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DEPARTMENT OF STATE

22 CFR Part 121

RIN: 1400-AD89

[Public Notice: 9604]

Amendment to the International Traffic in Arms Regulations: Revision of U.S. Munitions List Categories VIII and XIX

AGENCY: Department of State.

ACTION: Final rule.

SUMMARY: As part of the President's Export Control Reform (ECR) initiative, the Department of State amends the International Traffic in Arms Regulations (ITAR) to revise Categories VIII (aircraft and related articles) and XIX (gas turbine engines and associated equipment) of the U.S. Munitions List (USML) to describe more precisely the articles warranting control on the USML. The revisions contained in this rule are part of the Department of State's retrospective plan under E.O. 13563.

DATES: This final rule is effective on December 31, 2016.

FOR FURTHER INFORMATION CONTACT: Mr. C. Edward Peartree, Director, Office of Defense Trade Controls Policy, Department of State, telephone (202) 663-2792; e-mail *DDTCPublicComments@state.gov*. ATTN: ITAR Amendment – USML Categories VIII and XIX.

SUPPLEMENTARY INFORMATION: The Directorate of Defense Trade Controls (DDTC), U.S. Department of State, administers the International Traffic in Arms Regulations (ITAR) (22 CFR parts 120-130). The items subject to the jurisdiction of the ITAR, *i.e.*, "defense articles," are identified on the ITAR's U.S. Munitions List (USML) (22 CFR 121.1). With few exceptions, items not subject to the export control jurisdiction of

the ITAR are subject to the jurisdiction of the Export Administration Regulations ("EAR," 15 CFR parts 730-774, which includes the Commerce Control List (CCL) in Supplement No. 1 to Part 774), administered by the Bureau of Industry and Security (BIS), U.S. Department of Commerce. Both the ITAR and the EAR impose license requirements on exports and reexports. Items not subject to the ITAR or to the exclusive licensing jurisdiction of any other set of regulations are subject to the EAR.

All references to the USML in this rule are to the list of defense articles controlled for the purpose of export or temporary import pursuant to the ITAR, and not to the defense articles on the USML that are controlled by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) for the purpose of permanent import under its regulations. *See* 27 CFR part 447. Pursuant to section 38(a)(1) of the Arms Export Control Act (AECA), all defense articles controlled for export or import are part of the USML under the AECA. The list of defense articles controlled by ATF for the purpose of permanent import is the U.S. Munitions Import List (USMIL). The transfer of defense articles from the ITAR's USML to the EAR's CCL does not affect the list of defense articles controlled on the USMIL.

Revision of Category VIII

This final rule revises USML Category VIII, covering aircraft and related articles. The revisions are undertaken in order to ensure that the category, which was last revised in 2013, is clear, does not inadvertently control items in normal commercial use, accounts for technological developments, and properly implements the national security and foreign policy objectives of the ECR initiative. The Department published a

proposed rule for these revisions, as well as the revisions to Category XIX described below, on February 9, 2016 (81 FR 6797).

Paragraph (a) is revised to clarify that the controls for all paragraphs are applicable "whether manned, unmanned, remotely piloted, or optionally piloted," by modifying paragraph (a)(5) to clarify the design feature meriting USML control, and by deleting paragraph (a)(6) and placing it into reserve, because the relevant control is subsumed by revised paragraph (a)(5). Paragraphs (a)(7), (a)(8), and (a)(9) are modified to clarify the respective design features meriting USML control. The text of paragraphs (a)(11) and (a)(13) is deleted and the paragraphs are placed into reserve. Paragraph (a)(14) is modified to exclude L-100 and LM-100J aircraft from the scope of control. Note 2 to paragraph (a) is revised to clarify the definition of the described term.

Paragraph (d) is modified to delete the "ship-based" control parameter and to clarify the intent and scope of the control.

Paragraph (e) reflects having been placed into reserve in the final rule published by the Department on October 12, 2016 (81 FR 70340).

Notes 1 and 3 to paragraph (f) are modified to incorporate clarifying language.

Several changes are made to paragraph (h). Paragraph (h)(1) is revised to update the list of subject platforms, and to delete the reference to "equipment" because the specific types of equipment that warrant ITAR control are now enumerated separately in paragraph (h)(29). The Note to paragraph (h)(1) is modified to incorporate technical corrections and to enhance the clarity of the note. Paragraph (h)(2) is revised to focus the scope of control on certain rotorcraft gearboxes meeting specific technical parameters, and a note to paragraph (h)(2) is added to clarify certain

terminology used therein. Paragraph (h)(4)(ii) is modified to clarify the scope of control. Paragraph (h)(5) is updated to add the words "On-aircraft" in order to clarify the scope of control, while paragraph (h)(6) is updated to add the words "or rocket" after "missile." Paragraph (h)(7) is modified to clarify the scope of control. Paragraph (h)(8) is modified to clarify the meaning of "threat-adaptive autonomous flight control systems." Paragraph (h)(10) is modified to enhance the clarity of the control text. Paragraph (h)(13) is deleted and placed into reserve. Paragraph (h)(16) is modified to incorporate a technical correction. Paragraph (h)(18) is modified to control parts and components that are specially designed to meet the same performance criteria as the systems identified in the paragraph. Paragraph (h)(19) is modified to remove reference to ECCN 9A610.

Current paragraphs (h)(23) through (h)(26) are placed into reserve, with new controls added as paragraphs (h)(27) through (h)(29). Finally, the note to Category VIII is modified to update the paragraphs of paragraph (h) that are affected, as well as to reflect paragraph (e) having been placed into reserve.

A commenting party expressed concern that the objective of the USML review process, first announced in a Notice of Inquiry on March 2, 2015 (80 FR 11314), is to reconsider or reverse the effect of the ECR initiative. The Department clarifies that the purpose of the USML review process is to review and update the subject USML categories, as needed, to account for technological developments, practical application issues identified by exporters and reexporters, and changes in the military and commercial applications of items affected by the list. The "positive list" structure adopted in each of the revised USML categories requires an ongoing process of review in order to ensure that the list is current and

reflective of the modern state of the subject technology. This ongoing effort has been anticipated since the start of the ECR initiative and is not intended to reconsider or reverse the effort.

A commenter requested clarification as to why paragraph (h)(2) had been removed from the Note to Category VIII. Paragraph (h)(2) has been revised significantly to control only a class of rotorcraft gearboxes for which there is no current civil application. Given the reduced scope of control in the revised paragraph (h)(2), inclusion in the Note to Category VIII is no longer appropriate.

Three commenting parties recommended that paragraph (a)(5) be deleted, given the proposed reference to "unmanned" aircraft in paragraph (a), while an additional commenter suggested that the proposed paragraph (a)(5) was less clear than the existing version of the same paragraph. In light of these comments, the Department modified the paragraph to control only those unmanned aerial vehicles that are specially designed to incorporate a defense article, in order to focus the paragraph on the intended scope of control. The Department disagrees with the commenters recommending deletion of the paragraph, as there is continuing oversight utility in maintaining a clear, enumerated control for unmanned aerial vehicles that are specially designed to incorporate a defense article, particularly in light of the unique considerations for these aircraft as set forth in the Department's policy on unmanned aerial systems.

Two commenters suggested that the proposed revisions to paragraph (a)(7) were less clear than the existing version of the same paragraph, and could potentially capture an overly broad scope of aircraft with intelligence, surveillance, and reconnaissance (ISR) capabilities where such aircraft incorporate a defense article. The Department agreed with these

commenters and revised the paragraph to control only those aircraft that are specially designed to incorporate a defense article for the purpose of performing an intelligence, surveillance, and reconnaissance function, in order to better focus the scope of control and exclude certain aircraft that merely incorporate a defense article.

One commenter expressed concern that proposed paragraph (a)(8) would control technical data for electronic warfare or command, control, and communication aircraft that simply incorporated a defense article, while another party requested clarification of these terms as well as the significant military equipment (SME) designation for this paragraph. The Department notes that command, control, and communication systems are currently designated as SME in USML Category XI, so analogous treatment is appropriate in this paragraph. While the Department has not defined the referenced terms, as there were no examples provided of demonstrated uncertainty in the regulated community, the scope of the paragraph has been revised to control only those referenced aircraft types that are specially designed to incorporate a defense article for the purpose of performing a referenced function.

A commenting party recommended the replacement of each instance of the words "capable of" with "equipped to" or "designed for," as appropriate in the context of the paragraph at issue. The Department reviewed each paragraph in which these words appeared and made the appropriate revisions where the paragraph did not otherwise provide technical parameters or performance criteria that sufficiently constrained and identified the class of articles subject to control.

Three commenters suggested that paragraph (a)(14) be revised to limit the scope of control to aircraft with uniquely military capabilities, to the

exclusion of aircraft platforms such as the L-100 and LM-100J. One commenter asserted that the systems and functions that make the C-130J a sophisticated military platform are removed on the LM-100J, and that militarization of the latter platform would be very difficult. In response to these comments, the Department revised paragraph (a)(14) to exclude the L-100 and LM-100J aircraft.

A commenting party requested clarification regarding the classification of parts and components that are not enumerated or otherwise described on the USML, and are common to the C-130 and the L-100 aircraft. As with all parts and components classification concerns, the commenter is advised to follow the standard order of review guidance provided on the DDTC website (*see* http://pmddtc.state.gov/faqs/ecr.html#b). Where an item is described in multiple entries, an enumerated entry takes precedence over an entry controlling the item by virtue of a specially designed catch-all. The exception to this rule is where a SME entry is involved. In all situations, a SME entry will take precedence over a non-SME entry. If, through the order of review, one determines a particular item is not specifically enumerated in the USML, it may still be controlled by virtue of its parts and components, which are caught via a catch-all. For example, a part or component of an airborne radar system specially designed for the F-35 may not be enumerated or captured in USML Category XI but will be controlled under the specially designed catch-all of Category VIII(h)(1). If the article does not appear to fall under any USML paragraph or paragraph, consult the EAR to complete the classification inquiry.

A commenter recommended the deletion of paragraph (a)(15)(ii), based on the observation that paragraphs (a)(1) through (a)(14) do not

specify whether the subject aircraft is of U.S. or foreign origin. The Department notes that paragraph (a)(15)(ii) follows paragraph (a)(15)(i), which captures aircraft not otherwise enumerated in paragraph (a) but bearing any enumerated military designation. Since foreign-origin aircraft would not bear a U.S. military designation, paragraph (a)(15)(ii) exists to capture the foreign equivalents of the U.S.-origin aircraft controlled by paragraph (a)(15)(i).

One commenting party recommended a revision of paragraph (d) to limit its scope to launching and recovery equipment for aircraft controlled in paragraph (a) that meet a minimum weight threshold, so as to exclude small UAVs. The Department disagreed with this recommendation, noting that the paragraph controls only launching and recovery equipment that is specially designed to allow a subject aircraft to land on a vessel described in Category VI(a)-(c). This language controls a sufficiently narrow class of aircraft and adequately excludes many small UAV platforms.

A commenter expressed concern regarding the removal of the word "equipment" from paragraph (h)(1), as it potentially confuses the jurisdiction of such equipment. To clarify the scope of controlled equipment and avoid a perception that equipment designed for aircraft enumerated in paragraph (h)(1) is *per se* controlled in the same paragraph, the Department created proposed paragraph (h)(30), which appears in this final rule as paragraph (h)(29), to specify the specific types of equipment that warrant USML control.

A commenting party recommended the exclusion from paragraph (h)(1) of those parts identified in ECCNs 9A610.y or 9A619.y. The Department disagreed with this recommendation. The structure of CCL controls is distinguishable from those in the USML, with the CCL utilizing

"reasons for control" and country licensing policies that are not available under the ITAR or AECA. As such, provisions from the CCL cannot easily be adopted for the purposes of the USML. Given the unique policy considerations applicable to the enumerated aircraft in paragraph (h)(1) and their low observable / counter low observable capabilities, the Department declines to exclude classes of parts and components for these highly sensitive platforms.

One commenter recommended that paragraph (h)(2) be revised to control only those rotorcraft gearboxes that are qualified to a particular military standard. The Department disagreed with this comment, because military standards are not developed and published to advance export control-related objectives and may be revised frequently for reasons unrelated to export controls, which may additionally reduce the clarity of the USML through successive iterations of revisions to these standards.

Two commenters asserted that individual performance criteria specific in paragraph (h)(2) are not uniquely military in nature. The Department notes that both criteria are required for control, and it is the combination of the two specified criteria that makes the controlled article militarily significant. No examples were provided of commercial items capable of meeting both performance criteria.

A commenter suggested that tail boom folding systems controlled under paragraph (h)(3) could be useful in civil applications to optimize the use of space. The Department did not revise the control because the commenter did not provide an example of a current civil application for the articles controlled in this paragraph.

A commenter recommended that paragraph (h)(5) be reviewed in concert with ECCN 9A610.e to ensure that the two entries did not overlap.

The Department reviewed the entries and made no change to the paragraph, as it is sufficiently limited in scope to on-aircraft arresting gear and excludes arresting gear used on the ground.

One commenting party recommended that paragraph (h)(6) be revised to control "rocket launchers" in addition to "missile launchers," and further recommended criteria to exclude from control certain airborne UAV launching capabilities. The Department agreed with the addition of "rocket launchers" and revised the paragraph accordingly. However, the Department disagreed with the recommended airborne launching criteria, as the ability to deploy a UAV from an aircraft in flight is a current military capability.

A commenting party suggested that the Department had not offered a sufficient rationale to move to the USML specially designed parts and components for the systems controlled in paragraph (h)(7). The Department agreed with this comment and deleted the proposed addition. The disposition of the relevant parts and components will be addressed in the Department of Commerce's companion rule.

A commenting party recommended that paragraph (h)(8) be merged with paragraph (h)(12), in order to create a single paragraph for flight control systems that excludes commercial UAV "sense-and-avoid" capabilities. The Department observes that the ability of the subject UAVs to "avoid collisions" is only one aspect of the control parameter, which also requires the capability to "stay together" by virtue of the subject flight control system. No example has been presented of a commercial UAV flight control system that provides the capability for multiple UAVs to both "avoid collisions" and "stay together." Accordingly, the Department did not revise the paragraph.

One commenter suggested that paragraph (h)(10) include a note, similar to the Note to Category XI(a)(3), indicating that the paragraph does not control radio altimeter equipment conforming to Federal Aviation Administration TSO-C87. The Department did not add this note to paragraph (h)(10), because commercial altimeters conforming to this standard would not possess either of the low probability of intercept capabilities described in the paragraph. Since current commercial altimeters cannot meet the criteria of paragraph (h)(10), it is not necessary to include a note that would impact only these commercial items.

Three commenting parties suggested that the Department had not offered a sufficient rationale to move to the USML specially designed parts and components for the systems controlled in paragraph (h)(18). The Department partially agreed with this comment and revised the proposed addition. The only parts and components added to paragraph (h)(18) are those that are specially designed to function after impact of a 7.62mm or larger projectile. This is the same criterion that applies to the drive systems and flight control systems subject to control under this paragraph; thus, this paragraph unifies the articles subject to control under a common parameter of military criticality.

Two commenters recommended revisions to enhance the clarity of paragraph (h)(20). This paragraph pertains to classified defense articles and classified information, and replicates the structure of similar entries in other revised USML categories that are outside of the scope of this rule. To maintain conformity with those entries, the Department has noted these commenters' recommendations and will reconsider them in the context of a later review of all USML entries relating to classified defense articles and classified information.

Four commenting parties asserted that the proposed paragraph (h)(27) did not control articles providing a critical military advantage, would control variable speed gearboxes in commercial use, or would otherwise limit commercial development utilizing such technology. The Department notes that former paragraph (h)(2), prior to the revisions set forth in this rule, controlled "variable speed gearboxes" generally. Accordingly, the proposed paragraph (h)(27) constituted a reduction in the range of variable speed gearboxes subject to the ITAR to those employed in next-generation military technology. In light of the comments received, the Department has further refined paragraph (h)(27) to clarify the meaning of "variable speed gearbox," as well as to articulate the varying output speed currently in use in military applications.

A commenting party observed that the proposed paragraph (h)(28) would capture dual-use electrical power or thermal management systems used with Category XIX engines. The Department agreed with this comment and revised the paragraph to control electrical power or thermal management systems specially designed for an engine controlled in Category XIX.

A commenter requested clarification that the use of the term "pound" in paragraph (h)(28)(i) refers only to the generator and not the controller. The Department updated the paragraph to clarify that the referenced threshold excludes the mass of the controller for the purpose of calculating the gravimetric power density. The commenter additionally requested clarification as to whether the threshold reflects the total heat exchanger capacity or a single heat exchanger. The Department updated the paragraph to address the concerns expressed in the comment.

The same commenter asserted that paragraph (h)(28)(iii) lacked clarity and should be deleted. The Department agreed with this comment and deleted the paragraph. Consequentially, proposed paragraph (h)(28)(iv) now appears in this final rule as paragraph (h)(28)(iii). Additionally, the commenter requested clarification regarding the conditions for measuring the threshold in proposed paragraph (h)(28)(iv). The Department did not insert additional criteria regarding measurement conditions because the paragraph as drafted describes the threshold for ITAR control at a sufficient level of granularity.

A commenter proposed revisions to proposed paragraph (h)(29) to better articulate the scope of software to be controlled. A second commenter recommended deletion of the paragraph, since algorithms and software are already controlled as technical data. The Department agreed with the second commenter and deleted the proposed paragraph, having determined that the subject software is already controlled under paragraph (i).

Three commenters suggested that proposed paragraph (h)(30) would result in expense to industry with questionable regulatory benefit, and would require the re-review of certain parts and components to determine whether classification under the new paragraph is appropriate.

The Department notes that Category VIII was among the first two categories to undergo revision pursuant to the ECR initiative, a primary goal of which was to create a "positive list" that would inevitably require periodic revisions to keep reflective of the current state of technology. The experience of industry with the earliest revised categories, as well as the U.S. government in enforcing the regulations, has identified areas in which adjustments to Categories VIII and XIX were necessary to best articulate the articles subject to control.

The former treatment of equipment in paragraph (h)(1) potentially created the impression that equipment for enumerated aircraft was broadly controlled under that paragraph. For additional clarity, a newly-created paragraph, now found at (h)(29), enumerates certain types of equipment that merit ITAR control. While the Department's review considered in all cases the potential impact to industry in revising aspects of these categories, the primary standard of review was the "critical military or intelligence advantage" standard set forth in ITAR §120.3(b). As a general principle, where migration of items from the CCL to the USML was considered, the Department sought first to accommodate the item in a revised ECCN. The articles that newly appear on or have returned to the USML in this rule are those that constitute or are specially designed for next-generation technology and thus satisfy ITAR §120.3. In response to comments received, the Department revised the paragraph to better articulate the specific types of equipment that meet this standard.

Finally, a commenter recommended replacing the words "technical data" in paragraph (x) with "technology," to align the text with other revised categories and utilize the appropriate EAR terminology. The Department agreed and made the recommended change.

Revision of Category XIX

This final rule revises USML Category XIX, covering gas turbine engines. As with USML Category VIII, the revisions are undertaken in order to ensure that the category is clear, does not inadvertently control items in normal commercial use, accounts for technological developments, and properly implements the national security and foreign policy objectives of the ECR initiative.

Paragraph (a) is modified to clarify the scope of controlled engines and to incorporate technical corrections. Paragraph (b)(1) is revised to update the performance criteria meriting control, while paragraph (b)(2) is revised to clarify the specific power threshold specified therein.

Paragraph (c) is modified to incorporate conforming and technical changes and to make clear that the paragraph applies only to gas turbine engines, while paragraph (d) is modified to update the list of subject engines. The Note to paragraph (e) is modified to incorporate a conforming change.

Several changes are included within paragraph (f). Paragraph (f)(1) is modified to incorporate technical corrections and to update the list of subject engines. Paragraph (f)(2) introduces additional text to clarify the scope of controlled hot section components, and to reorganize the text according to the nature of the articles. New controls are included in paragraphs (f)(7) through (f)(12).

A commenter asserted that the PT6C-67A, a commercial model, would exceed the threshold proposed in paragraph (b)(1). In response to this comment, the Department increased the relevant threshold to 2000 mechanical shp (1491 kW).

Three commenting parties recommended clarification regarding the specific power threshold set forth in paragraph (b)(2). The Department agreed with these commenters and revised the relevant language to include a unit of measurement for the specific power threshold and maximum takeoff shaft horsepower. The Department further notes that given the additional modifications to paragraph (b)(2) described below, and the requirement that an engine must meet all of the criteria of paragraph (b)(2) to be subject to ITAR control, the revised paragraph should not pose a risk of capturing next-generation commercial engine models.

Two commenters asserted that the term “armament gas” in paragraph (b)(2) is unclear and requested a definition. The Department disagreed with the commenters because the term can be interpreted based on the plain meaning of the words “armament gas ingestion” – that is, the term describes an engine that is specially designed to ingest gas released from armaments.

Three commenting parties requested clarification regarding the term “transient maneuvers” in paragraph (b)(2), and requested revision to capture only maneuvers that are unique to military scenarios. The Department agreed with these comments and revised the parameter to capture non-civil transient maneuvers.

Three commenting parties suggested that the phrase “controlled in this category” in paragraph (c) be revised to read “controlled in Category VIII.” The Department partially agreed and revised the phrase to read “controlled in this subchapter.”

A commenter recommended the removal of the GE38 engine from paragraph (d), indicating that it is a marketing name that was used during the development of the T408 and will not be used in production. The Department agrees with this observation but also notes that GE38 models remain in use in test aircraft. Accordingly, the GE38 reference will remain in paragraph (d) while such engines are still in use.

One commenter recommended the removal of the MT7 engine from paragraph (d), arguing that it is a derivative of the AE1107C and that oil sump sealing is being designed out of the model. While the comment appears to describe a design modification that has not yet occurred, the Department further notes that the subject engine is unique to a destroyer platform. For these reasons, the MT7 was retained in paragraph (d).

The Department has removed the TF60 engine from paragraph (d) in response to a public comment that recommended its removal.

A commenter questioned whether the word "systems" in paragraph (e) should be interpreted to also indicate controls of parts and components thereof. The Department confirms that paragraph (e) is limited to specified systems and includes no reference to "parts and components thereof"; accordingly, parts and components thereof are not controlled under paragraph (e).

Two comments asserted, with respect to paragraph (f) as well as several paragraphs thereof, that materials should not be controlled in this category because Category XIII is intended to contain all materials entries. The Department disagreed in part with these comments. Where the materials at issue pertain only to a particular class of defense articles that are controlled in a single subcategory – as with these materials relevant only to gas turbine engines controlled in Category XIX – there is little utility in requiring the reader to review multiple USML categories for articles of potential relevance. Were these materials of broad applicability for a variety of defense articles controlled under more than one USML category, the Department would locate the relevant USML entries in Category XIII. However, in this case, ECCN 9C619 remains the appropriate category for the materials described in the proposed rule. The companion rule the Commerce Department has published explains the new licensing policies pertaining to such materials. No new materials controls are added to Category XIX.

Two commenting parties recommended the exclusion from paragraph (f)(1) of those parts identified in ECCNs 9A610.y or 9A619.y. The Department disagreed with this comment for reasons similar to those

explained above in the context of a similar comment on Category VIII(h)(1), regarding the different structures and objectives of CCL ECCNs as well as the national security interest in retaining control over the parts and components of engines with evolving or next-generation applications.

One commenter expressed concern regarding the removal of the word "equipment" from paragraph (f)(1). As with Category VIII(h)(1), the word was removed to avoid the impression that all equipment, including production equipment, relevant to the enumerated aircraft was subject to control under this paragraph. The Department has created a new paragraph (f)(12), which appeared in the proposed rule as proposed paragraph (f)(16), to enumerate certain types of equipment that merit control.

Three commenters requested clarification of the word "actively" in paragraph (f)(2), and requested the addition of a definition. The Department agreed that the term, which first appeared in the proposed rule, did not improve the clarity of the paragraph and deleted each instance of the term.

A commenting party recommended the reorganization of paragraph (f)(2) to refer to "intermediate pressure turbine blades" after "high pressure turbine blades" and before "low pressure turbine blades." The Department agreed and revised the paragraph accordingly.

A commenting party expressed difficulty interpreting the meaning of "engine monitoring systems" in paragraph (f)(5) and suggested that a definition of the term might be beneficial. The Department disagreed with the comment because the term can be sufficiently understood without a new definition, given the existing definition of "system" set forth in ITAR §120.45(g).

Four parties commented generally on the new paragraphs that appeared in the proposed rule as (f)(7) through (f)(16), arguing that USML

control of the subject articles will result in expense to industry by requiring reclassification of articles previously subject to the EAR. As with Category VIII, described above, Category XIX was among the first two categories to undergo revision pursuant to the ECR initiative, a primary goal of which was to create a "positive list" that would inevitably require periodic revisions to keep reflective of the current state of technology. The experience of industry with the earliest revised categories, as well as the U.S. government in enforcing the regulations, has identified areas in which adjustments to Categories VIII and XIX were necessary to best articulate the articles subject to control.

While the Department's review considered in all cases the potential impact to industry in revising aspects of these categories, the primary standard of review was the "critical military or intelligence advantage" standard set forth in ITAR §120.3(b). As a general principle, where a migration of items from the CCL to the USML was considered, the Department sought first to accommodate the item in a revised ECCN. The articles that nevertheless appear in new USML entries in this rule constitute or are specially designed for next-generation technology and thus satisfy ITAR §120.3.

The Department disagrees with the commenters' characterization of proposed paragraph (f)(16), now appearing as paragraph (f)(12), which controls certain enumerated types of equipment. Since "equipment" was referenced generally in the previous iteration of paragraph (f), the objective of this addition is to better clarify the equipment subject to ITAR control. With respect to the remaining proposed paragraphs, the Department applied this standard and determined that proposed paragraphs (f)(7), (f)(13), (f)(14), and (f)(15) were not necessary for inclusion in the USML. Accordingly,

these proposed paragraphs have been deleted. The considerations that prompted the addition of proposed paragraph (f)(7) are adequately addressed through paragraph (g), while the remaining deleted proposed entries will be addressed by the Department of Commerce in ECCN 9C619.

The Department retained proposed paragraph (f)(8), now appearing in the category as paragraph (f)(7), because the referenced equipment allows for the production of gas turbine engines and parts and components that offer a critical military advantage.

Among the retained new paragraphs and in response to public comments, the Department revised proposed paragraphs (f)(9) through (f)(12) – now appearing as paragraphs (f)(8) through (f)(11)– to reference only systems specially designed for gas turbine engines controlled in Category XIX, in order to avoid a chilling effect on potential commercial applications of these technologies.

The Department revised proposed paragraph (f)(16), now appearing in this final rule as paragraph (f)(12), to enumerate certain types of equipment that is specially designed for a defense article described in paragraph (f)(1).

Finally, a commenter recommended replacing the words "technical data" in paragraph (x) with "technology," to align the text with other revised categories and utilize the appropriate EAR terminology. The Department agreed and made the recommended change.

Regulatory Findings

Administrative Procedure Act.

The Department of State is of the opinion that controlling the import and export of defense articles and services is a foreign affairs function of the United States Government and that rules implementing this function are

exempt from sections 553 (Rulemaking) and 554 (Adjudications) of the Administrative Procedure Act (APA). Although the Department is of the opinion that this rule is exempt from the rulemaking provisions of the APA, the Department published this rule as a proposed rule (81 FR 6797) with a 45-day provision for public comment and without prejudice to its determination that controlling the import and export of defense services is a foreign affairs function.

Regulatory Flexibility Act.

Since this rule is exempt from the rulemaking provisions of 5 U.S.C. 553, it does not require analysis under the Regulatory Flexibility Act.

Unfunded Mandates Reform Act of 1995.

This amendment does not involve a mandate that will result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any year and it will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

Small Business Regulatory Enforcement Fairness Act of 1996.

This amendment has been found not to be a major rule within the meaning of the Small Business Regulatory Enforcement Fairness Act of 1996.

Executive Orders 12372 and 13132.

This amendment will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 13132, it is determined that this amendment does not have sufficient federalism

implications to require consultations or warrant the preparation of a federalism summary impact statement. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this amendment.

Executive Order 12866 and 13563.

Executive Orders 12866 and 13563 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, distributed 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," although not economically significant, under section 3(f) of Executive Order 12866. Accordingly, the rule has been reviewed by the Office of Management and Budget (OMB).

Executive Order 12988.

The Department of State has reviewed the amendment in light of sections 3(a) and 3(b)(2) of Executive Order 12988 to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burden.

Executive Order 13175.

The Department of State has determined that this rulemaking will not have tribal implications, will not impose substantial direct compliance costs on Indian tribal governments, and will not preempt tribal law. Accordingly, Executive Order 13175 does not apply to this rulemaking.

Paperwork Reduction Act.

Following is a listing of approved collections that will be affected by revision of the U.S. Munitions List (USML) and the Commerce Control List

pursuant to the President's Export Control Reform (ECR) initiative. This rule continues the implementation of ECR. The list of collections pertains to revision of the USML in its entirety, not only to the categories published in this rule. The Department is not proposing or making changes to these collections in this rule. The information collections impacted by the ECR initiative are as follows:

1) Statement of Registration, DS-2032, OMB No. 1405-0002.

2) Application/License for Permanent Export of Unclassified Defense Articles and Related Unclassified Technical Data, DSP-5, OMB No. 1405-0003.

3) Application/License for Temporary Import of Unclassified Defense Articles, DSP-61, OMB No. 1405-0013.

4) Application/License for Temporary Export of Unclassified Defense Articles, DSP-73, OMB No. 1405-0023.

5) Application for Amendment to License for Export or Import of Classified or Unclassified Defense Articles and Related Technical Data, DSP-6, -62, -74, -119, OMB No. 1405-0092.

6) Request for Approval of Manufacturing License Agreements, Technical Assistance Agreements, and Other Agreements, DSP-5, OMB No. 1405-0093.

7) Maintenance of Records by Registrants, OMB No. 1405-0111.

List of Subjects in 22 CFR Part 121

Arms and munitions, Exports

Accordingly, for the reasons set forth above, Title 22, Chapter I, Subchapter M, part 121 is amended as follows:

PART 121 – THE UNITED STATES MUNITIONS LIST

1. The authority citation for part 121 continues to read as follows:

Authority: Secs. 2, 38, and 71, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778, 2797); 22 U.S.C. 2651a; Pub. L. 105–261, 112 Stat. 1920; Section 1261, Pub. L. 112-239; E.O. 13637, 78 FR 16129.

2. Section 121.1 is amended by revising U.S. Munitions List Categories VIII and XIX to read as follows:

§121.1 The United States Munitions List.

*** * * * ***

Category VIII— Aircraft and Related Articles

(a) Aircraft, whether manned, unmanned, remotely piloted, or optionally piloted, as follows (MT if the aircraft, excluding manned aircraft, has a range equal to or greater than 300 km):

*(1) Bombers;

*(2) Fighters, fighter bombers, and fixed-wing attack aircraft;

*(3) Turbofan- or turbojet-powered trainers used to train pilots for fighter, attack, or bomber aircraft;

*(4) Attack helicopters;

*(5) Unmanned aerial vehicles (UAVs) specially designed to incorporate a defense article;

*(6) [Reserved]

*(7) Aircraft specially designed to incorporate a defense article for the purpose of performing an intelligence, surveillance, and reconnaissance function;

*(8) Aircraft specially designed to incorporate a defense article for the purpose of performing an electronic warfare function; airborne warning and control aircraft; or aircraft specially designed to incorporate a defense article

for the purpose of performing a command, control, and communications function;

(9) Aircraft specially designed to incorporate a defense article for the purpose of performing an air refueling function;

(10) Target drones;

(11) [Reserved]

(12) Aircraft capable of being refueled in-flight including hover-in-flight refueling (HIFR);

(13) [Reserved]

(14) Aircraft with a roll-on/roll-off ramp, capable of airlifting payloads over 35,000 lbs. to ranges over 2,000 nm without being refueled in-flight, and landing onto short or unimproved airfields, other than L-100 and LM-100J aircraft;

*(15) Aircraft not enumerated in paragraphs (a)(1) through (a)(14) as follows:

(i) U.S.-origin aircraft that bear an original military designation of A, B, E, F, K, M, P, R, or S; or

(ii) Foreign-origin aircraft specially designed to provide functions equivalent to those of the aircraft listed in paragraph (a)(15)(i) of this category; or

(16) Aircraft that are armed or are specially designed to be used as a platform to deliver munitions or otherwise destroy targets (*e.g.*, firing lasers, launching rockets, firing missiles, dropping bombs, or strafing);

Note 1 to paragraph (a): Aircraft specially designed for military applications that are not identified in paragraph (a) of this section are subject to the EAR and classified as ECCN 9A610, including any model of unarmed military aircraft manufactured prior to 1956, regardless of origin or designation, and unmodified since manufacture. Aircraft with modifications

made to incorporate safety of flight features or other FAA or NTSB modifications such as transponders and air data recorders are considered "unmodified" for the purposes of this paragraph.

Note 2 to paragraph (a): "Range" is the maximum distance that the specified aircraft system is capable of traveling in the mode of stable flight as measured by the projection of its trajectory over the surface of the Earth. The maximum capability based on the design characteristics of the system, when fully loaded with fuel or propellant, will be taken into consideration in determining range. The range for aircraft systems will be determined independently of any external factors such as operational restrictions, limitations imposed by telemetry, data links, or other external constraints. For aircraft systems, the range will be determined for a one-way distance using the most fuel-efficient flight profile (e.g., cruise speed and altitude), assuming International Civil Aviation Organization (ICAO) standard atmosphere with zero wind, but with no fuel reserve.

(b)-(c) [Reserved]

(d) Launching and recovery equipment specially designed to allow an aircraft described in paragraph (a) of this category to take off or land on a vessel described in Category VI paragraphs (a) through (c) (MT if the launching and recovery equipment is for an aircraft, excluding manned aircraft, that has a range equal to or greater than 300 km).

Note to paragraph (d): For the definition of "range," see note to paragraph (a) of this category.

(e) [Reserved]

(f) Developmental aircraft funded by the Department of Defense via contract or other funding authorization, and specially designed parts, components, accessories, and attachments therefor.

Note 1 to paragraph (f): This paragraph does not control aircraft and specially designed parts, components, accessories, and attachments therefor (a) in production; (b) determined to be subject to the EAR via a commodity jurisdiction determination (see § 120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

Note 2 to paragraph (f): Note 1 does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

Note 3 to paragraph (f): This paragraph is applicable only to those contracts, other funding authorizations, or modifications initiating development of a new defense article that are dated April 16, 2014, or later.

(g) [Reserved]

(h) Parts, components, accessories, attachments, associated equipment and systems, as follows:

(1) Parts, components, accessories, and attachments specially designed for the following U.S.-origin aircraft: the B-1B, B-2, B-21, F-15SE, F/A-18 E/F, EA-18G, F-22, F-35, and future variants thereof; or the F-117 or U.S. Government technology demonstrators. Parts, components, accessories, and attachments of the F-15SE and F/A-18 E/F that are common to earlier models of these aircraft, unless listed in paragraph (h) of this category, are subject to the EAR;

Note to paragraph (h)(1): This paragraph does not control parts, components, accessories, and attachments that are common to aircraft described in paragraph (a) of this category but not identified in paragraph (h)(1), and those identified in paragraph (h)(1). For example, when applying § 120.41(b)(3), a part common to only the F-16 and F-35 is not specially

designed for purposes of this paragraph. A part common to only the F-22 and F-35 — two aircraft models identified in paragraph (h)(1) — is specially designed for purposes of this paragraph, unless one of the other paragraphs is applicable under § 120.41(b) of this subchapter.

(2) Rotorcraft gearboxes with internal pitch line velocities exceeding 20,000 feet per minute and able to operate 30 minutes with loss of lubrication without an emergency or auxiliary lubrication system, and specially designed parts and components therefor;

Note to paragraph (h)(2): Loss of lubrication means a situation where oil/lubrication is mostly or completely lost from a transmission/gearbox such that only a residual coating remains due to the lubrication system failure.

(3) Tail boom folding systems, stabilator folding systems or automatic rotor blade folding systems, and specially designed parts and components therefor;

(4) Wing folding systems, and specially designed parts and components therefor, for:

(i) Aircraft powered by power plants controlled under USML Category IV(d); or

(ii) Aircraft with any of the following characteristics and powered by gas turbine engines:

(A) The portion of the wing outboard of the wing fold is required for sustained flight;

(B) Fuel can be stored outboard of the wing fold;

(C) Control surfaces are outboard of the wing fold;

(D) Hard points are outboard of the wing fold;

(E) Hard points inboard of the wing fold allow for in-flight ejection; or

(F) The aircraft is designed to withstand maximum vertical maneuvering accelerations greater than +3.5g/−1.5g.

(5) On-aircraft arresting gear (*e.g.*, tail hooks and drag chutes) and specially designed parts and components therefor;

(6) Bomb racks, missile or rocket launchers, missile rails, weapon pylons, pylon-to-launcher adapters, unmanned aerial vehicle (UAV) airborne launching systems, external stores support systems for ordnance or weapons, and specially designed parts and components therefor (MT if the bomb rack, missile launcher, missile rail, weapon pylon, pylon-to-launcher adapter, UAV airborne launching system, or external stores support system is for an aircraft, excluding manned aircraft, or missile that has a "range" equal to or greater than 300 km);

(7) Damage or failure-adaptive flight control systems, that do not consist solely of redundant internal circuitry, specially designed for aircraft controlled in this category;

(8) Threat-adaptive autonomous flight control systems, where a "threat-adaptive autonomous flight control system" is a flight control system that, without input from the operator or pilot, adjusts the aircraft control or flight path to minimize risk caused by hostile threats;

(9) Non-surface-based flight control systems and effectors (e.g., thrust vectoring from gas ports other than main engine thrust vector);

(10) Radar altimeters with output power management LPI (low probability of intercept) or signal modulation (i.e., frequency hopping, chirping, direct sequence-spectrum spreading) LPI capabilities (MT if for an aircraft, excluding manned aircraft, or missile that has a "range" equal to or greater than 300 km);

(11) Air-to-air refueling systems and hover-in-flight refueling (HIFR) systems, and specially designed parts and components therefor;
(12) Unmanned aerial vehicle (UAV) flight control systems and vehicle management systems with swarming capability (*i.e.*, UAVs interact with each other to avoid collisions and stay together, or, if weaponized, coordinate targeting) (MT if for an aircraft, excluding manned aircraft, or missile that has a "range" equal to or greater than 300 km);
(13) [Reserved]
(14) Lift fans, clutches, and roll posts for short take-off, vertical landing (STOVL) aircraft and specially designed parts and components for such lift fans and roll posts;
(15) Integrated helmets incorporating optical sights or slewing devices, which include the ability to aim, launch, track, or manage munitions (e.g., Helmet Mounted Cueing Systems, Joint Helmet Mounted Cueing Systems (JHMCS), Helmet Mounted Displays, Display and Sight Helmets (DASH)), and specially designed parts, components, accessories, and attachments therefor;
(16) Fire control computers, stores management systems, armaments control processors, and aircraft-weapon interface units and computers (e.g., AGM-88 HARM Aircraft Launcher Interface Computer (ALIC));
(17) Mission computers, vehicle management computers, and integrated core processers specially designed for aircraft controlled in this category;
(18) Drive systems, flight control systems, and parts and components therefor, specially designed to function after impact of a 7.62mm or larger projectile;
(19) Thrust reversers specially designed to be deployed in flight for aircraft controlled in this category;

*(20) Any part, component, accessory, attachment, equipment, or system that:

(i) Is classified;

(ii) Contains classified software directly related to defense articles in this subchapter or 600 series items subject to the EAR; or

(iii) Is being developed using classified information.

Note to paragraph (h)(20): Classified means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government or international organization;

(21) – (26) [Reserved]

(27) Variable speed gearboxes, where a "variable speed gearbox" has the ability to vary the gearbox output speed by mechanical means within the gearbox while the gearbox input speed from the engine or other source is constant, and is capable of varying output speed by 20% or greater and providing power to rotors, proprotors, propellers, propfans, or liftfans; and specially designed parts and components therefor;

(28) Electrical power or thermal management systems specially designed for an engine controlled in Category XIX and having any of the following:

(i) Electrical power generators that provide greater than 300kW of electrical power (per generator) with gravimetric power densities exceeding 2kW/pound (excluding the mass of the controller for the purpose of calculating the gravimetric power density);

(ii) Heat exchangers that exchange 60 kW/K-m^3 or 1 kW/K of heat or greater into the gas turbine engine flow path; or

(iii) Direct-cooling thermal electronic package heat exchangers that transfer 20kW of heat or greater at 100W/cm^2 or greater.

(29) Any of the following equipment if specially designed for a defense article described in paragraph (h)(1):

(i) Scale test models;

(ii) Full scale iron bird ground rigs used to test major aircraft systems; or

(iii) Jigs, locating fixtures, templates, gauges, molds, dies, or caul plates.

(i) Technical data (see § 120.10 of this subchapter) and defense services (see § 120.9 of this subchapter) directly related to the defense articles described in paragraphs (a) through (h) of this category and classified technical data directly related to items controlled in ECCNs 9A610, 9B610, 9C610, and 9D610 and defense services using classified technical data. (See § 125.4 of this subchapter for exemptions.) (MT for technical data and defense services related to articles designated as such.)

(j)-(w) [Reserved]

(x) Commodities, software, and technology subject to the EAR (see § 120.42 of this subchapter) used in or with defense articles controlled in this category.

Note to paragraph (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the purchase documentation includes commodities, software, or technology subject to the EAR (see § 123.1(b) of this subchapter).

Note: Parts, components, accessories, and attachments in paragraphs (h)(3)-(5), (7), (14), (17), or (19) are licensed by the Department of Commerce when incorporated in an aircraft subject to the EAR and classified under ECCN 9A610. Replacement systems, parts, components, accessories and attachments are subject to the controls of the ITAR.

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Category XIX—Gas Turbine Engines and Associated Equipment

*(a) Turbofan and Turbojet engines (including those that are technology demonstrators, developmental engines, or variable cycle engines) capable of 15,000 lbf (66.7 kN) of thrust or greater that have any of the following:

(1) With or specially designed for thrust augmentation (afterburner);

(2) Thrust or exhaust nozzle vectoring;

(3) Parts or components controlled in paragraph (f)(6) of this category;

(4) Specially designed for sustained 30 second inverted flight or negative g maneuver; or

(5) Specially designed for high power extraction (greater than 50 percent of engine thrust at altitude) at altitudes greater than 50,000 feet.

*(b) Turboshaft and Turboprop engines (including those that are technology demonstrators or developmental engines) that have any of the following:

(1) Capable of 2000 mechanical shp (1491 kW) or greater and specially designed with oil sump sealing when the engine is in the vertical position; or

(2) Capable of a specific power of 225 shp/(lbm/sec) or greater and specially designed for armament gas ingestion and non-civil transient maneuvers, where specific power is defined as maximum takeoff shaft horsepower (shp) divided by compressor inlet flow (lbm/sec).

*(c) Gas turbine engines (including technology demonstrators, developmental engines, and variable cycle engines) specially designed for unmanned aerial vehicle systems controlled in this subchapter, cruise missiles, or target drones (MT if for an engine used in an aircraft, excluding manned aircraft, or missile that has a “range” equal to or greater than 300 km).

*(d) GE38, AGT1500, CTS800, MT7, T55, HPW3000, GE3000, T408, and T700 engines.

Note to paragraph (d): Engines subject to the control of this paragraph are licensed by the Department of Commerce when incorporated in an aircraft subject to the EAR and controlled under ECCN 9A610. Such engines are subject to the controls of the ITAR in all other circumstances.

*(e) Digital engine control systems (e.g., Full Authority Digital Engine Controls (FADEC) and Digital Electronic Engine Controls (DEEC)) specially designed for gas turbine engines controlled in this category (MT if the digital engine control system is for an aircraft, excluding manned aircraft, or missile that has a range equal to or greater than 300 km).

Note to paragraph (e): Digital electronic control systems autonomously control the engine throughout its whole operating range from demanded engine start until demanded engine shut-down, in both normal and fault conditions.

(f) Parts, components, accessories, attachments, associated equipment, and systems as follows:

(1) Parts, components, accessories, and attachments specially designed for the following U.S.-origin engines (and military variants thereof): F101, F107, F112, F118, F119, F120, F135, F136, F414, F415, and J402;

Note to paragraph (f)(1): This paragraph does not control parts, components, accessories, and attachments that are common to engines enumerated in paragraph (a) through (d) of this category but not identified in paragraph (f)(1), and those identified in paragraph (f)(1). For example, a part common to only the F110 and F136 is not specially designed for purposes of this paragraph. A part common to only the F119 and F135 — two engine models identified in paragraph (f)(1) — is specially designed for purposes of

this paragraph, unless one of the other paragraphs is applicable under §120.41(b).

*(2) Hot section components (*i.e.*, combustion chambers and liners; high pressure turbine blades, vanes, disks and related cooled structure; cooled intermediate pressure turbine blades, vanes, disks and related cooled structures; cooled low pressure turbine blades, vanes, disks and related cooled structures; cooled shaft-driving power turbine blades, vanes, disks and related cooled structures; cooled augmenters; and cooled nozzles) specially designed for gas turbine engines controlled in this category;

(3) Uncooled turbine blades, vanes, disks, and tip shrouds specially designed for gas turbine engines controlled in this category;

(4) Combustor cowls, diffusers, domes, and shells specially designed for gas turbine engines controlled in this category;

(5) Engine monitoring systems (i.e., prognostics, diagnostics, and health) specially designed for gas turbine engines and components controlled in this category;

*(6) Any part, component, accessory, attachment, equipment, or system that:

(i) Is classified;

(ii) Contains classified software directly related to defense articles in this subchapter or 600 series items subject to the EAR; or

(iii) Is being developed using classified information.

Note to paragraph (f)(6): "Classified" means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government or international organization;

(7) Investment casting cores, core dies, or wax pattern dies for parts or components enumerated in paragraphs (f)(1), (f)(2), or (f)(3) of this category;

(8) Pressure gain combustors specially designed for engines controlled in this category, and specially designed parts and components therefor;

(9) Three-stream fan systems, specially designed for gas turbine engines controlled in this Category, that allow the movement of airflow between the streams to control fan pressure ratio or bypass ratio (by means other than use of fan corrected speed or the primary nozzle area to change the fan pressure ratio or bypass ratio), and specially designed parts, components, accessories, and attachments therefor;

(10) High pressure compressors, specially designed for gas turbine engines controlled in this Category, with core-driven bypass streams that have a pressure ratio greater than one, occurring across any section of the bypass duct, and specially designed parts, components, accessories, and attachments therefor;

(11) Intermediate compressors of a three-spool compression system, specially designed for gas turbine engines controlled in this Category, with an intermediate spool-driven bypass stream that has a pressure ratio greater than one, occurring across any section of the bypass duct, and specially designed parts, components, accessories, and attachments therefor; or

(12) Any of the following equipment if specially designed for a defense article described in paragraph (f)(1): Jigs, locating fixtures, templates, gauges, molds, dies, caul plates, or bellmouths.

(g) Technical data (see §120.10 of this subchapter) and defense services (see §120.9 of this subchapter) directly related to the defense articles described in paragraphs (a) through (f) of this category and classified technical data

directly related to items controlled in ECCNs 9A619, 9B619, 9C619, and 9D619 and defense services using the classified technical data. (See §125.4 of this subchapter for exemptions.) (MT for technical data and defense services related to articles designated as such.)

(h)-(w) [Reserved]

(x) Commodities, software, and technology subject to the EAR (see §120.42 of this subchapter) used in or with defense articles controlled in this category.

Note to paragraph (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the purchase documentation includes commodities, software, or technology subject to the EAR (see §123.1(b) of this subchapter).

November 14, 2016
Dated

Thomas M. Countryman,
Acting Under Secretary,
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