedes 0.1% with the phrase “equal to or better than” to clarify that entry.

6B007 Equipment to produce, align, and calibrate land based gravity meters with a static “accuracy” of better than 0.1 mGal.

ECCN 6B007 is amended by adding double quotes around the term “accuracy” in the Heading to indicate that this is a term defined in Part 772 of the EAR.

6C005 “Laser” materials

ECCN 6C005 is amended by adding double quotes around the term “laser” in Items paragraphs b.1 and b.2 in the List of Items Controlled section to indicate that this is a term defined in Part 772 of the EAR.

6E003 Other “technology”

ECCN 6E003 is amended by adding double quotes around the term “accuracies” in Items paragraph .d to indicate that the singular form of “accuracy” is a term defined in Part 772 of the EAR and revising the Items paragraph by moving all the topic headings out from the subparagraphs and reserving subparagraphs that do not have parameters at this time.

Category 7 - Navigation and Avionics

7A003 ‘Inertial measurement equipment or systems’

ECCN 7A003 is amended by removing the second paragraph in the Technical Note at the beginning of the Items paragraph of the List of Items Controlled section. Double quotes are added around the term “accuracies” in Items paragraph .a; and double quotes are added around the term “accuracy” in Items paragraphs .b, .c.1, and .c.2 in the List of Items Controlled section

to indicate that “accuracy” is a term defined in Part 772 of the EAR. Single quotes are replaced by double quotes around the term Circular Error Probable in the Items paragraph .a.1 and around the term’s acronym CEP in Items paragraphs .a.1, .a.2, .a.3, and .b in the List of Items Controlled section because this term and its acronym are added to the definitions in § 772.1 of the EAR as part of this rule.

7A004 ‘Star trackers’ and “components” therefor

ECCN 7A004 is amended by adding double quotes around the term “accuracy” in the Items paragraph .a in the List of Items Controlled section to indicate that this is a term defined in Part 772 of the EAR.

7A008 Underwater sonar navigation systems

ECCN 7A008 is amended by adding double quotes around the term “accuracy” in the Heading to indicate that this is a term defined in Part 772 of the EAR.

7B001 Test, calibration, or alignment equipment

ECCN 7B001 is amended by adding double quotes around the term “aircraft” in paragraph (1) of the Related Definitions paragraph in the List of Items Controlled section to indicate that this is a term defined in Part 772 of the EAR.

7B002 Equipment “specially designed” to characterize mirrors for ring “laser” gyros

ECCN 7B002 is amended by adding double quotes around the term “accuracy” in Items paragraphs .a and .b of the List of Items Controlled section because it is a defined term.

7E004 Other “technology”

ECCN 7E004 is amended by adding double quotes around the term “accuracy” in Items paragraph .a.7 and adding double quotes around the term “aircraft” in the Items paragraphs .b.1, .b.7.b.4, .b.8.a and .b.8.b to indicate that these terms are defined in Part 772 of the EAR. The word “directional” is replaced by “direction” in the Items paragraph .c.2 of the List of Items Controlled section for clarity and consistent with the term “circulation-controlled direction control systems,” as defined in Part 772 of the EAR.

Category 8 – Marine

8A001 Submersible vehicles and surface vessels

ECCN 8A001 is amended by revising the Related Controls paragraph in the List of Items Controlled section by removing reference to Category 5 - Part 2 because the applicability of Category 5 - Part 2 to other categories is stated in a new Note in the General Technology and Software Notes in Supplement No. 2 to part 774. Double quotes are added around the term “accuracy” in Items paragraph .e.2 of the List of Items Controlled section to indicate that this is a term defined in Part 772 of the EAR.

8A002 Marine systems, equipment, “parts” and “components”

ECCN 8A002 is amended by removing reference to 8A002.e.2 from the GBS and CIV eligibility paragraphs in the List Based License Exception section because 8A002.e is removed and reserved. Items paragraph .d “underwater vision systems” is revised by removing equipment specified in d.1 but no longer in use and redesignating d.2 as .d. Items paragraph .e

“photographic still cameras “specially designed” or modified for underwater use below 150 m ...” in the List of Items Controlled section is removed and reserved because modern digital photographic equipment and separate underwater housings have replaced underwater film format cameras.

Category 9 - Aerospace and Propulsion

9A001 Aero gas turbine engines

ECCN 9A001 is amended by adding double quotes around the term “aircraft” in paragraph b. of Note 1 to Items 9A001.a and in Items paragraph .b in the List of Items Controlled section to indicate that this is a term defined in Part 772 of the EAR.

9A004 Space launch vehicles and “spacecraft,” “spacecraft buses,” “spacecraft payloads,” “spacecraft” on-board systems or equipment, and terrestrial equipment

ECCN 9A004 is amended by replacing the reference to “5A002.a.5, 5A002.a.9” with “5A002.c, 5A002.e” in Items paragraph .d in the List of Items Controlled section to reflect the revisions this rule makes to ECCN 5A002.

9A012 Non-military “Unmanned Aerial Vehicles,” (“UAVs”), unmanned “airships,” related equipment and “components”

ECCN 9A012 is amended by removing the exclusion Note for model aircraft or model “airships” at the end of the Items paragraph in the List of Items Controlled section because these commodities are not within the scope of ECCN 9A012.

9B001 Equipment, tooling or fixtures, “specially designed” for manufacturing gas turbine engine blades, vanes or “tip shrouds”

ECCN 9B001 is amended by revising Items paragraph .b in the List of Items Controlled section to include combined cores and shells (moulds) because it is now possible, through the use of Additive Manufacturing, to produce a single shell (mould) containing a core in position.

9E003 Other “technology”

ECCN 9E003 is amended by adding double quotes around the term “aircraft” in the following five places: two places in Related Controls paragraph (2) in the List of Items Controlled section; in the Note to 9E003.h in the List of Items Controlled section; in Items paragraph .j; and in the Nota Bene that follows 9E003.j in the List of Items Controlled section. These double quotes are added to indicate that this is a term defined in Part 772 of the EAR.

Part 748 - Applications

Supplement No. 7 to part 748 “Validated End User” list is amended by removing the reference to 3B001.c in eight Chinese entities, because this paragraph of ECCN 3B001 is removed by this rule.

Other changes to part 748 are described in two separate paragraphs below in relation to encryption updates and the removal of the foreign national review requirement.

Section 774.1 Introduction

An explanation about the use of Chemical Abstracts Service (CAS) numbers in the Commerce Control List is added in new paragraph (e). This explanation comes from Note 2 of

the Wassenaar Arrangement's Munitions List. The information is helpful for exporters when trying to classify chemicals on the CCL.

Supplement No. 2 to part 774 "General Technology and Software Notes"

Supplement No. 2 to part 774 "General Technology and Software Notes" is amended by adding paragraph 3 "General "Information Security" Note" (GISN) to alert the public to consider Category 5 - Part 2 when classifying information security items or items with information security functions.

Supplement No. 6 to part 774 "Sensitive List"

Supplement No. 6 to part 774 "Sensitive List" is amended by revising paragraphs (2)(i) "2D001," (2)(ii) "2E001," (2)(iii) "2E002," (4)(ii) "4D001," and (4)(iii) "4E001" to match the revisions made to corresponding ECCNs by this rule. These changes will affect Wassenaar reporting requirements found in § 743.1.

Part 770 – Item interpretations

Section 770.2 is amended by making editorial revisions to paragraph (l)(1), (l)(2) and (m) to align ECCN references to revisions made by this rule.

Part 772 Terms and Definitions (Related to WA agreements)

Section 772.1 is amended by adding more categories to those associated with the terms "accuracy" and "airship." The term "Circular Error Probable" and its acronym "CEP" are added to the definitions in § 772.1 because the term and its acronym are used more broadly than in one ECCN or subparagraph. The definition of "cryptography" is revised by moving the definition of

“fixed” to the Technical Notes of this term. The term “FADEC” is revised by adding the word “systems,” thus changing the term to “FADEC systems.” Other revisions to Part 772 that are not related to WA agreements are described later in this Supplementary Information.

The term “frequency switching time” is revised to retain the relative value but tighten the tolerance from $\pm 0.05\%$ to ± 0.1 part per million to account for challenges in making measurements using the wide tolerance of $\pm 0.05\%$. The revision also applies an absolute value for frequencies below 1 GHz, because the 0.1 parts per million metric necessitates the difficult task of resolving very small frequency differences at low frequencies.

Category 7 is removed from the list of categories where “Full Authority Digital Engine Control Systems” is used.

The category references for the term “information security” are revised by removing Cat 4, 5P1 and 8, and adding a reference to the newly added General “Information Security” Note (GISN).

The term “laser” is revised to more closely link the amplification process with the observed coherencies in laser output.

The term “lighter-than-air vehicles” is added to § 772.1 because of its use in ECCNs 2B352, 9A120, and 9A610.

The term “optical amplification” is removed consistent with its removal from 5A991.b.5.e, 5B001.b.2.b, and 5E001.c.2.b, due to the term’s association with a method of communication that is no longer in use.

The terms “propellants” and “pyrotechnic(s)” are added to § 772.1 because they are used frequently in the EAR (propellants in 1C608.a and .n and pyrotechnic(s) in ECCN 1C608.j and .n).

The term “source code” is revised by adding Category 1 and Category 5 - Part 2 to the categories where this term is used.

This rule removes the term “system tracks” because it is not used in the EAR.

Part II - Information Security Update and Simplification

In conjunction with the restructuring of Category 5 - Part 2 of the CCL that was agreed upon by WA, BIS is updating and streamlining information security sections and policies within the EAR. Below is a summary of these updates.

Revised ECCNs (4): 5E002 (Related Controls), 5A992, 5D992 and 5E992.

Part 730 – General Information

Supplement No. 1 to part 730 is amended by removing the reference to 740.13(e) for paperwork collection 0694-137 “License exemptions and exclusions.”

Part 734 – Scope of the EAR

The Note to § 734.3(a)(4) is amended by removing the reference to § 740.17(b)(4)(ii), which is deleted by this rule, and replacing the reference “section 740.17(a)” with the reference “§ 740.17(a)(4),” which refers to foreign products developed with or incorporating U.S.-origin encryption source code components or toolkits.

Section 734.3, the Note to paragraphs (b)(2) and (b)(3) is amended by revising the citation “§ 740.13(e)” to read “§ 742.15(b).” This change is necessary because this rule moves the provision in § 740.13(e) to § 742.15(b) and then removes and reserves § 740.13(e).

Section 734.4 is amended by revising paragraph (b), which set forth special requirements for

certain encryption items, to harmonize with other changes made to encryption items throughout this rule.

Section 734.7, paragraph (b), is amended by revising the citation “§ 740.13(e)” to “§742.15(b).” This change is necessary because this rule moves the provision in §740.13(e) to §742.15(b) and removes and reserves § 740.13(e).

Section 734.17, paragraph (b)(2) is amended by revising the last two sentences. This change is necessary because this rule moves the provision in § 740.13(e) to § 742.15(b) and removes and reserves § 740.13(e). In addition, encryption object code “software” that corresponds to encryption source code “software” meeting the notification requirement of § 742.15(b) is now publicly available, whereas before this rule it was eligible for License Exception TSU.

Part 740 – License Exceptions

Section 740.13(e) is deleted because this notification requirement is moved to newly revised § 742.15(b).

The introductory paragraph of § 740.17 is amended to update the ECCNs that are eligible for License Exception ENC consistent with the implementation of the WA agreement to restructure Category 5 - Part 2. There is no substantive change to eligible items.

The introductory paragraphs of both §§ 742.15(a)(1) and 740.17 are revised to state that certain items classified in Category 5 - Part 2 of the Commerce Control List and described in License Exception ENC that meet the criteria of Note 3 to Category 5 - Part 2 – i.e., are mass market encryption items – are classified under ECCNs 5A992.c and 5D992.c and are no longer subject to “EI” or “NS” controls. The mass market provisions were previously set forth in § 742.15(b), but in this rule are consolidated into § 740.17 to delete duplicative text. Country

Group E:2 is added to the introductory paragraph in two places, as well as § 740.17(b)(2)(iv)(B), to correct an oversight in not adding E:2 when Cuba was added to Country Group E:2.

New § 740.17(a)(1)(ii) is added to authorize exports, reexports, and transfers (in-country) among related parties for internal use when the parent company is headquartered in a Supplement No. 3 to part 740 country (License Exception ENC Favorable Treatment Countries). No classification or reporting is required for such exports, reexports or transfers (in-country).

New § 740.17(a)(3) is added to authorize reexports of foreign-made products developed with or incorporating U.S. encryption source code, components or toolkits without classification by or reporting to BIS provided that the U.S.-origin encryption items have previously been classified or reported and authorized by BIS and the cryptographic function has not changed. This provision is moved from § 740.17(b)(4)(ii) to place all authorizations under License Exception ENC that do not require classification or self-classification in one paragraph.

Section 740.17(b) is amended to delete the requirement for an encryption registration. The encryption registration requirement, added to the Export Administration Regulations in 2010, is being deleted to create a more streamlined and efficient reporting processes. Accordingly, references to the encryption registration requirement are removed throughout the EAR (e.g., parts 738 and 748). Exporters who self-classify encryption products under § 740.17(b)(1) will continue to be required to submit a self-classification report on an annual basis. The requirements for the self-classification report are moved to § 740.17(e)(3) from § 742.15(c). In addition, § 740.17(b) is amended to provide that if an exporter obtains a Commodity Classification request (CCATS) classification from BIS for a product that is eligible for self-classification, the product does not need to be included in the annual self-classification report. BIS will make CCATS for products described in § 740.17(b)(1) available to the ENC Encryption

Request Coordinator through the SNAP-R system.

Section 740.17(b)(2) is amended to update the performance parameters of “network infrastructure” items. In paragraph (b)(2)(A)(1), the performance parameter for aggregate encrypted WAN, MAN, VPN, backhaul or long-haul throughput (including communications through wireless network elements such as gateways, mobile switches, and controllers) is updated from greater than 90 Mbps to equal to or greater than 250 Mbps. Paragraph (b)(2)(i)(A)(2), which set forth a performance parameter for wire (line), cable or fiber optic WAN, MAN or VPN single channel input data rate exceeding 154 Mbps is deleted, as this parameter is redundant in light of the aggregate encrypted throughput parameter in paragraph (b)(2)(A)(1). For media gateways and other unified communications (UC) infrastructure, including Voice-over-Internet Protocol (VoIP) services, the media encryption encrypted signaling is raised from more than 1,000 to 2,500 endpoints in paragraph (b)(2)(i)(A)(4).

Section 740.17(b)(2) is also amended to authorize exports, reexports, and transfers (in-country) of “network infrastructure” items to “less sensitive government end users” in all countries except Country Group E:1 and E:2 countries. A definition of “less sensitive government end users” is added to part 772. BIS has issued many so-called “worldwide” encryption licensing arrangements (ELAs) with this scope and a semi-annual reporting requirement. Because there is no country scope difference between the ELAs and the License Exception ENC authorization to non-“government end users,” BIS is making such exports, reexports, and transfers (in-country) eligible for License Exception ENC.

This rule also adds a Note to paragraph (b)(2)(i)(A) to add a carve out for certain types of satellite infrastructure and to define ‘network infrastructure.’ The satellite carve out was necessary because paragraph (b)(2), which precludes mass market treatment, was catching these

consumer goods. The definition for ‘network infrastructure’ is needed to clarify the scope of the license exception.

This rule adds new paragraph (b)(2)(i)(H) for items in 5A002.d or .e and equivalent or related software therefor classified under 5D002. Such commodities and software were eligible for (b)(1) and (b)(3), but are now moved to (b)(2) because BIS determined that they warrant a higher level of control. BIS does not anticipate an increase in license applications because historically BIS has not received license applications for such items.

Section 740.17(b)(4) is deleted because it is no longer needed. Section 740.17(b)(4)(i) described products with short range wireless encryption functions, most of which have been decontrolled pursuant to the decontrol notes in ECCN 5A002 on the Commerce Control List or pursuant to Note 4 to Category 5 - Part 2 of the Commerce Control List. Section 740.17(b)(4)(ii) is moved to § 740.17(a)(4) (see explanation above for paragraph (a)(4)).

Section 740.17(f), “Grandfathering,” is deleted as it is no longer necessary.

Supplement No. 3 to Part 740 is amended to add Croatia because it is a member of the European Union. This revised list harmonizes with the European Union’s list of countries that do not require a license for encryption items.

Part 742 – CCL Based Controls

The introductory paragraph of § 742.15(a) is amended to update the ECCNs that are controlled for EI reasons consistent with the implementation of the WA agreement to restructure Category 5 - Part 2. There is no substantive change to eligible items. Country Group E:2 is added to § 742.15(a)(2) to correct an oversight in not adding it when Cuba was added to Country Group E:2. Section 742.15(a) is also amended to state that mass market encryption products are

now released from Encryption Item (EI) and National Security (NS) controls pursuant to § 740.17, not § 742.15(b), and to clarify that encryption license arrangements are available for exports to all “government end users” in most countries, including military end users, now that there is a defined subset of government end users (i.e., less sensitive government end users). The mass market provisions are deleted in § 742.15(b) and added (moved) to § 740.17(b) in order to consolidate these provisions in one place. In addition, the classification requirements for mass market encryption products are moved to § 740.17(b). New § 742.15(b) sets forth the notification requirement when encryption source code is made publicly available. The notification requirement is the same as previously set forth in §740.13(e).

Sections 742.15(c) (Self-classification reporting) and 742.15(f) (Grandfathering) are deleted. The self-classification reporting provisions formerly in § 742.15(c) have been moved to § 740.17(e)(3) in order to consolidate all the mass-market provisions into § 740.17. The encryption registration requirement previously set forth in §§ 740.17(b) and 742.15(b) is deleted. The grandfathering provisions are no longer necessary.

Supplement No. 5 to part 742 is deleted because the encryption registration requirement previously set forth in §§740.17(b) and 742.15(b) is deleted.

Supplement No. 6 to part 742 “Technical Questionnaire ...” is amended by revising the title of the supplement to include “other “information security” items,” as well as revising the titles to paragraphs (a) and (b). Most of the revisions to this supplement are to clarify the information that must be provided in a classification request for encryption or “information security” items. This rule removes reference to the encryption registration in paragraphs (a)(2) and (d)(1) because this rule removes the requirement for encryption registration. Paragraph (b)(3) is revised for clarity. Paragraph (b)(7) is the former (b)(10). Paragraphs (b)(2), (b)(3), and (b)(9) are revised to

clarify the information request. Paragraph (b)(10) is now question (7) from the deleted Supplement No. 5 to part 742. Paragraph (b)(11) has been updated to correspond more closely with § 740.17(b)(2). Paragraph (b)(12) is redesignated as (b)(13) and a new paragraph (b)(12) is added, which addresses information related to § 740.17(b)(3). This rule adds paragraph (b)(14) to address Internet Protocol Security (IPsec) capabilities in products.

Supplement No. 8 to part 742 is amended by revising the introductory paragraph, introductory text to paragraph (a), and paragraphs (a)(6) and (c)(1) to remove references to the deleted encryption registration requirement and to harmonize citation references to track amendments in this rule. The list of products in paragraph (a)(6) is revised to more accurately describe the types of products being reported. Paragraphs (a)(7) through (12) are added to include fields that remain necessary now that Supplement No. 5 is deleted. Paragraph (b)(2) and (b)(3) are revised to add six additional fields to identify the company or person submitting the report, its address, email, point of contact, telephone number, non-U.S. components and non-U.S. manufacturing locations, and bringing the total number of fields to twelve. Paragraph (c)(4) is added to note that only products self-classified by the exporter should be reported.

Part 748 - Application

This rule removes reference to the encryption registration and procedures, and aligns citation and ECCN references with revisions in this rule in § 748.1(a) and (d), § 748.3 title, paragraph (a), paragraph (d) title and paragraph, § 748.7(a) and (d), § 748.8 (r), § 748.9(c)(1)(viii), Supplement No. 1 to part 748 Block 5 paragraph, Supplement No. 2 paragraph (r), and Supplement No. 7 “Validated End User” list.

Other changes to Part 748 that relate to the removal of the foreign national review

submission are described further down in this Supplementary Information section. One change to Supp. No. 6 to part 748 is described above in relation to a WA agreement.

Part 772 – Terms and Definitions

In addition to the revisions to Part 772 related to WA agreements, this rule amends Part 772 in light of information security updates and simplification. Part 772 is amended to add definitions of “less sensitive government end users” (as applied to encryption items) and “more sensitive government end users” (as applied to encryption items). BIS had been using these lists of less and more sensitive government end users for purposes of post-shipment reporting and pre-shipment notification requirements in encryption licensing arrangements (ELAs); however, they were not published in the EAR. These definitions will be used in § 742.15(a)(2) license review policy for Encryption License Arrangements (ELAs) and in § 740.17(b)(2)(i) for a specific License Exception ENC authorization.

In § 772.1 of the EAR, this rule revises the definition of “publicly available encryption software” to provide the updated reference of § 742.15(b) for notification requirements, instead of § 740.13(e) of the EAR.

Category 5 - Part 2

The Nota Bene to Note 3 (Cryptography Note) is amended to remove the reference to the encryption registration requirement and to add reference to the self-classification report because the information that was previously needed for the encryption registration will be obtained from the self-classification report.

5D002 “Information Security” “software”

This rule makes editorial revisions to the license requirements for this ECCN.

5E002 “Information Security” “technology”

This rule makes editorial revisions to the license requirements for this ECCN. The last sentence of the Related Controls note is deleted. Technology related to equipment excluded from control under ECCN 5A002 is not necessarily controlled under ECCN 5E992.

5A992 Equipment not controlled by 5A002

Paragraphs 5A992.a and .b are deleted because information security, telecommunication, and information security equipment, whether or not containing encryption, and components therefor will now either be controlled in the higher level Category 5 - Part 2 ECCNs or not at all (i.e., EAR99). The only items still described in ECCN 5A992 are mass market encryption items in paragraph 5A992.c.

5D992 “Information security” “software” not controlled by 5D002

Paragraphs 5D992.a and .b are deleted. The only items still described in ECCN 5D992 are mass market encryption items in 5D992.c. See explanation for 5A992 above. Some items previously classified as 5D992.a or .b may now be classified as 4D993. You may submit a classification request to BIS for a free official classification or self-classify as appropriate.

5E992 “Information Security” “technology”

ECCN 5E992 is amended by removing and reserving Items paragraph .a, which is a

consequential change because of the removal of 5A992.a and .b and 5D992.a and .b.

A separate companion rule also published today is revising the license requirements of twelve entities on the Entity List to “all items subject to the EAR” in order to narrow the license requirement differences between EAR99 and 5A992.a and .b.

The entry for “Shanghai Huahong Grace Semiconductor Manufacturing Corporation” on the VEU list is amended by revising the eligible items, because some of the items from 5A002 are now in new ECCN 5A004. Therefore, ECCN 5A004 is added to the list of eligible items for this entry.

Part III - High Performance Computer Adjusted Peak Performance (APP) Related Changes

In conjunction with the raising of APP numbers in Category 4 by WA agreements, BIS is updating License Exception APP.

§740.7 License Exception APP

In addition to the revisions connected with the removal of the Foreign National Review procedures, License Exception APP is amended by replacing the list of twenty-two (22) countries in paragraph (c)(3)(i) that are eligible to receive technology and software for computers of unlimited Adjusted Peak Performance (APP) under License Exception APP with the list of thirty-six (36) countries in Country Group A:5 in Supplement No. 1 to part 740 because these countries are considered most trusted allies with like-minded export controls. This adds 14 Computer Tier 1 countries (Argentina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Iceland, S. Korea, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) to the list of

countries eligible to receive technology and software controlled by ECCNs 4D001 and 4E001 specially designed or modified for the “development,” “production,” or “use” of computers, including “electronic assemblies” and specially designed components therefor classified in ECCN 4A003 under license exception APP.

For the rest of Computer Tier 1 countries the APP threshold for deemed exports of “development” and “production” computer technology and source code is raised from an APP of 25 to 40 Weighted TeraFLOPS (WT) in paragraph (c)(3)(ii) and the “use” technology and source code is raised from an APP of 120 to 200 WT in paragraph (c)(3)(iii).

For Computer Tier 3 countries, the APP threshold for deemed exports of “development” and “production” technology and source code is raised from an APP of 12 to 16 WT in paragraph (d)(3)(i). The APP threshold for deemed exports of “use” technology and source code is raised from an APP of 25 to 32 WT in paragraph (d)(3)(ii).

These APP threshold revisions are based on technological advancements in computer technology, as well as license data on the deemed export of computer technology.

§734.4 *De minimis* U.S. content.

Section 734.4 is amended by revising paragraph (a)(1) “items for which there is no *de minimis* level” to link the first APP value to ECCN 4A003.b for Tier 3 countries and the second APP value to 4A994.b for Cuba, Iran, North Korea, Sudan, and Syria. In making this revision, BIS is directly linking these ineligibility provisions for computers with the control levels for computers for these countries.

§743.2 High performance computers: Post shipment verification reporting.

Section 743.2 is amended by replacing the reference to the Adjusted Peak Performance of 8.0

with a reference to ECCN 4A003.b in the requirement for post shipment verification reporting for exports and reexports of high performance computers to Computer Tier 3 destinations. By replacing the APP number with the reference to 4A003.b, it will always be directly linked with the APP control parameter of ECCN 4A003.

Part IV - Removal of the Foreign National Review (FNR) procedure

The Foreign National Review (FNR) procedure was implemented in License Exceptions CIV and APP (then CTP) in 2004 as a less burdensome procedure for authorizing deemed exports that would otherwise require licenses. Since the procedure was implemented, according to licensing statistics, BIS has processed a total of approximately 410 applications, of which 230 were approved, none were denied, and 180 were returned without action due to ineligibility or because the FNR was not required for the deemed export at issue. These statistics indicate that the procedure is not used widely by industry, perhaps because it is not well understood. In addition, the fact that the review procedure has not resulted in any denials in over eight years indicates that government licensing resources should be redirected to other more sensitive licensing issues. Removing this requirement removes an unnecessary delay for foreign nationals to receive technology that is eligible for deemed exports under License Exceptions CIV and APP. Therefore, BIS is removing the FNR procedure from the EAR so that License Exception CIV and APP may be utilized for eligible deemed exports.

License Exception CIV - § 740.5

This rule removes paragraph (d) under § 740.5, which is the requirement under License Exception CIV to submit an FNR request to BIS for deemed exports and reexports of 3E002

technology to foreign nationals. The removal of this paragraph conforms to the removal of the FNR procedure from the EAR. This change allows exporters to utilize License Exception CIV for deemed exports of eligible 3E002 technology to a foreign national having a home country included in EAR Country Group D:1 without having to submit a FNR request to BIS.

Part 748 Applications (Classification, Advisory, and License) and Documentation.

Section 748.7 “Registering for electronic submission of license applications and related documents” is amended by removing references to the FNR requirement for License Exceptions APP and CIV under paragraphs (a) and (d). The removal of these words conform this provision with the removal of the FNR procedure from the EAR.

Section 748.8 “Unique Application and Submission Requirements” is amended by removing paragraphs (s) “Foreign National Review Request” and (t) “Foreign National Support Statement for deemed exports.” Corresponding paragraphs (s) and (t) are removed from Supplement No. 2 to part 748 as well. The removal of these sections and paragraphs conforms with the removal of the FNR procedure from the EAR. Guidelines for foreign national license applications are found on the BIS website at <http://www.bis.doc.gov/index.php/policy-guidance/deemed-exports>.

Other changes to Part 748 related to the removal of the encryption registration requirement and a WA agreement are described in two separate paragraphs in a previous section of this Supplementary Information section.

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., p. 783 (2002), as amended by Executive Order 13637 of March 8, 2013, 78 FR 16129 (March 13, 2013), and as extended by the Notice of August 4, 2016, 81 FR 52587 (August 8, 2016), has continued the EAR in effect under the International Emergency Economic Powers Act (50 U.S.C. §§ 1701 *et seq.*). BIS continues to carry out the provisions of the Export Administration Act, as appropriate and to the extent permitted by law, pursuant to Executive Order 13222 as amended by Executive Order 13637.

Saving Clause

Shipments of items removed from license exception eligibility or eligibility for export, reexport or transfer (in-country) 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 [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER], pursuant to actual orders for exports, reexports and transfers (in-country) 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 exports, reexports and transfers (in-country) before [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]. Any such items not actually exported, reexported and transferred (in-country) before midnight, on [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER], require a license in accordance with this regulation.

Rulemaking Requirements

1. Executive Orders 13563 and 12866 direct agencies to assess all costs and benefits of

available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This rule has been designated a “significant regulatory action,” under Executive Order 12866. Accordingly, the rule has been reviewed by the Office of Management and Budget.

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 collection has been approved by OMB under control number 0694-0106, “Reporting and Recordkeeping Requirements under the Wassenaar Arrangement,” and carries a burden hour estimate of 21 minutes for a manual or electronic submission. The collection under control number 0694-0137 “License Exemptions and Exclusions” is revised because the notification requirement for publicly available software is amended by this rule. The notification requirement for publicly available source code software is moved from License Exception TSU to § 742.15(b) of the EAR. Therefore, the burden hours will be moved from one section to another within 0694-0137 as a consequence of this rule and citations and requirements will be updated within the supporting statement for this collection upon the next renewal

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 or by fax to (202) 395-7285; and to the Office of Administration, Bureau of Industry and Security, Department of Commerce, 1401 Constitution Ave., 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 30-day 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 41 member countries that act on a consensus basis and the changes set forth in this rule implement agreements reached at the December 2015 plenary session of the WA. Because the United States is a significant exporter of the items covered by this rule, implementation of this rule 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 were delayed to allow for notice and comment and a 30-day delay in effectiveness, 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 2099, Washington, DC 20230.

List of Subjects

15 CFR Part 730

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

15 CFR Part 734

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

15 CFR Parts 738, 770 and 772

Exports

15 CFR Parts 740 and 748

Administrative practice and procedure, Exports, Reporting and recordkeeping requirements

15 CFR Part 742

Exports, Terrorism

15 CFR Part 774

Exports, Reporting and recordkeeping requirements

Accordingly, Parts 730, 734, 738, 740, 742, 748, 770, 772, and 774 of the Export Administration Regulations (15 CFR Parts 730-774) are amended as follows:

PART 730—[AMENDED]

1. The authority citation for Part 730 continues to read as follows:

Authority: 50 U.S.C. 4601 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. 2151 note; 22 U.S.C. 3201 et seq.; 22 U.S.C. 6004; 42 U.S.C. 2139a; 43 U.S.C. 1354; 15 U.S.C. 1824a; 50 U.S.C. 4305; 22 U.S.C. 7201 et seq.; 22 U.S.C. 7210; E.O. 11912, 41 FR 15825, 3 CFR, 1976 Comp., p. 114; E.O. 12002, 42 FR 35623, 3 CFR, 1977 Comp., p. 133; E.O. 12058, 43 FR 20947, 3 CFR, 1978 Comp., p. 179; E.O. 12214, 45 FR 29783, 3 CFR, 1980 Comp., p. 256; E.O. 12851, 58 FR 33181, 3 CFR, 1993 Comp., p. 608; E.O. 12854, 58 FR 36587, 3 CFR, 1993 Comp., p. 179; E.O. 12918, 59 FR 28205, 3 CFR, 1994 Comp., p. 899; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 12947, 60 FR 5079,

3 CFR, 1995 Comp., p. 356; E.O. 12981, 60 FR 62981, 3 CFR, 1995 Comp., p. 419; E.O. 13020, 61 FR 54079, 3 CFR, 1996 Comp., p. 219; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13099, 63 FR 45167, 3 CFR, 1998 Comp., p. 208; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; E.O. 13224, 66 FR 49079, 3 CFR, 2001 Comp., p. 786; E.O. 13338, 69 FR 26751, 3 CFR, 2004 Comp., p. 168; E.O. 13637, 78 FR 16129, 3 CFR, 2014 Comp., p. 223; Notice of September 18, 2015, 80 FR 57281 (September 22, 2015); Notice of November 12, 2015, 80 FR 70667 (November 13, 2015); Notice of January 20, 2016, 81 FR 3937 (January 22, 2016); Notice of May 3, 2016, 81 FR 27293 (May 5, 2016); Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

Supplement No. 1 to Part 730 [Amended]

2. Supplement No. 1 to part 730 is amended by removing the reference to “740.13(e)” under the “Reference in the EAR” column for the collection number 0694-0137.

PART 734—[AMENDED]

3. The authority citation for Part 734 continues to read as follows:

Authority: 50 U.S.C. 4601 *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; E.O. 13637, 78 FR 16129, 3 CFR, 2014 Comp., p. 223; Notice of November 12, 2015, 80 FR 70667 (November 13, 2015); Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

4. Section 734.3 is amended by revising the Note to paragraph (a)(4) and in the Note to paragraphs (b)(2) and (b)(3) by removing the citation “§ 740.13(e)” and adding “§

742.15(b)” in its place.

The revision reads as follows:

§ 734.3 Items subject to the EAR.

(a) ***

(4) ***

Note to paragraph (a)(4): Certain foreign-manufactured items developed or produced from U.S.-origin encryption items exported pursuant to License Exception ENC are subject to the EAR. See § 740.17(a) of the EAR.

5. Section 734.4 is amended by revising paragraphs (a)(1) and (b) to read as follows:

§734.4 *De minimis* U.S. content.

(a) *Items for which there is no de minimis level.* (1) There is no *de minimis* level for the export from a foreign country of a foreign-made computer with an Adjusted Peak Performance (APP) exceeding that listed in ECCN 4A003.b and containing U.S.-origin controlled semiconductors (other than memory circuits) classified under ECCN 3A001 to Computer Tier 3 destinations; or exceeding an APP listed in ECCN 4A994.b and containing U.S.-origin controlled semiconductors (other than memory circuits) classified under ECCN 3A001 or high speed interconnect devices (ECCN 4A994.j) to Cuba, Iran, North Korea, Sudan, and Syria.

(b) *Special requirements for certain encryption items.* Non-U.S.-made items that incorporate U.S.-origin items that are listed in this paragraph are subject to the EAR unless they meet the

de minimis level and destination requirements of paragraph (c) or (d) of this section and the requirements of this paragraph.

(1) The U.S.-origin commodities or software, if controlled under ECCN 5A002, ECCN 5B002, equivalent or related software therefor classified under ECCN 5D002, and “cryptanalytic items” classified under ECCN 5A004 or 5D002, must have been:

(i) Publicly available encryption source code classified under ECCN 5D002 that has met the notification requirement of § 742.15(b), see § 734.3(b)(3) of the EAR. Such source code does not have to be counted as controlled U.S.-origin content in a *de minimis* calculation;

(ii) Authorized for License Exception ENC by BIS after classification pursuant to § 740.17(b)(3) of the EAR;

(iii) Authorized for License Exception ENC by BIS after classification pursuant to § 740.17(b)(2) of the EAR, and the non-U.S.-made product will not be sent to any destination in Country Groups E:1 and E:2 in Supplement No. 1 to part 740 of the EAR; or

(iv) Authorized for License Exception ENC pursuant to § 740.17(b)(1) of the EAR.

(2) U.S.-origin encryption items classified under ECCNs 5A992.c, 5D992.c, or 5E992.b.

NOTE to paragraph (b): See Supplement No. 2 to this part for *de minimis* calculation procedures and reporting requirements.

§ 734.7 [Amended]

6. In § 734.7, paragraph (b) is amended by revising the citation “§ 740.13(e)” to read

“§ 742.15(b)”.

7. In § 734.17, paragraph (b)(2) is amended by revising the last two sentences to read as follows:

§ 734.17 Export of encryption source code and object code software.

(b) ***

(2) *** See § 742.15(b) of the EAR for notification requirements for export or reexports of encryption source code “software” considered to be publicly available or published consistent with the provisions of § 734.3(b)(3). Publicly available encryption source code “software” and corresponding object code are not subject to the EAR, when the encryption source code “software” meets the notification requirements in § 742.15(b) of the EAR.

PART 738—[AMENDED]

8. The authority citation for part 738 continues to read as follows:

Authority: 50 U.S.C. 4601 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; 42 U.S.C. 2139a; 43 U.S.C. 1354; 15 U.S.C. 1824a; 50 U.S.C. 4305; 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 4, 2016, 81 FR 52587 (August 8, 2016).

9. In § 738.4, revise paragraph (a)(2)(ii)(B) to read as follows:

§738.4 Determining whether a license is required.

(a) ***

(2) ***

(ii) ***

(B) If no, a license is not required based on the particular Reason for Control and destination. Provided that General Prohibitions Four through Ten do not apply to your proposed transaction and the License Requirement section does not refer you to any other part of the EAR to determine license requirements. For example, any applicable encryption classification requirements described in § 740.17(b) of the EAR must be met for certain mass market encryption items to affect your shipment using the symbol “NLR.” Proceed to parts 758 and 762 of the EAR for information on export clearance procedures and recordkeeping requirements. Note that although you may stop after determining a license is required based on the first Reason for Control, it is best to work through each applicable Reason for Control. A full analysis of every possible licensing requirement based on each applicable Reason for Control is required to determine the most advantageous License Exception available for your particular transaction and, if a license is required, ascertain the scope of review conducted by BIS on your license application.

PART 740—[AMENDED]

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

Authority: 50 U.S.C. 4601 *et seq.*; 50 U.S.C. 1701 *et seq.*; 22 U.S.C. 7201 *et seq.*; E.O.

13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

§ 740.5 [Amended]

11. Section 740.5 is amended by removing paragraph (d).

12. Section 740.7 is amended by revising paragraphs (a), (c)(3), and (d)(3) and removing paragraph (d)(4).

The revisions read as follows:

§740.7 Computers (APP).

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

(2) *Technology and software*. License Exception APP authorizes exports of technology and software controlled by ECCNs 4D001 and 4E001 specially designed or modified for the “development,” “production,” or “use” of computers, including “electronic assemblies” and specially designed components therefor classified in ECCN 4A003 to Computer Tier countries as provided by this section.

(c) ***

(3) *Eligible technology and software.* (i) Technology and software described in paragraph (a)(2) of this section for computers of unlimited APP are eligible for export, reexport, transfer (in-country) under License Exception APP to countries listed in Country Group A:5, see Supplement No. 1 to this part; and

(ii) “Development” and “production” technology and source code described in paragraph (a)(2) of this section for computers with a APP less than or equal to 40 Weighted TeraFLOPS (WT) are eligible for deemed exports under License Exception APP to foreign nationals of Tier 1 destinations, other than the destinations that are listed in paragraph (c)(3)(i) of this section, subject to the restrictions in paragraph (b) of this section.

(iii) “Use” technology and source code described in paragraph (a)(2) of this section for computers with a APP less than or equal to 200 WT are eligible for deemed exports under License Exception APP to foreign nationals of Tier 1 destinations, other than the destinations that are listed in paragraph (c)(3)(i) of this section, subject to the restrictions in paragraph (b) of this section.

(d) ***

(3) *Eligible technology and source code.* (i) “Development” and “production” technology and source code described in paragraph (a)(2) of this section for computers with an APP less than or equal to 16 Weighted TeraFLOPs (WT) are eligible for deemed exports under License Exception APP to foreign nationals of Tier 3 destinations as described in paragraph (d)(1) of this section, subject to the restrictions in paragraph (b) of this section.

(ii) “Use” technology and source code described in paragraph (a)(2) of this section for computers with an APP less than or equal to 32 WT are eligible for deemed exports under License

Exception APP to foreign nationals of Tier 3 destinations as described in paragraph (d)(1) of this section, subject to the restrictions in paragraph (b) of this section.

13. Section 740.11 is amended by revising paragraphs (a)(2)(iii) and (c)(3)(iii) to read as follows:

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

(a) ***

(2) ***

(iii) Encryption items controlled for EI reasons under ECCNs 5A002, 5A004, 5D002, or 5E002 may not be exported, reexported, or transferred (in-country) under this paragraph (a). See §740.17 of the EAR (License Exception ENC) for possible alternative license exception authorization.

(c) ***

(3) ***

(iii) Encryption items controlled for EI reasons under ECCNs 5A002, 5A004, 5D002, or 5E002 (see §740.17 of the EAR for License Exception ENC);

* * * * *

§ 740.13 [Amended]

14. Section 740.13 is amended by removing and reserving paragraph (e).

15. Section 740.17 is revised to read as follows:

§ 740.17 Encryption Commodities, Software, and Technology (ENC).

License Exception ENC authorizes export, reexport, and transfer (in-country) of systems, equipment, commodities, and components therefor that are classified under ECCNs 5A002, 5B002, equivalent or related software and technology therefor classified under 5D002 or 5E002, and “cryptanalytic items” classified under ECCNs 5A004, 5D002 or 5E002. This License Exception ENC does not authorize export or reexport to, transfer (in-country) in, or provision of any service in any country listed in Country Groups E:1 or E:2 in Supplement No. 1 to part 740 of the EAR, or release of source code or technology to any national of a country listed in Country Groups E:1 or E:2. Reexports and transfers (in-country) under License Exception ENC are subject to the criteria set forth in paragraph (c) of this section. Paragraphs (b) and (d) of this section set forth information about classifications required by this section. Items described in paragraphs (b)(1) and (b)(3)(i), (ii), or (iv) of this section that meet the criteria set forth in Note 3 to Category 5 - Part 2 of the Commerce Control List (the “mass market” note) are classified under ECCN 5A992.c or 5D992.c following self-classification or classification by BIS and are no longer subject to “EI” and “NS” controls. Paragraph (e) sets forth reporting required by this section. For items exported under paragraphs (b)(1), (b)(3)(i), (ii), or (iv) of this section and therefore excluded from paragraph (e) reporting requirements, exporters are reminded of the recordkeeping requirements in part 762 of the EAR and that they may be required to make such records available upon request. All classification requests, and reports submitted to BIS pursuant to this section for encryption items will be reviewed by the ENC Encryption Request

Coordinator, Ft. Meade, MD.

(a) *No classification request or reporting required.* License Exception ENC authorizes the export, reexport, or transfer (in-country) to the end users and for the end uses set forth in paragraphs (a)(1) through (3) of this section, without submission of a classification request, self-classification report or sales report to BIS.

(1) *Certain exports, reexports, transfers (in-country) to ‘private sector end users’—(i) Internal “development” or “production” of new products.* License Exception ENC authorizes certain exports, reexports, and transfers (in-country) of items described in paragraph (a) of this section for the internal “development” or “production” of new products by ‘private sector end users,’ wherever located, that are headquartered in a country listed in Supplement No. 3 of this part.

(ii) *Certain exports, reexports, transfers (in-country) to related parties, not involving “development” or “production” of new products.* For internal end uses among ‘private sector end users’ other than the “development” or “production” of new products, License Exception ENC authorizes exports, reexports, and transfers (in-country) of non-U.S.-origin items, described in paragraph (a) of this section, to ‘private sector end users’ wherever located provided that:

(A) That item became subject to the EAR after it was produced;

(B) All parties to the transaction are subsidiaries of the same parent company headquartered in a country listed in Supplement No. 3 of this part; and

(C) The characteristics or capabilities of the existing item are not enhanced, unless otherwise authorized by license or license exception.

Note to paragraph (a)(1): A ‘private sector end user’ is either: An individual who is not acting on behalf of any foreign government; or a commercial firm (including its subsidiary and parent firms, and other subsidiaries of the same parent) that is not wholly owned by, otherwise controlled by or acting on behalf of, any foreign government.

(2) *Exports, reexports, transfers (in-country) to “U.S. Subsidiaries.”* License Exception ENC authorizes export, reexport, and transfer (in-country) of items described in paragraph (a) of this section to any “U.S. subsidiary,” wherever located. License Exception ENC also authorizes export, reexport, transfer (in-country) of such items by a U.S. company and its subsidiaries to foreign nationals who are employees, individual contractors or interns of a U.S. company or its subsidiaries if the items are for internal company use, including the “development” or “production” of new products, without prior review by the U.S. Government.

Note to paragraphs (a)(1) and (2): All items produced or developed with items exported, reexported, or transferred (in-country) under paragraphs (a)(1) or (2) of this section are subject to the EAR. These items may require the submission of a classification request before sale, reexport or transfer to non-“U.S. subsidiaries,” unless otherwise authorized by license or license exception.

(3) *Reexports and transfers (in-country) of non-U.S. products developed with or incorporating U.S.-origin encryption source code, components, or toolkits.* License Exception ENC authorizes the reexport and transfer (in-country) of non-U.S. products developed with or incorporating U.S.-origin encryption source code, components or toolkits that are subject to the EAR, provided that the U.S.-origin encryption items have previously been classified or reported and authorized by

BIS and the cryptographic functionality has not been changed. Such products include non-U.S. developed products that are designed to operate with U.S. products through a cryptographic interface.

Note to paragraph (a)(3): This exception from classification and reporting requirements does not apply to non-U.S.-origin products exported from the United States.

(b) *Classification request or self-classification report.* For products described in paragraph (b)(1) of this section that are self-classified by the exporter, a self-classification report in accordance with paragraph (e)(3) of this section is required from specified exporters, reexporters and transferors; for products described in paragraph (b)(1) of this section that are classified by BIS via a CCATS, a self-classification report is not required. For products described in paragraphs (b)(2) and (3) of this section, a thirty-day (30-day) classification request is required in accordance with paragraph (d) of this section. An exporter, reexporter, or transferor may rely on the producer's self-classification (for products described in (b)(1), only) or CCATS for an encryption item eligible for export or reexport under License Exception ENC under paragraph (b)(1), (2), or (3) of this section. Exporters are still required to comply with semi-annual sales reporting requirements under paragraph (e)(1) or (2) of this section, even if relying on a CCATS issued to a producer for specified encryption items described in paragraphs (b)(2) and (b)(3)(iii) of this section.

(1) *Immediate authorization.* This paragraph (b)(1) authorizes the exports, reexports, and transfers (in-country) of the associated commodities self-classified under ECCNs 5A002.a or 5B002, and equivalent or related software therefor classified under 5D002, except any such commodities, software, or components described in (b)(2) or (3) of this section, subject to

submission of a self-classification report in accordance with § 740.17(e)(3) of the EAR. Items described in this paragraph (b)(1) that meet the criteria set forth in Note 3 to Category 5 - Part 2 of the Commerce Control List (the “mass market” note) are classified as ECCN 5A992.c or 5D992.c following self-classification or classification by BIS and are removed from “EI” and “NS” controls.

(2) *Classification request required.* Thirty (30) days after the submission of a classification request with BIS in accordance with paragraph (d) of this section and subject to the reporting requirements in paragraph (e) of this section, this paragraph under License Exception ENC authorizes certain exports, reexports, and transfers (in-country) of the items specified in paragraph (b)(2) and submitted for classification.

Note to paragraph (b)(2) introductory text: Immediately after the classification request is submitted to BIS in accordance with paragraph (d) of this section and subject to the reporting requirements in paragraph (e) of this section, this paragraph also authorizes exports, reexports, and transfers (in-country) of:

1. All submitted encryption items described in this paragraph (b)(2), except “cryptanalytic items,” to any end user located or headquartered in a country listed in Supplement No. 3 to this part;
2. Encryption source code as described in paragraph (b)(2)(i)(B) to non-“government end users” in any country;

3. “Cryptanalytic items” to non-“government end users,” only, located or headquartered in a country listed in Supplement No. 3 to this part; and

4. Items described in paragraphs (b)(2)(iii) and (b)(2)(iv)(A) of this section, to specified destinations and end users.

(i) *Cryptographic commodities, software, and components.* License Exception ENC authorizes exports, reexports, and transfers (in-country) of the items in paragraph (a)(i)(A) of this section to “less sensitive government end users” and non- “government end users” located or headquartered in a country not listed in Supplement No. 3 to this part, and the items in paragraphs (b)(2)(i)(B) through (H) to non “government end users” located or headquartered in a country not listed in Supplement No. 3.

(A) *‘Network Infrastructure.’* ‘Network infrastructure’ commodities and software, and components therefor, meeting any of the following with key lengths exceeding 80-bits for symmetric algorithms:

(1) *WAN, MAN, VPN, backhaul and long-haul.* Aggregate encrypted WAN, MAN, VPN, backhaul or long-haul throughput (including communications through wireless network elements such as gateways, mobile switches, and controllers) equal to or greater than 250 Mbps;

(2) [Reserved]

(3) *Satellite infrastructure.* Transmission over satellite at data rates exceeding 10 Mbps;

(4) *Media gateways and other unified communications (UC) infrastructure, including Voice-over-Internet Protocol (VoIP) services.* Media (voice/video/data) encryption or encrypted signaling to more than 2,500 endpoints, including centralized key management therefor; *or*

(5) *Terrestrial wireless infrastructure.* Air interface coverage (e.g., through base stations, access points to mesh networks, and bridges) exceeding 1,000 meters, where any of the following applies:

(i) Maximum transmission data rates exceeding 10 Mbps (at operating ranges beyond 1,000 meters); *or*

(ii) Maximum number of concurrent full-duplex voice channels exceeding 30;

Notes to paragraph (b)(2)(i)(A):

1. The License Exception ENC eligibility restrictions of paragraphs (b)(2)(i)(A)(3) (satellite infrastructure) and (b)(2)(i)(A)(5) (terrestrial wireless infrastructure) do not apply to satellite terminals or modems meeting all of the following:

a. The encryption of data over satellite is exclusively from the user terminal to the gateway earth station, and limited to the air interface; and

b. The items meet the requirements of the Cryptography Note (Note 3) in Category 5 - Part 2 of the Commerce Control List.

2. 'Network infrastructure' (as applied to encryption items). A 'network infrastructure' commodity or software is any "end item," commodity or "software" for providing one or more of the following types of communications:"

- (a) Wide Area Network (WAN);
- (b) Metropolitan Area Network (MAN);
- (c) Virtual Private Network (VPN);
- (d) Satellite;
- (e) Digital packet telephony/media (voice, video, data) over Internet protocol;
- (f) Cellular; or
- (g) Trunked.

Note 1 to paragraph 2: 'Network infrastructure' end items are typically operated by, or for, one or more of the following types of end users:

- (1) Medium- or large- sized businesses or enterprises;
- (2) Governments;
- (3) Telecommunications service providers; or
- (4) Internet service providers.

Note 2 to paragraph 2: Commodities, software, and components for the "cryptographic activation" of a 'network infrastructure' item are also considered 'network infrastructure' items.

(B) *Certain “encryption source code.”* “Encryption source code” that is not publicly available as that term is used in § 742.15(b) of the EAR;

(C) *Customized items.* Encryption software, commodities and components therefor, where any of the following applies:

(1) *Customized for government end users or end uses.* The item has been designed, modified, adapted, or customized for “government end user(s);” *or*

(2) *Custom or changeable cryptography.* The cryptographic functionality of the item has been designed or modified to customer specification or can be easily changed by the user;

(D) *Quantum cryptography.* ECCN 5A002.c or 5D002 “quantum cryptography” commodities or software;

(E) [Reserved]

(F) *Network penetration tools.* Encryption commodities and software that provide penetration capabilities that are capable of attacking, denying, disrupting or otherwise impairing the use of cyber infrastructure or networks;

(G) *Public safety / first responder radio (private mobile radio (PMR)).* Public safety / first responder radio (e.g., implementing Terrestrial Trunked Radio (TETRA) and/or Association of Public-Safety Communications Officials International (APCO) Project 25 (P25) standards);

(H) *Specified cryptographic ultra-wideband and “spread spectrum” items.* Encryption commodities and components therefor, classified under ECCNs 5A002.d or .e, and equivalent or related software therefor classified under ECCN 5D002.

(ii) *Cryptanalytic commodities and software.* “Cryptanalytic items” classified in ECCN 5A004 or 5D002 to non- “government end users” located or headquartered in countries not listed in Supplement No. 3 to this part.

(iii) *“Open cryptographic interface” items.* Items that provide an “open cryptographic interface,” to any end user located or headquartered in a country listed in Supplement No. 3 to this part.

(iv) *Specific encryption technology.* Specific encryption technology as follows:

(A) *Technology for “non-standard cryptography.”* Encryption technology classified under ECCN 5E002 for “non-standard cryptography,” to any end user located or headquartered in a country listed in Supplement No. 3 to this part;

(B) *Other technology.* Encryption technology classified under ECCN 5E002 except technology for “cryptanalytic items,” “non-standard cryptography” or any “open cryptographic interface,” to any non-“government end user” located in a country not listed in Country Group D:1, E:1, or E:2 of Supplement No. 1 to part 740 of the EAR.

Note to paragraph (b)(2): Commodities, components, and software classified under ECCNs 5A002.b or 5D002.d, for the “cryptographic activation” of commodities or software specified by this paragraph (b)(2) are also controlled under this paragraph (b)(2).

(3) *Classification request required for specified commodities, software, and components.* Thirty (30) days after a classification request is submitted to BIS in accordance with paragraph (d) of this section and subject to the reporting requirements in paragraph (e) of this section, this paragraph authorizes exports, reexports, and transfers (in-country) of the items submitted for classification, as further described in this paragraph (b)(3), to any end user, provided the item does not perform the functions, or otherwise meet the specifications, of any item described in paragraph (b)(2) of this section. Items described in paragraphs (b)(3)(i), (ii), or (iv) of this section that meet the criteria set forth in Note 3 to Category 5 - Part 2 of the Commerce Control List (the “mass market” note) are classified under ECCN 5A992.c or 5D992.c following classification by BIS.

Note to introductory text of paragraph (b)(3): Immediately after the classification request is submitted to BIS in accordance with paragraph (d) of this section and subject to the reporting requirements in paragraph (e) of this section, this paragraph also authorizes exports, reexports,

transfers (in-country) of the items described in this paragraph (b)(3) to any end user located or headquartered in a country listed in Supplement No. 3 to this part.

(i) *“Components,” toolsets, and toolkits.* Specified components classified under ECCN 5A002.a and equivalent or related software classified under ECCN 5D002 not described by paragraph (b)(2) of this section, as follows:

(A) Chips, chipsets, electronic assemblies and field programmable logic devices;

(B) Cryptographic libraries, modules, development kits and toolkits, including for operating systems and cryptographic service providers (CSPs).

(ii) *“Non-standard cryptography” (by items not otherwise described in paragraph (b)(2) of this section.)* Encryption commodities, software and components not described by paragraph (b)(2) of this section, that provide or perform “non-standard cryptography” as defined in part 772 of the EAR.

(iii) *Advanced network vulnerability analysis and digital forensics.* Encryption commodities and software not described by paragraph (b)(2) of this section, that provide or perform vulnerability analysis, network forensics, or computer forensics functions characterized by any of the following:

(A) *Automated network vulnerability analysis and response.* Automated network analysis, visualization, or packet inspection for profiling network flow, network user or client behavior, or network structure/topology and adapting in real-time to the operating environment; *or*

(B) *Digital forensics, including network or computer forensics.* Investigation of data leakage, network breaches, and other malicious intrusion activities through triage of captured digital forensic data for law enforcement purposes or in a similarly rigorous evidentiary manner.

(iv) “*Cryptographic activation*” *commodities, components, and software.* Commodities, components, and software classified under ECCNs 5A002.b or 5D002.d where the product or cryptographic functionality is not otherwise described in paragraphs (b)(2) or (b)(3)(i) of this section.

(c) *Reexport and transfer (in-country).* Distributors, resellers or other entities who are not original manufacturers of encryption commodities and software are permitted to use License Exception ENC only in instances where the reexport or transfer (in-country) meets the applicable terms and conditions of this section. Transfers of encryption items listed in paragraph (b)(2) of this section to “government end users,” or for government end uses, within the same country are prohibited, unless otherwise authorized by license or license exception.

(d) *Classification request procedures*—(1) Submission requirements and instructions. To submit a classification request to BIS, you must submit an application to BIS in accordance with the procedures described in §§ 748.1 and 748.3 of the EAR and the instructions in paragraph (r) of

Supplement No. 2 to part 748 “Unique Application and Submission Requirements,” along with other required information as follows:

(ii) *Technical information submission requirements.* For all submissions of encryption classification requests for items described under paragraph (b)(2) or (b)(3) of this section, you must submit the applicable information described in paragraphs (a) through (d) of Supplement No. 6 to part 742 of the EAR (Technical Questionnaire for Encryption Items). For items eligible for self-classification that are submitted to BIS for classification you may be required to provide BIS this Supplement No. 6 to part 742 information on an as-needed basis, upon request by BIS.

(iii) *Changes in encryption functionality following a previous classification.* A new product encryption classification request (under paragraphs (b)(2) or (b)(3) of this section) is required if a change is made to the cryptographic functionality (e.g., algorithms) or other technical characteristics affecting License Exception ENC eligibility (e.g., encrypted throughput) of the originally classified product. However, a new product classification request is not required when a change involves: the subsequent bundling, patches, upgrades or releases of a product; name changes; or changes to a previously reviewed encryption product where the change is limited to updates of encryption software components where the product is otherwise unchanged.

(2) *Action by BIS.*

(i) [Reserved]

(ii) *For items requiring classification by BIS under paragraphs (b)(2) and (3) of this section.*

(A) For classifications that require a thirty (30-day) waiting period, if BIS has not, within thirty days (30 days) from registration in SNAP-R of your complete classification request, informed you that your item is not authorized for License Exception ENC, you may export, reexport, or transfer (in-country) under the applicable provisions of License Exception ENC.

(B) Upon completion of its classification, BIS will issue a Commodity Classification Automated Tracking System (CCATS) to you.

(C) *Hold Without Action (HWA) for classification requests.* BIS may hold your classification request without action if necessary to obtain additional information or for any other reason necessary to ensure an accurate classification. Time on such “hold without action” status shall not be counted towards fulfilling the thirty-day (30-day) processing period specified in this paragraph.

(iii) BIS may require you to supply additional relevant technical information about your encryption item(s) or information that pertains to their eligibility for License Exception ENC at any time, before or after the expiration of the thirty-day (30-day) processing period specified in this paragraph and in paragraphs (b)(2) and (3) of this section. If you do not supply such information within 14 days after receiving a request for it from BIS, BIS may return your classification request(s) without action or otherwise suspend or revoke your eligibility to use License Exception ENC for that item(s). At your request, BIS may grant you up to an additional 14 days to provide the requested information. Any request for such an additional number of days

must be made prior to the date by which the information was otherwise due to be provided to BIS, and may be approved if BIS concludes that additional time is necessary.

(e) *Reporting requirements*—(1) *Semiannual reporting requirement*. Semiannual reporting is required for exports to all destinations other than Canada, and for reexports from Canada for items described under paragraphs (b)(2) and (b)(3)(iii) of this section. Certain encryption items and transactions are excluded from this reporting requirement, see paragraph (e)(1)(iii) of this section. For information about what must be included in the report and submission requirements, see paragraphs (e)(1)(i) and (ii) of this section respectively.

(i) *Information required*. Exporters must include for each item, the Commodity Classification Automated Tracking System (CCATS) number and the name of the item(s) exported (or reexported from Canada), and the following information in their reports:

(A) *Distributors or resellers*. For items exported (or reexported from Canada) to a distributor or other reseller, including subsidiaries of U.S. firms, the name and address of the distributor or reseller, the item and the quantity exported or reexported and, if collected by the exporter as part of the distribution process, the end user's name and address;

(B) *Direct sales*. For items exported (or reexported from Canada) through direct sale, the name and address of the recipient, the item, and the quantity exported; or

(C) *Foreign manufacturers and products that use encryption items.* For exports (i.e., from the United States) or direct transfers (e.g., by a “U.S. subsidiary” located outside the United States) of encryption components, source code, general purpose toolkits, equipment controlled under ECCN 5B002, technology, or items that provide an “open cryptographic interface,” to a foreign developer or manufacturer headquartered in a country not listed in Supplement No. 3 to this part when intended for use in foreign products developed for commercial sale, the names and addresses of the manufacturers using these encryption items and, if known, when the product is made available for commercial sale, a non-proprietary technical description of the foreign products for which these encryption items are being used (e.g., brochures, other documentation, descriptions or other identifiers of the final foreign product; the algorithm and key lengths used; general programming interfaces to the product, if known; any standards or protocols that the foreign product adheres to; and source code, if available).

(ii) *Submission requirements.* For exports occurring between January 1 and June 30, a report is due no later than August 1 of that year. For exports occurring between July 1 and December 31, a report is due no later than February 1 the following year. These reports must be provided in electronic form. Recommended file formats for electronic submission include spreadsheets, tabular text or structured text. Exporters may request other reporting arrangements with BIS to better reflect their business models. Reports may be sent electronically to BIS at crypt@bis.doc.gov and to the ENC Encryption Request Coordinator at enc@nsa.gov, or disks and CDs containing the reports may be sent to the following addresses:

(A) Department of Commerce, Bureau of Industry and Security, Office of National Security and Technology Transfer Controls, 14th Street and Pennsylvania Ave., NW, Room 2705, Washington, DC 20230, Attn: Encryption Reports, and

(B) Attn: ENC Encryption Request Coordinator, 9800 Savage Road, Suite 6940, Ft. Meade, MD 20755-6000.

(iii) *Exclusions from reporting requirement.* Reporting is not required for the following items and transactions:

(A) [Reserved]

(B) Encryption commodities or software with a symmetric key length not exceeding 64 bits;

(C) Encryption items exported (or reexported from Canada) via free and anonymous download;

(D) Encryption items from or to a U.S. bank, financial institution or its subsidiaries, affiliates, customers or contractors for banking or financial operations;

(E) [Reserved]

(F) Foreign products developed by bundling or compiling of source code.

(2) *Key length increases.* Reporting is required for commodities and software that, after having been classified and authorized for License Exception ENC in accordance with paragraphs (b)(2) or (3) of this section, are modified only to upgrade the key length used for confidentiality or key exchange algorithms. Such items may be exported, reexported or transferred (in-country) under the previously authorized provision of License Exception ENC without a classification resubmission.

(i) *Information required.* (A) A certification that no change to the encryption functionality has been made other than to upgrade the key length for confidentiality or key exchange algorithms.

(B) The original Commodity Classification Automated Tracking System (CCATS) authorization number issued by BIS and the date of issuance.

(C) The new key length.

(ii) *Submission requirements.* (A) The report must be received by BIS and the ENC Encryption Request Coordinator before the export, reexport or transfer (in-country) of the upgraded product; and

(B) The report must be e-mailed to crypt@bis.doc.gov and enc@nsa.gov.

(3) Self-classification reporting for certain encryption commodities, software and components.

This paragraph (e)(3) sets forth requirements for self-classification reporting to BIS and the ENC Encryption Request Coordinator (Ft. Meade, MD) of encryption commodities, software and components exported or reexported. This reporting requirement applies to commodities and software that meet the criteria of Note 3 to Category 5 - Part 2 of the Commerce Control List (“mass market” note) and are classified under ECCN 5A992.c or 5D992.c following self-classification, as well as to commodities and software that remain classified in ECCNs 5A002, 5B002 or 5D002 following self-classification.

(i) *When to report.* Your self-classification report for applicable encryption commodities, software and components exported or reexported during a calendar year (January 1 through December 31) must be received by BIS and the ENC Encryption Request Coordinator no later than February 1 the following year.

(ii) *How to report.* Encryption self-classification reports must be sent to BIS and the ENC Encryption Request Coordinator via e-mail or regular mail. In your submission, specify the timeframe that your report spans and identify points of contact to whom questions or other inquiries pertaining to the report should be directed. Follow these instructions for your submissions:

(A) *Submissions via e-mail.* Submit your encryption self-classification report electronically to BIS at crypt-supp8@bis.doc.gov and to the ENC Encryption Request Coordinator at enc@nsa.gov, as an attachment to an e-mail. Identify your e-mail with subject “self-classification report.”

(B) *Submissions on disks and CDs.* The self-classification report may be sent to the

following addresses, in lieu of e-mail:

(1) Department of Commerce, Bureau of Industry and Security, Office of National Security and Technology Transfer Controls, 14th Street and Pennsylvania Ave., NW, Room 2099B, Washington, DC 20230, Attn: Encryption Reports, and

(2) Attn: ENC Encryption Request Coordinator, 9800 Savage Road, Suite 6940, Ft. Meade, MD 20755-6000.

(iii) *Information to report.* Your encryption self-classification report must include the information described in paragraph (a) of Supplement No. 8 to part 742 for each applicable encryption commodity, software and component made eligible for export or reexport under § 740.17(b)(1) of the EAR. Each product must be included in a report only one time. However, if no new products are made eligible for export or reexport during a calendar year, you must send an e-mail to the addresses listed in paragraph (e)(3)(ii)(A) of this section stating that nothing has changed since the previous report.

(iv) *File format requirements.* The information described in paragraph (a) of Supplement No. 8 to part 742 must be provided to BIS and the ENC Encryption Request Coordinator in tabular or spreadsheet form, as an electronic file in comma separated values format (.csv) adhering to the specifications set forth in paragraph (b) of Supplement No. 8 to part 742.

Supplement No. 3 to Part 740 [Amended]

16. Supplement No. 3 to part 740 is amended by adding “Croatia” in alphabetical order.

PART 742—[AMENDED]

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

Authority: 50 U.S.C. 4601 *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, 68 FR 26459, 3 CFR, 2004 Comp., p. 320; Notice of November 12, 2015, 80 FR 70667 (November 13, 2015); Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

§ 742.10 [Amended]

18. Section 742.10 is amended in paragraph (a)(2) by removing the phrase “.5A992, 5D992.b and .c” and adding in its place “5A992.c, 5D992.c”.

19. Section 742.15 is amended by revising paragraphs (a) and (b) and removing paragraphs (c) and (d).

The revisions read as follows:

§ 742.15 Encryption Items.

(a) *Licensing requirements and policy*—(1) *Licensing requirements*. A license is required to export or reexport encryption items (“EI”) classified under ECCN 5A002, 5A004, 5D002.a, .c.1 or .d (for equipment and “software” in ECCNs 5A002 or 5A004, 5D002.c.1); or 5E002 for “technology” for the “development,” “production,” or “use” of commodities or “software” controlled for EI reasons in ECCNs 5A002, 5A004 or 5D002, and “technology” classified under

5E002.b to all destinations, except Canada. Refer to part 740 of the EAR, for license exceptions that apply to certain encryption items, and to § 772.1 of the EAR for definitions of encryption items and terms. Most encryption items may be exported under the provisions of License Exception ENC set forth in §740.17 of the EAR. Following classification or self-classification, items that meet the criteria of Note 3 to Category 5 - Part 2 of the Commerce Control List (the “mass market” note), are classified ECCN 5A992.c or 5D992.c and are no longer subject to this Section (see § 740.17 of the EAR). Before submitting a license application, please review License Exception ENC to determine whether this license exception is available for your item or transaction. For exports, reexports, or transfers (in-country) of encryption items that are not eligible for a license exception, you must submit an application to obtain authorization under a license or an Encryption Licensing Arrangement.

(2) *Licensing policy.* Applications will be reviewed on a case-by-case basis by BIS, in conjunction with other agencies, to determine whether the export, reexport, or transfer (in-country) is consistent with U.S. national security and foreign policy interests. Encryption Licensing Arrangements (ELAs) may be authorized for exports, reexports, or transfers (in-country) of unlimited quantities of encryption commodities and software described in § 740.17(b)(2)(i)(A) that have been classified by BIS to “more sensitive government end users,” in all destinations, except countries listed in Country Groups E:1 or E:2 of Supplement No. 1 to part 740. ELAs for “more sensitive government end users” may be authorized for encryption commodities and software described in § 740.17(b)(2)(ii) through (iv) under certain circumstances. ELAs are valid for four years and may require pre-shipment notification. Applicants seeking authorization for Encryption Licensing Arrangements must specify the sales

territory on their license applications.

(b) *Publicly available encryption source code*—(1) *Scope and eligibility*. Subject to the notification requirements of paragraph (b)(2) of this section, publicly available (see § 734.3(b)(3) of the EAR) encryption source code classified under ECCN 5D002 is not subject to the EAR. Such source code is publicly available even if it is subject to an express agreement for the payment of a licensing fee or royalty for commercial production or sale of any product developed using the source code.

(2) *Notification requirement*. You must notify BIS and the ENC Encryption Request Coordinator via e-mail of the Internet location (e.g., URL or Internet address) of the publicly available encryption source code classified under ECCN 5D002 or provide each of them a copy of the publicly available encryption source code. If you update or modify the source code, you must also provide additional copies to each of them each time the cryptographic functionality of the source code is updated or modified. In addition, if you posted the source code on the Internet, you must notify BIS and the ENC Encryption Request Coordinator each time the Internet location is changed, but you are not required to notify them of updates or modifications made to the encryption source code at the previously notified location. In all instances, submit the notification or copy to crypt@bis.doc.gov and to enc@nsa.gov.

Supplement No. 5 to Part 742 [Removed and Reserved]

20. Part 742 is amended by removing and reserving Supplement No. 5.

21. Supplement No. 6 is amended by:

- a. Revising the heading of the Supplement;
- b. Revising paragraphs (a) introductory text, (a)(2), (b) introductory text, (b)(2) and (3), (b)(6) and (7), and (b)(9) through (12);
- c. Adding paragraph (b)(13) and (14); and
- d. Revising paragraph (d)(1).

The revisions and additions read as follows:

**Supplement No. 6 to Part 742 --Technical Questionnaire for Encryption and Other
“Information Security” Items**

(a) For all items:

* * * * *

(2) Indicate whether there have been any prior classifications of the product(s), if they are applicable to the current submission. For products with minor changes in encryption functionality, you must include a cover sheet with complete reference to the previous review (Commodity Classification Automated Tracking System (CCATS) number, Export Control Classification Number (ECCN), authorization paragraph) along with a clear description of the changes.

(b) For classification requests and other submissions, provide the following information:

* * * * *

(2) Describe how encryption keys are generated or managed by your product, including algorithms and modulus sizes supported.

(3) Describe whether the products incorporate or use “non-standard cryptography” defined as incorporating or using proprietary, unpublished cryptographic functionality, including encryption algorithms or protocols that have not been adopted or approved by a duly recognized international standards body. Provide a textual description and the source code of the algorithm.

(6) State all communication protocols (e.g., X.25, Telnet, TCP, IEEE 802.11, IEEE 802.16, SIP ...) and cryptographic protocols and methods (e.g., SSL, TLS, SSH, IPSEC, IKE, SRTP, ECC, MD5, SHA, X.509, PKCS standards...), including application programming interfaces (APIs), that are supported and describe how they are used.

(7) State how the product is written to preclude user modification of the encryption algorithms, key management and key space.

(9) Identify the version(s) and type(s) of compilers, runtime interpreters or code assemblers used, as applicable.

(10) With respect to your company’s encryption products, are any of the products (or its encryption components) manufactured outside the United States? If yes, provide manufacturing locations (city and country).

(11) See § 740.17(b)(2) of the EAR. Describe whether the item meets any of the §740.17(b)(2) criteria. Provide a comparison of your item against the criteria listed in each paragraph of § 740.17(b)(2). Give specific data for each of the parameters listed, as applicable (e.g., maximum aggregate encrypted throughput, maximum number of encrypted endpoints, maximum satellite or terrestrial wireless transmission rates, terrestrial wireless operating range, customized cryptography, network penetration capability, cryptanalytic capability and “non-standard cryptography”).

(12) See § 740.17(b)(3) of the EAR. Describe whether the product meets any of the criteria described under each of the paragraphs in § 740.17(b)(3) (e.g., chip, chipset, electronic assembly, programmable logic device, cryptographic library, cryptographic development kit, “non-standard cryptography,” digital forensics, and “cryptographic activation”).

(13) See § 740.17(b)(2)(iii) of the EAR. For products which incorporate an “open cryptographic interface” as defined in part 772 of the EAR, describe the cryptographic interface.

(14) For products with IPsec capabilities:

(i) Please describe your product’s implementation of IKE vendor IDs, including vendor specific and capability IDs; and

(ii) Please specify which version of IKE you use (IKEv1 or IKEv2).

(d) ***

(1) If applicable, reference the executable (object code) product that was previously classified by BIS;

22. Supplement No. 8 to part 742 is amended by:

- a. Revising the introductory text;
- b. Revising paragraphs (a) introductory text, (a)(5) introductory text, and (a)(6);
- c. Adding paragraphs (a)(7) through (12);
- d. Revising paragraphs (b)(2) and (3) and (c)(1); and
- e. Adding paragraph (c)(4).

The revisions and additions read as follows:

Supplement No. 8 to Part 742—Self-Classification Report for Encryption Items

This supplement provides certain instructions and requirements for self-classification reporting to BIS and the ENC Encryption Request Coordinator (Ft. Meade, MD) of encryption commodities, software and components exported or reexported pursuant to §740.17(b)(1) of the EAR. See §740.17(e)(3) of the EAR for additional instructions and requirements pertaining to this supplement, including when to report and how to report.

(a) *Information to report.* The following information is required in the file format as described in paragraph (b) of this supplement, for each encryption item subject to the requirements of this supplement and §§ 740.17(b)(1) and 740.17(e)(3) of the EAR:

(5) Encryption authorization type identifier, selected from *one* of the following, which denote

eligibility under License Exception ENC § 740.17(b)(1):

(6) Item type descriptor, selected from one of the following:

- (i) Access point;
- (ii) Cellular;
- (iii) Computer or computing platforms;
- (iv) Computer forensics;
- (v) Cryptographic accelerator;
- (vi) Data backup and recovery;
- (vii) Database;
- (viii) Disk / drive encryption;
- (ix) Distributed computing;
- (x) E-mail communications;
- (xi) Fax communications;
- (xii) File encryption;
- (xiii) Firewall;
- (xiv) Gateway;
- (xv) Intrusion detection;
- (xvi) Identity management;

- (xvii) Key exchange;
- (xviii) Key management;
- (xix) Key storage;
- (xx) Link encryption;
- (xxi) Local area networking (LAN);
- (xxii) Metropolitan area networking (MAN);
- (xxiii) Mobility and mobile applications n.e.s.;
- (xxiv) Modem;
- (xxv) Multimedia n.e.s.;
- (xxvi) Network convergence or infrastructure n.e.s.;
- (xxvii) Network forensics;
- (xxviii) Network intelligence;
- (xxix) Network or systems management (OAM / OAM&P);
- (xxx) Network security monitoring;
- (xxxi) Network vulnerability and penetration testing;
- (xxxii) Operating system;
- (xxxiii) Optical networking;
- (xxxiv) Radio communications;
- (xxxv) Router;
- (xxxvi) Satellite communications;

- (xxxvii) Short range wireless n.e.s.;
- (xxxviii) Storage Area Networking (SAN);
- (xxxix) 3G / 4G / 5G / LTE / WiMAX;
- (xl) Trusted computing;
- (xli) Videoconferencing;
- (xlii) Virtual private networking (VPN);
- (xliii) Voice communications n.e.s.;
- (xliv) Voice over Internet Protocol (VoIP);
- (xlv) Wide Area Networking (WAN);
- (xlvi) Wireless Local Area Networking (WLAN);
- (xlvii) Wireless Personal Area Networking (WPAN);
- (xlviii) Test equipment n.e.s.; or
- (xlix) Other (please specify).

(7) Name of company or individual submitting the report (50 characters or less).

(8) Telephone number (50 characters or less).

(9) E-mail address (50 characters or less).

(10) Mailing address (50 characters or less).

(11) With respect to your company's encryption products, do they incorporate encryption components produced or furnished by non-U.S. sources or vendors? Enter 'YES', 'NO', or if necessary, 'N/A' (250 characters or less).

(12) With respect to your company’s encryption products, are any of them manufactured in non-U.S. locations?” If yes, list the non-U.S. manufacturing locations by city and country. If necessary, enter ‘NONE’ or ‘N/A’ (250 characters or less).

(b) ***

(2) Each line of your encryption self-classification report (.csv file) must consist of twelve entries as further described in this supplement.

(3) The first line of the .csv file must consist of the following twelve entries (i.e., match the following) without alteration or variation: PRODUCT NAME, MODEL NUMBER, MANUFACTURER, ECCN, AUTHORIZATION TYPE, ITEM TYPE, SUBMITTER NAME, TELEPHONE NUMBER, E-MAIL ADDRESS, MAILING ADDRESS, NON-U.S. COMPONENTS, NON-U.S. MANUFACTURING LOCATIONS.

Note to paragraph (b)(3): These first twelve entries (i.e., first row) of an encryption self-classification report in .csv format correspond to the twelve column headers of a spreadsheet data file. The responses provided under column headers 7 through 12 (SUBMITTER NAME through NON-U.S. MANUFACTURING LOCATIONS) relate to the company as a whole, and thus should be entered the same for each product (i.e., only one point of contact, one ‘YES’ or ‘NO’ answer to whether any of the reported products incorporate non-U.S. sourced encryption components, and one list of non-U.S. manufacturing locations, is required for the report). However, even though the information is the same for each product, please duplicate this information into each row of the spreadsheet, leaving no entry blank, so each product has the same identifying company information.

(c) *Other instructions.* (1) The information provided in accordance with this supplement and §§ 740.17(b)(1) and 740.17(e)(3) of the EAR must identify product offerings as they are typically distinguished in inventory, catalogs, marketing brochures and other promotional materials.

(4) Only products self-classified by the exporter or reexporter must be reported. Products submitted for classification by the Bureau of Industry and Security for which a CCATS is issued do not need to be reported.

PART 743—[AMENDED]

23. The authority citation for part 743 continues to read as follows:

Authority: 50 U.S.C. 4601 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; E.O. 13637, 78 FR 16129, 3 CFR, 2014 Comp., p. 223; 78 FR 16129; Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

24. Section 743.2 is amended by revising paragraph (b) to read as follows:

§743.2 High performance computers: Post shipment verification reporting.

(b) *Requirement.* Exporters must file post-shipment reports and keep records in accordance with recordkeeping requirements in part 762 of the EAR for high performance computer exports to destinations in Computer Tier 3, as well as, exports of commodities used to enhance computers previously exported or reexported to Computer Tier 3 destinations, where the “Adjusted Peak Performance” (“APP”) is greater than that listed in ECCN 4A003.b in the Commerce Control List, Supplement No. 1 to part 774 of the EAR.

PART 744—[AMENDED]

25. The authority citation for part 744 continues to read as follows:

Authority: 50 U.S.C. 4601 *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 September 18, 2015, 80 FR 57281 (September 22, 2015); Notice of November 12, 2015, 80 FR 70667 (November 13, 2015); Notice of January 20, 2016, 81 FR 3937 (January 22, 2016); Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

Supplement No. 4 to Part 744 [Amended]

26. Supplement No. 4 to part 744 is amended by removing the reference “5D002 or 5A002.” and adding in its place “5A002, 5A004 or 5D002.” in the third column “License Requirement,” in the entry for Ecuador.

PART 748—[AMENDED]

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

Authority: 50 U.S.C. 4601 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

28. Section 748.1 is amended by revising paragraphs (a) and (d) introductory text to read as follows:

§748.1 General provisions.

(a) *Scope.* In this part, references to the Export Administration Regulations or EAR are references to 15 CFR chapter VII, subchapter C. The provisions of this part involve requests for classifications and advisory opinions, export license applications, reexport license applications, and certain license exception notices subject to the EAR. All terms, conditions, provisions, and instructions, including the applicant and consignee certifications, contained in electronic or paper form(s) are incorporated as part of the EAR. For the purposes of this part, the term “application” refers to both electronic applications and the Form BIS-748P: Multipurpose Application.

(d) *Electronic filing required.* All export and reexport license applications (other than Special Iraq Reconstruction License applications), License Exception AGR notifications, requests to authorize use of License Exception STA for “600 series” end items (which are currently submitted as export license applications) and classification requests and their accompanying documents must be filed via BIS’s Simplified Network Application Processing system (SNAP-R), unless BIS authorizes submission via the paper forms BIS 748-P (Multipurpose Application Form), BIS-748P-A (Item Appendix) and BIS-748P-B, (End-User Appendix). Only original paper forms may be used. Facsimiles or reproductions are not acceptable.

29. Section 748.3 is amended by revising the section heading, the last sentence in paragraph

(a), and paragraph (d) to read as follows:

§748.3 Classification requests and advisory opinions.

(a) *** The encryption provisions in the EAR require the submission of a classification request in accordance with §740.17(d) of the EAR in order for certain items to be eligible for export and reexport under License Exception ENC (see §740.17 of the EAR) or to be released from “EI” controls (see §§ 740.17(b)(2) and 740.17(b)(3) of the EAR).

(d) *Classification requests for encryption items.* A classification request associated with encryption items transferred from the U.S. Munitions List consistent with Executive Order 13026 of November 15, 1996 (3 CFR, 1996 Comp., p. 228) and pursuant to the Presidential Memorandum of that date may be required to determine eligibility under License Exception ENC or for release from “EI” controls. Refer to Supplement No. 6 to part 742 of the EAR for a complete list of technical information that is required for encryption classification requests. Refer to § 740.17(e)(3) and Supplement No. 8 to part 742 of the EAR for information that is required to be submitted in a self-classification report. Refer to § 740.17(b) of the EAR for instructions regarding mass market encryption commodities and software, including self-classifications and classification requests. Refer to §740.17 of the EAR for the provisions of License Exception ENC, including encryption self-classifications, classification requests and sales reporting. All classification requests, notifications and reports submitted to BIS pursuant to §§740.17 and 742.15(b) of the EAR will be reviewed by the ENC Encryption Request Coordinator, Ft. Meade, MD.

30. Section 748.7 is amended by revising paragraphs (a) and (d) to read as follows:

§ 748.7 Registering for electronic submission of license applications and related documents.

(a) *Scope.* This section describes the procedures for registering to submit electronic documents to BIS. The procedures in this section apply to submission of export and reexport license applications (other than Special Iraq Reconstruction Licenses), classification requests, and License Exception AGR notifications.

(d) *Role of individual users.* An individual user may submit to BIS export and reexport license applications (other than Special Iraq Reconstruction Licenses), classification requests, and License Exception AGR notifications.

§ 748.8 [Amended]

31. Section 748.8 is amended in paragraph (r) by removing the phrase “and encryption registrations” and removing and reserving paragraphs (s) and (t).

32. Section 748.9 is amended by revising paragraph (c)(1)(viii) to read as follows:

§748.9 Support documents for evaluation of foreign parties in license applications.

(c) ***

(1) ***

(viii) The license application is submitted for encryption commodities controlled under ECCN 5A002, 5A004 or 5B002.

* * * * *

33. Supplement No. 1 to Part 748 is amended by revising the Block 5 paragraph to read as follows:

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

Block 5: Type of Application. *Export*. If the items are located within the United States, and you wish to export those items, mark the Box labeled “Export” with an (X). *Reexport*. If the items are located outside the United States, mark the Box labeled “Reexport” with an (X).

Classification. If you are requesting BIS to classify your item against the Commerce Control List (CCL), mark the Box labeled “Classification Request” with an (X). If you are submitting a License Exception STA eligibility request pursuant to § 740.20(g), mark the box labeled “Export” with an (X) and then proceed to Block 6 of this supplement for instructions specific to such requests.

34. Supplement No. 2 to part 748 is amended by:

- a. Revising paragraph (r) introductory text;
- b. Removing and reserving paragraph (r)(1);
- c. Revising paragraph (r)(2)(ii)(B)(2);

- d. Removing paragraph (r)(2)(iii); and
- e. Removing and reserving paragraphs (s) and (t).

The revisions read as follows:

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

(r) *Encryption classification requests.* Failure to follow the instructions in this paragraph may delay consideration of your encryption classification request.

(2) ***

(ii) ***

(B) ***

(2) “Mass market encryption” if you are submitting an encryption classification request for certain mass market encryption items (§ 740.17(b) of the EAR).

Supplement No. 7 to Part 748 [Amended]

35. Supplement No. 7 to part 748 is amended by removing the reference to 3B001.c in the third column “Eligible items (by ECCN),” in the following entries under China (People’s Republic of):

- a. Advanced Micro-Fabrication Equipment, Inc., China (two places);

- b. Applied Materials (China), Inc., in destinations identified by both one asterisk (*) and two asterisks (**) (two places)
- c. Lam Research Service Co., Ltd, in Destinations Identified by both a single asterisk (*), (in two places) and by two asterisks (**), (two places)
- d. Samsung China Semiconductor Co. Ltd;
- e. Semiconductor Manufacturing International Corporation;
- f. Shanghai Huahong Grace Semiconductor Manufacturing Corporation;
- g. SK hynix Semiconductor (China) Ltd; and
- h. SK hynix Semiconductor (Wuxi) Ltd.

36. Supplement No. 7 to part 748 is further amended by removing the phrase “ECCN 5A002 that have been classified by BIS as eligible for License Exception ENC under paragraph (b)(2) or (b)(3) of Section 740.17 of the EAR, or classified by BIS as a mass market item under paragraph (b)(3) of Section 742.15 of the EAR).” and adding in its place “ECCN 5A002 that have been classified by BIS as eligible for License Exception ENC under paragraph (b)(2) or (3) of § 740.17 of the EAR.” for “Semiconductor Manufacturing International Corporation” under China (People’s Republic of).

37. Supplement No. 7 to part 748 is further amended by removing “(limited to production technology for integrated circuits controlled by ECCNs 5A002 or 5A992 that have been successfully reviewed under the encryption review process specified in Sections 740.17(b)(2) or 740.17(b)(3) and 742.15 of the EAR)” and adding in its place “(controlled by ECCNs 5A002,

5A004, or 5A992 that have been successfully reviewed under the encryption review process specified in Sections 740.17(b)(2) or 740.17(b)(3) of the EAR)” in the third column “Eligible items (by ECCN)” for “Shanghai Huahong Grace Semiconductor Manufacturing Corporation” under China (People’s Republic of).

PART 770—[AMENDED]

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

Authority: 50 U.S.C. 4601 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

39. Section 770.2 is amended by revising paragraphs (l) and (m) to read as follows:

§770.2 Item interpretations.

(l) *Interpretation 12: Computers.* (1) Digital computers or computer systems classified under ECCN 4A003.b or .c, that qualify for “No License Required” (NLR) must be evaluated on the basis of Adjusted Peak Performance (APP) alone, to the exclusion of all other technical parameters. Digital computers or computer systems classified under ECCN 4A003.b or .c that qualify for License Exception APP must be evaluated on the basis of APP, to the exclusion of all other technical parameters. Assemblies performing analog-to-digital conversions are evaluated under Category 3—Electronics, ECCN 3A002.h.

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

(m) *Interpretation 13: Encryption commodities and software controlled for EI reasons.*

Encryption commodities and software controlled for EI reasons under ECCNs 5A002, 5A004 and 5D002 may be pre-loaded on a laptop, handheld device or other computer or equipment and exported under the tools of trade provision of License Exception TMP or the personal use exemption under License Exception BAG, subject to the terms and conditions of such License Exceptions. Neither License Exception TMP nor License Exception BAG contains a reporting requirement. Like other “information security” “software,” components, “electronic assemblies” or modules, the control status of encryption commodities and software is determined in Category 5 - Part 2 even if they are bundled, commingled or incorporated in a computer or other equipment. However, commodities and software specially designed for medical end use that incorporate an item in Category 5 - Part 2 are not controlled in Category 5 - Part 2. See paragraph (a) of Supplement No. 3 to part 774 (Statements of Understanding) of the EAR.

PART 772—[AMENDED]

40. The authority citation for part 772 continues to read as follows:

Authority: 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 4, 2016, 81 FR 52587 (August 8, 2016).

41. Section 772.1 is amended by:

- a. Revising the terms “Accuracy” and “Airship;”
- b. Revising the terms “Circular Error Probable,” “Cryptography,” and “FADEC;”
- c. Removing the term “Fixed;”
- d. Revising the terms “Frequency switching time” and “Full Authority Digital Engine Control Systems;”
- e. Revising the term “Government end users (as applied to encryption items);”
- f. In the definition of “Information security,” removing “(Cat 4, 5P1, 5P2, 8, GSN)” and adding in its place “(Cat 5P2, GSIN, GSN);”
- g. Revising the term “Laser;”
- h. Adding in alphabetical order the terms “Less sensitive government end users (applied to encryption items),” “Lighter-than-air vehicles,” and “More sensitive government end users (applied to encryption items);”
- i. Removing the term “Optical amplification;”
- j. Revising the term “Publicly available encryption software;”
- k. Adding in alphabetical order the term “Pyrotechnic(s);”
- l. Revising the term “Source code;” and
- m. Removing the term “System tracks.”

The revisions and additions read as follows:

§772.1 Definitions of terms as used in the Export Administration Regulations (EAR).

Accuracy. (Cat 2, 3, 6, 7 and 8)--“Accuracy” is usually measured in terms of inaccuracy. It is

defined as the maximum deviation, positive or negative, of an indicated value from an accepted standard or true value.

Airship. (Cat 2 and 9) A power-driven airborne vehicle that is kept buoyant by a body of gas (usually helium, formerly hydrogen) which is lighter than air.

Circular Error Probable. (“CEP”) (Cat 7) In a circular normal distribution, the radius of the circle containing 50% of the individual measurements being made, or the radius of the circle within which there is a 50% probability of being located.

Cryptography. (Cat 5P2)-- The discipline that embodies principles, means and methods for the transformation of data in order to hide its information content, prevent its undetected modification or prevent its unauthorized use. “Cryptography” is limited to the transformation of information using one or more ‘secret parameters’ (e.g., crypto variables) and/or associated key management.

Note: “Cryptography” does not include ‘fixed’ data compression or coding techniques.

Technical Notes:

1. ‘Secret parameter’: a constant or key kept from the knowledge of others or shared only within a group.

2. 'Fixed': the coding or compression algorithm cannot accept externally supplied parameters (e.g., cryptographic or key variables) and cannot be modified by the user.

FADEC systems. See "full authority digital engine control systems."

Frequency switching time. (Cat 3) The time (i.e., delay) taken by a signal when switched from an initial specified output frequency, to arrive at or within any of the following:

- (1) ± 100 Hz of a final specified output frequency of less than 1 GHz; *or*
- (2) ± 0.1 part per million of a final specified output frequency equal to or greater than 1 GHz.

Full Authority Digital Engine Control Systems. ("FADEC Systems") (Cat 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.

Government end user" (as applied to encryption items). A government end user is any foreign central, regional or local government department, agency, or other entity performing governmental functions; including governmental research institutions, governmental corporations or their separate business units (as defined in part 772 of the EAR) which are engaged in the manufacture or distribution of items or services controlled on the Wassenaar Munitions List, and international governmental organizations. This term does not include: utilities (including telecommunications companies and Internet service providers); banks and financial institutions; transportation; broadcast or entertainment; educational organizations

(except public schools and universities); civil health and medical organizations (including public civilian hospitals); retail or wholesale firms; and manufacturing or industrial entities not engaged in the manufacture or distribution of items or services controlled on the Wassenaar Munitions List.

Laser. (Cat 1, 2, 3, 5P1, 6, 7, 8 and 9)--An item that produces spatially and temporally coherent light through amplification by stimulated emission of radiation. See also: "Chemical laser;" "Super High Power Laser;" and "Transfer laser."

Less sensitive government end users (as applied to encryption items). The following "government end users" (as defined in this Section of the EAR) are considered "less sensitive" for the purposes of License Exception ENC (§ 740.17 of the EAR):

(1) Local/state/provincial "government end users" (departments, agencies and entities), including local/state/provincial executive, legislative, judicial, police, fire, rescue and public safety agencies.

(2) National/federal/royal "government end users" (departments, agencies and entities) providing the following civil government functions and services:

(i) Census and statistics services;

(ii) Civil public works infrastructure services (construction, maintenance, repair, regulation and administration) as follows: buildings, public transportation, roads and highways, trucking;

- (iii) Civil service administration and regulation, including human resources and personnel/labor management;
- (iv) Clean water infrastructure services (treatment, supply and testing);
- (v) Economic (trade/commerce/investment), business and industrial development, promotion, regulation and administration, excluding the following end users/end uses:
 - (A) Agencies, departments, boards and councils for science and technology;
 - (B) Research, development and national laboratories (other than as specified in paragraphs (2)(xi) (measurements and standards services) and (2)(xii) (meteorology/weather/atmospheric services) of this definition (below);
 - (C) National telecommunications and information technology agencies, boards, councils and development authorities (including national information center, and Information Communications Technology (ICT) / telecommunications infrastructure / spectrum planning, policy, regulation and testing);
- (vi) Elections, balloting and polling services;
- (vii) Energy regulation and administration, including oil, gas and mining sectors;
- (viii) Environmental/natural resources regulation, administration and protection, including wildlife, fisheries and national parks;
- (ix) Food/agriculture regulation and administration;
- (x) Labor/community/social services planning, regulation and administration, including: housing and urban development, municipality and rural affairs;
- (xi) Measurements and standards services;
- (xii) Meteorology (weather, atmospheric) services;

- (xiii) National archives/museums;
- (xiv) Patents;
- (xv) Pilgrimage and religious affairs;
- (xvi) Postal services;
- (xvii) Public and higher education (excluding government research institutions and any agency, institution or affiliate engaged in the manufacture or distribution of items or services controlled on the Wassenaar Munitions List);
- (xviii) Public health and medicine/pharmaceutical regulation and administration;
- (xix) Public libraries;
- (xx) Sports/culture (includes film, commercial broadcasting and the arts) promotion, regulation and administration;
- (xxi) Travel/tourism promotion, regulation and administration.

Lighter-than-air vehicles. (Cat 2 and 9) Balloons and “airships” that rely on hot air or on lighter-than-air gases such as helium or hydrogen for their lift.

More sensitive government end users (as applied to encryption items). The following national/federal/royal (departments, agencies and entities) “government end users” (as defined in this section of the EAR) providing the following government functions and services, are considered “more sensitive:”

- (1) Agencies, departments, boards and councils for science and technology (including research, development and state / national laboratories, but not including measurements and

standards);

(2) Currency and monetary authorities (including departments and offices of the national / federal / royal reserve);

(3) Executive agents of state (including offices of president / vice president / prime minister, royal courts, national security councils, cabinet / council of ministers / supreme councils / executive councils, crown princes and other deputies of the rulers, departments and offices of political / constitutional / mainland affairs);

(4) Legislative bodies responsible for the enactment of laws;

(5) Import/export control, customs and immigration agencies and entities;

(6) Intelligence agencies and entities;

(7) Judiciary (including supreme courts and other national / federal / regional / royal high courts and tribunals);

(8) Maritime, port, railway and airport authorities;

(9) Military and armed services (including national guard, coast guard, security bureaus and paramilitary);

(10) Ministries, departments and garrisons of defense (including defense technology agencies);

(11) Ministries and departments of finance and taxation (including national / federal / royal budget and revenue authorities);

(12) Ministries and departments of foreign affairs / foreign relations / consulates / embassies;

(13) Ministries of interior, internal / home / mainland affairs, and homeland security;

(14) State / national telecommunications and information technology agencies, boards,

councils and development authorities (including national information / critical infrastructure data centers, and Information and Communications Technology (ICT) /telecommunications infrastructure / spectrum planning, policy, regulation and testing);

(15) Police, investigation and other law enforcement agencies and entities (including digital crime / cybercrime / computer forensics, counter narcotics / counter terrorism / counter proliferation agencies);

(16) Prisons;

(17) Public safety agencies and entities (including national / federal / royal agencies and departments of civil defense, emergency management, and first responders).

Publicly available encryption software. See § 742.15(b) of the EAR.

Pyrotechnic(s). (Cat 1) Mixtures of solid or liquid fuels and oxidizers which, when ignited, undergo an energetic chemical reaction at a controlled rate intended to produce specific time delays, or quantities of heat, noise, smoke, visible light or infrared radiation. Pyrophorics are a subclass of pyrotechnics, which contain no oxidizers but ignite spontaneously on contact with air.

Source code (or source language). (Cat 1, 4, 5P2, 6, 7, and 9)--A convenient expression of one or more processes that may be turned by a programming system into equipment executable form ("object code" (or object language)).

PART 774—[AMENDED]

42. The authority citation for part 774 continues to read as follows:

Authority: 50 U.S.C. 4601 *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; 43 U.S.C. 1354; 15 U.S.C. 1824a; 50 U.S.C. 4305; 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 4, 2016, 81 FR 52587 (August 8, 2016).

43. Section 774.1 is amended by adding paragraph (e) to read as follows:

§ 774.1 Introduction.

(e) *Chemicals identified by Chemical Abstracts Service (CAS) number.* In some instances chemicals are listed by name and CAS number. The list applies to chemicals of the same structural formula (including hydrates) regardless of name or CAS number. CAS numbers are shown to assist in identifying a particular chemical or mixture, irrespective of nomenclature. CAS numbers cannot be used as unique identifiers because some forms of the listed chemical have different CAS numbers, and mixtures containing a listed chemical may also have different CAS numbers.

Supplement No. 1 to Part 774 [Amended]

44. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 0, ECCN 0A617 is amended by adding double quotes around the term “laser” in paragraph (8) of the Related Controls paragraph in the List of Items Controlled section.

45. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1A001 is amended by removing and reserving paragraph b and removing paragraph c from the Items paragraph of the List of Items Controlled section.

46. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1A002 is amended by adding double quotes around the term “composite” in the introductory text of Note 1 following Items paragraph b.2 of the List of Items Controlled section.

47. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1A004, Items paragraph of the List of Items controlled is amended by revising paragraphs a.1, b.1, and c.1 and the Technical Notes at the end of the Items paragraph to read as follows:

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

* * * * *

1A004 Protective and detection equipment and “components,” not “specially designed” for military use, as follows (see List of Items Controlled).

List of Items Controlled

Items:

a. ***

a.1. ‘Biological agents’;

b. ***

b.1. ‘Biological agents’;

c. ***

c.1. ‘Biological agents’;

Technical Notes:

1. 1A004 includes equipment, “components” that have been ‘identified,’ successfully tested to national standards or otherwise proven effective, for the detection of or defense against radioactive materials “adapted for use in war,” ‘biological agents,’ chemical warfare agents, ‘simulants’ or “riot control agents,” even if such equipment or “components” are used in civil industries such as mining, quarrying, agriculture, pharmaceuticals, medical, veterinary, environmental, waste management, or the food industry.

2. *'Simulant': A substance or material that is used in place of toxic agent (chemical or biological) in training, research, testing or evaluation.*

3. *For the purposes of 1A004, 'biological agents' are pathogens or toxins, selected or modified (such as altering purity, shelf life, virulence, dissemination characteristics, or resistance to UV radiation) to produce casualties in humans or animals, degrade equipment or damage crops or the environment.*

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

1A613, Items paragraph of the List of Items controlled is amended by revising paragraph c and adding a Nota Bene after paragraph y.1 to read as follows:

1A613 Armored and protective “equipment” and related commodities, as follows (see List of Items Controlled).

List of Items Controlled

Items:

c. Military helmets (other than helmets controlled under 1A613.y.1) providing less than NIJ Type IV protection and “specially designed” helmet shells, liners, or comfort pads therefor.

Note 1: See ECCN 0A979 for controls on police helmets.

Note 2: See USML Category X(a)(5) and (a)(6) for controls on other military helmets.

y. ***

y.1 ***

N.B. to paragraph y.1: For other military helmet “components” or “accessories,” see the relevant ECCN in the CCL or USML Entry.

49. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1C001, the List of Items Controlled section, the Items paragraph is amended by adding double quotes around the term “laser” in paragraphs (a) and (b) of the Note to 1C001.b.

50. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1C002, the List of Items Controlled section is amended by revising the Note at the beginning of the Items paragraph 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:

Note: 1C002 does not control metal alloys, metal alloy powder and alloyed materials, specially formulated for coating purposes.

51. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1C006, the List of Items Controlled section, the Items paragraph is amended by removing and reserving paragraph .a (including the subparagraphs through a.2.e and the Technical Note for 1C006.a.2).

52. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1C008, the List of Items Controlled section is amended by revising the Technical Notes at the end of the Items paragraph to read as follows:

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

List of Items Controlled

Items:

Technical Notes:

1. The 'glass transition temperature (Tg)' for 1C008.a.2 thermoplastic materials, 1C008.a.4 materials and 1C008.f materials is determined using the method described in ISO 11357-2 (1999) or national equivalents.

2. The 'glass transition temperature (Tg)' for 1C008.a.2 thermosetting materials and 1C008.a.3 materials is determined using the 3-point bend method described in ASTM D 7028-07 or equivalent national standard. The test is to be performed using a dry test specimen which has attained a minimum of 90% degree of cure as specified by ASTM E 2160-04 or equivalent national standard, and was cured using the combination of standard- and post-cure processes that yield the highest Tg.

53. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1C009, List of Items Controlled section, the Items paragraph is amended by removing and reserving paragraph a.

54. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1C608 is amended by:

- a. Revising the Related Definitions paragraph in the List of Items Controlled section; and
- b. Revising the Items paragraph of the List of Items Controlled section.

The revisions read as follows:

1C608 Energetic materials and related commodities (see List of Items Controlled).

List of Items Controlled

Related Definitions: (1) For purposes of this entry, the term ‘controlled materials’ means controlled energetic materials enumerated in ECCNs 1C011, 1C111, 1C239, 1C608, or USML Category V. (2) For the purposes of this entry, the term ‘propellants’ means substances or mixtures that react chemically to produce large volumes of hot gases at controlled rates to perform mechanical work.

Items:

- a. ‘Single base,’ ‘double base,’ and ‘triple base’ ‘propellants’ having nitrocellulose with nitrogen content greater than 12.6% in the form of either:
 - a.1. ‘Sheetstock’ or ‘carpet rolls;’ or
 - a.2. Grains with diameter greater than 0.10 inches.

Note: This entry does not control ‘propellant’ grains used in shotgun shells, small arms cartridges, or rifle cartridges.

Technical Notes:

1. *'Sheetstock' is 'propellant' that has been manufactured in the form of a sheet suitable for further processing.*
 2. *A 'carpet roll' is 'propellant' that has been manufactured as a sheet, often cut to a desired width, and subsequently rolled up (like a carpet).*
 3. *'Single base' is 'propellant' which consists mostly of nitrocellulose.*
 4. *'Double base' 'propellant' consist mostly of nitrocellulose and nitroglycerine.*
 5. *'Triple base' consists mostly of nitrocellulose, nitroglycerine, and nitroguanidine. Such 'propellants' contain other materials, such as resins or stabilizers, that could include carbon, salts, burn rate modifiers, nitrodiphenylamine, wax, polyethylene glycol (PEG), polyglycol adipate (PGA).*
- b. Shock tubes containing greater than 0.064 kg per meter (300 grains per foot), but not more than 0.1 kg per meter (470 grains per foot) of 'controlled materials.'
- c. Cartridge power devices containing greater than 0.70 kg, but not more than 1.0 kg of 'controlled materials.'
- d. Detonators (electric or nonelectric) and "specially designed" assemblies therefor containing greater than 0.01 kg, but not more than 0.1 kg of 'controlled materials.'
- e. Igniters not controlled by USML Categories III or IV that contain greater than 0.01 kg, but not more than 0.1 kg of 'controlled materials.'

- f. Oil well cartridges containing greater than 0.015 kg, but not more than 0.1 kg of ‘controlled materials.’
- g. Commercial cast or pressed boosters containing greater than 1.0 kg, but not more than 5.0 kg of ‘controlled materials.’
- h. Commercial prefabricated slurries and emulsions containing greater than 10 kg and less than or equal to thirty-five percent by weight of USML ‘controlled materials.’
- i. [Reserved]
- j. “Pyrotechnic” devices “specially designed” for commercial purposes (e.g., theatrical stages, motion picture special effects, and fireworks displays), and containing greater than 3.0 kg, but not more than 5.0 kg of ‘controlled materials.’
- k. Other commercial explosive devices or charges “specially designed” for commercial applications, not controlled by 1C608.c through .g above, containing greater than 1.0 kg, but not more than 5.0 kg of ‘controlled materials.’
- l. Propyleneimine (2 methylaziridine) (C.A.S. #75-55-8).
- m. Any oxidizer or ‘mixture’ thereof that is a compound composed of fluorine and any of the following: other halogens, oxygen, or nitrogen.

Note 1 to 1C608.m: Nitrogen trifluoride (NF₃)(CAS 7783-54-2) in a gaseous state is controlled under ECCN 1C992 and not under ECCN 1C608.m.

Note 2 to 1C608.m: Chlorine trifluoride (ClF₃)(CAS 7790-91-2) is controlled under ECCN 1C111.a.3.f and not under ECCN 1C608.m.

Note 3 to 1C608.m: Oxygen difluoride (OF₂) is controlled under USML Category V.d.10 (see 22 CFR 121.1) and not under ECCN 1C608.m.

Note to 1C608.l and m: If a chemical in ECCN 1C608.l or .m is incorporated into a commercial charge or device described in ECCN 1C608.c through .k or in ECCN 1C992, the classification of the commercial charge or device applies to the item.

Technical Note to 1C608.m: ‘Mixture’ refers to a composition of two or more substances with at least one substance being enumerated in 1C011, 1C111, 1C239, 1C608, USML Category V, or elsewhere on the USML.

n. Any explosives, ‘propellants,’ oxidizers, “pyrotechnics,” fuels, binders, or additives that are “specially designed” for military application and not enumerated or otherwise described in USML Category V or elsewhere on the USML.

55. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1E001 is amended by revising the Heading and the first NS paragraph in the table of the License Requirements section to read as follows:

1E001 “Technology” according to the General Technology Note for the “development” or “production” of items controlled by 1A002, 1A003, 1A004, 1A005, 1A006.b, 1A007, 1A008 1A101, 1B (except 1B608, 1B613 or 1B999), or 1C (except 1C355, 1C608, 1C980 to 1C984, 1C988, 1C990, 1C991, 1C995 to 1C999).

License Requirements

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to “technology” for items controlled by 1A002, 1A003, 1A005, 1A006.b, 1A007, 1B001 to 1B003, 1B018, 1C001 to 1C011, or 1C018	NS Column 1.

56. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCN 1E002 is amended by removing the phrase “contained in aircraft manufacturers’ manuals” and adding in its place “contained in “aircraft” manufacturers’ manuals” in the Note to 1E002.f.

57. In Supplement No. 1 to Part 774 (the Commerce Control List), the Annex to Category 1 is amended by revising paragraph 48 and adding paragraph 49 to read as follows:

ANNEX to Category 1
List of Explosives (See ECCNs 1A004 and 1A008)

48. Energetic ionic materials melting between 343 K (70°C) and 373 K (100°C) and with detonation velocity exceeding 6,800 m/s or detonation pressure exceeding 18 GPa (180 kbar);

49. BTNEN (Bis(2,2,2-trinitroethyl)-nitramine) (CAS 19836-28-3).

58. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 2, ECCN 2B001 is amended by revising paragraphs a, b.1 and b.2.a in the Items paragraph of the List of Items Controlled section, to read as follows:

2B001 Machine tools and any combination thereof, for removing (or cutting) metals, ceramics or “composites,” which, according to the manufacturer’s technical specifications, can be equipped with electronic devices for “numerical control;” as follows (see List of Items Controlled).

List of Items Controlled

Items:

a. Machine tools for turning having two or more axes which can be coordinated simultaneously for “contouring control” having any of the following:

a.1. "Unidirectional positioning repeatability" equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

a.2. “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m;

Note 1: *2B001.a does not control turning machines “specially designed” for producing contact lenses, having all of the following:*

a. *Machine controller limited to using ophthalmic based “software” for part programming data input; and*

b. *No vacuum chucking.*

Note 2: *2B001.a does not apply to bar machines (Swissturn), limited to machining only bar feed thru, if maximum bar diameter is equal to or less than 42 mm and there is no capability of*

mounting chucks. Machines may have drilling and/or milling capabilities for machining parts with diameters less than 42 mm.

b. ***

b.1. Three linear axes plus one rotary axis which can be coordinated simultaneously for “contouring control” having any of the following:

b.1.a. "Unidirectional positioning repeatability" equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

b.1.b. “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m;

b.2. ***

b.2.a. "Unidirectional positioning repeatability" equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m;

59. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 2, ECCN 2B006 is amended by:

a. Revising the NP Column 1 paragraph in the License Requirements table;

- b. Revising the Note following the introductory Items paragraph b.1;
- c. Revising Items paragraph b.1.c in the List of Items Controlled section; and
- d. Adding double quotes around the term “laser” in the Note to Items paragraph b.2 in the List of Items Controlled section.

The revisions read as follows:

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

License Requirements

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
*****	*****
NP applies to those items in 2B006.a and .b that meet or exceed the technical parameters in 2B206.	NP Column 1
*****	*****

List of Items Controlled

Items:

b. ***

b.1. ***

Note: Interferometer and optical-encoder displacement measuring systems containing a “laser” are only specified by 2B006.b.1.c.

b.1.c. Measuring systems having all of the following:

b.1.c.1. Containing a “laser;”

b.1.c.2. A “resolution” over their full scale of 0.200 nm or less (better); *and*

b.1.c.3. Capable of achieving a “measurement uncertainty” equal to or less (better) than $(1.6 + L/2,000)$ nm (L is the measured length in mm) at any point within a measuring range, when compensated for the refractive index of air and measured over a period of 30 seconds at a temperature of $20 \pm 0.01^\circ\text{C}$; *or*

b.2. ***

Note: 2B006.b.2 does not control optical instruments, such as autocollimators, using collimated light (e.g., “laser” light) to detect angular displacement of a mirror.

60. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3, ECCN 3A001 is amended by:

- a. Revising the Heading;
- b. Revising Items paragraph a.5.a.2 through a.5.a.5, not including the Technical Note, in the List of Items Controlled section;
- c. Revising Items introductory paragraph b, not including the Technical Note, and Items paragraph e.1.b, in the List of Items Controlled section; and
- d. Adding double quotes to the term “accuracy” in Items paragraph f.

The revisions read as follows:

3A001 Electronic items as follows (see List of Items Controlled).

List of Items Controlled

Items:

a. ***

a.5. ***

a.5.a.2. A resolution of 10 bit or more, but less than 12 bit, with an output rate greater than 500 million words per second;

a.5.a.3. A resolution of 12 bit or more, but less than 14 bit, with an output rate greater than 200 million words per second;

a.5.a.4. A resolution of 14 bit or more, but less than 16 bit, with an output rate greater than 250 million words per second; *or*

a.5.a.5. A resolution of 16 bit or more with an output rate greater than 65 million words per second;

b. Microwave or millimeter wave items, as follows:

e. ***

e.1. ***

e.1.b. 'Secondary cells' having an 'energy density' exceeding 350 Wh/kg at 293 K

(20°C);

61. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3, ECCN 3A002

is amended by:

- a. Revising the Heading;
- b. Revising the License Requirements and List Based License Exceptions sections;
- c. Revising the Related Controls paragraph in the List of Items Controlled section;
- d. Removing and reserving Items paragraph a.5 of the List of Items Controlled section;
- e. Adding a Nota Bene (N.B.) under the reserved Items paragraphs a.1 to a.5 of the List of Items Controlled section;
- f. Revising Items paragraph a.6 of the List of Items Controlled section; and
- g. Adding Items paragraph h to the List of Items Controlled section.

The additions and revisions read as follows:.

3A002 General purpose “electronic assemblies,” modules and equipment, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, AT

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to entire entry	NS Column 2
MT applies to 3A002.h when the parameters in 3A101.a.2.b are met or exceeded	MT Column 1
AT applies to entire entry	AT Column 1

Reporting Requirements: See §743.1 of the EAR for reporting requirements for exports under License Exceptions, and Validated End-User authorizations.

List Based License Exceptions (See Part 740 for a description of all license exceptions)

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

\$5000: 3A002.c to .d, and .h (unless controlled for MT);

GBS: Yes, for 3A002.h (unless controlled for MT)

CIV: Yes, for 3A002.h (unless controlled for MT)

List of Items Controlled

Related Controls: See Category XV(e)(9) of the USML for certain “space-qualified” atomic frequency standards “subject to the ITAR” (see 22 CFR parts 120 through 130). See also 3A101, 3A292, 3A992 and 9A515.x.

Items:

a. ***

a.1. to a.5. [RESERVED]

N.B.: *For waveform digitizers and transient recorders, see 3A002.h.*

a.6. Digital data recorders having all of the following:

a.6.a. A sustained ‘continuous throughput’ of more than 6.4 Gbit/s to disk or solid-state drive memory; *and*

a.6.b. A processor that performs analysis of radio frequency signal data while it is being recorded;

Technical Notes:

1. For recorders with a parallel bus architecture, the 'continuous throughput' rate is the highest word rate multiplied by the number of bits in a word.

2. 'Continuous throughput' is the fastest data rate the instrument can record to disk or solid-state drive memory without the loss of any information while sustaining the input digital data rate or digitizer conversion rate.

h. "Electronic assemblies," modules or equipment, specified to perform all of the following:

h.1. Analog-to-digital conversions meeting any of the following:

h.1.a. A resolution of 8 bit or more, but less than 10 bit, with an input sample rate greater than 1.3 billion samples per second;

h.1.b. A resolution of 10 bit or more, but less than 12 bit, with an input sample rate greater than 1.0 billion samples per second;

h.1.c. A resolution of 12 bit or more, but less than 14 bit, with an input sample rate greater than 1.0 billion samples per second;

h.1.d. A resolution of 14 bit or more but less than 16 bit, with an input sample rate greater than 400 million samples per second; *or*

h.1.e. A resolution of 16 bit or more with an input sample rate greater than 180 million samples per second; *and*

h.2. Any of the following:

h.2.a. Output of digitized data;

h.2.b. Storage of digitized data; *or*

h.2.c. Processing of digitized data;

N.B.: Digital data recorders, oscilloscopes, “signal analyzers,” signal generators, network analyzers and microwave test receivers, are specified by 3A002.a.6, 3A002.a.7, 3A002.c, 3A002.d, 3A002.e and 3A002.f, respectively.

Technical Note: For multiple-channel “electronic assemblies” or modules, control status is determined by the highest single-channel specified performance.

Note: 3A002.h includes ADC cards, waveform digitizers, data acquisition cards, signal acquisition boards and transient recorders.

62. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3, ECCN 3A101 is amended by revising the Related Controls paragraph in the List of Items Controlled section to read as follows:

3A101 Electronic equipment, devices, “parts” and “components,” other than those controlled by 3A001, as follows (see List of Items Controlled).

List of Items Controlled

Related Controls: See also ECCN 3A002.h for controls on analog-to-digital “electronic assemblies,” modules or equipment. *****

63. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3, ECCN 3A292 is amended by revising the Heading to read as follows:

3A292 Oscilloscopes and transient recorders other than those controlled by 3A002.h, and “specially designed” “parts” and “components” therefor.

64. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3, ECCN 3B001 is amended by:

- a. Revising the CIV paragraph in the List Based License Exceptions section;
- b. Removing and reserving Items paragraph c in the List of Items Controlled section;
- c. Revising Items paragraph e.1 in the List of Items Controlled section;
- d. Removing the word “etch,” in Technical Note 1 after Items paragraph e.2;
- e. Adding a Note to Items paragraph f.2;
- f. Revising Items paragraph f.3 in the List of Items Controlled section; and
- g. Adding Items paragraph f.4 in the List of Items Controlled section.

The revisions and additions 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 Based License Exceptions (See Part 740 for a description of all license exceptions)

CIV: Yes for equipment controlled by 3B001.a.1 and a.2.

List of Items Controlled

Items:

e. ***

e.1. Interfaces for wafer input and output, to which more than two functionally different 'semiconductor process tools' controlled by 3B001.a.1, 3B001.a.2, 3B001.a.3 or 3B001.b are designed to be connected; *and*

f. ***

f.2. ***

Note: 3B001.f.2 includes:

- *Micro contact printing tools*
- *Hot embossing tools*
- *Nano-imprint lithography tools*
- *Step and flash imprint lithography (S-FIL) tools*

f.3. Equipment “specially designed” for mask making having all of the following:

f.3.a. A deflected focused electron beam, ion beam or “laser” beam; *and*

f.3.b. Having any of the following:

f.3.b.1. A Full-Width Half-Maximum (FWHM) spot size smaller than 65 nm and an image placement less than 17 nm (mean + 3 sigma); *or*

f.3.b.2. [Reserved]

f.3.b.3. A second-layer overlay error of less than 23 nm (mean + 3 sigma) on the mask;

f.4. Equipment designed for device processing using direct writing methods, having all of the following:

f.4.a. A deflected focused electron beam; *and*

f.4.b. Having any of the following:

f.4.b.1. A minimum beam size equal to or smaller than 15 nm; *or*

f.4.b.2. An overlay error less than 27 nm (mean + 3 sigma);

65. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3, ECCN 3D001

is amended by:

- a. Revising the Heading;
- b. Revising the NS paragraph in the License Requirements table; and
- c. Revising the CIV paragraph in the List Based License Exceptions section, to read as follows:

3D001 “Software” “specially designed” for the “development” or “production” of equipment controlled by 3A001.b to 3A002.h or 3B (except 3B991 and 3B992).

License Requirements

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to “software” for equipment controlled by 3A001.b to 3A001.h, 3A002, and 3B	NS Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

CIV: N/A

66. In Supplement No. 1 to part 774 (the Commerce Control List), Category 3, ECCN 3E002

is amended by:

- a. Revising the CIV paragraph in the List Based License Exception section;
- b. Revising the Technical Note after Items paragraph a in the List of Items Controlled section; and
- c. Revising Items paragraph c, including Notes that follow, to read as follows:

3E002 “Technology” according to the General Technology Note other than that controlled in 3E001 for the “development” or “production” of a “microprocessor microcircuit,” “micro-computer microcircuit” and microcontroller microcircuit core, having an arithmetic logic unit with an access width of 32 bits or more and any of the following features or characteristics (see List of Items Controlled).

License Requirements

List Based License Exceptions (See Part 740 for a description of all license exceptions)

CIV: Yes, for deemed exports, as described in §734.13(a)(2) of the EAR, of “technology” for the “development” or “production” of general purpose microprocessor cores with a vector processor unit with operand length of 64-bit or less, 64-bit floating operations not exceeding 50 GFLOPS, or 16-bit or more floating-point operations not exceeding 50 GMACS (billions of 16-

bit fixed-point multiply-accumulate operations per second). License Exception CIV does not apply to ECCN 3E002 technology also required for the development or production of items controlled under ECCNs beginning with 3A, 3B, or 3C, or to ECCN 3E002 technology also controlled under ECCN 3E003.

List of Items Controlled

Items:

a. ***

Technical Note: A 'vector processor unit' is a processor element with built-in instructions that perform multiple calculations on floating-point vectors (one-dimensional arrays of 32-bit or larger numbers) simultaneously, having at least one vector arithmetic logic unit and vector registers of at least 32 elements each.

c. Designed to perform more than eight 16-bit fixed-point multiply-accumulate results per cycle (e.g., digital manipulation of analog information that has been previously converted into digital form, also known as digital "signal processing").

Note 1: 3E002 does not control “technology” for multimedia extensions.

Note 2: 3E002 does not control “technology” for the “development” or “production” of microprocessor cores, having all of the following:

a. Using “technology” at or above 0.130 μm ; and

b. Incorporating multi-layer structures with five or fewer metal layers.

Note 3: 3E002 includes “technology” for digital signal processors and digital array processors.

67. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4 is amended by removing Note 3 at the beginning of Category 4.

68. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4, ECCN 4A001 is amended by revising the Related Controls paragraph in the List of Items Controlled section to read as follows:

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

List of Items Controlled

Related Controls: See also 4A101 and 4A994. Equipment designed or rated for transient ionizing radiation is “subject to the ITAR” (see 22 CFR parts 120 through 130).

69. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4, ECCN 4A003

is amended by:

- a. Removing MT from the Reason for Control paragraph in the License Requirements section;
- b. Removing the MT paragraph from the License Requirements table;
- c. Revising the AT paragraph in the License Requirements table;
- d. Revising the Note in the License Requirements section;
- e. Revising the List Based License Exceptions sections;
- f. Removing the last listed item in Note 1 located at the beginning of the Items paragraph in the List of Items Controlled section;
- g. Revising Items paragraph b in the List of Items Controlled section;
- h. Revising Note 1 to 4A003.c;
- i. Removing Items paragraph e and revising the citation of the reserved paragraphs to read “.d to f. [Reserved]”;
- j. Adding a Nota Bene below the reserved paragraphs d to f.

The revisions and additions read as follows:

4A003 “Digital computers,” “electronic assemblies,” and related equipment therefor, as follows (see List of Items Controlled) and “specially designed” “components” therefor.

License Requirements

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
*****	*****
AT applies to entire entry (refer to 4A994 for controls on “digital computers” with a APP > 0.0128 but ≤ 12.5 WT)	AT Column 1

Note: For all destinations, except those countries in Country Group E:1 or E:2 of Supplement No. 1 to part 740 of the EAR, no license is required (NLR) for computers with an “Adjusted Peak Performance” (“APP”) not exceeding 12.5 Weighted TeraFLOPS (WT) and for

“electronic assemblies” described in 4A003.c that are not capable of exceeding an “Adjusted Peak Performance” (“APP”) exceeding 12.5 Weighted TeraFLOPS (WT) in aggregation, except certain transfers as set forth in § 746.3 (Iraq).

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: \$5000; N/A for 4A003.b and .c.

GBS: Yes, for 4A003.g and “specially designed” “parts” and “components” therefor, exported separately or as part of a system.

APP: Yes, for computers controlled by 4A003.b, and “electronic assemblies” controlled by 4A003.c, to the exclusion of other technical parameters. See §740.7 of the EAR.

CIV: Yes, for 4A003.g.

List of Items Controlled

Items:

Note 1: *4A003 includes the following:*

- ‘Vector processors’ (as defined in Note 7 of the “Technical Note on “Adjusted Peak Performance” (“APP”));

- *Array processors;*

- *Digital signal processors;*

- *Logic processors;*

- *Equipment designed for “image enhancement.”*

b. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 12.5 weighted TeraFLOPS (WT);

c. ***

Note 1: 4A003.c applies only to “electronic assemblies” and programmable interconnections not exceeding the limit in 4A003.b when shipped as unintegrated “electronic assemblies.”

d. to f. [Reserved]

N.B.: For “electronic assemblies,” modules or equipment, performing analog-to-digital

conversions, see 3A002.h.

70. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4, ECCN 4D001 is amended by:

- a. Removing NP from the Reason for Control paragraph in the License Requirements section;
- b. Removing the sentence directly below the License Requirements table;
- c. Revising the TSR paragraph in the List Based License Exceptions section;
- d. Revising the STA paragraph in the Special Conditions for STA section;
- e. Revising Items paragraph b.1 in the List of Items Controlled section.

The revisions are set forth below:

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

License Requirements

Reason for Control: NS, CC, AT

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to entire entry	NS Column 1.

CC applies to “software” for computerized finger-print equipment controlled by 4A003 for CC reasons	CC Column 1.
AT applies to entire entry	AT Column 1.

Reporting Requirements See §743.1 of the EAR for reporting requirements for exports under License Exceptions, and Validated End-User authorizations.

List Based License Exceptions (See Part 740 for a description of all license exceptions)

TSR: Yes, except for “software” for the “development” or “production” of commodities with an “Adjusted Peak Performance” (“APP”) exceeding 12.5 WT.

Special Conditions for STA

STA: License Exception STA may not be used to ship or transmit “software” “specially designed” for the “development” or “production” of equipment specified by ECCN 4A001.a.2 or for the “development” or “production” of “digital computers” having an ‘Adjusted Peak Performance’ (‘APP’) exceeding 12.5Weighted TeraFLOPS (WT) to any of the destinations listed in Country Group A:6 (See Supplement No.1 to part 740 of the EAR).

List of Items Controlled

Items:

b. ***

b.1. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 6.0 Weighted TeraFLOPS (WT);

71. In Supplement No. 1 to part 774 (the Commerce Control List), Category 4, ECCN 4E001, is amended by:

- a. Removing NP from the Reason for Control paragraph in the License Requirements section;
- b. Removing the sentence directly below the License Requirements table;
- c. Revising the TSR paragraph in the List Based License Exceptions section;
- d. Revising the STA paragraph in the Special Conditions for STA section;
- e. Revising Items paragraph b.1 in the List of Items Controlled section.

The revisions read as follows:

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

License Requirements

Reason for Control: NS, MT, CC, AT

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to entire entry	NS Column 1.
MT applies to “technology” for items controlled by 4A001.a and 4A101 for MT reasons	MT Column 1.
CC applies to “technology” for computerized fingerprint equipment controlled by 4A003 for CC reasons	CC Column 1.
AT applies to entire entry	AT Column 1.

Reporting Requirements See §743.1 of the EAR for reporting requirements for exports under License Exceptions, and Validated End-User authorizations

List Based License Exceptions (See Part 740 for a description of all license exceptions)

TSR: Yes, except for “technology” for the “development” or “production” of commodities with an “Adjusted Peak Performance” (“APP”) exceeding 12.5 WT.

Special Conditions for STA

STA: License Exception STA may not be used to ship or transmit “technology” according to the General Technology Note for the “development” or “production” of any of the following equipment or “software”: a. Equipment specified by ECCN 4A001.a.2; b. “Digital computers”

having an ‘Adjusted Peak Performance’ (‘APP’) exceeding 12.5 Weighted TeraFLOPS (WT); or
c. “software” specified in the License Exception STA paragraph found in the License Exception section of ECCN 4D001 to any of the destinations listed in Country Group A:6 (See Supplement No. 1 to part 740 of the EAR).

List of Items Controlled

Items:

b. ***

b.1. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 6.0 Weighted TeraFLOPS (WT);

72. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 1 is amended by removing Nota Bene 2 (N.B.2) from Note 1 at the beginning of Category 5 - Part 1 and changing “N.B.1” to read “N.B”.

CATEGORY 5 – TELECOMMUNICATIONS AND “INFORMATION SECURITY”

Part 1 – TELECOMMUNICATIONS

Notes:

1. ***

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

73. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 1, ECCN 5A001 is amended by revising paragraph d in the Items paragraph of the List of Items Controlled section to read as follows:

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

List of Items Controlled

Items:

d. “Electronically steerable phased array antennas” as follows:

d.1. Rated for operation above 31.8 GHz, but not exceeding 57 GHz, and having an Effective Radiated Power (ERP) equal to or greater than +20 dBm (22.15 dBm Effective

Isotropic Radiated Power (EIRP));

d.2. Rated for operation above 57 GHz, but not exceeding 66 GHz, and having an ERP equal to or greater than +24 dBm (26.15 dBm EIRP);

d.3. Rated for operation above 66 GHz, but not exceeding 90 GHz, and having an ERP equal to or greater than +20 dBm (22.15 dBm EIRP);

d.4. Rated for operation above 90 GHz;

Note: 5A001.d does not control “electronically steerable phased array antennas” for landing systems with instruments meeting ICAO standards covering Microwave Landing Systems (MLS).

74. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 1, ECCN 5B001 is amended by removing and reserving paragraph b.2.b and revising paragraph b.4 in the Items paragraph of the List of Items Controlled section to read as follows:

5B001 Telecommunication test, inspection and production equipment, “components” and “accessories,” as follows (See List of Items Controlled).

List of Items Controlled

Items:

b. ***

b.4. Radio equipment employing Quadrature-Amplitude-Modulation (QAM) techniques above level 1,024.

75. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 1, ECCN 5D001 is amended by revising paragraph d.4 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. ***

d.4. Radio equipment employing Quadrature-Amplitude-Modulation (QAM) techniques above level 1,024.

76. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 1,

ECCN 5E001 is amended by:

- a. Removing and reserving Items paragraph c.2.b of the List of Items Controlled section;
- b. Revising the Note to Items paragraph c.2.c;
- c. Revising Items paragraph c.4.a 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.2. ***

c.2.c. ***

Note: 5E001.c.2.c applies to “technology” for the “development” or “production” of systems using an optical local oscillator in the receiving side to synchronize with a carrier “laser.”

c.4. ***

c.4.a. Quadrature-Amplitude-Modulation (QAM) techniques above level 1,024; *or*

77. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2 is amended by:

- a. Removing and reserving Note 1, including the Nota bene, at the beginning of the Category;
- b. Revising Note 2;
- c. Revising the introductory text to Note 3;
- d. Revising the Technical Note below paragraph b.4 in Note 3;
- e. Revising paragraph 1.b in the Note to the Cryptography Note;
- f. Revising the Nota Bene to Note 3 (Cryptography Note);
- g. Revising the introductory text to Note 4; and
- h. Adding the heading “I. CRYPTOGRAPHIC “INFORMATION SECURITY” following the heading that reads “A. “END ITEMS,” “EQUIPMENT,” “ACCESSORIES,” “ATTACHMENTS,” “PARTS,” “COMPONENTS,” AND “SYSTEMS”.

The revisions and additions read as follows:

CATEGORY 5 – TELECOMMUNICATIONS AND “INFORMATION SECURITY”

Part 2 – “INFORMATION SECURITY”

Note 2: Category 5 - Part 2, “information security” products, when accompanying their user for the user's personal use or as tools of trade, are eligible for License Exceptions TMP or BAG, subject to the terms and conditions of these license exceptions.

Note 3: Cryptography Note: ECCNs 5A002, 5A003, 5A004 and 5D002, do not control items as follows:

b. ***

4. ***

Technical Note: For the purpose of the Cryptography Note, ‘executable software’ means “software” in executable form, from an existing hardware component excluded from 5A002, 5A003 or 5A004 by the Cryptography Note.

Note: ***

Note to the Cryptography Note:

1. ***

b. The price and information about the main functionality of the item are available before purchase without the need to consult the vendor or supplier. A simple price inquiry is not considered to be a consultation.

2. ***

N.B. to Note 3 (Cryptography Note): You must submit a classification request or self-classification report to BIS for mass market encryption commodities and software eligible for the Cryptography Note employing a key length greater than 64 bits for the symmetric algorithm (or,

for commodities and software not implementing any symmetric algorithms, employing a key length greater than 768 bits for asymmetric algorithms or greater than 128 bits for elliptic curve algorithms) in accordance with the requirements of § 740.17(b) of the EAR in order to be released from the “EI” and “NS” controls of ECCN 5A002 or 5D002.

Note 4: *Category 5 - Part 2 does not apply to items incorporating or using “cryptography” and meeting all of the following:*

A. “END ITEMS,” “EQUIPMENT,” “ACCESSORIES,” “ATTACHMENTS,” “PARTS,” “COMPONENTS,” AND “SYSTEMS”

I. CRYPTOGRAPHIC “INFORMATION SECURITY”

78. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2,

ECCN 5A002 is amended by:

- a. Revising the Heading;
- b. Revising the License Requirements section;
- c. Revising the Related Controls paragraph in the List of Items Controlled section;
- and
- d. Revising Items paragraph in the List of Items Controlled section.

The revisions read as follows:

5A002 “Information security” systems, equipment and “components,” as follows (see List

of Items Controlled).

License Requirements

Reason for Control: NS, AT, EI

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
NS applies to entire entry	NS Column 1.
AT applies to entire entry	AT Column 1.
EI applies to entire entry	Refer to §742.15 of the EAR.

License Requirements Note: See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

List of Items Controlled

Related Controls: (1) ECCN 5A002.a controls “components” providing the means or functions necessary for “information security.” All such “components” are presumptively “specially designed” and controlled by 5A002.a. (2) See USML Categories XI (including XI(b)) and XIII(b) (including XIII(b)(2)) for controls on systems, equipment, and components described in 5A002.d or .e that are subject to the ITAR. (3) After classification or self-classification in

accordance with § 740.17(b) of the EAR, mass market encryption commodities that meet eligibility requirements are released from “EI” and “NS” controls. These commodities are designated 5A992.c.

Items:

a. Systems, equipment and components, for cryptographic “information security,” as follows:

N.B.: For the control of Global Navigation Satellite Systems (GNSS) receiving equipment containing or employing decryption, see ECCN 7A005, and for related decryption “software” and “technology” see 7D005 and 7E001.

a.1. Designed or modified to use “cryptography” employing digital techniques performing any cryptographic function other than authentication, digital signature, or execution of copy-protected “software,” and having any of the following:

Technical Notes:

1. Functions for authentication, digital signature and the execution of copy-protected “software” include their associated key management function.

2. Authentication includes all aspects of access control where there is no encryption of files or text except as directly related to the protection of passwords, Personal Identification Numbers (PINs) or similar data to prevent unauthorized access.

a.1.a. A “symmetric algorithm” employing a key length in excess of 56-bits; *or*

Technical Note: *In Category 5 - Part 2, parity bits are not included in the key length.*

a.1.b. An “asymmetric algorithm” where the security of the algorithm is based on any of the following:

a.1.b.1. Factorization of integers in excess of 512 bits (e.g., RSA);

a.1.b.2. Computation of discrete logarithms in a multiplicative group of a finite field of size greater than 512 bits (e.g., Diffie-Hellman over Z/pZ); *or*

a.1.b.3. Discrete logarithms in a group other than mentioned in 5A002.a.1.b.2 in excess of 112 bits (e.g., Diffie-Hellman over an elliptic curve);

a.2. [Reserved]

N.B.: *See 5A004.a for items formerly specified in 5A002.a.2.*

Note: *5A002.a does not control any of the following:*

(a) Smart cards and smart card ‘readers/writers’ as follows:

(1) A smart card or an electronically readable personal document (e.g., token coin,

e-passport) that meets any of the following:

a. The cryptographic capability is restricted for use in equipment or systems, excluded from 5A002, 5A003 or 5A004 by Note 4 in Category 5 - Part 2 or entries (b) to (i) of this Note, and cannot be reprogrammed for any other use; or

b. Having all of the following:

1. It is specially designed and limited to allow protection of 'personal data' stored within;

2. Has been, or can only be, personalized for public or commercial transactions or individual identification; and

3. Where the cryptographic capability is not user-accessible;

Technical Note: *'Personal data' includes any data specific to a particular person or entity, such as the amount of money stored and data necessary for authentication.*

(2). 'Readers/writers' specially designed or modified, and limited, for items specified by (a)(1) of this Note;

Technical Note: *'Readers/writers' include equipment that communicates with smart cards or electronically readable documents through a network.*

(b) Cryptographic equipment specially designed and limited for banking use or 'money transactions';

Technical Note: *'Money transactions' in 5A002 Note (b) includes the collection and settlement of fares or credit functions.*

(c) Portable or mobile radiotelephones for civil use (e.g., for use with commercial civil cellular radio communication systems) that are not capable of transmitting encrypted data directly to another radiotelephone or equipment (other than Radio Access Network (RAN) equipment), nor of passing encrypted data through RAN equipment (e.g., Radio Network Controller (RNC) or Base Station Controller (BSC));

(d) Cordless telephone equipment not capable of end-to-end encryption where the maximum effective range of unboosted cordless operation (i.e., a single, unrelayed hop between terminal and home base station) is less than 400 meters according to the manufacturer's specifications;

(e) Portable or mobile radiotelephones and similar client wireless devices for civil use, that implement only published or commercial cryptographic standards (except for anti-piracy functions, which may be non-published) and also meet the provisions of paragraphs a.2. to a.5. of the Cryptography Note (Note 3 in Category 5 – Part 2), that have been customized for a specific civil industry application with features that do not affect the cryptographic functionality of these original non-customized devices;

(f) Wireless "personal area network" equipment that implement only published or commercial cryptographic standards and where the cryptographic capability is limited to a nominal operating range not exceeding 30 meters according to the manufacturer's specifications, or not exceeding 100 meters according to the manufacturer's specifications for equipment that cannot interconnect with more than seven devices;

(g) Equipment meeting all of the following:

1. All cryptographic capability specified by 5A002.a meets any of the following:

a. It cannot be used; or

b. It can only be made useable by means of “cryptographic activation;” and

2. When necessary as determined by the appropriate authority in the exporter’s country, details of the equipment are accessible and will be provided to the authority upon request, in order to ascertain compliance with conditions described above;

***N.B.1:** See 5A002.a for equipment that has undergone “cryptographic activation.”*

***N.B.2:** See also 5A002.b, 5D002.d and 5E002.b.*

(h) Mobile telecommunications Radio Access Network (RAN) equipment designed for civil use, which also meet the provisions 2. to 5. of part a. of the Cryptography Note (Note 3 in Category 5 – Part 2), having an RF output power limited to 0.1W (20 dBm) or less, and supporting 16 or fewer concurrent users;

(i) Routers, switches or relays, where the "information security" functionality is limited to the

tasks of "Operations, Administration or Maintenance" ("OAM") implementing only published or commercial cryptographic standards; or

(j) General purpose computing equipment or servers, where the "information security" functionality meets all of the following:

1. Uses only published or commercial cryptographic standards; and

2. Is any of the following:

a. Integral to a CPU that meets the provisions of Note 3 in Category 5 - Part 2;

b. Integral to an operating system that is not specified by 5D002; or

c. Limited to "OAM" of the equipment.

b. Designed or modified to enable, by means of "cryptographic activation," an item to achieve or exceed the controlled performance levels for functionality specified by 5A002.a that would not otherwise be enabled;

c. Designed or modified to use or perform "quantum cryptography;"

Technical Note: "Quantum cryptography" is also known as Quantum Key Distribution (QKD).

d. Designed or modified to use cryptographic techniques to generate channelizing codes, scrambling codes or network identification codes, for systems using ultra-wideband modulation techniques and having any of the following:

d.1. A bandwidth exceeding 500 MHz; *or*

d.2. A “fractional bandwidth” of 20% or more;

e. Designed or modified to use cryptographic techniques to generate the spreading code for “spread spectrum” systems, not controlled in 5A002.d., including the hopping code for “frequency hopping” systems.

79. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2, ECCN 5A992 is amended by removing and reserving Items paragraphs a and b and revising Items paragraph c in the List of Items Controlled section.

The revisions read as follows:

5A992 Equipment not controlled by 5A002 (see List of Items Controlled).

List of Items Controlled

*Items:****

c. Commodities classified as mass market encryption commodities in accordance with

§ 740.17(b) of the EAR.

80. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2 is amended by:

- a. Adding after ECCN 5A992 the heading “II. NON-CRYPTOGRAPHIC “INFORMATION SECURITY” ” and adding ECCN 5A003; and
- b. Adding after ECCN 5A003 the heading “III. DEFEATING, WEAKENING, OR BYPASSING “INFORMATION SECURITY”” and adding ECCN 5A004 .

The additions read as follows:

II. NON-CRYPTOGRAPHIC “INFORMATION SECURITY”

5A003 “Systems,” “equipment” and “components,” for non-cryptographic “information security,” as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
NS applies to entire entry	NS Column 2.
AT applies to entire entry	AT Column 1.

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: Yes: \$500 for “components.” N/A for systems and equipment.

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: N/A

Related Definitions: N/A

Items:

a. Communications cable systems designed or modified using mechanical, electrical or electronic means to detect surreptitious intrusion;

Note: 5A003.a applies only to physical layer security.

b. “Specially designed” or modified to reduce the compromising emanations of information-bearing signals beyond what is necessary for health, safety or electromagnetic interference standards.

II. DEFEATING, WEAKENING, OR BYPASSING “INFORMATION SECURITY”

5A004 “Systems,” “equipment” and “components” for defeating, weakening or bypassing “information security,” as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, AT, EI

Control(s)	Country Chart (See Supp. No. 1 to part 738)
-------------------	--

NS applies to entire entry	NS Column 1.
AT applies to entire entry	AT Column 1.
EI applies to entire entry	Refer to §742.15 of the EAR.

License Requirements Note: See §744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: Yes: \$500 for “components.” N/A for systems and equipment.

GBS: N/A

CIV: N/A

ENC: Yes for certain EI controlled commodities, see §740.17 of the EAR for eligibility.

List of Items Controlled

Related Controls: ECCN 5A004.a controls “components” providing the means or functions necessary for “information security.” All such “components” are presumptively “specially designed” and controlled by 5A004.a.

Related Definitions: N/A

Items:

- a. Designed or modified to perform ‘cryptanalytic functions.’

Note: 5A004.a includes systems or equipment, designed or modified to perform ‘cryptanalytic functions’ by means of reverse engineering.

Technical Note: 'Cryptanalytic functions' are functions designed to defeat cryptographic mechanisms in order to derive confidential variables or sensitive data, including clear text, passwords or cryptographic keys.

b. [Reserved]

81. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2, ECCN 5B002 is amended by revising the Items paragraph in the List of Items Controlled section to read as follows:

5B002 “Information Security” test, inspection and “production” equipment, as follows (see List of Items Controlled).

List of Items Controlled

Items:

a. Equipment “specially designed” for the “development” or “production” of equipment controlled by 5A002, 5A003, 5A004 or 5B002.b;

b. Measuring equipment “specially designed” to evaluate and validate the “information security”

functions of equipment controlled by 5A002, 5A003 or 5A004, or of “software” controlled by 5D002.a or 5D002.c.

82. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2, ECCN 5D002 is amended by:

- a. Adding, as well as revising, EI controls to the License Requirement table in the License Requirements section;
- b. Removing the EI sentence, including the two Notes, under the License Requirements Note;
- c. Revising the Related Controls paragraph in the List of Items Controlled Section; and
- d. Revising Items paragraphs a. and c.1.

The revisions and additions read as follows:

5D002 “Software” as follows (see List of Items Controlled)

License Requirements

Reason for Control: ***

Control(s)	Country Chart (See Supp. No. 1 to part 738)
*****	*****
EI applies to “software” in 5D002.a, c.1 and .d, for commodities or “software” controlled for EI reasons	See §742.15 of the EAR. <i>Note: Encryption software is controlled because of its functional capacity, and not because of any informational value of such software; such software is not accorded the</i>

in ECCNs 5A002, 5A004 or 5D002.	<i>same treatment under the EAR as other “software”; and for export licensing purposes, encryption software is treated under the EAR in the same manner as a commodity included in ECCN 5A002.</i>
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License Requirements Note: See §744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

List of Items Controlled

Related Controls: After classification or self-classification in accordance with § 740.17(b) of the EAR, mass market encryption software that meet eligibility requirements are released from “EI” and “NS” controls. This software is designated as 5D992.c.

Items:

- a. “Software” “specially designed” or modified for the “development,” “production” or “use” of equipment controlled by 5A002, 5A003 or 5A004, or of “software” controlled by 5D002.c;

- c. ***

c.1. “Software” having the characteristics, or performing or simulating the functions of the equipment, controlled by 5A002, 5A003 or 5A004;

83. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2, ECCN 5D992 is amended by removing and reserving Items paragraphs a and b, and revising Items paragraph c in the Items paragraph of the List of Items Controlled section to read as follows:

5D992 “Information Security” “software” not controlled by 5D002 as follows (see List of Items Controlled).

List of Items Controlled

Items:

a. [Reserved]

b. [Reserved]

c. “Software” classified as mass market encryption software in accordance with § 740.17(b) of the EAR.

84. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2,

ECCN 5E002 is amended by:

- a. Adding an EI control row to the License Requirements table in the License Requirements section;
- b. Removing the EI sentence after the License Requirements table in the License Requirements section;
- c. Revising Note 2 in the License Requirements Notes in the License Requirements section;
- d. Revising the Related Controls paragraph of the List of Items Controlled section;
- e. Revising Items paragraph a in the List of Items Controlled section.

The revisions and additions read as follows:

5E002 “Technology” as follows (see List of Items Controlled).

License Requirements

Reason for Control: ***

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
*****	*****
EI applies to “technology” in	Refer to §742.15 of the EAR.

5E002.a for commodities or “software” controlled for EI reasons in ECCNs 5A002, 5A004 or 5D002, and to “technology” in 5E002.b.	
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*License Requirements Notes: *** (2) When a person performs or provides technical assistance that incorporates, or otherwise draws upon, “technology” that was either obtained in the United States or is of US-origin, then a release of the “technology” takes place. Such technical assistance, when rendered with the intent to aid in the “development” or “production” of encryption commodities or software that would be controlled for “EI” reasons under ECCN 5A002, 5A004 or 5D002, may require authorization under the EAR even if the underlying encryption algorithm to be implemented is from the public domain or is not of U.S.-origin.*

List of Items Controlled

Related Controls: See also 5E992. This entry does not control “technology” “required” for the “use” of equipment excluded from control under the Related Controls paragraph or the Technical Notes in ECCN 5A002 or “technology” related to equipment excluded from control under ECCN 5A002. *****

Items:

a. “Technology” according to the General Technology Note for the “development,” “production” or “use” of equipment controlled by 5A002, 5A003, 5A004 or 5B002, or of “software” controlled by 5D002.a or 5D002.c.

85. In Supplement No. 1 to part 774 (the Commerce Control List), Category 5 - Part 2, ECCN 5E992 is amended by removing and reserving Items paragraph a.

86. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6A001 is amended by:

- a. Adding double quotes around the term “components” in the Heading, introductory text of Items paragraph a, a.1, a.1.d, a.2 and the Note to 6A001.a.2 in the List of Items Controlled section;
- b. Revising Items paragraphs a.1.d.2 and a.1.e.2 in the List of Items Controlled section, as set forth below; and
- c. Adding double quotes around the term “accuracy” in Items paragraphs a.2.d.1, b.1.b, and b.2 in the List of Items Controlled section.

The additions and revisions read as follows:

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

List of Items Controlled

Items:

a. ***

a.1. ***

a.1.d. ***

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

Note: ***

a.1.e. ***

a.1.e.2. Determined position error of less than 15 m rms (root mean square) when measured at a range of 530 m; *and*

87. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6A002 is amended by adding paragraph d. to Note 2 to 6A002.a.3 in the Items paragraph of the List of Items Controlled section, to read as follows:

6A002 Optical sensors and equipment, and “components” therefor, as follows (see List of Items Controlled).

List of Items Controlled

Items:

a. ***

a.3. ***

Note 2: ***

d. Thermopile arrays having less than 5,130 elements;

88. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6A003 is amended by revising the Related Controls paragraph in the List of Items Controlled section to read as follows:

6A003 Cameras, systems or equipment, and “components” therefor, as follows (see List of Items Controlled).

List of Items Controlled

Related Controls: (1) See ECCNs 6E001 (“development”), 6E002 (“production”), and 6E201 (“use”) for technology for items controlled under this entry. (2) Also see ECCN 6A203. (3) See ECCN 0A919 for foreign-made military commodities that incorporate cameras described in 6A003.b.3, 6A003.b.4.b, or 6A003.b.4.c. (4) Section 744.9 imposes license requirements on cameras described in 6A003.b.3, 6A003.b.4.b, or 6A003.b.4.c if being exported for incorporation

into an item controlled by ECCN 0A919 or for a military end user.

89. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6A004

is amended by:

- a. Adding a Note to Items paragraph a.3 in the List of Items Controlled section; and
- b. Revising Items paragraphs d.2.a.3 and d.2.b, to read as follows:

The addition and revisions read as follows:

6A004 Optical equipment and “components,” as follows (see List of Items Controlled).

List of Items Controlled

Items:

a. ***

a.3. ***

Note: 6A004.a.2 and 6A004.a.3 do not apply to mirrors “specially designed” to direct solar radiation for terrestrial heliostat installations.

d. ***

d.2. ***

d.2.a. ***

d.2.a.3. An angular “accuracy” of 10 μ rad (microradians) or less (better);

d.2.b. Resonator alignment equipment having bandwidths equal to or more than 100 Hz and an “accuracy” of 10 μ rad or less (better);

90. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6A005

is amended by:

- a. Revising the introductory text to Note 2 located after Items paragraph a.6.b.2 and the Technical Note located after Note 2 in the List of Items Controlled section;
- b. Revising Items paragraphs b.6.a.2 and b.6.b.2 in the List of Items Controlled section;
- c. Removing the Note to 6A005.c.1 in the Items paragraph of the List of Items Controlled section;
- d. Adding a Note to 6A005.c.1 after Items paragraph c.1.b in the List of Items Controlled section;
- e. Adding a Note to 6A005.d.1.d.1.d in the Items paragraph d.1.d.1.d of the List of

Items Controlled section;

- f. Adding a Note to 6A005.d.1.d.2.d after the Items paragraph d.1.d.2.d of the List of Items Controlled section;
- g. Revising Items paragraph e.3 introductory text, e.3.c.1, e.3.c.2, f.3, and g.1 through g.3 of the List of Items Controlled section;
- h. Revising the Technical Note at the end of the Items paragraph in the List of Items Controlled section.

The revisions and additions read as follows:

6A005 “Lasers,” “components” and optical equipment, as follows (see List of Items Controlled), excluding items that are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

List of Items Controlled

Items:

a. ***

a.6.***

a.6.b. ***

a.6.b.2. ***

Note 2: 6A005.a.6.b does not apply to multiple transverse mode, industrial “lasers” having any of the following:

Technical Note: For the purpose of 6A005.a.6.b, Note 2 (a)(2), ‘brightness’ is defined as the output power of the “laser” divided by the squared Beam Parameter Product (BPP), i.e., $(\text{output power})/BPP^2$.

b. ***

b.6. ***

b.6.a. ***

b.6.a.2. “Average output power” exceeding 30 W; or

b.6.b. ***

b.6.b.2. "Average output power" exceeding 50 W; *or*

c. ***

c.1. ***

c.1.b. ***

Note: 6A005.c.1 does not apply to dye "lasers" or other liquid "lasers," having a multimode output and a wavelength of 150 nm or more but not exceeding 600 nm and all of the following:

- 1. Output energy less than 1.5 J per pulse or a "peak power" less than 20 W; and*
- 2. Average or CW output power less than 20 W.*

d. ***

d.1. ***

d.1.d. ***

d.1.d.1. ***

d.1.d.1.d. ***

Note: 6A005.d.1.d.1.d does not apply to epitaxially-fabricated monolithic devices.

d.1.d.2.d. ***

Note: 6A005.d.1.d.2.d does not apply to epitaxially-fabricated monolithic devices.

e. ***

e.3. Fiber “laser” “components” as follows:

e.3.c. ***

e.3.c.1. Designed for spectral or coherent beam combination of 5 or more fiber “lasers;” *and*

e.3.c.2. CW “Laser” Induced Damage Threshold (LIDT) greater than or equal to 10 kW/cm²;

f. ***

f.3. Optical equipment and “components,” “specially designed” for a phased-array “SHPL” system for coherent beam combination to an “accuracy” of $\lambda/10$ at the designed wavelength, or 0.1 μm , whichever is the smaller;

g. ***

g.1. CW “laser” output power greater than or equal to 20 mW;

g.2. “Laser” frequency stability equal to or better (less) than 10 MHz;

g.3. “Laser” wavelengths equal to or exceeding 1,000 nm but not exceeding 2,000 nm;

Technical Note: ‘Laser acoustic detection equipment’ is sometimes referred to as a “Laser” Microphone or Particle Flow Detection Microphone.

91. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6A007 is amended by adding double quotes around the term “accuracy” in Items paragraphs .a, b.1 and b.2 in the List of Items Controlled section.

92. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6A008

is amended by:

- a. Adding double quotes around the term “accuracy” in Items paragraph a.2 in the List of Items Controlled section;
- b. Adding double quotes around the term “lasers” in Items paragraph j.3 in the List of Items Controlled section;
- c. Adding double quotes around the term “aircraft” in Note 2 of the Technical Notes at the end of the Items paragraph in the List of Items Controlled section.

93. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6B004

is amended by revising Items paragraph a in the List of Items Controlled section to read as follows:

6B004 Optical equipment as follows (see List of Items Controlled).

List of Items Controlled

Items:

- a. Equipment for measuring absolute reflectance to an “accuracy” of equal to or better than 0.1% of the reflectance value;

94. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6B007 is amended by adding double quotes around the term “accuracy” in the Heading.

95. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6C005 is amended by adding double quotes around the term “laser” in Items paragraphs b.1 and b.2 in the List of Items Controlled section.

96. In Supplement No. 1 to part 774 (the Commerce Control List), Category 6, ECCN 6E003 is amended by revising the Items paragraph in the List of Items Controlled section to read as follows:

6E003 Other “technology” as follows (see List of Items Controlled).

List of Items Controlled

Items:

ACOUSTICS

a. [Reserved]

OPTICAL SENSORS

b. [Reserved]

CAMERAS

c. [Reserved]

OPTICS

d. “Technology” as follows:

d.1. Optical surface coating and treatment “technology,” “required” to achieve an ‘optical thickness’ uniformity of 99.5% or better for optical coatings 500 mm or more in diameter or major axis length and with a total loss (absorption and scatter) of less than 5×10^{-3} ;

N.B.: See also 2E003.f.

Technical Note: ‘Optical thickness’ is the mathematical product of the index of refraction and the physical thickness of the coating.

d.2. Optical fabrication “technology” using single point diamond turning techniques to produce surface finish “accuracies” of better than 10 nm rms on non-planar surfaces exceeding 0.5 m²;

LASERS

e. “Technology” “required” for the “development,” “production” or “use” of “specially designed” diagnostic instruments or targets in test facilities for “SHPL” testing or testing or evaluation of materials irradiated by “SHPL” beams;

MAGNETIC AND ELECTRIC FIELD SENSORS

f. [Reserved]

GRAVIMETERS

g. [Reserved]

RADAR

h. [Reserved]

97. In Supplement No. 1 to part 774 (the Commerce Control List), Category 7, ECCN 7A003

is amended by:

- a. Revising the Technical Note at the beginning of the Items paragraph of the List of Items Controlled section;
- b. Adding double quotes around the term “accuracies” in the introductory paragraph in the Items paragraph .a, and the term “accuracy” in the Items paragraphs b, c.1, and c.2 in the List of Items Controlled section;
- c. Removing single quotes and adding double quotes around the term “Circular Error Probable” in the Items paragraph a.1 in the List of Items Controlled section; and
- d. Removing single quotes and adding double quotes around the term “CEP” in Items paragraphs a.1, a.2, a.3, and .b in the List of Items Controlled section.

The revision reads as follows:

7A003 ‘Inertial measurement equipment or systems’, having any of the following (see List of Items Controlled).

List of Items Controlled

Items:

Technical Note:

'Positional aiding references' independently provide position, and include:

a. Global Navigation Satellite Systems (GNSS);

b. "Data-Based Referenced Navigation" ("DBRN").

98. In Supplement No. 1 to part 774 (the Commerce Control List), Category 7, ECCN 7A004 is amended by adding double quotes around the term "accuracy" in the Items paragraph a in the List of Items Controlled section.

99. In Supplement No. 1 to part 774 (the Commerce Control List), Category 7, ECCN 7A008 is amended by adding double quotes around the term "accuracy" in the Heading.

100. In Supplement No. 1 to part 774 (the Commerce Control List), Category 7, ECCN 7B001 is amended by adding double quotes around the term "aircraft" in paragraph (1) of the Related Definitions paragraph in the List of Items Controlled section.

101. In Supplement No. 1 to part 774 (the Commerce Control List), Category 7, ECCN 7B002 is amended by adding double quotes around the term “accuracies” in Items paragraphs .a and .b of the List of Items Controlled section.

102. In Supplement No. 1 to part 774 (the Commerce Control List), Category 7, ECCN 7E004 is amended by:

- a. Adding double quotes around the term “accuracy” in Items paragraph a.7 of the List of Items Controlled section;
- b. Adding double quotes around the term “aircraft” in the Items paragraphs b.1, b.7.b.4, b.8.a and b.8.b of the List of Items Controlled section; and
- c. Removing the word “directional” and adding in its place “direction” in the Items paragraph c.2 of the List of Items Controlled section.

103. In Supplement No. 1 to part 774 (the Commerce Control List), Category 8, ECCN 8A001 is amended by:

- a. Revising the Related Controls paragraph in the List of Items Controlled section, as set forth below;
- b. Adding double quotes around the term “accuracies” in Items paragraph e.2 of the List of Items Controlled section.

The revision reads as follows:

8A001 Submersible vehicles and surface vessels, as follows (see List of Items Controlled).

List of Items Controlled

Related Controls: For the control status of equipment for submersible vehicles, see: Category 6 for sensors; Categories 7 and 8 for navigation equipment; Category 8A for underwater equipment.

104. In Supplement No. 1 to part 774 (the Commerce Control List), Category 8, ECCN

8A002 is amended by:

- a. Revising the GBS and CIV paragraphs in the List Based License Exception section;
- b. Revising Items paragraph d of the List of Items Controlled section;
- c. Removing and reserving Items paragraph e in the List of Items Controlled section.

The revisions read as follows:

8A002 Marine systems, equipment, “parts” and “components,” as follows (see List of Items Controlled).

List Based License Exceptions (See Part 740 for a description of all license exceptions)

GBS: Yes for manipulators for civil end uses (e.g., underwater oil, gas or mining operations) controlled by 8A002.i.2 and having 5 degrees of freedom of movement; and 8A002.r.

CIV: Yes for manipulators for civil end uses (e.g., underwater oil, gas or mining operations)

controlled by 8A002.i.2 and having 5 degrees of freedom of movement; and 8A002.r.

List of Items Controlled

Items:

d. Underwater vision systems “specially designed” or modified for remote operation with an underwater vehicle, employing techniques to minimize the effects of back scatter and including range-gated illuminators or “laser” systems;

105. In Supplement No. 1 to part 774 (the Commerce Control List), Category 9, ECCN

9A001 is amended by:

- a. Adding double quotes around the term “aircraft” in paragraph b. of Note 1 to Items 9A001.a in the List of Items Controlled section; and
- b. Adding double quotes around the term “aircraft” in Items paragraph b introductory text in the List of Items Controlled section.

106. In Supplement No. 1 to part 774 (the Commerce Control List), Category 9, ECCN

9A004 is amended by removing the reference to “5A002.a.5, 5A002.a.9” and adding in its place “5A002.c, 5A002.e” in Items paragraph d in the List of Items Controlled section.

107. In Supplement No. 1 to part 774 (the Commerce Control List), Category 9, ECCN 9A012 is amended by removing the Note at the end of the Items paragraph in the List of Items Controlled section.

108. In Supplement No. 1 to part 774 (the Commerce Control List), Category 9, ECCN 9B001 is amended by revising Items paragraph b in the List of Items Controlled section to read as follows:

9B001 Equipment, tooling or fixtures, “specially designed” for manufacturing gas turbine engine blades, vanes or “tip shrouds,” as follows (See List of Items Controlled).

Items:

b. Casting tooling, manufactured from refractory metals or ceramics, as follows:

b.1. Cores;

b.2. Shells (moulds);

b.3. Combined core and shell (mould) units.

109. In Supplement No. 1 to part 774 (the Commerce Control List), Category 9, ECCN 9E003 is amended by:

a. Adding double quotes around the term “aircraft” in two places in Related Controls

paragraph (2) in the List of Items Controlled section;

- b. Adding double quotes around the term “aircraft” in the Note to 9E003.h in the List of Items Controlled section;
- c. Adding double quotes around the term “aircraft” in Items paragraph j and the Nota Bene that follows in the List of Items Controlled section.

Supplement No. 2 to Part 774 [Amended]

- 110. Supplement No. 2 to part 774 “General Technology And Software Notes” is amended by adding paragraph 3 to read as follows:

Supplement No. 2 To Part 774 – General Technology and Software Notes

3. *General “Information Security” Note.* “Information security” items or functions should be considered against the provisions in Category 5–Part 2, even if they are components, “software” or functions of other items.

- 111. Supplement No. 6 to part 774 “Sensitive List” is amended by revising paragraphs (2)(i) “2D001,” (2)(ii) “2E001,” (2)(iii) “2E002,” (4)(ii) “4D001,” (4)(iii) “4E001,” to read as follows:

Supplement No. 6 to Part 774—Sensitive List

(2) *Category 2*

(i) 2D001—”Software,” other than that controlled by 2D002, specially designed for the “development” or “production” of equipment as follows:

(A) Machine tools for turning (ECCN 2B001.a) having two or more axes which can be coordinated simultaneously for “contouring control” having any of the following:

(1) “Unidirectional positioning repeatability” equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

(2) “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m;

(B) Machine tools for milling (ECCN 2B001.b) having any of the following:

(1) Three linear axes plus one rotary axis which can be coordinated simultaneously for “contouring control” having any of the following:

(a) “Unidirectional positioning repeatability” equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

(b) “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m;

(2) Specified by 2B001.b.2.a, 2B001.b.2.b or 2B001.b.2.c and having a “unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis; or

(3) A “unidirectional positioning repeatability” for jig boring machines equal to or less (better) than 1.1 μm along one or more linear axis;

(C) Electrical discharge machines (EDM) controlled under 2B001.d;

(D) Deep-hole-drilling machines controlled under 2B001.f;

(E) “Numerically controlled” or manual machine tools controlled under 2B003.

(ii) 2E001—”Technology” according to the General Technology Note for the “development” of

“software” specified by 2D001 described in this Supplement or for the “development” of equipment as follows:

(A) Machine tools for turning (ECCN 2B001.a) having two or more axes which can be coordinated simultaneously for “contouring control” having any of the following:

(1) “Unidirectional positioning repeatability” equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

(2) “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m

(B) Machine tools for milling (ECCN 2B001.b) having any of the following:

(1) Three linear axes plus one rotary axis which can be coordinated simultaneously for “contouring control” having any of the following:

(a) “Unidirectional positioning repeatability” equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

(b) “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m;

(2) Specified by 2B001.b.2.a, 2B001.b.2.b or 2B001.b.2.c and having a “unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis; or

(3) A “unidirectional positioning repeatability” for jig boring machines equal to or less (better) than 1.1 μm along one or more linear axis;

(C) Electrical discharge machines (EDM) controlled under 2B001.d;

(D) Deep-hole-drilling machines controlled under 2B001.f;

(E) “Numerically controlled” or manual machine tools controlled under 2B003.

(iii) 2E002—”Technology” according to the General Technology Note for the “production” of equipment as follows:

(A) Machine tools for turning (ECCN 2B001.a) having two or more axes which can be coordinated simultaneously for “contouring control” having any of the following:

(1) “Unidirectional positioning repeatability” equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

(2) “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m;

(B) Machine tools for milling (ECCN 2B001.b) having any of the following:

(1) Three linear axes plus one rotary axis which can be coordinated simultaneously for “contouring control” having any of the following:

(a) “Unidirectional positioning repeatability” equal to or less (better) than 0.9 μm along one or more linear axis with a travel length less than 1.0 m; *or*

(b) “Unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis with a travel length equal to or greater than 1.0 m;

(2) Specified by 2B001.b.2.a, 2B001.b.2.b or 2B001.b.2.c and having a “unidirectional positioning repeatability” equal to or less (better) than 1.1 μm along one or more linear axis; *or*

(3) A “unidirectional positioning repeatability” for jig boring machines equal to or less (better) than 1.1 μm along one or more linear axis;

(C) Electrical discharge machines (EDM) controlled under 2B001.d;

(D) Deep-hole-drilling machines controlled under 2B001.f;

(E) “Numerically controlled” or manual machine tools controlled under 2B003.

(4) Category 4

(ii) 4D001 – “Software” “specially designed” for the “development” or “production” of equipment controlled under ECCN 4A001.a.2 or for the “development” or “production” of “digital computers” having an ‘Adjusted Peak Performance’ (‘APP’) exceeding 12.5 Weighted TeraFLOPS (WT).

(iii) 4E001 – “Technology” according to the General Technology Note for the “development” or “production” of any of the following equipment or “software”: equipment controlled under ECCN 4A001.a.2, “digital computers” having an ‘Adjusted Peak Performance’ (‘APP’) exceeding 12.5 Weighted TeraFLOPS (WT), or “software” controlled under the specific provisions of 4D001 described in this Supplement.

DATED: September 1, 2016.

Kevin J. Wolf,

Assistant Secretary for Export Administration

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