

the proposal to revise the index level during the five-year period.

#### IV. Comment Procedures

41. Initial comments are due November 26, 2024. Reply comments are due December 20, 2024. Comments must refer to Docket No. RM25–2–000, and must include the commenter's name, the organization they represent, if applicable, and their address. All comments will be placed in the Commission's public files and may be viewed, printed, or downloaded remotely as described in the Document Availability section below. Commenters on this proposal are not required to serve copies of their comments on other commenters.

42. The Commission encourages comments to be filed electronically via the eFiling link on the Commission's website at <http://www.ferc.gov>. The Commission accepts most standard word processing formats. Documents created electronically using word processing software must be filed in native applications or print-to-PDF format and not in a scanned format. Commenters filing electronically do not need to make a paper filing.

43. Commenters that are not able to file comments electronically may file an original of their comment by USPS mail or by courier or other delivery services. For submission sent via USPS only, filings should be mailed to: Federal Energy Regulatory Commission, Office of the Secretary, 888 First Street NE, Washington, DC 20426. Submission of filings other than by USPS should be delivered to: Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852.

#### V. Document Availability

44. In addition to publishing the full text of this document in the **Federal Register**, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the internet through the Commission's Home Page (<http://www.ferc.gov>).

45. From the Commission's Home Page on the internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

46. User assistance is available for eLibrary and the Commission's website during normal business hours from FERC Online Support at (202) 502–6652 (toll free at 1–866–208–3676) or email at

[ferconlinesupport@ferc.gov](mailto:ferconlinesupport@ferc.gov), or the Public Reference Room at (202) 502–8371, TTY (202) 502–8659. Email the Public Reference Room at [public.referenceroom@ferc.gov](mailto:public.referenceroom@ferc.gov).

By direction of the Commission.

Issued: October 17, 2024.

**Debbie-Anne A. Reese,**

*Secretary.*

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## DEPARTMENT OF STATE

### 22 CFR Parts 120, 121, and 126

[Public Notice: 12543]

RIN 1400–AE73

#### International Traffic in Arms Regulations (ITAR): U.S. Munitions List Categories IV and XV

**AGENCY:** Department of State.

**ACTION:** Proposed rule.

**SUMMARY:** The Department of State (the Department) proposes to amend the International Traffic in Arms Regulations (ITAR) to revise U.S. Munitions List (USML) Categories IV and XV and related sections of the ITAR to clarify and standardize the regulatory text, add items that warrant designation on the USML, and remove those items that no longer warrant designation on the USML. The Department further proposes to add three new license exemptions to the ITAR.

**DATES:** Send comments on or before November 22, 2024.

**ADDRESSES:** Interested parties may submit comments to the Department by any of the following methods:

- Visit the *Regulations.gov* website at: <https://www.regulations.gov> and search for the docket number DOS–2024–0035.
- Email: [DDTCPublicComments@state.gov](mailto:DDTCPublicComments@state.gov). Commenting parties must include RIN 1400–AE73 in the subject line of the email message.

See **SUPPLEMENTARY INFORMATION** for other information about electronic filing.

**FOR FURTHER INFORMATION CONTACT:** Mr. Robert Rasmussen, Office of Defense Trade Controls Policy, Department of State, telephone (202) 663–2217; email [DDTCCustomerService@state.gov](mailto:DDTCCustomerService@state.gov); SUBJECT: International Traffic in Arms Regulations: USML Categories IV and XV (RIN 1400–AE73).

**SUPPLEMENTARY INFORMATION:** The Department of State's Directorate of Defense Trade Controls (DDTC) regulates the export, reexport, retransfer,

and temporary import of the defense articles and defense services identified on the USML at ITAR § 121.1. Items not subject to the ITAR or to the exclusive licensing jurisdiction of any other department or agency of the U.S. Government are subject to the Export Administration Regulations (EAR, 15 CFR parts 730 through 774, which includes the Commerce Control List (CCL) in supplement no. 1 to part 774). The EAR is administered and enforced by the Bureau of Industry and Security (BIS), U.S. Department of Commerce. This rule does not modify the list of defense articles and defense services controlled for purposes of permanent import by the Attorney General, as enumerated on the U.S. Munitions Import List (USMIL) at 27 CFR 447.21.

Section 38 of the Arms Export Control Act (AECA) (22 U.S.C. 2778), the authority from which the ITAR is derived, requires periodic review to determine what articles and services, if any, no longer warrant designation on the U.S. Munitions List at 22 CFR 121.1. In maintaining the USML, DDTC's Office of Defense Trade Controls Policy (DTCP) identifies articles and services for review through a variety of methods, including informal public and interagency comment, commodity jurisdiction reviews, advisory opinions, and technology monitoring. The Department maintains the USML such that it comprises those defense articles or defense services that provide a critical military or intelligence advantage or, in the case of firearms, have an inherently military function. The Department, informed by consultations with its interagency partners, determined that the additional defense articles this rule proposes to designate on the USML warrant ITAR control and those articles it proposes to remove from the USML no longer do. This rule also proposes to amend and clarify certain regulatory text that describes items on the USML.

Further, on December 20, 2023, Vice President Kamala Harris convened the National Space Council to discuss U.S. leadership in space. The Departments of State and Commerce were subsequently tasked to “review relevant export controls and processes to better enable a globally competitive U.S. space industrial base while protecting our national security and foreign policy interests.” In addition to clarifying existing controls, the Department identifies three primary methods to meet that objective. First, it presents several updates to the USML's structure, terminology, and concepts. Second, it proposes three new license exemptions within the ITAR and the transition of

guidance from an existing USML note into a fourth new exemption within a new section, § 126.8. Third, it proposes revisions to USML Categories IV and XV.

With this rule, the Department proposes to amend specific paragraphs within the USML to address controls that were identified as potentially requiring addition, removal, revision, or clarification. The Department proposes the following general types of changes to the ITAR: (1) USML Modernization Efforts, (2) Civil Space-Related License Exemptions and Special Licensing Provisions, and (3) USML Category Revisions.

The Department invites feedback from industry and other interested parties on these proposals, which are further explained in that order below. In accordance with 5 U.S.C. 553(b)(4), a summary of this proposed rule may be found at <https://www.regulations.gov>.

#### **USML Modernization Efforts**

The Department is modernizing the USML, specifically to improve its usability, clarity, and consistency in structure and regulatory text. This proposed rule contains revisions to that effect in the following areas:

##### *Revision and Removal of Notes and Expansion of § 121.0 Definitions*

The Department proposes to relocate content in notes within the USML, which has regulatory effect, into the relevant text of the USML paragraphs, or into new definitions in § 121.0. The Department also proposes to update or remove other notes within the USML for clarity and to avoid redundancy.

To create additional clarity within the text of the USML, the Department proposes to add definitions for the following new terms, many of which are currently contained in notes: amateur rocket, amateur rocket motor, bomb, excluded National Aeronautics and Space Administration (NASA) spacecraft, ground sample distance, hosted payload, human spaceflight preparations, loitering munition, mine, payload, primary payload, range, real-time, secondary payload, spacecraft, spacecraft bus, spacecraft housekeeping data and output, spacecraft payload, and spectral bandwidth.

ITAR part 120 maintains defined terms that are relevant to the ITAR, while other definitions are located in notes to USML paragraphs. Consistent with the Department's overall effort to streamline and clarify the content and organization of the ITAR, this rule proposes to consolidate defined terms used within the USML in one location at § 121.0. The Department will further

consider, and requests public comment on, whether the Department should instead move any of those terms to part 120, so they apply across the ITAR instead of just the USML.

##### *Removal of Specially Designed as a Criterion in Certain Paragraphs*

The Department further proposes to revise those paragraphs where the term specially designed either does not narrow the scope of the paragraph or can be replaced with technical criteria that provide more specific controls. The Department does so to enhance clarity within the regulatory text.

##### *Consistency in Construction*

The Department proposes to start each paragraph of the USML with the specific article of interest, followed by any qualifying criteria such as characteristics, functions, or performance capability. The Department does so to improve both the USML's consistency and its ease of navigation.

The Department also proposes to relocate in-line catch-all entries (*i.e.*, those located in the same paragraph as the article they are specially designed for) to the end of the paragraph to which they apply, unless it applies only to a portion of the control. The Department does so to enhance clarity and consistency within the regulatory text.

##### *Structure of USML Categories*

The Department proposes to structure certain USML control text to more consistently follow the organizational composition described in § 120.10(b), *Composition of U.S. Munitions List categories*. Restructuring to group paragraphs according to § 120.40, *Compositional terms*, will improve the USML's ease of use and help reduce user error when performing an analysis to determine if an item is specially designed per § 120.41. Since paragraphs (a)(2) and (b)(1) through (5) only apply to USML paragraphs that use the term "specially designed" to describe items as parts, components, accessories, attachments, or software, the Department believes that clearly differentiating between the USML paragraphs that do so, and those that instead use the term "specially designed" to describe items using other § 120.40 compositional terms, will assist in the analysis. For example, in this rule, the Department proposes to move equipment and systems currently described in the parts and components paragraph of Category IV(h) to a newly created paragraph (e) of USML Category IV. A similar approach is proposed for Category XV.

##### *Clarification of Internal References and Standardization of Regulatory Text*

The Department proposes to update internal references within the USML for consistency and greater readability. For example, the Department proposes to replace references to larger divisions of subchapter M of title 22 (such as "this section") with more specific references such as "the USML," when that is the intent. Similarly, the Department proposes to update references to "this category" to the specific USML Category referenced.

The Department proposes to standardize its use of terms within the USML, including "described" and "controlled."

For consistency and ease of use, the Department also proposes to utilize metric units and minimize references to U.S. customary units.

And, finally, the Department proposes other minor changes in multiple paragraphs to promote consistency in regulatory text, grammar, and syntax without changing scope or substance.

#### **Civil Space-Related License Exemptions and Special Licensing Provisions**

The Department proposes to add to part 126 three new licensing exemptions intended to promote U.S. industrial base participation in civil space activity commensurate with its national security and foreign policy goals. The Department further proposes to codify a fourth licensing exemption currently provided as guidance in an existing note within the USML. As a reminder, the ITAR contains other requirements to be eligible to use an exemption, including requirements which may attach to transfers. Those include, but are not limited to, § 126.1 regarding proscribed destinations and statements required under § 123.9(b). Specific to the current proposed rulemaking, the four proposed exemptions are as follows.

##### *Official Space Agency Exemption*

This license exemption, proposed to be in a new § 126.8(a), would authorize certain transfers of defense articles and defense services when conducted entirely within the scope of an official U.S. government agency space program listed in § 126.8(a)(2). While the proposed list of articles and services subject to the exemption applies to several NASA spacecraft, the Department emphasizes this licensing exemption does not similarly apply to the space launch vehicles for these spacecraft. The Department assesses the underlying launch vehicle technology is independent of the spacecraft that potentially warrant a licensing

exemption, in part due to the implicitly civil, multilateral, or scientific mission of these specific spacecraft.

#### *Space Activity Exemption*

This exemption, proposed to be in a new § 126.8(b), consists of four provisions. The first would authorize certain transfers of defense articles and § 120.32(a)(2) defense services supporting space launches. Certain transfers of electrical connectors would be eligible for this exemption, as the Department assesses that, while they continue to warrant regulation by this subchapter, certain transfers of these articles may be conducted under a licensing exemption without risk to U.S. national security and foreign policy interests. The Department requests public comment on additional space technologies having both military and commercial applications that should be considered for incorporation into this exemption. Comments on the benefit of such an expansion of the exemption to the regulated community and any perceived or recommended proliferation risk mitigations are also requested.

The second provision would authorize certain services related to the transmission of space launch vehicle telemetry, to improve safety of flight and support the growing space launch industry. The Department proposes to limit this authorization to space launch vehicles since similar data can be used by rockets and missiles to deliver weapons of mass destruction.

The third provision would authorize certain services to support collaboration with foreign persons when on-orbit defense articles are utilized in support of fundamental research, as defined in § 120.34(a)(8).

The fourth provision would authorize certain services associated with radiofrequency transmissions using on-orbit defense articles, including geolocating certain automated information broadcasts, emergency transmissions, and cellular transmissions.

#### *Space Tourism and Research Exemption*

This exemption, proposed to be in a new § 126.8(c), would authorize certain transfers of manned spacecraft for space tourism or in support of fundamental research, as defined in § 120.34(a)(8).

The Department notes the proposed research exemptions apply specifically to certain basic and applied research, and not to the engineering development phase of research and development. Similarly, they do not apply to the design and development of a defense article or to research either not intended for publication or subject to publication

restrictions or non-disclosure agreements.

#### *Special Licensing Provision for Defense Articles Incorporated Into Spacecraft Subject to the EAR*

This exemption, proposed to be in a new § 126.8(d), would authorize certain transfers of defense articles while they are incorporated into spacecraft subject to the EAR. This is consistent with two current notes (note 2 to paragraph (e) and note 2 to paragraph (e)(17)) the Department proposes to remove from Category XV.

#### *Satellite Signature Reduction*

In addition to the proposed exemptions previously described, the Department also requests public comment on specific regulatory changes or clarifications to facilitate industry efforts to reduce the apparent magnitude, as viewed from Earth, of satellite brightness. Commenters should be cognizant of the Department's continued need to control signature reduction technologies that provide a critical military or intelligence advantage, including technologies to reduce spacecraft signatures as viewed in, or between, orbits.

### **USML Category Revisions**

#### *USML Category IV*

##### Category Title

The Department proposes to update the title of Category IV to better reflect the items described therein and to avoid the potential misinterpretation that the list of items in the title is exhaustive.

##### Paragraphs (a)(1) and (2)

The Department proposes minor adjustments to USML Category IV(a)(1) and (2) for consistency in construction of the control text.

##### Man-Portable Air Defense Systems (MANPADS)

In USML Category IV, paragraph (a)(3) describes MANPADS, paragraph (b)(2) describes “[f]ixed launch sites and mobile launcher mechanisms for any system enumerated in paragraphs (a)(3) through (5) . . . (e.g., launch tables, TOW missile, MANPADS),” and paragraph (h)(5) describes “MANPADS grip stocks and specially designed parts and components therefor.”

To provide additional clarity and consistency in structure of the USML, with no change in the scope of the controls, the Department proposes to modify these paragraphs. The Department proposes to modify paragraph (a)(3) to enumerate the missiles and rockets used in

MANPADS. As described elsewhere in this rule, the Department proposes further modifications to paragraph (b)(2) to clarify it describes launch systems and equipment for MANPADS and certain other defense articles; thus, launch tubes for MANPADS missiles would remain described on the USML. The Department proposes to continue to describe parts and components specially designed for MANPADS grip stocks in paragraph (h)(5) but notes MANPADS grip stocks described in that paragraph would also be described in proposed paragraph (b)(2) as launch equipment for MANPADS. The Department requests public comment on the advantages and disadvantages of describing MANPADS grip stocks either only in paragraph (b)(2) or only in paragraph (h)(5).

##### Anti-Tank Missiles

USML Category IV(a)(4) describes “[a]nti-tank missiles and rockets.” The Department proposes to distinguish this entry from other USML paragraphs that describe other missiles and rockets that may be used to neutralize tanks, such as Category III(d)(4) for rocket propelled grenades (RPGs). The Department assesses that a commonly accepted distinction between the two is that anti-tank systems are typically guided, whereas RPGs are not. This demarcation, along with established precedent, precludes the need for a substantive revision of Category IV(a)(4). Instead, the Department proposes minor modifications for consistency in sentence structure and to clarify that it describes projectiles used to neutralize armored platforms of any kind, not just tanks.

##### Rockets

USML Category IV(a)(5) describes rockets, space launch vehicles (SLVs), and missiles not described elsewhere in paragraphs (a)(1) through (4). This includes rockets on the lower end of the performance spectrum that, nonetheless, warrant designation as a defense article. USML Category IV(a) excludes certain model rockets via note 3 to paragraph (a).

The Department also proposes to replace note 3 to paragraph (a) with a specific definition of “amateur rockets” in § 121.0 and to reference that definition to exclude amateur rockets from the regulatory text of paragraph (a)(5). The proposed definition is consistent with the current National Fire Protection Association Code definition referenced in note 3 to paragraph (a).

## Bombs

The Department proposes to clarify the scope of USML Category IV(a)(6) through defining “bomb” in § 121.0 in a manner that more clearly excludes improvised explosive devices (IEDs) and other ground-based munitions. In doing so, the Department does not intend to narrow the scope of the USML and notes bombs dropped from ground-launched munitions are still dropped from the air (e.g., bomblets dropped from a munition launched from a ground vehicle), while some munitions marketed as ‘bombs’ may more appropriately be classified as rockets or missiles.

## Mines

The USML currently enumerates mines in three separate paragraphs in USML Category IV. Paragraph (a)(9) describes “[a]nti-personnel, anti-vehicle, or anti-armor land mines (e.g., area denial devices).” Paragraph (a)(10) describes “[a]nti-helicopter mines.” And paragraph (a)(11) describes “[n]aval mines.” The Department proposes to clarify, via a new parenthetical, that paragraph (a)(9) describes both Terrain Shaping Obstacles (TSOs) that are compliant with the Ottawa/Presidential Landmine Policy and non-compliant area denial devices (ADDs).

The Department also proposes to clarify that paragraph (a)(10) describes mines designed to target any type of aircraft, such as unmanned aerial vehicles (UAVs)—not just helicopters. The Department is unaware of any anti-UAV mines that are not anti-helicopter mines. Moreover, the Department assesses that any notional or future anti-aircraft mines that are not also anti-helicopter mines warrant the same level of control as anti-helicopter mines.

To facilitate additional proposed subordinate paragraphs to paragraph (a), the Department proposes to delete the conjunction “or” at the end paragraph (a)(11). The Department also proposes to move the definition of “mine” currently found in note 4 to Category IV(a) to § 121.0, refine the definition, and delete the original note.

## Grenades

The Department proposes to remove the reference to “high explosive” in USML Category IV(a)(12) to prevent confusing the articles described in this paragraph with law enforcement tools, such as stun grenades, that are not subject to the ITAR. Instead, the Department proposes the paragraph refer to hand grenades “designed to be lethal or destructive”, with a parenthetical list of examples, as more

reflective of the types of grenades the Department intends to describe in this paragraph.

## Loitering Munitions

The Department proposes to add new paragraph (a)(13) to USML Category IV to enumerate loitering munitions, thereby distinguishing them from other defense articles with similar functionality, e.g., UAVs designed for repeated missions, instead of a single use. In support of this new paragraph, the Department proposes to add a regulatory definition of “loitering munition” in § 121.0.

## Kinetic Kill Vehicles

The Department proposes to move kinetic kill vehicles currently described in USML Category IV(h)(3) to a new entry in paragraph (a), with no change in the scope of control.

## Post-Boost Vehicles

The Department proposes to move post-boost vehicles currently described in USML Category IV(h)(12) to a new entry in paragraph (a), with an expanded description for clarity in the regulatory text but no change in the scope of control.

## Hypersonic Glide Vehicles

The Department notes most hypersonic vehicles (HVs) are described on the USML in either Category IV or VIII. However, the Department assesses that the functionality of hypersonic glide vehicles (HGVs) requires specific enumeration on the USML. The Department thus proposes to add a new paragraph (a)(16) in Category IV for HGVs and specially designed parts and components therefor. The Department further proposes to designate this paragraph as “MT” (see § 120.10(d)).

## Re-Entry Vehicles

The Department proposes to move the control for re-entry vehicles within USML Category IV from paragraph (h)(17) to new paragraph (a)(17) with minor textual changes. The Department also proposes to incorporate the guidance currently in the note to paragraph (h)(17) into the new paragraph (a)(17) and to clarify the scope of paragraph (a)(17) to better facilitate the order of review. Thus, the Department further proposes to delete the note to paragraph (h)(17).

## Range and Payload

The Department proposes to move the definitions of “range” and “payload,” currently found in the notes to USML Category IV(a), to § 121.0.

## Model Rockets

Certain rockets described in USML Category IV(a)(5) are excluded from that paragraph by note 3 to USML Category IV(a). The Department proposes to delete note 3, while maintaining the scope of paragraph (a), by adding a definition for “amateur rocket” in § 121.0 and modifying paragraph (a)(5) to exclude amateur rockets.

## Launch Platforms

Paragraphs (b)(1) and (2) of USML Category IV describe “[f]ixed launch sites and mobile launcher mechanisms” for articles described in paragraphs (a)(1) through (5). For clarity, the Department proposes to delete the parenthetical example in paragraph (b)(2) since the “TOW missile” and “MANPADS” are described in paragraph (a).

With advances in technology, such as maritime launch sites, the Department also proposes to modify paragraphs (b)(1) and (2) to describe “launch systems and equipment” to clarify they describe all launch system variants. This change also facilitates the Department’s proposed intent to describe all launch systems for Category IV munitions in Category IV, changing the current practice of describing them according to the platform into which they are integrated, as currently facilitated by notes 1 and 2 to paragraph (b). Additionally, consistent with the current launch system controls for Category IV munitions, the Department proposes to add a parts and components catch-all control to paragraphs (b)(1) and (2).

The Department also proposes to delete the first two notes to paragraph (b) in the current regulation. Notes 1 and 2 direct the user to Categories VI, VII, and VIII for launcher mechanisms integrated into platforms described therein. However, the Department now proposes to describe launch systems according to the articles launched, not the platforms from which they are launched. This will result in describing articles such as the M299 and LAU-61 launchers in Category IV(b), while continuing to describe in Category VIII articles such as weapons pylons for integrating those launchers with aircraft. The Department assesses articles specially designed for the integration of a defense article described in USML Category IV with an operational platform should remain described in Category VI, VII, or VIII with their respective platforms, since they are better described as either articles for integrating launch equipment or, in the case of bomb racks, as release

mechanisms for self-launched munitions. The Department also proposes to add a new note 1 to paragraph (b) to ensure practitioners are aware that accessories, attachments, and associated equipment for USML Category XX(a) articles remain described in USML Category XX following the movement of launch systems and equipment to Category IV.

This proposed change in the Department's approach is intended, in part, to address launchers that are repurposed from one platform to another, or even to fixed, land-based installations. In such cases, the Department assesses it is inappropriate for the export classification of an article to change based solely on the platform with which it is used. However, maintaining the original platform-specific classification for a launcher installed on a different platform also causes unnecessary confusion and can delay licensing, compliance, and enforcement. Further challenges arise when the control text for launchers on different platforms differs either in the relevant USML paragraph or its related catch-all entry, or in the significant military equipment (SME) status of those paragraphs. This is not a theoretical issue, as the Department has identified multiple instances where launch equipment has been repurposed from aircraft or ships to vehicles or fixed installations (*e.g.*, the M299 launcher and Mark 41 Vertical Launch System).

Thus, the Department proposes to modify the relevant paragraphs of Categories VI, VII, and VIII so they only describe articles used to integrate either the launch systems described in Category IV(b), or self-launched munitions described in Category IV(a) that do not require a separate launch system (*e.g.*, bombs that attach only via hard points), with platforms described in those categories. The Department assesses these changes will eliminate the potential conflict with the order of review in which the existing notes imply reclassification from the SME paragraph of Category IV to a non-SME paragraph in another category. The proposed change will also reduce confusion, and potential reclassification, when the same equipment is used on multiple platforms. The Department is coordinating with the Department of Commerce's Bureau of Industry and Security to ensure consistency in its related catch-all controls for any articles that move between USML categories because of this new approach.

#### USML Category IV(c)

The Department notes it will address issues related USML Category IV(c) in a separate rulemaking. However, the Department still welcomes comments related to this paragraph.

**Note 1 to Paragraph (c)** The Department proposes to modify note 1 to USML Category IV(c) to clarify that, while paragraph (c) describes tanks specially designed for launch-site storage or handling of certain propellants, it does not describe tanks designed for commercial transportation and storage.

**Note 2 to Paragraph (c)** Note 2 to USML Category IV(c) points to USML Category XI for controls on "Aircraft Missile Protection Systems (AMPS)." The Department proposes to delete note 2, assessing the pointer is no longer necessary for contemporary users and not specific enough for novice users. These systems are known by multiple names, and the term AMPS is not used in USML Category XI. However, the Department believes that current practitioners have already determined the export classification of their specific aircraft survivability equipment. Separately, a novice's search for "AMPS" or "Aircraft Missile Protection Systems" would not identify an entry in USML Category XI—even if the specific system is described, for example, in USML Category XI(a)(4)(iii). The Department considered revising the note to provide a more explicit cross-reference but proposes to delete it instead, as similar cross-references are not provided for most other technologies described on the USML and the Department is not aware of significant confusion in the regulated community as to the location of these specific controls that would warrant treating them differently from other technology controls.

#### Propulsion Systems

The text of USML Category IV(d) uses the term "power plants" to refer to the items described in its subordinate paragraphs. The Department proposes to replace that term with "propulsion systems." However, the Department further proposes to exclude from Category IV(d) those propulsion systems described in USML Categories XV or XIX, to clarify those items are not described in the subordinate paragraphs of (d), while deleting note 2 to paragraph (d), as it is made redundant by these changes.

#### Rocket Stages, Motors, and Engines

The Department proposes minor changes to USML Category IV(d)(1) for consistency in construction and uniformity. The Department also proposes simplifying the regulatory text of paragraphs (d)(2) and (3) to reflect its intent to describe all motors and engines that satisfy the performance criteria, regardless of the propellant.

#### Air-Breathing Engines and Pressure Gain Combustion-Based Propulsion Systems

The Department proposes minor changes to paragraphs (d)(5) through (7) of USML Category IV for consistency. The Department also proposes to designate paragraphs (d)(5) and (6) as "MT" based on an assessment that the described articles are also described in the Missile Technology Control Regime Equipment, Software, and Technology Annex (MTCR Annex).

#### Note 1 to USML Category IV(d)

Note 1 to USML Category IV(d) provides a carve-out for motors that contain five pounds or less of propellant. The Department proposes to move that regulatory text into the definition of amateur rocket motors in § 121.0 and delete the note.

#### Addition of USML Category IV(e)

The Department proposes to move the following systems and equipment in USML Category IV from current paragraph (h) to a new paragraph (e): flight control and guidance systems (currently described in paragraphs (h)(1) and (28)), kinetic kill vehicles (currently described in paragraph (h)(3)), thrust vector control systems (currently described in paragraph (h)(4)), thermal protection systems (currently described in paragraph (h)(8)), self-destruct systems (currently described in paragraph (h)(10)), separation systems (currently described in paragraph (h)(11)), post-boost vehicles (currently described in paragraph (h)(12)), hypersonic glide vehicles, and unmanned atmospheric re-entry vehicles (both of which are currently described in paragraph (h)(17)), attitude control systems (currently described in paragraph (h)(28)), and seeker systems (currently described in paragraph (h)(2)).

These changes are part of the Department's USML modernization efforts and align with the USML structure outlined in § 120.10, by describing end-items, systems, and equipment in paragraphs that precede paragraphs dedicated to parts, components, accessories, and attachments.

#### Flight Control Systems, Guidance Systems, and Attitude Control Equipment

Flight control systems are described in paragraphs (h)(1) and (28) of USML Category IV. Those two paragraphs also describe guidance systems and attitude control equipment, respectively. Along with moving these systems to new paragraph (e), the Department also

proposes to consolidate them in three subordinate paragraphs of new paragraph (e)(1), with each subordinate paragraph describing one of the three types of systems or equipment (flight control systems, guidance systems, and attitude control equipment).

Within the paragraph for guidance systems, the Department proposes to delete the parenthetical reference to “guidance sets” and the related note to paragraph (h)(1) as redundant, assessing that “guidance sets” described in paragraph (h)(1) already meet the § 120.40 definition of a “system” and are thus already described by the term “guidance systems.” The Department also believes any manufacturers who historically used the “guidance set” term of art understand the export classification of their items, further reducing the utility of the reference.

#### Thrust Vector Control Systems

The Department proposes to simplify the regulatory text of current USML Category IV(h)(4) and move it to paragraph (e)(2). Specifically, the Department proposes to eliminate the reference to “missile or rocket” at the beginning of the paragraph, noting the text of proposed paragraph (e) renders it unnecessary. The Department further proposes to clarify this paragraph does not describe spacecraft thrust vector control systems described in USML Category XV.

#### Thermal Protection Systems (*e.g.*, Heat Shields and Heat Sinks)

USML Category IV(h)(8) describes heat shields for re-entry vehicles or warheads. The Department proposes to revise this paragraph and move it to paragraph (e)(3) to clarify the thermal protection systems described in this paragraph are not limited to traditional heat shields and to better distinguish this entry from a related paragraph in USML Category XV that describes spacecraft heat shields. The Department further proposes to designate new paragraph (e)(3) as “MT” based on an assessment that all such thermal protection systems designed for atmospheric re-entry are usable in MTCR Category I systems, and thus are described in the MTCR Annex. The Department also proposes to add a catch-all control to this paragraph. The Department also proposes to collocate this catch-all control with the thermal protection systems controls to improve the regulation’s clarity and ease of use.

Regarding the similar paragraph describing spacecraft heat shields in Category XV, the Department requests public comment on any perceived benefits and drawbacks to consolidating

these two heat shield paragraphs under Category XIII.

#### Self-Destruct Systems

USML Category IV(h)(10) describes self-destruct systems. The Department proposes to make minor modifications to this paragraph for consistency and clarity, with no change in the scope of control, and move it to paragraph (e)(4) of USML Category IV.

#### Separation Systems

USML Category IV(h)(11) describes separation systems. The Department proposes to revise this paragraph for consistency and clarity, with no change in the scope of control, and move it to paragraph (e)(5) of USML Category IV. This paragraph currently describes all separation systems, including those used to separate satellites from space launch vehicles. The Department considered removing certain separation mechanisms from the USML but declines to do so after assessing the technology differences between those for civil purposes and military purposes do not provide sufficient differentiation.

#### SAFF Components

USML Category IV(h)(9) describes safing, arming, fuzing, and firing (SAFF) components for missiles and rockets. The Department proposes to move it to the newly created paragraph (e)(6) and clarify it describes all SAFF systems for rockets, missiles, loitering munitions, and bombs, as well as their specially designed parts and components.

In support of that change, the Department proposes to replace the limiting compound adjective “missile and rocket” with a criterion for articles described in paragraph (a)(1), (2), (3), (4), or (5) or (g) of USML Category IV. This will avoid an expansion of scope from the current USML by avoiding control of, for instance, SAFF systems for mines that are nominally subject to the EAR. By adding a reference to paragraph (g), the Department intends to incorporate SAFF systems for non-nuclear warheads currently described in USML Category IV(h)(18). This proposed change will consolidate all SAFF systems and components described on the USML into a single paragraph focused on the underlying technology instead of its end-use.

#### Seeker Systems

USML Category IV(h)(2) describes seeker systems. The Department proposes to revise this paragraph for consistency and clarity, with no change in the scope of control, and move it to paragraph (e)(7) of USML Category IV. Additionally, the Department requests

public comment on whether there are any areas of potential overlap between this and other USML entries and if so, whether entries describing these systems could potentially be consolidated.

#### Test Equipment

The Department proposes to add USML Category IV(f) to describe test equipment for certain rockets, missiles, SLVs, and missile seekers. The Department assesses this technology provides a critical military advantage because testing protocols are increasingly being utilized in complex missile designs. The Department notes that testing software and protocols directly related to rockets, missiles, SLVs, or missile seekers are currently described in USML Category IV(i).

#### Non-Nuclear Warheads

The Department proposes to simplify the regulatory text of USML Category IV(g). Additionally, the Department proposes to add chemical and biological warheads to the non-exhaustive parenthetical list of examples to further clarify the scope.

#### USML Category IV(h)

The Department proposes to modify USML Category IV(h) to economize the text of its subordinate paragraphs. Currently, some subordinate paragraphs of (h) require an article be used in an end item described elsewhere in Category IV. The Department proposes to clearly stipulate in paragraph (h) that the articles in its subordinate paragraphs are for end-items described elsewhere in Category IV, thereby eliminating the need to repeat that requirement in each of its subordinate paragraphs. Consistent with its intent to move systems from paragraph (h) to paragraph (e), the Department also proposes to delete the reference to systems and subsystems in paragraph (h).

#### USML Category IV(h)(1) Through (4)

Paragraphs (h)(1) through (4) of USML Category IV describe flight control systems, guidance systems, seeker systems, kinetic kill vehicles, and thrust vector control systems. As noted elsewhere in this rule, the Department proposes to move those articles to another paragraph. Consistent with this change, the Department proposes to reserve paragraphs (h)(1) through (4) to maintain the current numbering in the remaining paragraphs.

#### Grip Stocks for MANPADS

The Department proposes to modify the wording of USML Category IV(h)(5),

so the article of interest is listed first rather than the end item for which it is used.

Nozzles, Nozzle Throats, Nose Tips, Nose Fairings, and Aerospikes

The Department proposes to eliminate the reference to rockets and missiles in paragraphs (h)(6) and (7) of USML Category IV, based on proposed changes to paragraph (h) that more broadly reference articles described in USML Category IV.

USML Category IV(h)(8) Through (12)

Paragraphs (h)(8) through (12) of USML Category IV describe heat shields, SAFF components, self-destruct systems, separation mechanisms, and post-boost vehicles. As the Department proposes to move these paragraphs to other locations within USML Category IV, it further proposes to reserve paragraphs (h)(8) through (12) to maintain the numbering of the paragraphs that follow.

Engine or Motor Mounts

The Department proposes minor modifications to USML Category IV(h)(13) for clarity and consistency, with no intended change in the scope of control.

Combustion Chambers

USML Category IV(h)(14) describes combustion chambers “specially designed” for articles enumerated in paragraphs (a) and (d) of USML Category IV. However, the Department is unaware of a scenario wherein combustion chambers used with articles described in paragraph (a) or (d) would be released by the “specially designed” analysis provided at § 120.41(b). As such, the Department proposes to simplify the control paragraph by removing “specially designed” as a criterion for control. Additionally, the Department proposes to eliminate the limiting criterion “for articles enumerated in paragraphs (a) and (d).” The Department assesses this criterion is redundant, as it is unaware of combustion chamber use in articles described in the remaining Category IV paragraphs. This assessment, along with the regulatory text the Department proposes for paragraph (h), means the removal of this criterion does not change the scope of the control.

Injectors

Similar to combustion chambers, the Department is unaware of injectors used in articles described in USML Category IV that would be released by the “specially designed” analysis provided at § 120.41(b), and the proposed

regulatory text for paragraph (h) ensures the injectors described in paragraph (h)(15) are “for articles described in USML Category IV.” As such, the Department proposes to remove the “specially designed” criterion from paragraph (h)(15), with no change to the scope of the control.

Igniters

The Department proposes to revise USML Category IV(h)(16) for clarity and consistency, and with a minor change in scope. The current USML describes solid rocket motor and liquid engine igniters. However, the Department assesses igniters used in amateur rocket motors do not provide a critical military or intelligence advantage. The Department believes that simplifying the paragraph to just “igniters,” with the proposed changes to paragraph (h) to describe parts, components, accessories, and attachments for articles described in Category IV appropriately scopes the control by removing igniters for amateur rocket motors.

Parts and Components for Non-Nuclear Warheads and USML Category IV(e) Systems

The Department proposes to expand the scope of the USML Category IV(h)(18) catch-all control to include two types of parts and components specially designed for systems described in paragraph (e): non-electronic radiation hardened parts and components and parts and components specially designed for underwater launch. The Department’s assessment is that such articles provide a critical military advantage when used in USML Category IV systems.

Penetration Aids

The Department proposes to designate USML Category IV(h)(19) as SME per § 120.36, since the articles it describes are vital to the successful deployment of warheads described in USML Category IV(g) which are, themselves, SME.

Motor Cases

Consistent with changes it proposes to USML Category IV(h), the Department proposes to eliminate the reference to “rocket” in USML Category IV(h)(20) based on the assessment that, in this context, the use of “rocket” is intended to describe the motor, not the platform in which the motor is used and that rocket motors can be used in more than just rockets. Since the technology remains the same, regardless of the platform, the Department intends for the control to remain independent of its end use.

Liners and Insulation

The Department proposes to modify the wording of USML Category IV(h)(21) for clarity and consistency, with no change in the scope of the control.

Radomes, Sensor Windows, Antenna Windows, and Embedded Antennae

The Department proposes minor modifications to USML Category IV(h)(22) for consistency in regulatory text construction and to update cross-references in the regulatory text. The Department further proposes to expand the scope of paragraph (h)(22) by adding “embedded antennae” to the list of items described therein, as embedded antennae are not antenna windows yet provide similar capability through alternative means.

Payload Fairings

The Department proposes minor modifications to USML Category IV(h)(23), to ensure it effectively describes all payload fairings for articles described in USML Category IV, not just those for rockets and missiles.

Launch Canisters

The Department proposes to modify USML Category IV(h)(24) to remove the reference to “rocket or missile” in describing launch canisters. The Department assesses the existing reference is redundant based on the proposed changes to paragraph (h).

Fuzes

The Department proposes to limit the scope of USML Category IV(h)(25) to those fuzes not already described in paragraph (e)(6) as “specially designed” parts and components of SAFF systems. The Department requests public comment on whether the retention of USML Category IV(h)(25) is necessary and if so, examples of items that could be described in this entry but are not already described in paragraph (e)(6).

Propellant Tanks and Altimeters

The Department proposes to modify USML Category IV(h)(26) and (27) to eliminate the reference to “rocket or missile” based on proposed changes to paragraph (h).

Umbilical and Interstage Electrical Connectors

In USML Category IV(h)(29), the Department proposes to remove the reference to “rockets or missiles,” consistent with similar proposed changes in other paragraphs, and to create three subordinate paragraphs, moving the umbilical and interstage connectors described therein to the new paragraph (h)(29)(i). The Department

proposes to incorporate the guidance currently provided in the note to paragraph (h)(29) to the regulatory text in the new paragraph (h)(29)(ii) and delete the note. The Department further proposes to add electrical connectors specially designed for hostile nuclear radiation environments to the new paragraph (h)(29)(iii), assessing that these connectors, used in ballistic missile systems, provide a critical military advantage.

The Department also proposes to add a licensing exemption to § 126.8 for certain activities involving connectors installed between articles described in paragraph (a)(1) or (2) and certain payloads.

#### Turbo Pumps

The Department proposes to add a new paragraph (h)(31) to USML Category IV describing turbo pumps specially designed for the propulsion systems described in USML Category IV(d).

#### Technical Data and Defense Services

The Department proposes minor modifications to USML Category IV(i) for consistency in construction of the control text.

#### Note to Category IV

The Department proposes to eliminate the note to USML Category IV, as it does not provide a substantive explanation of the control text. This note describes one specific circumstance wherein a system would be described in Category I of the MTCR Annex, which is not a distinction made elsewhere on the USML. For assistance identifying articles that are on the MTCR Annex, users should reference the “MT” designations provided as described in § 120.10(d).

#### Consideration of Prior Public Comments on USML Category IV

The Department previously published an advanced notice of proposed rulemaking (RIN 1400–AE73) on March 8, 2019, to request public comment (*see* 84 FR 8486). Twenty-five parties filed comments recommending changes, which were reviewed and considered by the Department, in consultation with other U.S. Government departments and agencies. A summary of the comments related to USML Category IV follows:

Four commenting parties recommended the Department add a note to USML Category IV, similar to note 3 to paragraph (f) of Category XV, to decontrol housekeeping and telemetry data associated with space launch vehicles. The Department declines to do so, as such data may be used in the furtherance of programs to

deliver weapons of mass destruction. However, the Department does propose to exempt certain telemetry from licensing requirements in specific circumstances, as reflected in its proposed exemptions in part 126.

Three commenting parties recommended thermal batteries be removed from the USML in favor of existing descriptions on the CCL. Thermal batteries were originally developed as, and are still predominantly used as, single-use power sources with long shelf-lives and high reliability for munitions applications. As such, they continue to provide a critical military advantage and the Department declines to remove them from the USML. Nonetheless, the Department requests public comment on civil uses of thermal batteries in space applications to allow consideration for their inclusion in a licensing exemption supporting civil space efforts.

One commenting party recommended the USML be revised to account for unmanned aerial vehicles (UAVs) used as loitering munitions. The Department proposes both a § 121.0 definition and an enumerated paragraph (a)(13) in USML Category IV for loitering munitions, as explained in this rule.

Seven commenting parties recommended various changes to USML Category IV(b). Specifically, the commenting parties recommended the exclusion of aircraft modified to launch SLVs, the exclusion of parts and components not otherwise enumerated, consistency with how launch platforms are described in other USML categories, addressing the absence of launchers for articles described in paragraphs (a)(6) through (12) of USML Category IV, decontrolling articles described therein once integrated into an end-item subject to the EAR (similar to note 2 to paragraph (e) of USML Category XV), and revising Category VI to better describe the Mark 41 Vertical Launch System (MK 41 VLS) as SME. The Department proposes revising the regulatory text of USML Category IV(b), clarifying its scope, and deleting its corresponding notes, as previously described in this rule.

Two commenting parties recommended changes to paragraph (c) of USML Category IV. One suggested defining the terms “apparatus” and “devices.” The Department plans to address this issue in a separate rulemaking. Both parties recommended changes to note 1 to paragraph (c) to avoid controlling tanks used to store propellants not subject to the ITAR. Though the Department declines to propose this change at this time, it clarifies that certain storage tanks are

not defense articles. Specifically, only those storage tanks with properties peculiarly responsible for the handling, control, activation, monitoring, detection, protection, discharge, or detonation of a commodity described in USML Category IV(a) or (b) are described. For example, this would not include general-purpose tanks designed to store flammable liquids that are subsequently used, unmodified, in launch site applications. However, it would include a similar tank with additional properties to protect against damage from launch blasts or debris from launch failures.

One commenting party recommended distinguishing between launch platforms described in Category IV and prominent subassemblies sold independently that do not, individually, satisfy the control criteria of paragraph (b) or (c). The Department declines this recommendation and notes the example provided was such a prominent subassembly of the overall launch platform that it likely satisfies the definition of a defense article as provided in § 120.31. Specifically, it has “. . . reached a stage in manufacturing where . . . [it is] clearly identifiable by mechanical properties, material composition, geometry, or function as [a] defense [article].”

Four commenting parties recommended changes to paragraph (h)(11) to more clearly delineate between separation systems for spacecraft and those for articles described in Category IV. The Department has not identified a clear delineation and assesses that implementing a carve-out to the USML based solely on end-use would harm U.S. national security and foreign policy interests. Instead, the Department requests public comment on potentially exempting certain separation systems from licensing requirements in certain situations, as reflected in the proposed changes to part 126 for connectors.

One commenting party recommended a change to paragraph (h)(14) to remove combustion chambers of reaction control system thrusters and auxiliary systems. The Department declines this recommendation. Reaction control systems are a vital subassembly of articles described in USML Category IV. Moreover, the Department is unaware of combustion chambers used in an SLV, rocket, or missile that would otherwise be released by the “specially designed” analysis provided at § 120.41(b). The only rockets not currently subject to the ITAR are those which satisfy the definitions of model or high power rockets, which do not use such combustion chambers.



Two commenting parties recommended paragraphs (h)(15) and (16) be revised to clarify they describe injector assemblies and igniter systems, respectively, with the additional suggestion that the scope of the paragraphs be expanded to include “catch-all” controls as defined in the note to paragraph (b) of § 120.41 (to describe parts and components therefor). The Department concurs regarding the inclusion of assemblies to clarify scope. However, the Department disagrees with including “catch-all” controls on the USML for these paragraphs.

One commenting party recommended mine launchers be added to paragraph (h)(24) to close a gap in jurisdictional control. The Department proposes to modify paragraph (b) to do so.

One commenting party recommended paragraph (h)(28) be revised to clarify it does not control thrusters or actuators in attitude control systems since similar thruster designs are used in articles subject to the EAR. The Department declines to do so, since such scenarios are already addressed by the inclusion of “specially designed” within the control text.

#### *USML Category VI, VII, VIII, and XX Conforming Changes*

The Department proposes to modify USML Category VI(f)(6) and (7) to avoid overlap in controls between those paragraphs and the proposed revision and intent of Category IV(b). As such, the Department proposes to clarify these paragraphs only describe certain integration equipment, aircraft launch and recovery equipment, and certain shipborne defensive systems, not articles described in Category IV(b). The Department further proposes to split paragraph (f)(6) into three subordinate paragraphs for ease of parsing and adjust the “MT” designations for consistency with the MTCR Annex.

Similarly, the Department proposes to modify USML Category VII(g)(2) to avoid overlap in controls between that paragraph and the proposed revision and intent of Category IV(b), and therefore proposes to clarify paragraph (g)(2) only describes articles not already described in Category IV(b).

The Department proposes to add USML Category VII(g)(15) and modify USML Category VIII(h)(6) to ensure items designed for integrating certain defense articles are described in the same USML category as the platform they are being integrated into and to avoid ambiguity about whether they are controlled in USML Category IV(b).

Subsequent to these changes, these paragraphs will only describe articles

that assist in the integration between a vehicle and either a launching system or a self-launching munition.

#### *USML Category XI*

##### Monolithic Microwave Integrated Circuits (MMICs)

The Department proposes to modify USML Category XI(c)(4) to control the MMICs removed from Category XV. The proposed change will not change the scope of controls on MMICs, but will create clarity in controls on the items by consolidating regulatory text on MMICs under the more appropriate designation of military electronics.

##### Electronic Assemblies

The Department proposes to expand the scope of items described in paragraph (c)(15) of USML Category XI by adding electronic parts and components capable of operation at temperatures in excess of 125 °C and specially designed for spacecraft described in USML Category XV. The Department assesses that such items provide a critical military advantage commensurate with the electronics currently described in that paragraph. The Department proposes further revisions to paragraph (c)(15) for clarity and consistency of the regulatory text and ease of use, with no additional change in scope of the items described therein.

#### *USML Category XII*

##### Read-Out Integrated Circuits (ROICs)

The Department requests comment on the potential merits of removing of USML Category XII(e)(14), with no change in the scope of control. Integrated circuits described therein are already described in USML Category XI(c)(1) and the Department asks whether the regulated community sees a benefit to retaining USML Category XII(e)(14) as a separate entry.

#### *USML Category XIII*

USML Category XIII(j) describes certain materials not elsewhere specified on the USML. The Department proposes to revise paragraph (j) for consistency in the regulatory text, with no change in scope, and to add two subordinate paragraphs to paragraph (j) to describe materials specially designed for underwater launch of missiles or hostile nuclear radiation environments. As missile designs advance, the Department assesses these specific types of materials provide a critical military or intelligence advantage.

#### *USML Category XV*

##### Spacecraft

The Department proposes to revise USML Category XV(a) in several ways. First, the Department proposes to use two § 121.0 definitions, “spacecraft” and “excluded NASA spacecraft,” to clarify the scope and to simplify its subordinate paragraphs. By excluding specific NASA spacecraft via the proposed definition, the Department both facilitates the deletion of notes 2 and 3 to paragraph (a) (which exclude these NASA spacecraft) with no change in the scope of control and establishes a straightforward mechanism to enable the exclusion of certain NASA spacecraft in the future. The Department further considered excluding commercial low Earth orbit (CLEO) habitats and assesses doing so is unnecessary, as the proposed regulatory text does not nominally describe such spacecraft. The Department welcomes public comment identifying reasons CLEO habitats may be inadvertently described in proposed paragraph (a), as it intends only to describe spacecraft that provide a critical military or intelligence advantage as set forth in § 120.3(b).

Additionally, the Department proposes to delete the qualifying phrase “. . . whether designated developmental, experimental, research, or scientific, or having a commercial, civil, or military end use . . .” from paragraph (a). Spacecraft described in the subordinate paragraphs of paragraph (a) are defense articles, regardless of intended end-use. The Department assesses this intent is sufficiently clear without inclusion of this phrase. The Department further assesses the current note 1 to paragraph (a) is already addressed through the “order of review” guidance at § 120.11 and proposes to delete it as unnecessary.

The Department considered proposing definitions for space probe, space vehicle, space capsule, and space habitat, but declines to do so at this time, and requests comment from members of the public who believe there is a need to define one or more of these terms.

##### Detection or Mitigation of a Nuclear Detonation

The Department proposes to modify USML Category XV(a)(1) for consistency in construction of the control text.

##### Detect and Track Objects

In USML Category XV(a)(2), the Department proposes to delete the reference to “imaging, infrared, radar, or laser systems,” as the function, not the

method, provides the critical military or intelligence advantage. The Department also proposes to replace the reference to “ground, airborne, missile or space” with criteria that describe the technology critical to detecting and tracking ballistic and cruise missiles, launch vehicles, and related payloads (missiles, post-boost vehicles, kill vehicles, re-entry vehicles, and penetration aids). The Department assesses that autonomously detecting and tracking ground vehicles and aircraft via satellite no longer provides a critical military or intelligence advantage, and that the proposed criterion would exclude the tracking of all ground objects and most airborne objects, thus reducing the scope of the control. With this change, the Department intends to describe the missile defense capability without describing space situational awareness, orbital debris mitigation, or cooperative docking capabilities.

#### Spacecraft for Signals Intelligence

USML Category XV(a)(3) describes satellites that conduct certain intelligence collection. To clarify the intent of the control and consistency in construction of the text, the Department proposes to modify this paragraph by adding a “specially designed” criterion to the control text and removing from the text the term “conduct,” with no change in the scope of the control.

#### Constellations

The Department proposes to modify USML Category XV(a)(4) for simplicity and consistency in construction of the control text.

#### Space-Based Weapons

In USML Category XV, the Department proposes to modify paragraph (a)(5), which describes spacecraft that are anti-satellite or anti-spacecraft, and paragraph (a)(6), which describes spacecraft with space-to-ground weapon systems, for consistency in construction, simplicity, and uniformity. The Department proposes using the terms ‘space-to-space weapons’ and ‘space-to-ground weapons’ to differentiate between the two entries, and to remove the parenthetical example lists as unnecessary.

#### Spacecraft With Remote Sensing Capabilities

The Department proposes several revisions to USML Category XV(a)(7). To facilitate purely scientific telescopes, the Department considered limiting paragraph (a)(7) to Earth-pointing spacecraft. It declines to do so, as the

technology for Earth-pointing and non-Earth pointing spacecraft that satisfy the technical criteria in paragraphs (a)(7)(i) through (iv) overlaps to a large degree. Instead, the Department welcomes comments on specific activities that might reasonably warrant an exemption from certain licensing requirements without harming U.S. national security or foreign policy interests.

Within the control text, the Department proposes to update the threshold for some remote sensing capabilities to better reflect the current state of technology. In paragraph (a)(7)(i), the Department proposes to eliminate the spectral band threshold and replace the aperture size threshold with a threshold on light collecting area, in recognition that not all light collecting sensors are circular or readily described in terms of a physical aperture size. The Department also proposes to reduce the ground sample distance (GSD) requirement in paragraph (a)(7)(ii) from 30 meters to 20 meters. Consistent with the proposed definition of “ground sample distance” in § 121.0, the GSD requirements apply only to a sensor as calibrated.

The proposed addition of a definition for GSD and satellite spectral bandwidth in § 121.0 facilitates the Department’s proposed removal of notes 1 and 2 to paragraph (a)(7). The Department further proposes to move the guidance from note 3 to paragraph (a)(7) into the control text and delete the note.

Additionally, the Department proposes to clarify that when a spacecraft incorporates multiple sensors that perform the same function, those sensors should be assessed in the aggregate when adjudicating the applicability of this paragraph.

#### Radar Remote Sensing

The Department proposes to modify USML Category XV(a)(8) to narrow its scope by increasing the bandwidth criterion to 500 MHz and to make minor changes for consistency in construction and clarity. To assist its review of this control, the Department further requests comments substantiating current industry standards for radar remote sensing bandwidths, related foreign availability of such technology, and any radar remote sensing activities the Department should consider for an additional licensing exemption, similar to the list of radiofrequency sensing activities proposed for § 126.8(b)(2)(iv).

#### Position, Navigation, and Timing

The Department proposes to modify USML Category XV(a)(9) both for consistency in construction and to clarify the scope is limited to spacecraft

that generate a position, navigation, and timing (PNT) signal, not those that augment, amplify, re-broadcast, relay the signal or provide a differential correction. Subsequent to that change, the Department proposes to delete the note.

#### Autonomous Collision Avoidance

USML Category XV(a)(10) describes spacecraft that autonomously perform collision avoidance. In an increasingly congested orbital environment, the Department assesses many spacecraft will have to perform this task, and that doing so no longer provides a critical military or intelligence advantage. Based on that assessment, spacecraft no longer warrant inclusion on the USML solely due to their ability to autonomously avoid collisions. Thus, the Department proposes to delete USML Category XV(a)(10) and place it in reserve to avoid renumbering subsequent paragraphs.

#### Suborbital Craft

The Department proposes to modify USML Category XV(a)(11) for consistency in construction of the control text.

#### Inspection or Surveillance

The Department proposes to modify USML Category XV(a)(12) to eliminate the reference to servicing other spacecraft and to narrow the scope of the control to only describe surveillance spacecraft. Specifically, the Department proposes two distinct sets of surveillance criteria. The first criterion describes spacecraft specially designed to take images of another spacecraft within a defined angular resolution that doesn’t change with distance between the detector and the object. The second set of criteria describe spacecraft specially designed to monitor, follow, and record other spacecraft. With this change, the Department intends to describe the surveillance capability without describing space situational awareness, orbital debris mitigation, or cooperative docking capabilities.

#### Note to Paragraph (a)(12)

With the elimination of servicing from paragraph (a)(12), the guidance provided in the note to paragraph (a)(12) is no longer relevant. It is nominally relevant to newly created paragraph (a)(14) for spacecraft that non-cooperatively dock with other spacecraft. However, in new paragraph (a)(14) the Department proposes to remove the criterion for the type of docking system used and, instead, focus on the technology required to achieve uncooperative docking or grappling. As

a result of these proposed changes, the Department proposes to delete the note to paragraph (a)(12), as it is no longer relevant.

#### Classified Spacecraft

The Department proposes to modify USML Category XV(a)(13) for consistency in construction and simplicity of the control text.

#### Additions

The Department proposes to add paragraphs (a)(14) through (16). These paragraphs designate, respectively, spacecraft capable of non-cooperative grappling or docking, in-orbit construction of other defense articles, and deploying multiple spacecraft into different orbits.

The technology required to facilitate non-cooperative docking is likely to be used in an adversarial manner. A spacecraft capable of in-orbit construction of other defense articles represents a critical logistical advantage. And spacecraft that can rapidly deploy multiple spacecraft into multiple different orbits provide a critical military or intelligence advantage when compared to commercial systems that may be able to achieve the same result over a much longer timeframe.

#### Articles Jettisoned From Another Spacecraft

The Department proposes to move USML Category XV(e)(20) to paragraph (a)(17) and then modify the control text for clarity and consistency in construction of the control text. The Department proposes to simplify it by moving the required characteristics to three subordinate paragraphs for guidance, navigation, and control (GNC) systems, attitude control systems, and propulsion systems, respectively.

#### Ground Control Systems

The Department proposes to modify the text in USML Category XV(b) for simplicity by eliminating references to “telemetry, tracking, and control” since the Department assesses those functions effectively encompass the entirety of a ground station’s purpose and are, therefore, redundant.

The Department assesses the current note to paragraph (b) is unnecessary and proposes to delete it. Paragraph (b) only describes systems and simulators, includes a specially designed criterion, and does not include a catch-all control. The Department assesses the proposed text of paragraph (b), the order of review at § 120.11, and the specially designed definition at § 120.41 would render the note superfluous.

#### Movement of Systems

The Department proposes to move the following systems within USML Category XV to paragraph (c): cryocoolers and cold finger systems, active vibration suppression systems, and attitude determination and control systems. These changes align with the Department’s intended USML structure, as described in § 120.10, with end-item, system, and equipment controls generally listed prior to paragraphs dedicated to parts, components, accessories, and attachments.

#### Active Cooling Systems

The Department proposes to relocate USML Category XV(e)(4) to paragraph (c)(1), along with several modifications to the control text. The Department proposes to replace the requirement that the cooling system be space-qualified with a “specially designed” criterion. The Department assesses that, for certain technologies, space qualification is no longer the best discriminator, since all spacecraft and equipment, parts, and components are essentially space-qualified by default and designed, manufactured, or tested for operation in space. Elimination of this term would also minimize assertions that articles otherwise described by the USML are subject to the EAR based solely on the intentional avoidance of qualification.

Additionally, the Department proposes to explicitly state that the paragraph describes only active cooling systems. This will be accomplished by moving the qualifier “active” from the parenthetical reference to the beginning of the paragraph. The Department assesses this does not change the scope of the controls since the two types of articles listed in the parenthetical reference are both active systems.

#### Vibration Suppression Systems

The Department proposes to relocate USML Category XV(e)(5) to paragraph (c)(2), along with several modifications, including replacing the requirement that the articles described therein be space-qualified with a “specially designed” criterion based on the same rationale used for active cooling systems. The Department also proposes to move the examples provided in the text of paragraph (e)(5) to a parenthetical list in paragraph (c)(2) for clarity.

#### Attitude Determination and Control Systems

The Department proposes to relocate USML Category XV(e)(10) to paragraph (c)(3), along with minor modifications for consistency in construction and enhanced clarity of the control text. The Department proposes to move the

reference to “specially designed parts and components” to the end of the paragraph’s text, as the accuracy requirements in the control text apply to the attitude control systems overall, and not to the parts and components of those systems. Additionally, the Department proposes to clarify the existing threshold of “better than” means “less than” in the context of the control and to move that qualifying regulatory text to each of the subordinate paragraphs, alongside the values for the control criteria. Consistent with the Department’s intent to regulate technologies in space consistent with how it regulates them on Earth, the Department proposes to add “or equivalent” to each orbital accuracy criterion to account for systems designed to provide the same performance while orbiting celestial bodies other than the Earth.

#### Thermal Protection Systems (e.g., Heat Shields and Heat Sinks)

USML Category XV(e)(19) describes heat shields and heat sinks for spacecraft. The Department proposes to move this text to new paragraph (c)(4) and revise it to clarify the scope extends beyond traditional heat shields to more complex thermal protection systems and to better distinguish it from a related paragraph in USML Category IV. Further, the Department proposes to designate the entire entry “MT,” based on an assessment that all such articles designed for atmospheric re-entry can be deployed on MTCR Category I systems.

Regarding the similar paragraph describing spacecraft heat shields in Category IV, the Department requests public comment on any perceived benefits and drawbacks to consolidating these two heat shield paragraphs under Category XIII.

#### Spacecraft Propulsion

The Department proposes to relocate the spacecraft propulsion system paragraphs in USML Category XV from paragraphs (e)(11) and (12) to new paragraph (d), consistent with its intent to limit the scope of paragraph (e) to parts, components, accessories, and attachments. Doing so would make USML Category XV consistent with USML Category IV in providing a dedicated paragraph (d) for propulsion systems.

The Department proposes to relocate the nuclear and electric propulsion and power assemblies described in paragraph (e)(11)(i) through (iii) to paragraphs (d)(1) through (3) and modify the control text for simplicity and consistency with the current state of

technology by replacing the reference to “space-based systems” with the more specific “propulsion systems” and “power systems.” Similar systems designed for applications other than spacecraft are excluded by the proposed text of paragraph (d).

The Department proposes to move ion propulsion systems described in paragraph (e)(11)(iv) to paragraph (d)(4), adjust upward the thrust and specific impulse criteria, and adjust upward the input power criterion, thereby removing from the USML certain systems the Department assesses no longer provide a critical military or intelligence advantage.

The Department proposes to move the non-nuclear propulsion assemblies described in paragraph (e)(12) to paragraph (d)(5) and to modify the control text for consistency in construction and clarity of the control text by replacing the term “thrusters” and the accompanying examples with the term “non-nuclear propulsion systems,” with no change to the scope of the control.

#### Spacecraft Parts, Components, Accessories, and Attachments

The Department proposes two minor revisions to the text of USML Category XV(e). First, the Department proposes to remove the reference to equipment and systems, reflecting the proposed movement of those articles to a paragraph dedicated to systems and equipment. Second, the Department proposes to clarify the scope of paragraph (e) by limiting the parts, components, accessories, and attachments described therein to those that are for spacecraft.

#### Antennas

The Department proposes to narrow the scope of USML Category XV(e)(1) by adding a minimum operational frequency, thereby removing from the USML certain antennas the Department assesses no longer provide a critical military or intelligence advantage. Additionally, the Department proposes minor modifications to paragraphs (e)(1)(i) through (iv) for clarity and consistency within the control text.

#### Optics

The Department proposes multiple modifications to USML Category XV(e)(2). First, the Department proposes to remove “space-qualified” because the Department assesses the underlying technology provides a critical military or intelligence advantage regardless of the environment in which the optics are used. Second, the Department proposes to modify the subordinate paragraphs to

better describe optics that are not circular in nature by replacing the requirement for aperture dimension in paragraph (e)(2)(i) with an individual light collecting area threshold. Third, the Department proposes to replace paragraph (e)(2)(ii) with regulatory text that describes passive optics to complement the active optics described in paragraph (e)(2)(i). Additionally, the Department proposes to add paragraph (e)(2)(iii) to describe X-ray optics with performance capability criteria for effective collecting area and angular resolution.

#### Focal Plane Arrays

USML Category XV(e)(3) describes certain space-qualified focal plane arrays. The Department proposes to remove the parts control for readout integrated circuits, as integrated circuits specially designed for defense articles are already described in USML Category XI(c). The Department also proposes to replace the “space-qualified” criterion with a specially designed criterion, for the same reasons it proposes adjusting similar criteria for other space-qualified articles described in Category XV.

#### Optical Bench Assemblies

The Department proposes minor modifications to USML Category XV(e)(6) for consistency in construction of the control text, with no intended change in the scope of control.

#### Directed Energy Systems

The Department proposes to remove and reserve USML Category XV(e)(7). Kinetic energy weapon systems and directed energy weapon systems are already described in Categories II and XVIII, respectively, and each includes a catch-all control. Moreover, the order of review at § 120.11 provides that those control paragraphs each supersede Category XV(e)(7) due to their SME designations. This proposed revision is also consistent with the Department’s intent to regulate space systems the same way it regulates ground-based systems.

#### Control Moment Gyroscopes

The Department proposes to remove certain gyroscopes, which no longer provide a critical military or intelligence advantage, from USML Category XV(e)(13) by adding additional performance criteria on the minimum angular momentum and torque provided by the gyroscopes.

#### Monolithic Microwave Integrated Circuits (MMICs)

As described elsewhere in this rule, the Department proposes to remove and

reserve USML Category XV(e)(14) and to modify Category XI(c)(4) so all MMICs are described therein, with no change to the scope of controls on MMICs.

#### Oscillators for Radar

The Department proposes to modify USML Category XV(e)(15) by clarifying the scope and replacing the “space qualified” criterion with a “specially designed” criterion for the same reasons the Department proposes adjusting similar criteria for other space-qualified articles described in Category XV. The Department further proposes to clarify that paragraph (e)(15) describes oscillators specially designed for either spacecraft described in paragraph (a) or payloads described in paragraph (h)(17), with no change in the scope of the control.

#### Star Trackers

The Department proposes to modify USML Category XV(e)(16) by removing the “space qualified” requirement. The Department assesses that the performance requirements currently specified provide a critical military or intelligence advantage regardless of the environment in which they are used.

#### Primary, Secondary, or Hosted Payloads

The Department proposes to modify USML Category XV(e)(17) for simplicity and consistency of construction of the control text by replacing the current term “primary, secondary, or hosted payload,” which describes any payload in the complete set of all payloads, with the term “payload.”

#### Notes to USML Category XV(e)(17)

In USML Category XV, note 1 to paragraph (e)(17) defines different types of payloads. The Department proposes to relocate these to § 121.0, thereby facilitating the deletion of the note, and to revise the definitions for clarity and consistency in construction of the control text. The first portion of note 2 to paragraph (e)(17) covers the integration of hosted payloads described in paragraph (e)(17) into spacecraft subject to the EAR by noting the export jurisdiction of the spacecraft does not change based on the hosted payload’s incorporation, while the second portion of the note excludes certain payloads for the James Webb Space Telescope. The Department proposes to move the first portion of the note to the proposed exemption at § 126.8(d). The Department proposes to exclude the James Webb Space Telescope from the USML via the definition for “excluded NASA spacecraft” and the text of USML Category XV(a). Thus, the Department proposes to delete note 2 as well.

### Payloads Developed with Department of Defense Funding

The Department proposes to modify USML Category XV(e)(18) for consistency in construction of the control text. Additionally, the Department proposes to expand the control by removing the “secondary or hosted” qualifier so all payloads funded by the Department of Defense (DoD), and specially designed parts and components therefor, are described therein.

Note to USML Category XV(e)(19): The Department proposes to remove the note to USML Category XV(e)(19) because the proposed § 121.0 definitions replace the note.

### Addition of USML Category XV(e)(22)

The Department proposes to add a new paragraph at USML Category XV(e)(22) for technologies that facilitate the signature reduction of in-orbit spacecraft observations. The proposed regulatory text reflects the Department’s intent to exclude technology used only to minimize light pollution, as seen from the ground.

Notes USML Category XV(e): The Department proposes to eliminate note 1 to USML Category XV(e), as the jurisdiction of articles not described in paragraph (e) is already addressed in the order of review at § 120.11. Note 2 to paragraph (e) delegates the licensing of articles described in paragraph (e) when integrated into a spacecraft subject to the EAR. The Department proposes a licensing exemption in § 126.8 to codify this exemption and to facilitate the deletion of note 2. The Department also proposes to delete notes 3 and 4 to paragraph (e), as the proposed revisions to USML Category XV remove all but one reference to space-qualified and the Department assesses notes 3 and 4 are no longer required to identify space-qualified atomic clocks.

### Technical Data and Defense Services

The Department proposes to modify USML Category XV(f) by incorporating guidance currently provided in notes 1 through 3 to paragraph (f), which is not already included in the definition of technical data at § 120.33 or the proposed definition of “spacecraft housekeeping data and output at § 121.0.” The Department also proposes to delete the explanatory information regarding defense services found in the control text, as it assesses such information does not provide substantial guidance beyond the order of review provided at § 120.11 and the USML text, and similar redundancy is not provided in other USML Categories.

The Department is also considering, and requests public comment on, whether to retain the broad exclusion

for future sensor outputs in its proposed definition of “spacecraft housekeeping data and output” at § 121.0. The Department assesses that such information may no longer need to be transmitted in unencrypted form due to advances in encryption technology size, weight, power consumption, performance capability, and cost and launch costs. Additionally, the Department updated § 120.54(a)(5) in a prior rulemaking to exclude the sending, taking, or storing of technical data from the definition of “export,” when secured using end-to-end encryption in certain circumstances. In considering whether and how to narrow that exclusion, the Department is also considering reasonable safe harbor provisions for systems that previously entered development, to minimize disruptions to existing projects.

### Consideration of Prior Public Comments on USML Category XV

As discussed earlier in this proposed rule, twenty-five parties filed comments requesting changes in response to 84 FR 8486 (RIN 1400–AE73), which were reviewed and considered by the Department, in consultation with other U.S. Government departments and agencies. A summary of the comments related to USML Category XV follows:

Seven commenting parties recommended USML Category XV be revised to clarify it does not describe either the Lunar Gateway or unmanned probes used in conjunction with the Lunar Gateway. As described in this rule, the Department proposes a licensing exemption in § 126.8 to support Lunar Gateway.

One commenting party recommended USML Category XV be revised to clarify it does not describe celestial landers. The Department’s proposed spacecraft definition in § 121.0 provides related exclusions commensurate with the Department’s intent to regulate articles based on technology employed, not intended location of use.

Two commenting parties recommended the itemization of NASA programs and their respective jurisdictions and classifications. The Department declines to do so, as NASA and the entities supporting NASA programs are responsible for their respective export compliance analyses. The Department further notes that programs, in and of themselves, are not subject to export controls; rather, the technologies involved in the programs are subject to export controls.

One commenting party recommended narrowing USML Category XV(a)(2) controls on spacecraft that detect certain moving objects by removing the term

“space objects.” The Department declines to do so and proposes updates to clarify and reduce the scope of this control consistent with U.S. national security and foreign policy equities. Another commenting party recommended an exception for NASA programs that utilize technology described in USML Category XV(a)(2). Following coordination with NASA, the Department proposes a list of “excluded NASA spacecraft” in § 121.0 and a licensing exemption for certain NASA spacecraft at § 126.8(a). The Department intends these tools to evolve as NASA programs evolve.

One commenting party recommended the term “constellation” be deleted from USML Category XV(a)(4) to account for commercial communication satellites that might otherwise be described therein. The Department proposes modifications to clarify the scope of the control.

Seven commenting parties recommended changes to USML Category XV(a)(7), including using different measurement thresholds and excluding non-Earth-pointing optical telescopes. The Department proposes a change to the ground sample distance requirement for paragraph (a)(7)(ii) but assesses the technology described in paragraph (a)(7) is fundamentally the same regardless of a spacecraft’s orientation. As the jurisdiction of technical data and services generally follow the jurisdiction of the defense article they are directly related to, the Department thus declines to exclude non-Earth-pointing telescopes. The Department proposes to facilitate certain space-related fundamental research using defense articles through licensing exemptions in § 126.8(b) and (c), and requests public comment on additional ways to consider facilitating activities related to space-based scientific telescopes while accounting for U.S. national security and foreign policy equities.

One commenting party recommended excluding space vehicles that incorporate USML Category XV(a)(8) technology and can land on celestial bodies. The Department declines to do so, consistent with its intent to regulate technology in space in the same manner as it regulates it on Earth.

One commenting party recommended an exception for commercial satellites otherwise described in USML Category XV(a)(10), asserting that collision-avoidance technology will likely be required for all spacecraft once large communication constellations are in orbit. The Department agrees, and in response proposes to delete paragraph (a)(10) in its entirety.

Three commenting parties recommended adding a note to USML Category XV(a)(11) to clarify propulsion systems for such spacecraft are described elsewhere in Category XV. The Department assesses this is unnecessary as the paragraph currently provides specific reference to propulsion systems described in Categories IV and XV.

One commenting party recommended the exclusion of crewed suborbital vehicles used for space tourism from USML Category XV(a)(11). The Department notes that doing so would also exclude the technical data and services directly related to the vehicles, and instead proposes a licensing exemption in § 126.8(c). This approach maintains the technology on the USML that provides a critical military or intelligence advantage, while exempting the licensing requirements for certain activities directly related to those technologies.

Seven commenting parties made recommendations regarding the inspection, surveillance, and servicing spacecraft described in USML Category XV(a)(12), including deletion of the control, defining the term “service,” excluding commercial spacecraft, and expanding the docking systems excluded by the related note. The Department proposes to revise the “inspection and surveillance” control in paragraph (a)(12), remove the “servicing” control, move the “docking” control into a new USML Category XV(a)(14). The Department further proposes to clarify the intended scope of paragraph (a)(14) by removing references to specific docking standards and focusing on the technology of interest, namely the ability to grapple or dock with another spacecraft using certain means.

One commenting party requested the Department resolve a perceived inconsistency between the notes to paragraphs (a) and (e)(17) of USML Category XV to make clear a spacecraft that incorporates a classified payload remains subject to the EAR unless the overall spacecraft is classified for national security purposes. Category XV(a)(13) describes spacecraft that “. . . contain classified . . . hardware.” Note 1 to paragraph (a) stipulates EAR spacecraft remain subject to the EAR “. . . even if defense articles described on the USML are incorporated therein, except when such incorporation results in a spacecraft described in this paragraph.” Thus, this text provides that incorporation of a classified payload would render any spacecraft a defense article. However, note 2 to paragraph (e)(17) provides that a hosted payload

performing a function described in paragraph (a) does not alter the jurisdiction of the satellite it is incorporated into.

The Department understands the perceived discrepancy but notes that hosted payloads that are classified do not “perform a function” described in paragraph (a). Thus, the Department assesses there is no conflict between the two paragraphs. As the intent of note 2 to paragraph (e)(17) is to facilitate hosted DoD payloads on spacecraft otherwise subject to the EAR, the Department proposes to modify paragraph (a)(13) to exclude spacecraft described solely because of the inclusion of a hosted payload that is classified by DoD for national security reasons.

Three commenting parties recommended two specific changes to USML Category XV(b): the exclusion of superficial access to training simulators and that the text “space vehicles or other vehicles” be added to the note to paragraph (b). The Department declines to add the term “superficial,” as it could create ambiguity and proposes to delete the note to paragraph (b), as the guidance it contains is already addressed through the “specially designed” guidance at § 120.41 and the “order of review” guidance at § 120.11.

One commenting party requested clarification of the controls on optical and radar systems within the context of their use in either Earth-based or space-based platforms. In response, the Department proposes to move USML Category XV systems and equipment to paragraph (c) and adjust the text of paragraphs (c) and (e) to require articles to be for spacecraft. The Department further notes that certain radar and optical system controls are also located in USML Categories XI and XII, respectively.

Three commenting parties recommended either removing USML Category XV(e)(1) or updating the technical thresholds to remove antennas used for commercial applications. The Department proposes changes to the performance parameters listed in paragraph (e)(1) and notes the antennas described on the USML are critical elements for spacecraft described in Category XV and provide a critical military or intelligence advantage. However, the Department requests public comment on any civil applications it should consider for inclusion in its proposed exemption at § 126.8(b).

One commenting party recommended revising USML Category XV(e)(2) to both avoid controlling optics based solely on aperture size and to exclude

non-Earth observing instruments. The Department assesses aperture size remains an important criterion and proposes changes to paragraph (e)(2) to remove references to specific geometries, as some apertures are not circular. Additionally, the Department proposes to modify paragraph (a)(7), as detailed in the preamble of this rule under the heading “Spacecraft with Remote Sensing Capabilities.” Since paragraph (e)(2) describes articles specially designed for satellites described in paragraph (a), the proposed changes to paragraph (a)(7) are directly applicable.

For USML Category XV(e)(5), one commenting party recommended providing control parameters for active vibration suppression systems, distinguishing between vibration suppression and image stabilization, and clarifying that commercial systems that subsequently become space-qualified are not subject to the ITAR. The Department declines to narrow this paragraph, or to draw a distinction between vibration suppression and image stabilization. Also, note 3 to paragraph (e) notes that commercial systems that are subsequently space-qualified are subject to the ITAR. Separately, the Department proposes to eliminate the criterion that active vibration suppression systems be space-qualified for reasons discussed elsewhere in this rule.

Six commenting parties recommended electric propulsion, as described in USML Category XV(e)(11), be either removed from the USML or revised to include a higher thrust threshold. The Department proposes to adjust upward the thrust and specific impulse criteria (from 300 to 400 milli-Newtons, and from 1,500 to 1,900 seconds, respectively), and to remove the input power criterion, thereby removing from the USML certain systems the Department assesses no longer provide a critical military or intelligence advantage.

Four commenting parties recommended removal of bi-propellant and monopropellant thrusters in USML Category XV(e)(12) or, at a minimum, a distinction between thrusters used for spacecraft and thrusters used for rockets. The Department declines to remove thrusters from the USML, as they continue to provide a critical military or intelligence advantage and proposes updates to the text of Categories IV and XV to clearly delineate between those propulsion systems for use with rockets and those for spacecraft.

Four commenting parties recommended removing star trackers

from USML Category XV(e)(16) or, at a minimum, updating the control with performance parameters based on technology advancements. The Department declines to remove star trackers from the USML as they continue to provide a critical military or intelligence advantage and welcomes public comments substantiating a recommended change in performance parameters.

One commenting party recommended removing detachable equipment described in USML Category XV(e)(20), asserting such technologies are an important element of human space exploration. The Department acknowledges the significance of this technology to both human space exploration and to sectors not related to human spaceflight. The Department proposes to address this concern via the combination of definitions, revisions, exclusions, and licensing exemptions proposed in this rule.

Two commenting parties recommended adding a note to USML Category XV(f) to exclude from “defense services” the launch of a foreign payload for scientific or commercial research on a space launch vehicle, spaceplane, or spacecraft. The Department notes the national origin of an article is immaterial to the definition of defense services and that the launch provider is not best positioned to determine the scientific, commercial, or military nature of a foreign payload. However, the Department proposes two exemptions supporting fundamental research at § 126.8(b) and (c).

Four commenting parties recommended excluding from USML Category XV(f) information regarding general foreign spaceport requirements related to hangar size and building requirements, apron and runway width and length, ground support equipment, vehicle processing and fueling, nitrous oxide storage and loading, chemical handling and storage, and other basic facility-related information. The Department assesses the scope of the request is too broad for a discrete exclusion from the USML. Instead, each of these articles is best assessed through the order of review at § 120.11 and the technical data definition at § 120.33.

Two commenting parties recommended excluding foreign space flight participant activities related to scientific or commercial research or foreign payload management or observation from USML Category XV(f). The Department assesses the underlying concern is adequately addressed through the order of review at § 120.11 and the proposed exclusions for human spaceflight preparations in this rule.

Two commenting parties recommended the exclusion of certain mission analyses from USML Category XV(f), such as load analyses and three-body trajectory planning tools. The Department assesses the order of review at § 120.11 in combination with the regulatory text of the USML, addresses this comment.

One commenting party recommended USML Category XV(f) be amended to remove Defense Technology Security Administration monitoring conditions for a foreign party’s integration of an EAR-controlled satellite to a launch vehicle using a standard deployer or separation mechanism, where no U.S. person is present during the integration. The Department notes no such monitoring conditions exist on the USML. The referenced monitoring conditions, required under Public Law 105–261, are outside the scope of this rulemaking.

One commenting party recommended the expansion of note 1 to USML Category XV(f) to exclude technical data directly related to articles integrated into a satellite or spacecraft instead of just satellites. The Department proposes to delete note 1 to paragraph (f) as described in this rule.

Two commenting parties recommended excluding from the ITAR both the payloads brought into the cabin of a crewed space vehicle and the monitoring and managing of those payloads. The Department assesses the order of review at § 120.41 adequately addresses most of the scenarios associated with this comment. Furthermore, the Department proposes to define “spacecraft” in § 121.0 which, in its current proposed form, excludes “any article designed to operate exclusively inside a spacecraft.” Moreover, unless the crewed spacecraft is described in paragraph (a), it also would not be a defense article described in Category XV. As a result, the Department assesses a payload transported in the cabin of a crewed space vehicle would not likely be described on the USML as a discrete spacecraft or as a payload associated with the spacecraft. However, if the payload in the cabin were otherwise described on the USML, it would remain a defense article.

One commenting party recommended expanding note 3 to paragraph (f) of USML Category XV to clarify satellite imagery is neither subject to the ITAR or EAR when the data is collected from a NOAA-licensed Earth imaging satellite. The Department declines to do so and assesses the order of review at § 120.11 and technical data definition at § 120.33, in combination with the

regulatory text of the USML, address this comment.

Six commenting parties recommended detailed definitions for space launch vehicles, rockets, and missiles, as well as a distinction between space vehicles and space launch vehicles. The Department has proposed a detailed definition of spacecraft. However, the Department declines to define rockets, space launch vehicles, and missiles within the ITAR, and notes that common dictionary definitions of these terms exist.

Four commenting parties recommended a note be added to Categories IV and XV to clarify crewed space vehicles are not subject to MT control. The Department declines to do so. Any crewed spacecraft on the USML would likely be described in paragraph (a) of USML Category XV; however, none of the subordinate paragraphs of (a) are designated as MT or proposed for designation as MT by this rule. As such, the Department assesses adding an exclusionary note is unnecessary.

One commenting party recommended excluding crewed or crew-tended systems from USML Category XV. While certain crewed platforms are excluded within the regulation and the proposals in this rule, the Department assesses the presence of crew members, by itself, is not a useful criterion for determining whether a spacecraft warrants designation as a defense article as provided at § 120.3.

One commenting party recommended excluding defense articles and defense services described by USML Category XV but fabricated only for fundamental research purposes. The Department notes an exclusion for fundamental research is currently provided in § 120.34(a)(8). However, that exclusion from the technical data definition is limited to certain basic and applied research conducted at specific institutions in the United States. Extending those provisions to the design and development of a defense article would be incompatible with both the current exclusion and the definition of defense service at § 120.32. However, the Department proposes to exempt certain suborbital and on-orbit research in § 126.8, and requests public comment on the perceived risks and benefits of doing so.

One commenting party recommended an exemption allowing DDTC registered persons to ship defense articles from the United States to international waters. The Department notes this is an export under the ITAR, and a broad exemption of this nature would present a proliferation risk. The Department asks for public comment on any specific,

narrowly-tailored scenarios for the Department to consider creating an exemption for, that would provide significant benefit to the U.S. space industry.

One commenting party recommended an exemption for the transfer of technical data and defense services that occur outside the atmosphere. The Department declines to do so, as a broad exemption of this nature would present a proliferation risk.

Two commenting parties recommended some or all technology and information related to commercial satellite servicing be removed from the USML. The Department declines to do so and assesses the order of review at § 120.11 and technical data definition at § 120.33, in combination with the regulatory text of the USML, address this comment.

One commenting party asserted industry did not see a cost benefit to prior export control reforms and future rulemaking efforts should minimize overlapping authorizations for a given program. The Department welcomes specific recommendations to address this perception, and notes multiple agencies have jurisdiction over separate aspects of space programs, given their mandates and delegated authorities.

Two commenting parties recommended changes to the MTCR and MT designations within the USML. Specifically, they recommended updating the MTCR annex, removing “specially designed” and other non-technical modifiers from MT descriptions and adding specific references to the MTCR annex. The Department declines to do so and notes the USML is not determinative in identifying whether a specific article is subject to the MTCR, and that a version of the MTCR Annex was previously removed from the ITAR. MT designation on the USML support the U.S. implementation of its commitments under the MTCR.

Two commenting parties recommended the definition of “export” at § 120.50 be revised to exclude encrypted data. The Department previously addressed this issue through § 120.54(a)(5), which excludes the sending, taking, or storing of technical data from the definition of “export” at § 120.50 when secured using end-to-end encryption in certain circumstances. “End-to-end encryption” is defined at § 120.54(b)(1), and further information on this topic can be found throughout § 120.54, which should be consulted to prevent unauthorized exports of technical data.

## Part 126 Licensing Exemptions

The Department proposes to exempt certain articles that continue to warrant description on the USML from ITAR licensing requirements in certain circumstances. The Department outlines these exemptions in the proposed additions to part 126. The proposed changes, while intended to be self-explanatory, were discussed in detail at the beginning of this rule. The Department requests comment on whether the provisions are clear or whether they might benefit from further explanation. The practical effect of these proposed changes will be their continued regulation as defense articles, along with directly related technical data and defense services, while allowing for increased coordination and collaboration without a license for certain pre-approved activities.

### Updating of Licenses and Agreements

As part of the Department’s USML modernization efforts, the USML classification for some defense articles is changing, which will eventually require exporters to update their records to reflect the new classification. Consistent with prior revisions of USML categories, additional guidance that address specific licensing scenarios will be provided on DDTC’s website.

### Request for Comments

#### *Comments Requested*

Consistent with its ongoing USML review process, the Department is requesting public comments on the revisions described in this rulemaking. In particular, the Department is requesting comment on ways to streamline the descriptions and criteria on the USML for these items, so that it may continue to protect U.S. national security and foreign policy interests while benefitting U.S. industry and international partners. Describing items more precisely could lower administrative burdens and regulatory compliance costs and present an opportunity for increased exports, thus bolstering the U.S. commercial sector and industrial base.

The Department encourages the public to provide comments directly related to this proposed rule and responsive to the questions presented. To facilitate timely review and assessment, comments should be provided in a concise sentence or paragraph, followed by supporting explanatory paragraphs and examples, with each distinct comment treated separately (as opposed to multiple comments in one paragraph or section). In addition to questions presented

elsewhere in the preamble, the Department requests comments focused on the following questions:

1. Are there articles, services, or technical data closely related to these revisions that warrant ITAR control, but are currently either not described on the USML, or not described with sufficient clarity? If so, please provide examples and a concise explanation.

2. Is the technology required to refuel a space launch vehicle in orbit distinguishable from the technology required to refuel a spacecraft? If so, what characteristics, functions, or performance criteria may differentiate the two technologies?

3. Are there specific articles, services, or technical data described on the USML following these revisions that are also described by another existing paragraph on the USML? If so, please identify the relevant paragraph(s), and provide a concise explanation.

4. Are there specific articles, services, or technical data described on the USML following these revisions that are, or have previously been, in normal commercial use, that were previously transitioned to another agency’s jurisdiction, or that were previously determined not to be subject to the ITAR via a Commodity Jurisdiction determination? If so, please include supporting documentation.

5. Are there specific articles, services, or technical data described on the USML following these revisions for which civil use is proposed, intended, or anticipated in the next five years? Please include supporting documentation and a point of contact familiar with the details.

6. Are there specific functions, performance levels, or characteristics related to these revisions that could be better:

a. Distinguish between the articles that do, and do not, warrant ITAR control; or

b. Delineate the criteria for control, in lieu of using the defined term ‘specially designed?’

7. Are these revisions unclear in any way, or can they be more concisely stated? For example, please identify any:

a. Terms that you find ambiguous in definition or context; or

b. Constructions or regulatory text that varies from existing USML paragraphs.

8. Are there other technical issues directly related to these paragraphs which you believe the Department should address in future rulemaking?

9. What technical parameters should the Department consider for differentiating between star trackers for



civil use and star trackers that provide a critical military or intelligence advantage?

10. Is there a critical technological difference between thermal protection systems designed for entry of Earth's atmosphere as opposed to entry of another planet's atmosphere?

11. What benefits, drawbacks, and other considerations should the Department take into account in considering whether and how to consolidate the two thermal protection system paragraphs in Categories IV and XV into one paragraph in USML Category XIII?

12. Are there civil spacecraft that would be described by the newly proposed Category XV(a)(16)? If so, are there technical criteria that may differentiate them from spacecraft the Department intends to describe, that rapidly deploy multiple spacecraft into multiple different orbits?

13. Are there any specific examples in which including "air-dropped" in the proposed "bomb" definition appears to release a military munition from the USML?

14. How could the proposed definition of range for USML Category IV be adjusted to apply more broadly across the USML while remaining scope neutral for Category IV?

15. What other means should the Department consider to differentiate surveillance spacecraft from space situational awareness, cooperative docking, and orbital debris mitigation spacecraft?

16. Is there potential overlap between the proposed seeker systems control in Category IV and other USML control paragraphs, such as USML Category IV(e)(1)(ii) or XII(a)(6), (c)(3) or (4), or (d).

17. Are additional performance requirements (e.g., delta-v or propellant volume) needed in the regulatory text for Category XV(a)(16) to avoid controlling commercial satellites that don't provide a critical military or intelligence advantage?

#### *Comment Submission Instructions*

Include the Regulatory Information Number (RIN) (1400-AE73) or agency name and docket number for all submissions related to this proposed rule. Submission of comments to [www.regulations.gov](http://www.regulations.gov) is preferred. Commenters are cautioned not to include proprietary, export-controlled, or other sensitive information that they are not comfortable making public in their comments. If such information would provide useful insight to the comment, (1) assemble that information in a separate document with proprietary

markings; (2) include "Proprietary supplement on file with: [provide POC]" as the first line in the body of the email submission; (3) submit the public portion of the comment via email; and (4) call DDTC at (202) 663-1282 to coordinate submission of the proprietary supplement.

#### **Regulatory Analysis and Notices**

##### *Administrative Procedure Act*

This rulemaking is exempt from the rulemaking requirements of section 553 of the Administrative Procedure Act (APA) pursuant to section 553(a)(1) as a military or foreign affairs function of the United States. Nevertheless, and without prejudice to this determination, the Department has elected to seek public comment on this proposed rule.

##### *Regulatory Flexibility Act*

Since this proposed rule is exempt from the notice-and-comment 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 rulemaking 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.

##### *Executive Orders 12372 and 13132*

This rulemaking 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 rulemaking.

##### *Executive Orders 12866, 13563, and 14094*

Executive Orders 12866, as amended by Executive Orders 13563 and 14094, 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. The Department specifically welcomes public comment on the impact, including costs and benefits, of this proposed rule. After review by the Office of Management and Budget (OMB), this proposed rule has been deemed a significant regulatory action.

##### *Executive Order 12988*

The Department of State has reviewed this rulemaking 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, the requirements of Executive Order 13175 do not apply to this rulemaking.

##### *Paperwork Reduction Act*

This rulemaking does not impose or revise any information collections subject to 44 U.S.C. chapter 35.

#### **List of Subjects in 22 CFR Parts 120, 121, and 126**

Arms and munitions, Classified information, Exports.

Accordingly, for the reasons set forth above and under the authority of 22 U.S.C. 2778, the Department of State proposes to amend title 22, chapter I, subchapter M, parts 120, 121, and 126 as follows:

#### **PART 120—PURPOSE AND DEFINITIONS**

■ 1. The authority citation for part 120 continues to read as follows:

**Authority:** 22 U.S.C. 2651a, 2752, 2753, 2776, 2778, 2779, 2779a, 2785, 2794, 2797; E.O. 13637, 78 FR 16129, 3 CFR, 2013 Comp., p. 223.

■ 2. Amend § 120.33 by revising paragraph (b) to read as follows:

##### **§ 120.33 Technical data.**

\* \* \* \* \*

(b) The definition in paragraph (a) of this section does not include information concerning general scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities, or information in the public domain as defined in § 120.34 or spacecraft housekeeping data and output as defined in § 121.1 of this subchapter. It also does not include basic marketing information on function or purpose or

general system descriptions of defense articles.

## PART 121—THE UNITED STATES MUNITIONS LIST

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

**Authority:** 22 U.S.C. 2752, 2778, 2797; 22 U.S.C. 2651a; Sec. 1514, Pub. L. 105–261, 112 Stat. 2175; E.O. 13637, 78 FR 16129, 3 CFR, 2013 Comp., p. 223.

■ 4. Revise § 121.0 to read as follows:

### § 121.0 United States Munitions List descriptions and definitions.

For a description of the U.S. Munitions List (USML) and its designations, including the use of asterisks and the parenthetical “(MT)”, see § 120.10 of this subchapter. As used in this part:

*Amateur rocket* means an unmanned rocket that:

(1) Is made of paper, wood, fiberglass, or plastic, and does not contain any substantial metal parts;

(2) Does not carry a payload designed to be flammable, explosive, or harmful to humans or property;

(3) Is propelled by one or more motors having a combined total impulse of 40,960 Newton-seconds or less;

(4) Has a capacity for no more than five (5) pounds of propellant;

(5) Has no active controls; and

(6) Cannot reach an altitude greater than 150 km above Earth’s surface.

*Amateur rocket motor* means a rocket motor or engine containing no more than 5 pounds of propellant, that is certified for U.S. consumer use as described in National Fire Protection Association Code 1125.

*Bomb* means an air-dropped munition, guided or unguided, without propulsion.

*CCL*. See Commerce Control List in 15 CFR part 772.

*Commerce Control List*. See 15 CFR part 772.

*Department of Defense* means U.S. Department of Defense.

*DoD*. See Department of Defense.

*EAR*. See Export Administration Regulations at 15 CFR parts 730 through 774.

*ECCN*. See Export Control Classification Number in 15 CFR part 772.

*Excluded NASA spacecraft* means:

(1) The International Space Station (ISS); and specially designed (as defined in the EAR) parts and components therefor; and

(2) The James Webb Space Telescope (JWST).

*Export Administration Regulations* means 15 CFR parts 730 through 774.

*Export Control Classification Number*. See 15 CFR part 772.

*Ground sample distance* means a calibrated measurement of spatial resolution for ground imagery taken from the periapsis of an orbit and recorded as the ground distance between the center points of adjacent pixels.

*GSD*. See Ground sample distance.

*Hosted payload* means equipment that uses excess spacecraft capacity, to accommodate an independent mission of opportunity but that neither operates as an independent spacecraft nor dictates the operation or jurisdiction of the host spacecraft.

*Human spaceflight preparations* means activities and information directly related to, or required for:

(1) Spacecraft access, ingress, and egress, including the operation of all spacecraft doors, hatches, and airlocks;

(2) Physiological training (e.g., human-rated centrifuge training or parabolic flights, pressure suit or spacesuit training/operation);

(3) Medical evaluation or assessment of the spaceflight passenger or participant;

(4) Training for and operation by the passenger or participant of health and safety related hardware (e.g., seating, environmental control and life support, hygiene facilities, food preparation, exercise equipment, fire suppression, communications equipment, safety-related clothing or headgear) or emergency procedures;

(5) Viewing of the interior and exterior of the spacecraft or terrestrial mock-ups;

(6) Observing spacecraft operations (e.g., pre-flight checks, landing, in-flight status);

(7) Training to connect to or operate equipment used for purposes other than operating the spacecraft; or

(8) Donning, wearing, or utilizing the passenger’s or participant’s flight suit, pressure suit, or spacesuit, and personal equipment.

*Loitering munition* means any non-stationary platform specially designed for integration with non-releasable munitions and capable of delayed target engagement.

*Mine* means stationary or floating munitions triggered by proximity, pressure, contact, timer, or remote control.

*Payload* (in the context of USML Category IV in § 121.1) means mass delivered to a pre-determined position and not used to maintain a vehicle’s flight.

*Primary payload* means equipment designed to accomplish the prime mission function of a spacecraft and

may operate independently from a secondary payload.

*Range* means:

(1) In the context of USML Category IV in § 121.1, the distance achievable by a vehicle as measured by the projection of its trajectory over the surface of the Earth, assuming a full complement of fuel, the International Civil Aviation Organization (ICAO) standard atmosphere, no wind, and no operational constraints.

(2) In other USML contexts, is either defined locally or is not explicitly defined in this subchapter.

*Real-time* means the time required for a system to process, analyze, and respond to input is at least as fast as the rate at which it can receive input.

*Secondary payload* means equipment integrated into a spacecraft that may operate separately from the primary payload.

*Spacecraft* means vehicles, satellites, probes, and craft designed to operate at least 100 km above the mean sea level of Earth, excluding:

(1) Any article designed to operate exclusively inside a spacecraft;

(2) Any article designed to operate exclusively in the immediate proximity of a spacecraft for a limited time (e.g., during extra vehicular activities (EVAs));

(3) Any article designed to operate exclusively under or on the surface of a celestial body, or within the atmosphere of a celestial body;

(4) Any article launched suborbitally or atmospherically from the surface or atmosphere of a celestial body other than Earth; and

(5) Defense articles described in USML Category IV in § 121.1.

*Spacecraft bus* means the support infrastructure and interface for the spacecraft.

*Spacecraft housekeeping data and output* means information about the health, operational status, or measurements or function of, or raw sensor output from, a spacecraft, a spacecraft payload, or its associated subsystems or components. Examples of such information include:

(1) System, hardware, component configuration, and operation status information pertaining to temperatures, pressures, power, currents, voltages, and battery charges;

(2) Spacecraft or payload orientation or position information, such as state vector or ephemeris information;

(3) Payload raw mission or science output, such as images, spectra, particle measurements, or field measurements;

(4) Command responses;

(5) Timing information; and

(6) Link budget data.

*Spacecraft payload* means equipment attached to the spacecraft bus that performs a particular mission in space (e.g., communications, observation, science).

*Spectral bandwidth* means the smallest difference in wavelength (i.e.,  $\Delta\lambda$ ) that can be distinguished at full width and half maximum (FWHM) of wavelength  $\lambda$ .

■ 5. Amend § 121.1 as follows:

■ a. Revise Category IV.

■ b. In Category VI, revise paragraphs (f)(6) and (7).

■ c. In Category VII:

■ i. Revise paragraphs (g)(2) and (13) and (g)(14)(iii); and

■ ii. Add paragraph (g)(15).

■ d. In Category VIII, revise paragraph (h)(6).

■ e. In Category XI, revise paragraphs (c)(4) and (15).

■ f. In Category XIII, revise paragraph (j).

■ g. Revise Category XV.

■ h. In Category XX, revise paragraph (c).

The revisions and addition read as follows:

#### § 121.1 The United States Munitions List.

\* \* \* \* \*

Category IV—Launch Vehicles, Rocket Systems, and Other Weapons (e.g., Bombs, Torpedoes, and Mines)

\* (a) Rockets, space launch vehicles (SLVs), missiles, bombs, torpedoes, depth charges, mines, and grenades, as follows:

(1) Rockets, SLVs, and missiles, capable of delivering a payload of at least 500 kg to a range of at least 300 km (MT);

(2) Rockets, SLVs, and missiles, capable of delivering a payload of less than 500 kg to a range of at least 300 km (MT);

(3) Missiles and rockets for man-portable air defense systems (MANPADS);

(4) Missiles and rockets for anti-armor systems;

(5) Rockets, SLVs, and missiles, not otherwise described in paragraphs (a)(1) through (4) of USML Category IV, excluding amateur rockets;

(6) Bombs;

(7) Torpedoes;

(8) Depth charges;

(9) Land mines (e.g., terrain shaping obstacles (TSOs) and area denial devices (ADDs));

(10) Anti-aircraft mines;

(11) Naval mines;

(12) Hand grenades that are designed to be lethal or destructive (e.g., fragmentation, concussive, incendiary, chemical, or biological);

(13) Loitering munitions not otherwise described in paragraphs (a)(1) through (5) of USML Category IV;

(14) Kinetic kill vehicles; and specially designed parts and components therefor;

(15) Post-boost vehicles (PBV), including ballistic missile equipment sections (MT);

(16) Hypersonic glide vehicles; and specially designed parts and components therefor (MT); and

(17) Unmanned atmospheric re-entry vehicles not otherwise described in USML Category IV or XV; and specially designed parts and components therefor (MT);

\* (b) Launch systems and equipment, as follows:

(1) Systems and equipment for launching articles described in paragraph (a)(1) or (2) of USML Category IV (MT) and specially designed parts and components therefor; and

(2) Systems and equipment for launching articles described within paragraphs (a)(3) through (14) or (a)(16) and (17) of USML Category IV and specially designed parts and components therefor.

**Note 1 to paragraph (b):** For accessories, attachments, and associated equipment, including production, testing, and inspection equipment and tooling, related to articles described in this paragraph (b) that are specially designed for articles described in paragraph (a) of USML Category XX, see paragraph (c) of USML Category XX.

(c) Apparatus and devices specially designed for the handling, control, activation, monitoring, detection, protection, discharge, or detonation of the articles enumerated in paragraphs (a) and (b) of USML Category IV (MT for those systems enumerated in paragraphs (a)(1) and (2) and (b)(1) of USML Category IV).

**Note 1 to paragraph (c):** This paragraph (c) includes specialized handling equipment (transporters, cranes, and lifts) specially designed to handle articles enumerated in paragraphs (a) and (b) of USML Category IV for preparation and launch from fixed and mobile sites. The equipment in this paragraph also includes specially designed robots, robot controllers, and robot end-effectors, and liquid propellant tanks specially designed for the on-launch site storage or handling of the propellants controlled in USML Category V, CCL ECCNs 1C011, 1C111, and 1C608, or other liquid propellants used in the systems enumerated in paragraph (a)(1), (2), or (5) of USML Category IV. This paragraph (c) does not describe liquid propellant tanks designed solely for commercial transportation and storage.

\* (d) Propulsion systems not otherwise described in USML Category XV or XIX, as follows:

(1) Individual rocket stages for the articles enumerated in paragraph (a)(1), (2), or (5) of USML Category IV except

as described in paragraph (d)(2) or (3) of USML Category IV (MT if usable in articles described in paragraph (a)(1) or (2) of USML Category IV);

(2) Rocket motors and engines having a total impulse capacity equal to or greater than  $1.1 \times 10^6$  N-s (MT);

(3) Rocket motors and engines having a total impulse capacity equal to or greater than  $8.41 \times 10^5$  N-s, but less than  $1.1 \times 10^6$  N-s (MT);

(4) Combined cycle, pulsejet, ramjet, or scramjet engines (MT);

(5) Air-breathing engines that operate above Mach 4 not described in paragraph (d)(4) of USML Category IV (MT);

(6) Propulsion systems based on pressure gain combustion or detonation and not otherwise described in paragraph (d)(4) or (5) of USML Category IV (MT); and

(7) Rocket, SLV, and missile motors and engines not otherwise described in paragraphs (d)(1) through (6) of USML Category IV, except for amateur rocket motors.

(e) Systems and equipment for articles described in paragraph (a) of USML Category IV, as follows:

(1) Control and guidance systems and equipment as follows:

(i) Flight control systems (e.g., fly-by-wire, fly-by-light, pneumatic, hydraulic, electromechanical, mechanical, or electro-optical) specially designed for articles described in paragraph (a) of USML Category IV (MT if usable in articles described in paragraph (a)(1) or (2) of USML Category IV);

(ii) Guidance systems specially designed for articles described in paragraph (a) of USML Category IV (MT if usable in articles described in paragraph (a)(1) or (2) of USML Category IV); and

(iii) Attitude control equipment specially designed for articles described in paragraph (a)(1) of USML Category IV (MT);

(2) Thrust vector control systems not otherwise described in paragraph (d) of USML Category XV (MT if usable in articles described in paragraph (a)(1) of USML Category IV);

(3) Thermal protection systems (e.g., heat shields) usable for warheads or in articles described within paragraphs (a)(14) through (17) of USML Category IV (MT); and specially designed parts and components therefor (MT);

(4) Self-destruct systems specially designed for articles described in paragraph (a) of USML Category IV (MT if usable in articles described in paragraph (a)(1) or (2) of USML Category IV);

(5) Separation systems, staging mechanisms, and interstages; and

specially designed parts and components therefor (MT if usable in articles described in paragraph (a)(1) of USML Category IV);

(6) Safing, arming, fuzing, and firing (SAFF) systems and equipment (to include target detection and proximity sensing devices) for articles described in paragraph (a)(1), (2), (3), (4), or (5) or (g) of USML Category IV; and specially designed parts and components therefor (MT if usable in articles described in paragraph (a)(1) of USML Category IV); and

(7) Seeker systems specially designed for articles described in paragraph (a) of USML Category IV (MT for articles described in paragraph (a)(1) or (2) of USML Category IV).

(f) Test equipment specially designed for articles described in paragraph (a)(1) or (2) or (e)(7) of USML Category IV.

\* (g) Non-nuclear warheads (e.g., explosive, kinetic, electromagnetic pulse, thermobaric, shaped charge, fuel air explosive, chemical, or biological).

(h) Parts, components, accessories, and attachments for articles described in USML Category IV, as follows:

(1)–(4) [Reserved]

(5) Grip stocks for MANPADS; and specially designed parts and components therefor;

(6) Nozzles or nozzle throats; and specially designed parts and components therefor (MT if usable in articles described in paragraph (a)(1) or (2) of USML Category IV);

(7) Nose tips, nose fairings, or aerospikes; and specially designed parts, and components therefor (MT if usable in articles described in paragraph (a)(1) or (2) of USML Category IV);

(8)–(12) [Reserved]

(13) Engine or motor mounts specially designed for articles described in paragraph (a) or (b) of USML Category IV (MT if usable with articles described in paragraph (a)(1) or (2) or (b)(1) of USML Category IV);

(14) Combustion chambers; and specially designed parts and components therefor (MT if usable in articles described in paragraph (a)(1) or (2) or (b)(1) of USML Category IV, or for any articles described in paragraphs (d)(1) through (5) of USML Category IV);

(15) Injector assemblies (MT if usable in articles described in paragraph (a)(1) of USML Category IV);

(16) Igniters;

(17) [Reserved]

(18) Parts and components not elsewhere specified, as follows:

(i) Parts and components specially designed both for articles described in paragraph (e) of USML Category IV and for underwater launch;

(ii) Non-electronic parts and components, specially designed both for

systems described in paragraph (e) of USML Category IV and for hostile nuclear radiation environments; and

(iii) Parts and components specially designed for articles described in paragraph (g) of USML Category IV;

\* (19) Penetration aids (e.g., physical or electronic countermeasure suites, atmospheric re-entry vehicle replicas or decoys, or submunitions); and specially designed parts and components therefor;

(20) Motor cases; and specially designed parts and components therefor (e.g., flanges, flange seals, end domes) (MT if usable in articles described in paragraph (a)(1) or (2) of USML Category IV or if specially designed parts and components for use in hybrid rocket motors described in paragraph (d)(2) or (3) of USML Category IV);

(21) Liners and insulation for solid rocket motors (MT if liners for use in articles described in paragraph (a)(1) of USML Category IV, if liners specially designed for use in articles described in paragraph (a)(2) of USML Category IV; or if insulation for use in articles described in paragraph (a)(1) or (2) of USML Category IV);

(22) Radomes, sensor windows, antenna windows, and embedded antennae, specially designed for articles described in paragraph (a) of USML Category IV (MT if for radomes used in systems described in paragraph (a)(1) of USML Category IV or if for any radomes, sensor windows, or antenna windows manufactured as composite structures or laminates specially designed for use in articles described in paragraph (a)(1), (2), (16), or (17), (d)(1), or (e)(3) or (6) of USML Category IV);

(23) Payload fairings;

(24) Launch canisters (MT if usable with articles described in paragraph (a)(1) or (2) of USML Category IV);

(25) Fuzes specially designed for articles enumerated in paragraph (a) of USML Category IV and not otherwise described in paragraph (e)(6) of USML Category IV;

(26) Liquid or gel propellant tanks (MT if usable in systems described in paragraph (a)(1) of USML Category IV);

(27) Altimeters specially designed for articles described in paragraph (a)(1) of USML Category IV (MT);

(28) [Reserved]

(29) Electrical connectors specially designed for articles described in paragraph (a)(1) or (2) of USML Category IV, as follows (MT):

(i) Umbilical and interstage electrical connectors;

(ii) Electrical connectors between articles described in paragraph (a)(1) or (2) of USML Category IV and their payloads; and

(iii) Electrical connectors specially designed for hostile nuclear radiation environments;

(30) Any part, component, accessory, attachment, equipment, or system that (MT for those articles designated as such):

(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; and

(31) Turbo pumps specially designed for articles described in paragraph (d) of USML Category IV.

(i) Technical data (see § 120.33 of this subchapter) and defense services (see § 120.32 of this subchapter) directly related to the defense articles described in paragraphs (a) through (h) of USML Category IV and classified technical data directly related to items controlled in ECCN 0A604, 0B604, 0D604, 9A604, 9B604, or 9D604 and defense services using the classified technical data.

Defense services include the furnishing of assistance (including training) to a foreign person in the integration of a satellite or spacecraft to a launch vehicle, including both planning and onsite support, regardless of the jurisdiction, ownership, or origin of the satellite or spacecraft, or whether technical data is used. It also includes the furnishing of assistance (including training) to a foreign person in the launch failure analysis of a launch vehicle, regardless of the jurisdiction, ownership, or origin of the launch vehicle, or whether technical data is used. (See § 125.4 of this subchapter for license exemptions specifically related to this paragraph (i), and § 124.15 of this subchapter for special export controls for spacecraft and spacecraft launches.) (MT if directly related to articles designated as such.)

(j)–(w) [Reserved]

(x) Commodities, software, and technical data subject to the EAR used in or with defense articles.

**Note 1 to paragraph (x):** Use of this paragraph (x) is limited to license applications for defense articles where the purchase documentation includes commodities, software, or technical data subject to the EAR (see § 123.1(b) of this subchapter).

\* \* \* \* \*

Category VI—Surface Vessels of War and Special Naval Equipment

\* \* \* \* \*

(f) \* \* \*

(6) Parts, components, accessories, attachments, and equipment specially designed for:

(i) The integration of articles described in USML Category II, IV, or XVIII (MT if specially designed for rockets, space launch vehicles, or missiles capable of achieving a range greater than or equal to 300 km);

(ii) Catapults for launching aircraft (MT for catapults designed or modified for unmanned aerial vehicle systems capable of a range greater than or equal to 300 km); or

(iii) Arresting gear for recovering aircraft (MT for arresting gear designed or modified for unmanned aerial vehicle systems capable of a range greater than or equal to 300 km);

(7) Shipborne active protection systems (i.e., defensive systems that actively detect and track incoming threats and launch a ballistic, explosive, energy, or electromagnetic countermeasure(s) to neutralize the threat prior to contact with a vessel); and specially designed parts and components therefor, not otherwise described on the USML;

\* \* \* \* \*

Category VII—Ground Vehicles

\* \* \* \* \*

(g) \* \* \*

(2) Active protection systems (i.e., defensive systems that actively detect and track incoming threats and launch a ballistic, explosive, energy, or electromagnetic countermeasure(s) to neutralize the threat prior to contact with a vehicle); and specially designed parts and components therefor, not otherwise described on the USML;

\* \* \* \* \*

(13) Test or calibration equipment for the mission systems of the vehicles in USML Category VII, except those enumerated elsewhere on the USML;

\* (14) \* \* \*

(iii) Is being developed using classified information; or

(15) Parts, components, accessories, attachments, and equipment specially designed for the integration of articles described in USML Category IV with vehicles (MT if specially designed for rockets, space launch vehicles, unmanned aerial vehicle systems, or missiles capable of achieving a range greater than or equal to 300 km).

\* \* \* \* \*

Category VIII—Aircraft and Related Articles

\* \* \* \* \*

(h) \* \* \*

(6) Parts, components, accessories, attachments, and equipment specially designed for the integration of articles described in USML Category IV with aircraft (e.g., bomb racks, weapon

pylons, pylon-to-launcher adapters, external stores support systems for ordnance or weapons); and specially designed parts and components therefor (MT if usable in an aircraft or missile that has a range equal to or greater than 300 km);

\* \* \* \* \*

Category XI—Military Electronics

\* \* \* \* \*

(c) \* \* \*

(4) Transmit/receive modules, transmit/receive monolithic microwave integrated circuits (MMICs), transmit modules, and transmit MMICs meeting any of the following:

(i) Articles having all of the following:

(A) A peak saturated power output (in watts), P<sub>sat</sub>, greater than 505.62 divided by the maximum operating frequency (in GHz) squared [P<sub>sat</sub> > 505.62 W \* GHz<sup>2</sup>/fGHz<sup>2</sup>] for any channel;

(B) A fractional bandwidth of 5% or greater for any channel;

(C) Any planar side with length d (in cm) equal to or less than 15 divided by the lowest operating frequency in GHz [d ≤ 15cm \* GHz/fGHz]; and

(D) At least one electronically variable phase shifter per channel; or

(ii) MMICs that combine transmit and receive (T/R) functions on a single die, specially designed for spacecraft, having either of the following:

(A) A power amplifier with maximum saturated peak output power (in watts), P<sub>sat</sub>, greater than 200 divided by the maximum operating frequency (in GHz) squared [P<sub>sat</sub> > 200 W \* GHz<sup>2</sup>/fGHz<sup>2</sup>]; or

(B) A common path (e.g., phase shifter-digital attenuator) circuit with greater than 3 bits phase shifting at operating frequencies 10 GHz or below, or greater than 4 bits phase shifting at operating frequencies above 10 GHz;

**Note 1 to paragraph (c)(4):** A MMIC: (a) Is formed by means of diffusion processes, implantation processes, or deposition processes in or on a single semiconducting piece of material; (b) can be considered as indivisibly associated; (c) performs the function(s) of a circuit; and (d) operates at microwave frequencies (i.e., 300 MHz to 300 GHz).

**Note 2 to paragraph (c)(4):** A transmit/receive module is a multifunction electronic assembly that provides bi-directional amplitude and phase control for transmission and reception of signals.

**Note 3 to paragraph (c)(4):** A transmit module is an electronic assembly that provides amplitude and phase control for transmission of signals.

**Note 4 to paragraph (c)(4):** A transmit/receive MMIC is a multifunction MMIC that provides bi-directional amplitude and phase control for transmission and reception of signals.

**Note 5 to paragraph (c)(4):** A transmit MMIC is a MMIC that provides amplitude and phase control for transmission of signals.

**Note 6 to paragraph (c)(4):** USML Category XI(c)(4) applies to transmit/receive modules and to transmit modules, with or without a heat sink. The value of length d in USML Category XI(c)(4)(iii) does not include any portion of the transmit/receive module or transmit module that functions as a heat sink.

**Note 7 to paragraph (c)(4):** Transmit/receive modules, transmit modules, transmit/receive MMICs, and transmit MMICs may or may not have N integrated radiating antenna elements, where N is the number of transmit or transmit/receive channels.

**Note 8 to paragraph (c)(4):** Fractional bandwidth is the bandwidth over which output power remains constant within 3 dB (without the adjustment of other operating parameters), divided by the center frequency, and multiplied by 100. Fractional bandwidth is expressed as a percentage.

\* \* \* \* \*

(15) Electronic parts and components, capable of operation at temperatures in excess of 125 °C and specially designed for any of the following: spacecraft described in USML Category XV; UAVs or drones described by USML Category VIII; or rocket, space launch vehicles (SLV), or missiles described in USML Category IV capable of achieving a range greater than or equal to 300 km (MT) (see note 2 to paragraph (a)(3)(xxix) of USML Category XI);

\* \* \* \* \*

Category XIII—Materials and Miscellaneous Articles

\* \* \* \* \*

(j) Equipment, materials, coatings, and treatments not elsewhere specified on the USML, as follows:

(1) Specially treated or formulated dyes, coatings, and fabrics used in the design, manufacture, or production of personnel protective clothing, equipment, or face paints designed to protect against or reduce detection by radar, infrared, or other sensors at wavelengths greater than 900 nanometers (see USML Category X(a)(2));

\* (2) Equipment, materials, coatings, and treatments that are specially designed to modify the electro-optical, radiofrequency, infrared, electric, laser, magnetic, electromagnetic, acoustic, electro-static, or wake signatures of defense articles or 600 series items subject to the EAR through control of absorption, reflection, or emission to reduce detectability or observability (MT for applications usable for rockets, SLVs, missiles, drones, or UAVs capable of achieving a range greater than or equal to 300 km, and their subsystems.

See note to paragraph (d) of USML Category XIII);

(3) Materials specially designed for the underwater launch of articles described in paragraph (a)(1) or (2) of USML Category IV; and

(4) Materials specially designed both for articles described in paragraph (a)(1) or (2) of USML Category IV and hostile radiation environments.

\* \* \* \* \*

#### Category XV—Spacecraft and Related Articles

(a) Spacecraft, other than excluded NASA spacecraft or spacecraft that meet this paragraph (a) entirely through a hosted payload, as follows:

\* (1) Spacecraft specially designed to detect, or mitigate the effects of (*e.g.*, scintillation), nuclear detonations;

\* (2) Spacecraft specially designed to detect and track launch vehicles, missiles, kill vehicles, post-boost vehicles, re-entry vehicles or penetration aids;

\* (3) Spacecraft specially designed for signals intelligence (SIGINT) or measurement and signatures intelligence (MASINT);

\* (4) Spacecraft specially designed to operate with other spacecraft to function collectively as an article described elsewhere in paragraph (a) of USML Category XV;

\* (5) Spacecraft equipped with space-to-space weapons (*e.g.*, kinetic, RF, laser, or directed energy);

\* (6) Spacecraft equipped with space-to-ground weapons;

\* (7) Spacecraft equipped with remote sensing instruments that utilize any of the following, assessed in the aggregate if more than one instrument is used for the same objective (significant military equipment (SME) only if Earth-pointing):

(i) Any number of spectral bands in the visible and near infrared (VNIR) through infrared spectrum (*i.e.*, wavelengths greater than 400 nm but less than or equal to 30,000 nm) and either a minimum cumulative light collecting surface area of 3,850 cm<sup>2</sup> or any individual light collecting optic with a minimum surface area of 2,150 cm<sup>2</sup>;

(ii) Forty (40) or more spectral bands in the VNIR through short-wavelength infrared (SWIR) spectrum (*i.e.*, wavelengths greater than 400 nm but less than or equal to 2,500 nm) and a Ground Sample Distance (GSD) less than 20 m;

(iii) Forty (40) or more spectral bands in the mid-wavelength infrared (MWIR) (*i.e.*, wavelengths greater than 2,500 nm but less than or equal to 5,500 nm), a GSD less than 200 m and either a

narrow spectral bandwidth less than or equal to 20 nm or a wide spectral bandwidth greater than 20 nm; or

(iv) Forty (40) or more spectral bands in the long-wavelength infrared (LWIR) (*i.e.*, wavelengths greater than 5,500 nm but less than or equal to 30,000 nm), a calibrated GSD less than 500 m, and either a narrow spectral bandwidth less than or equal to 50 nm or a wide spectral bandwidth greater than 50 nm;

\* (8) Spacecraft equipped with radar remote sensing (*e.g.*, active electronically scanned array (AESA), synthetic aperture radar (SAR), inverse synthetic aperture radar (ISAR), and ultra-wideband SAR), excluding those having both a bandwidth less than or equal to 500 MHz and a center frequency greater than or equal to 1 GHz but less than or equal to 10 GHz;

(9) Spacecraft that generate positioning, navigation, and timing (PNT) signals, excluding those that provide only a differential correction broadcast;

(10) [Reserved]

(11) Spacecraft limited to suborbital trajectories, specially designed for atmospheric re-entry, and equipped with propulsion systems described within either paragraph (e) of USML Category XV or paragraphs (d)(1) through (6) of USML Category IV;

(12) Spacecraft specially designed either to image other spacecraft with an angular resolution better than (less than or equal to) 4 mrad or to monitor, follow, and collect signals from other spacecraft;

\* (13) Spacecraft that are classified, contain classified articles other than a hosted payload classified by DoD, or are either manufactured or developed with the use of classified information (*e.g.*, requirements, specifications, functions, or operational characteristics);

\* (14) Spacecraft specially designed to grapple or dock with another spacecraft through means other than receiving mechanisms on the target spacecraft intended to facilitate grappling or docking;

\* (15) Spacecraft specially designed to construct, while in orbit, spacecraft described in paragraph (a) of USML Category XV;

(16) Spacecraft specially designed to deploy multiple spacecraft larger than 3,400 cm<sup>3</sup> within 72 hours into orbits separated from each other by at least 25 km; and

(17) Articles that can be separated from a spacecraft and incorporate all of the following:

(i) A guidance, navigation, and control (GNC) system;

(ii) An attitude control system; and

(iii) A system described in paragraph (d) of USML Category XV or within paragraphs (d)(1) through (4) of USML Category IV.

**Note 1 to paragraph (a):** When a spacecraft not otherwise described in this paragraph (a) incorporates is a hosted payload described in paragraph (e)(17) of USML Category XV, while the hosted payload remains subject to this subchapter, the spacecraft remains subject to the EAR. Spacecraft that incorporate other payloads described in paragraph (e)(17) are described in this paragraph (a).

(b) Ground control systems and telemetry, tracking, and control (TT&C) simulators, specially designed for spacecraft described in paragraph (a) of USML Category XV.

(c) Spacecraft systems and equipment, as follows:

(1) Active cryocoolers and cold finger systems specially designed for spacecraft, and associated control electronics specially designed therefor;

(2) Active vibration suppression systems (*e.g.*, isolation and dampening systems) specially designed for spacecraft, and associated control electronics specially designed therefor;

(3) Attitude determination and control systems that provide a spacecraft's location on a planetary coordinate system, without using ground location points, with an accuracy described within paragraphs (c)(3)(i) through (iv) of USML Category XV; and specially designed parts and components therefor:

(i) Less than or equal to 5 meters (CE90) from low Earth orbit (LEO) or equivalent;

(ii) Less than or equal to 30 meters (CE90) from medium Earth orbit (MEO) or equivalent;

(iii) Less than or equal to 150 meters (CE90) from geosynchronous orbit (GEO) or equivalent; or

(iv) Less than or equal to 225 meters (CE90) from high Earth orbit (HEO) or equivalent; and

(4) Thermal protection systems (*e.g.*, heat shields) specially designed for atmospheric re-entry, not otherwise described in paragraph (e)(3) of USML Category IV; and specially designed parts and components therefor (MT).

(d) Propulsion systems and power systems for spacecraft, as follows; and specially designed parts and components therefor:

(1) Nuclear reactors and associated power conversion systems (*e.g.*, liquid metal or gas-cooled fast reactors);

(2) Radioisotope-based power systems (*e.g.*, radioisotope thermoelectric generators);

(3) Nuclear thermal propulsion systems (*e.g.*, solid core, liquid core, gas core fission);

(4) Electric (e.g., Plasma or Ion) propulsion systems that operate at an input power of at least 20 kW or provide both a thrust greater than 400 milli-Newtons and a specific impulse greater than 1,900 sec; and

(5) Non-nuclear propulsion systems that use a bi-propellant or mono-propellants and produce vacuum thrust greater than 667.23 N (MT if total impulse is equal to or greater than 8.41 x 10^5 N s).

(e) Spacecraft parts, components, accessories, and attachments, as follows:

(1) Antennas specially designed for spacecraft, with an operating frequency of at least 40 GHz, and any of the following characteristics:

- (i) A projected circular aperture diameter greater than 25 meters;
- (ii) Active electronic scanning;
- (iii) Adaptive beam forming; or
- (iv) Specially designed for interferometric radar;

(2) Optics (e.g., lens, mirror, or membrane) meeting any of the following:

(i) Active (e.g., adaptive, deformable) with an individual light collecting area of 1,020 cm<sup>2</sup> or greater;

(ii) Passive with an individual light collecting area of 2,150 cm<sup>2</sup> or greater; or

(iii) X-ray, not otherwise described in paragraph (e)(2)(i) or (ii) of USML Category XV, with a total effective collecting area greater than or equal to 3,000 cm<sup>2</sup> and an angular resolution less than or equal to 30 milliarcseconds;

(3) Focal plane arrays (FPA) specially designed for spacecraft and having a peak response wavelength greater than 900 nm;

(4)–(5) [Reserved]

(6) Optical bench assemblies specially designed for articles described in paragraph (a) of USML Category XV;

(7)–(8) [Reserved]

(9) Space-qualified cesium, rubidium, hydrogen maser, or quantum (e.g., based upon Al, Hg, Yb, Sr, or Be Ions) atomic clocks; and specially designed parts and components therefor;

(10)–(12) [Reserved]

(13) Control moment gyroscopes (CMG) that provide an angular momentum of at least 2.0 Newton meter seconds (N m sec), provide a torque of at least 6.0 Newton meters (N m), and are specially designed for spacecraft;

(14) [Reserved]

(15) Oscillators specially designed for articles described in paragraph (a) or (h)(17) of USML Category XV and with phase noise less than -120 dBc/Hz + (20 log<sub>10</sub>(RF) (in GHz)) measured at 2 KHz\* RF (in GHz) from carrier;

(16) Star trackers and star sensors with angular accuracy less than or equal

to 1 arcsec (1-Sigma) per star coordinate, and a tracking rate equal to or greater than 3.0 deg/sec; and specially designed parts and components therefor (MT);

\* (17) Payloads that perform any of the functions described within paragraphs (a)(1) through (17) of USML Category XV;

\* (18) Payloads, developed with Department of Defense-funding; and specially designed parts and components therefor;

(19)–(20) [Reserved]

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

- (i) Is classified;
  - (ii) Contains classified software; or
  - (iii) Is being developed using classified information; and
- (22) Any part, component, accessory, or attachment that is designed to modify a spacecraft's optical, radiofrequency, or infrared signature as observed from orbit.

(f) Technical data, excluding spacecraft housekeeping data and output and human spaceflight preparations (see § 120.33 of this subchapter and § 121.0), and defense services, excluding human spaceflight preparations (see § 120.32 of this subchapter and § 121.0), directly related to the defense articles described in paragraphs (a) through (e) of USML Category XV and classified technical data directly related to items controlled in ECCN 9A515, 9B515, or 9D515 and defense services using the classified technical data. (MT if related to articles designated as such.)

(g)–(w) [Reserved]

(x) Commodities, software, and technology subject to the EAR used in or with defense articles.

**Note 1 to paragraph (x):** Use of this paragraph (x) is limited to license applications for defense articles where the purchase documentation also includes commodities, software, or technology subject to the EAR (see § 123.21(b) of this subchapter).

\* \* \* \* \*

Category XX—Submersible Vessels and Related Articles

\* \* \* \* \*

(c) Parts, components, accessories, attachments, and associated equipment, including production, testing, and inspection equipment and tooling, specially designed for any of the articles in paragraphs (a) and (b) of USML Category XX (MT if specially designed for rockets, space launch vehicles, unmanned aerial vehicle systems, or missiles capable of achieving a range greater than or equal to 300 km).

\* \* \* \* \*

**PART 126—GENERAL POLICIES AND PROVISIONS**

■ 6. The authority citation for part 126 continues to read as follows:

**Authority:** 22 U.S.C. 287c, 2651a, 2752, 2753, 2776, 2778, 2779, 2779a, 2780, 2791, 2797, 10423; sec. 1225, Pub. L. 108–375, 118 Stat. 2091; sec. 7045, Pub. L. 112–74, 125 Stat. 1232; sec. 1250A, Pub. L. 116–92, 133 Stat. 1665; sec. 205, Pub. L. 116–94, 133 Stat. 3052; and E.O. 13637, 78 FR 16129, 3 CFR, 2013 Comp., p. 223.

■ 7. Add § 126.8 to read as follows:

**§ 126.8 Civil space promotion: exemptions, policies, and requirements.**

(a) *Exemption for certain official space agency programs.* No license or other approval is required for the export, reexport, retransfer, or temporary import of defense articles, or the furnishing of defense services, when such activity is entirely within the scope of an official space agency program as identified in paragraph (a)(2) of this section, subject to the restrictions in paragraph (a)(1) of this section.

(1) *Restrictions.* The exemption set forth in this paragraph (a) does not apply:

(i) For purposes of establishing offshore procurement arrangements or producing defense articles offshore (see § 124.13 of this subchapter);

(ii) To any of the following:

(A) Activities whose value exceeds the amounts described in § 123.15 of this subchapter;

(B) Activities that involve the manufacturing abroad of significant military equipment as described in § 124.11 of this subchapter; or

(C) For commercial communications satellites for launch from the Russian Federation, Ukraine, or Kazakhstan (see § 123.15 of this subchapter); or

(iii) Defense articles or defense services that are classified (see § 120.38 of this subchapter).

(2) *Official space agency programs.* Spacecraft within the scope of the following programs are eligible for the exemption in this paragraph (a):

- (i) NASA's Lunar Gateway;
- (ii) NASA's Mars Sample Return;
- (iii) Nancy Grace Roman Telescope;

and

(iv) The Orion spacecraft.  
(b) *Exemption for certain space activities.* No license or other approval is required for the activities identified in paragraph (b)(2) of this section, subject to the restrictions in paragraph (b)(1) of this section.

(1) *Restrictions.* The exemption set forth in this paragraph (b) is subject to all of the following restrictions:

(i) The end-use for paragraph (b)(2)(i) of this section must be to connect a

spacecraft, subject to the EAR to its launch vehicle; and

(ii) For the spacecraft referenced in paragraph (b)(1)(i) of this section, the scheduled launch date must be within six months of when the activities are conducted.

(2) *Exempted activities.* The following activities are eligible for the exemption in this paragraph (b):

(i) The export, reexport, retransfer, or temporary import of the following defense articles:

(A) Electrical connectors described in paragraph (h)(29) of USML Category IV in part 121 of this subchapter, other than those used in ballistic missiles; and directly related interface control documents;

(B) [Reserved]

(ii) Encrypting, decrypting, relaying, or retransmitting, to or from a ground station, unmodified telemetry for the health, systems status, position, and velocity of space launch vehicles described in USML Category IV in part 121 of this subchapter;

(iii) The furnishing of assistance to a foreign person in the operation or use of an on-orbit defense article in support of fundamental research as defined at § 120.34(a)(8) of this subchapter; and

(iv) The furnishing of assistance to a foreign person in the operation or use of an on-orbit defense article to geolocate the following radiofrequency transmissions:

(A) Emergency locator transmission (ELT) frequencies 121.5, 243.0, and 406 MHz;

(B) Automatic identification system (AIS) frequencies 161.975 and 162.025 MHz;

(C) Commercial VHF maritime mobile frequencies 156 through 174 MHz; and

(D) Commercial non-satellite cellular telephone communications specified by the global system for mobile communications (GSM), universal mobile telecommunications system (UMTS), long-term evolution (LTE), or the following International Mobile Telecommunications (IMT) standards: IMT-2000 (3G), IMT-Advanced (4G), or IMT-2020 (5G).

(c) *Exemption for space tourism and research.* No license or other approval is required for the export, reexport, or temporary import of manned spacecraft, subject to all of the following restrictions:

(1) The spacecraft must be limited to suborbital trajectories;

(2) The purpose of the activity must be limited to either space tourism or supporting fundamental research as defined at § 120.34(a)(8) of this subchapter;

(3) The activity must not transfer registration, control, or ownership of the spacecraft to a foreign person; and

(4) The spacecraft's destinations, including planned diverts and contingencies, must be approved by the Federal Aviation Administration or its foreign equivalent, and must not include any proscribed destinations under § 126.1 of this subchapter.

(d) *Licensing of defense articles incorporated or integrated into EAR spacecraft.* Articles described in paragraph (c), (d), or (e) of USML Category XV in part 121 of this subchapter may be licensed for export, reexport, or retransfer by the Department of Commerce's Bureau of Industry and Security while they are incorporated in, and included as an integral part of, a spacecraft subject to the EAR. Articles do not become eligible for this licensing provision until incorporated into the spacecraft subject to the EAR. Exports, reexports, retransfers, or temporary imports of defense articles prior to incorporation, and directly related technical data and defense services, are not eligible for this licensing provision. Replacement articles, and articles subsequently unincorporated from the spacecraft, are not eligible for this licensing provision.

**Bonnie D. Jenkins,**

*Under Secretary, Arms Control and International Security, Department of State.*

[FR Doc. 2024-24091 Filed 10-17-24; 4:15 pm]

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## DEPARTMENT OF DEFENSE

### GENERAL SERVICES ADMINISTRATION

### NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

#### 48 CFR Part 25

[FAR Case 2020-009, Docket No. FAR-2020-0009, Sequence No. 1]

**RIN 9000-AO07**

#### Federal Acquisition Regulation: List of Domestically Nonavailable Articles

**AGENCY:** Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

**ACTION:** Proposed rule.

**SUMMARY:** DoD, GSA, and NASA are proposing to amend the Federal Acquisition Regulation (FAR) to revise the list of domestically nonavailable articles under the Buy American statute

and implement requirements related to making future changes to the list.

**DATES:** Interested parties should submit written comments to the Regulatory Secretariat Division at the address shown below on or before December 23, 2024 to be considered in the formation of the final rule.

**ADDRESSES:** Submit comments in response to FAR Case 2020-009 to the Federal eRulemaking portal at <https://www.regulations.gov> by searching for "FAR Case 2020-009". Select the link "Comment Now" that corresponds with "FAR Case 2020-009". Follow the instructions provided on the "Comment Now" screen. Please include your name, company name (if any), and "FAR Case 2020-009" on your attached document. If your comment cannot be submitted using <https://www.regulations.gov>, call or email the point of contact in the **FOR FURTHER INFORMATION CONTACT** section of this document for alternate instructions.

*Instructions:* Please submit comments only and cite "FAR Case 2020-009" in all correspondence related to this case. Comments received generally will be posted without change to <https://www.regulations.gov>, including any personal and/or business confidential information provided. Public comments may be submitted as an individual, as an organization, or anonymously (see frequently asked questions at <https://www.regulations.gov/faq>). To confirm receipt of your comment(s), please check <https://www.regulations.gov>, approximately two to three days after submission to verify posting.

**FOR FURTHER INFORMATION CONTACT:** For clarification of content, contact Ms. Zenaida Delgado, Procurement Analyst, at 202-969-7207 or by email at [zenaida.delgado@gsa.gov](mailto:zenaida.delgado@gsa.gov). For information pertaining to status, publication schedules, or alternate instructions for submitting comments if <https://www.regulations.gov> cannot be used, contact the Regulatory Secretariat Division at 202-501-4755 or [GSARegSec@gsa.gov](mailto:GSARegSec@gsa.gov). Please cite FAR Case 2020-009.

#### SUPPLEMENTARY INFORMATION:

##### I. Background

DoD, GSA, and NASA are proposing to revise the list of domestically nonavailable articles at FAR 25.104(a) and take other actions to limit the use of regulatory nonavailability waivers consistent with section 9 of Executive Order (E.O.) 14005, Ensuring the Future Is Made in All of America by All of America's Workers (86 FR 7475, January 28, 2021). E.O. 14005 establishes policies to maximize the Federal Government's use of goods, products,