DEPARTMENT OF COMMERCE

Bureau of Industry and Security

15 CFR Parts 740 and 774

[Docket No. 241004–0265]

RIN 0694–AH66

Export Administration Regulations: Revisions to Space-Related Export Controls, Including Addition of License Exception Commercial Space Activities (CSA)

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

ACTION: Proposed rule.

SUMMARY: In this proposed rule, the Bureau of Industry and Security (BIS) proposes changes to controls for spacecraft and related items under the Export Administration Regulations (EAR) that would conform to proposed changes to the International Traffic in Arms Regulations (ITAR) related to U.S. Munitions List (USML) Categories IV and XV. This rule also proposes the addition of a new license exception for certain Commercial Space Activities (CSA). This proposed rule is published alongside the Department of State proposed rule, ''International Traffic in Arms Regulations (ITAR): U.S. Munitions List Categories IV and XV'' (1400–AE73), which includes proposed changes for certain space-related defense articles and related controls. These proposed rules are intended to better enable a globally competitive U.S. space industrial base while continuing to protect U.S. national security and foreign policy interests.

DATES: Comments must be received by BIS no later than November 22, 2024.

ADDRESSES: Comments on this rule may be submitted to the Federal rulemaking portal at: *https://www.regulations.gov.* The *regulations.gov* ID for this rule is: BIS–2018–0029. Please refer to RIN 0694–AH66 in all comments.

All filers using the portal should use the name of the person or entity submitting the comments as the name of their files, in accordance with the instructions below. Anyone submitting business confidential information should clearly identify the business confidential portion at the time of submission, file a statement justifying nondisclosure and referring to the specific legal authority claimed, and provide a non-confidential version of the submission.

For comments submitted electronically containing business confidential information, the file name of the business confidential version should begin with the characters ''BC.'' Any page containing business confidential information must be clearly marked ''BUSINESS CONFIDENTIAL'' on the top of that page. The corresponding non-confidential version of those comments must be clearly marked ''PUBLIC.'' The file name of the non-confidential version should begin with the character ''P.'' Any submissions with file names that do not begin with either a ''BC'' or a ''P'' will be assumed to be public and will be made publicly available at: *https://www.regulations.gov.* Commenters submitting business confidential information are encouraged to scan a hard copy of the non-confidential version to create an image of the file, rather than submitting a digital copy with redactions applied, to avoid inadvertent redaction errors which could enable the public to read business confidential information.

FOR FURTHER INFORMATION CONTACT:

- For technical questions, contact Joseph A. Cristofaro, Director, Sensors, Aerospace and Marine Division, Office of National Security Controls, Bureau of Industry and Security, U.S. Department of Commerce, at (202)-482–2440 or by email: *Joseph.Cristofaro@bis.doc.gov.*
- For general questions, contact Regulatory Policy Division, Office of Exporter Services, Bureau of Industry and Security, U.S. Department of Commerce at 202–482–2440 or by email: *RPD2@bis.doc.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

A. National Space Council Direction To Review Space Export Controls

On December 20, 2023, the National Space Council convened to discuss U.S. leadership in space. The Departments of State and Commerce (hereinafter, State and Commerce, respectively) were subsequently tasked to ''conduct a review of space export controls to enable a globally competitive U.S. industrial base while protecting our national security and foreign policy interests'' (see The White House FACT SHEET: Strengthening U.S. International Space Partnerships released on December 20, 2023). In response to the tasking, and pursuant to its authorities under the Export Control Reform Act of 2018 (ECRA) (codified, as amended, at 50 U.S.C. 4801–4852), BIS is publishing concurrently with this proposed rule, the Commerce final rule, ''*Export Administration Regulations: Removal of License Requirements for Certain Spacecraft and Related Items for Australia, Canada, and the United Kingdom*'' (0694–AJ85). That final rule makes important changes to the EAR's controls on remote sensing and space-based logistics, assembly, and servicing spacecraft and related items to better rationalize the controls and facilitate collaboration with three close allies of the United States (*i.e.,* Australia, Canada, and the United Kingdom), as directed by the Space Council tasking.

In addition, in response to the tasking, BIS is also publishing concurrently with this proposed rule a Commerce interim final rule, ''*Export Administration Regulations: Revisions to Space-Related Export Controls*'' (0694–AJ87) and that Commerce final rule that will build on the space-related export control revisions for Australia, Canada, and the United Kingdom by further reducing the export control requirements on certain space-related items when destined to U.S. allies and partners (including, but not limited to Australia, Canada and the United Kingdom).

This proposed rule builds on those two rules, to propose EAR changes that would conform to proposed changes to the ITAR (22 CFR parts 120–130), including those related to USML Categories IV and XV. This rule also proposes the addition of a new EAR License Exception for certain Commercial Space Activities (CSA). This proposed rule is published concurrently with the Department of State proposed rule, ''International Traffic in Arms Regulations (ITAR): U.S. Munitions List Categories IV and XV'' (1400–AE73), which proposes changes to controls under the ITAR for certain space-related defense articles and related controls in response to the same tasking. Although the two rules are complementary and published concurrently, they are not published in conjunction as joint rules.

These proposed changes are intended to better enable a globally competitive U.S. space industrial base while continuing to protect U.S. national security and foreign policy interests. BIS welcomes public comment on the impact of the changes proposed in this rule, as well as any additional changes to the EAR's space-related export controls that could enable a globally competitive U.S. space industrial base while protecting U.S. national security and foreign policy interests.

In 2023–2024, BIS, in coordination with the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) conducted a survey and assessment of organizations affiliated with NASA, NOAA, and the broader U.S. Civil Space Industrial Base (CSIB). The resulting data included respondents' aggregated views on

current export control regulations, as well as suggestions for revisions, and has been broadly used to inform this proposed rule.

B. Past Activities To Review Spacecraft and Related Controls Under Departments of State and Commerce Export Control Authorities

On March 8, 2019, the Department of Commerce (Commerce) and the Department of State (State) published two advanced notices of proposed rulemaking (ANPRMs) (84 FR 8485 and 84 FR 8486, respectively) seeking input on potential revisions to export controls related to satellites and spacecraft under the ITAR (22 CFR parts 120–130) and EAR (15 CFR parts 730–774). In public comments received in response to those ANPRMs, and during subsequent export control outreach events and interagency meetings to review space and related items export controls, industry and interagency representatives proposed several amendments to the EAR to support more robust international partnerships, improve the consistency and clarity of the EAR, and ensure that, whenever possible, U.S. policies are not putting U.S. industries at a comparative disadvantage. Building on the 2019 ANPRMs and as part of its activities described under section I.A of this proposed rule, the National Space Council tasked State and Commerce in December 2023 with conducting a review of space export controls to enable a globally competitive U.S. industrial base while protecting national security and foreign policy interests. Based on that initial interagency review, and pursuant to its authorities under ECRA, Commerce proposes the regulatory changes described in section II of this proposed rule.

In response to the Commerce ANPRM, BIS received 19 public comments. The 19 comments submitted in response to the Commerce ANPRM consisted of comments from 12 major companies in the space industry, four trade associations with large representation from the space industry, two universities well known for their research activities in space related issues, and one individual. BIS summarizes those comments into 22 topics, which BIS addresses under section I.C. BIS has reviewed these comments and used them to help inform interagency review of export controls on space and related items. In this proposed rule, BIS summarizes and responds to these 22 topics received in response to the Commerce ANPRM with either regulatory changes or in clarifications made in the preamble.

BIS also notes that a large number of the comments received on the Commerce ANPRM, which were also submitted to State in response to the State ANPRM, requested that additional space-related defense articles be moved from the U.S Munitions List (USML) to the Commerce Control List (CCL). BIS considered those ITAR specific comments as part of the interagency review process that included State but does not further act upon them here because State has the statutory authority as delegated by the President to the Secretary of State to designate those items that are defense articles and defense services for purposes of the ITAR.

BIS is publishing this proposed rule alongside the State proposed rule to propose appropriate EAR controls for the items that State proposes to remove from the USML.

BIS reviewed all relevant comments submitted in response to the Commerce ANPRM and responds to them directly, as appropriate, in the discussion of the regulatory changes in section II of this proposed rule.

C. Public Comments in Response to Commerce 2019 ANPRM

Topic 1: Supportive of moving items from USML to CCL. Commenters on the Commerce ANPRM were generally supportive of the effort to review the controls for spacecraft and related items and highlighted the importance of conducting regular reviews by the agencies, including public input to ensure that the controls are appropriately calibrated from a jurisdictional and license requirement perspective. One commenter stated that they support BIS's goals of streamlining export control regulations for the commercial space industry to secure our industrial base and reduce our export burdens. Another commenter stated that in general, this commenter sees developments in the commercial communications satellite sector rapidly evolving into areas described on the USML to emphasize the point for the importance of regular reviews of the USML and CCL.

BIS response: BIS agrees that these additional proposed changes will help to reinforce U.S. technological innovation and leadership in the commercial space sector while safeguarding national security interests. BIS agrees that there has been rapid innovation and change in the commercial satellite servicing sector and changes are being proposed in this rule to address these developments as described below. BIS welcomes any additional comments from the public on the specific changes included in this proposed rule, as well as broader comments on reforming space export controls in a way that will continue to protect U.S. national security and foreign policy interests.

Topic 2: Mandate a regular review of the CCL and the USML. A commenter stated that the CCL and USML reviews should be mandatory and ongoing, with a manageable portion of both lists revised annually. This commenter recommended that 20 percent of the CCL and USML be examined each year, leading to a full review and revision over the course of five-year cycles.

BIS response: BIS supports the idea of regularly reviewing the CCL but does not support mandating a particular review schedule. Commerce has not mandated specific time periods for conducting re-reviews of certain categories to allow greater flexibility to focus on regulations that need re-review at certain times. This allows for reviews to occur more often for categories that include items that are rapidly changing, or in paragraphs where there have been issues (*e.g.,* a continued large number of questions) that indicate refinements of the controls may be warranted for adjustment or clarity.

Topic 3: Better distinguish between designed to operate/function in outer space vs. hardware that is ''specially designed'' for a satellite or spacecraft. One commenter requested that a distinction should be made between items designed to operate/function in outer space vs. hardware that is ''specially designed'' for a satellite or spacecraft. This commenter recommended that such items should not fall under ECCN 9A515.

BIS response: BIS does not accept making edits to the EAR at this time to address this comment. The commenter's recommended criteria appear too broad to BIS and could result in certain items being released from 9x515 ECCNs that warrant being controlled in a 9x5zz ECCN. These items need to be retained in 9x5zz ECCNs to protect U.S. national security and foreign policy interests. BIS welcomes comments providing more specific examples of what this commenter is stating supported by further rationale for why these particular items should be controlled at a lower level.

Topic 4: Spacecraft related items to retain in 9A515. A commenter stated that specific defense-related commodities that could be militarized need to retain more stringent control and be retained in ECCN 9A515, which includes the following: (1) precision location determination sensors; (2) propulsion for re-entry; (3) vehicle re-

entry thermal protection; (4) security for communications; and (5) high power energy and associated technologies.

BIS response: The proposed rule does not decontrol any items from ECCN 9A515. The rule proposes adding additional requirements to 9A515 to ensure appropriate controls will be in place for any additional spacecraft related item that are moved from the USML to the CCL.

Topic 5: Control parameters for large aperture earth observation cameras needs to be revised to not overreach. One commenter requested that State and Commerce increase the clear aperture diameter threshold for space-qualified optics in USML Category XV(a)(7)(i) and (e)(2), and ECCN 9A515.g.1 from ''0.50 meters'' to ''0.80 meters.'' This commenter stated that the U.S. has been building high-resolution commercial imaging satellites with similar sized optics since the 1990s and that, as of 2019, U.S. industry faced global competitors from at least eight countries that can produce one meter-class space-qualified optics. Another commenter stated that non-U.S. built commercial imaging satellites are already using apertures larger than 0.5m and the adverse effect on U.S. industry's competitiveness in the international market should be considered when evaluating tight controls on performance parameters.

BIS response: This proposed rule would revise the text of 9A515.g.1, which would be responsive to these comments. This rule proposes to revise ECCN 9A515.g.1 to specify it controls space-qualified optics (*i.e.,* lens, mirror, membrane having active properties (*e.g.,* adaptive, deformable)) with a largest individual light collecting or focusing area less than 1,020 cm^2; or passive optics with a largest individual light collecting area between 1,020 cm^2 and 2,150 cm^2; or Xray grazing incidence optics with a total surface area (*i.e.,* shells/segments) of less than 25,000 cm^2; or an effective collecting area less than 3,000 cm^2. State also proposed changes in its rule which would increase the thresholds, which is why BIS is publishing this Commerce proposed rule to ensure that appropriate controls would be in place to protect U.S. national security and foreign policy interests for the items that would move from the USML to the CCL.

Topic 6: Codes for trajectories involving three-body calculations may be covered under fundamental research. A commenter stated that national interest in space activity in Earth's Cis-Lunar space is turning toward participation by the private or commercial sector. Planning trajectories in this domain involve three-body calculations of a sort different from the two-body codes employed previously in deep space exploration. The basis of three-body trajectory planning is use of mathematics from the domain of basic or fundamental research. Verified codes that employ this mathematics may need to be reviewed to determine if they are appropriate items for inclusion in either ITAR or EAR control.

BIS response: For items not subject to the ITAR, a person in this scenario should review part 734 to see if any of the specified exclusion criteria may apply. BIS also continuously reviews emerging and foundational technologies (*i.e.,* Section 1758 items) to determine when new entries need to be added to a 0Y521 ECCN or to a new or existing ECCN to ensure appropriate controls are in place under the EAR to protect U.S. national security and foreign policy interests. Section 1758 of ECRA (50 U.S.C. 4801–4852) authorizes BIS to establish appropriate controls on the export, reexport or transfer (in-country) of emerging and foundational technologies essential to the national security of the United States. For fundamental research into a technology, the existing EAR criteria in § 734.8 for excluding fundamental research that meets the criteria in that section would already address it. Commerce notes that the development of mathematical techniques under the fundamental research exclusion does not mean that applying those techniques in the development of a specific commodity or software is also fundamental research. BIS also notes that the application of the results from prior fundamental research in the subsequent engineering development phase of research and development, and may also include proprietary information, both of which would be outside the scope of the fundamental research exclusion.

Topic 7: Request for classification guidance for science instruments. One commenter stated that it would be beneficial to have a category that provides control guidance for science instruments such as mass spectrometers (particles, plasmas), Spectral—visible/infrared/ultraviolet/multispectral sensors, and Magnetometers.

BIS response: BIS does not agree that creating a separate ECCN classification or exclusion from CCL-based controls is warranted for these types of science instruments because any type of exclusion would likely be too broad. The existing CCL already controls scientific instruments under certain ECCNs and other scientific instruments are designated as EAR99. BIS welcomes comments in response to this proposed rule for identifying additional specific scientific instruments that should be excluded from the scope of certain ECCNs.

Topic 8: Remove worldwide license requirement for 9A515.a.4 and 9A515.a.5. One commenter requested BIS remove the worldwide licensing requirement for spacecraft controlled under 9A515.a.4 that are designed for resupply of the International Space Station (ISS) or another U.S. space station (*e.g.,* the Lunar Gateway) controlled similarly under 9A515.a.5.

BIS response: BIS does not agree. With license exceptions under the EAR, BIS can facilitate the exports, reexports, and transfers (in-country) that are consistent with U.S. national security and foreign policy interests while still imposing a restrictive license requirement requiring EAR authorization. BIS notes that this rule does propose the new License Exception Commercial Space Activities (CSA), which addresses some of the concerns surrounding this comment. BIS welcomes comments on the new License Exception CSA.

Topic 9: Small CubeSats should be released to a lower level of control. One commenter noted that CubeSats of 6U size or smaller have become widely available as commercial off-the-shelf (COTS) systems because: (1) advances in satellite technology have provided many improvements including lighter structural elements, capable miniaturized ''components,'' and low power electronics; (2) standardization of CubeSat architectures has enabled small companies to enter the market as some of the previously demanding technical obstacles have been mitigated or removed. Standardization also has lowered the cost of initial investments required for entering the market, and the need for acquiring data for big data applications has increased the market interest in CubeSats considerably. This commenter specified that CubeSat is a quickly growing market. This commenter stated that because of the COTS availability of 6U or smaller CubeSats warrants further review of this technology for less stringent licensing requirements.

BIS response: BIS does not agree that all CubeSats should be moved to a lower level of control. The EAR controls in place on some CubeSats based on their functionality is needed to protect U.S. national security and foreign policy interests. BIS also notes that EAR authorizations can be an efficient way to export, reexport, or transfer (in-country) items that would otherwise require a license.

Topic 10: Remove certain terrestrial equipment from 9A515.x and add it as a new 9A515.i.

One commenter recommended adding 9A515.i (.i is currently reserved) to control certain terrestrial equipment ''specially designed'' for ''spacecraft.'' This commenter stated that this type of equipment is positively described and controlled under 9A004 when used with the James Webb Space Telescope, but when ''specially designed'' for use in or with a 9A515.b ground control system and simulator are not positively described in 9A515, they are caught under the catch-all category of 9A515.x. This commenter believes that adding telemetry and telecommand equipment and simulators as a 9A515 paragraph (*i.e.,* 9A515.i) instead of capturing the items in a catch-all category, furthers the objective of creating a positive control list which will result in more consistent classifications and licensing of these commodities.

BIS response: BIS does not agree that a separate ''items'' paragraph is needed in 9A515.i to control this equipment. In the context of ECCN 9A004 and the use of this equipment in the James Webb Space Telescope, it is warranted to call out this specific equipment. In the context of ECCN 9A515 where this equipment may be ''specially designed'' for use in a variety of spacecraft, it is warranted to maintain the classification of 9A515.x.

Topic 11: Clarification needed for thrusters for whether to classify under ECCNs 9A515 and 9A604. One commenter recommended BIS consider under ECCN 9A604 adopting text similar to that of ECCN 9A515.x by controlling ''specially designed'' ''parts'' and ''components'' of USML Category IV and 9A604 (excluding ''specially designed'' ''parts'' of 9A604.e and .f) or create a new ''items'' paragraph entry under 9A604 to control thrusters ''specially designed'' for USML Category IV defense articles that are not controlled under USML Category IV. This commenter stated that unlike ECCN 9A515.x, ECCN 9A604.x does not generically control ''specially designed'' ''parts'' of 9A604 commodities. This commenter stated that this presents a classification challenge because following the CCL Order of Review process leaves the classifier in a quandary about how to classify the thruster, especially when the item peculiarly responsible for the controlled performance, characteristic, or function of the Category IV defense article is a ''part'' or ''component'' of the thruster. This commenter stated that in this case they choose to classify the complete thruster as ECCN 9A604.x and the ''specially designed'' ''component'' as ECCN 9A604.x.

BIS response: Other than certain model and high power rocket motors, the USML currently describes all rocket, SLV, and missile engines and motors. For a thruster that is not subject to the ITAR, in these types of classification scenarios BIS would look to whether the thruster was for spacecraft and met the control parameter in 9A515.h. When asked by the public, BIS has generally advised industry to treat thrusters under USML Category IV or ECCN 9A604. BIS further notes that if the thrusters were for satellite functionality they would be classified under 9A515. BIS reminds exporters, reexporters, and transferors that if a person needs assistance in classifying such items, they may submit a free classification request to BIS using the SNAP–R System on the BIS website at: *https://www.bis.doc.gov.*

Topic 12: License Exception eligibility for 9x515 items. One commenter states that hardware purchased from a foreign vendor often needs to be sent back to the vendor for various reasons, including repair, maintenance, calibration, or exchange. This commenter stated that in the case of hardware that originated abroad, a less stringent licensing requirement is warranted, especially if the U.S. user can document the fact that the hardware does not bear any indication of what it was used for or the data that it produced during use by the U.S. individual.

BIS response: License Exception TMP under § 740.9(a)(6) (Inspection, test, calibration, and repair) already addresses this comment. If the scenario was altered slightly where it involved reexports between two foreign countries for repair or servicing, then License Exception TMP under § 740.9(a)(6) would be used for the initial reexport, and then License Exception RPL under § 740.10(b) would address return of the repaired or serviced commodity in that scenario. License Exception RPL is not needed for the return leg of the transaction in this commenter's scenario because no EAR authorization would be required to return the serviced or repaired item to the U.S. No additional changes are needed or warranted.

Topic 13: Reduce the number of agencies and organizations/offices that review export licenses, advisory opinions, commodity jurisdictions, and commodity classification requests. A commenter requested that BIS reduce the number of agencies that review license applications, as well as other key documents BIS reviews, to help improve the efficiency of the review processes for the licensing of 9x515 items. This commenter stated that the multiple layers of review often involving various agencies results in unnecessarily long processing times.

BIS response: BIS's license review process, including the agencies that review BIS license applications, is mandated by Executive Order (E.O.) 12981, ECRA, and required under the regulatory provisions in part 750 of the EAR. BIS also notes that that other agencies that review BIS licenses play an important role in helping to protect U.S. export control interests when decisions are made whether to approve a license application. BIS clarifies here that the review of advisory opinions and, until fairly recently, classifications, were already done within just BIS in most cases. As a result, any improvements that would need to be made for efficiency would be within BIS. BIS does evaluate on a regular basis ways that these various review processes can be improved. For example, BIS believes that having clear and objective CCL control parameters helps reduce the number of classification requests that BIS receives. BIS is soliciting comments in response to this proposed rule, including on these proposed ECCN control parameters, assists BIS in making the process more efficient if the public's input helps BIS confirm whether the proposed control parameters are clear and if any refinements are needed.

Topic 14: Improving efficiency of reviews by fully staffing reviewing agencies and continuing to work during a lapse in Federal funding. One commenter made two recommendations for how to improve the efficiency of license review and classifications for spacecraft and related items. This commenter recommended that each of the agencies that review BIS licenses or are involved in reviewing classification requests should be fully staffed. This same commenter recommended that during any U.S. Government lapse in funding that the staff working at these agencies reviewing BIS licenses and classification requests will continue to be able to work.

BIS response: BIS agrees that fully staffing each of the respective agencies would help improve the efficiency of the licensing process. BIS does not have any control over staffing decisions at other agencies. BIS also seeks to be fully staffed to ensure the work of BIS can be completed in a timely and efficient fashion with decisions made that protect U.S. national security and foreign policy interests. BIS notes that there are statutory limitations that prevent BIS, as well as many other U.S. Government employees who are not deemed essential or some other

exempted category, to continue working during a lapse in Federal funding. For essential employees that do continue to work during a lapse in Federal funding, there are statutory limits for the activities that these types of U.S. Government personnel may engage in. BIS notes that even during a lapse in Federal funding that license applications that are critical to health and safety would generally continue to be processed by employees determined to be essential. Because BIS does not impose fees for applying for licenses and submitting classification requests to BIS, there are limits to what can be done to continue operations when there is a lapse in Federal funding. By statute, under ECRA, BIS is prohibited from charging fees to apply for BIS licenses, which benefits exporters, reexporters, and transferors because they do not need to pay a fee to apply for a license. In order to apply for a BIS license or submit a classification request to BIS, an applicant needs to register in BIS's SNAP–R system, but this registration process is free. After any lapse in Federal funding, BIS, as well as the other agencies involved in reviewing BIS licenses or classifications requests, do the best they can to reduce any backlog of applications.

Topic 15: Cost savings to private entities by shifting control of additional items from the USML to the CCL. One commenter in response to the Commerce ANPRM addressing whether there were past cost savings from USML Categories IV or XV to the CCL, stated that, in general, compliance with EAR controls requires fewer company resources (*i.e.,* less time and personnel devoted to drafting and submitting licenses and complying with administrative obligations) than compliance with State's ITAR controls, given the greater flexibility of licensing and exporting under the EAR versus the ITAR.

BIS response: This commenter's statement is consistent with past representations made by BIS and State, as well as by comments received by the public over the years in response to USML to CCL review process rules. BIS notes that this comment was made in response to the Commerce ANPRM, and that, in State's proposed rule published alongside this BIS proposed rule, State is proposing new ITAR exemptions for certain space related activities. BIS is also proposing new EAR License Exception CSA to mirror the ITAR exemptions where it makes sense in the context of the EAR for spacecraft and related items subject to the EAR. Comments specific to the ITAR should be directed to State in response to its proposed rule, but BIS does welcome comments on whether the changes included in the Commerce and State proposed rules impact the perceived cost savings for entities in the space industry.

Topic 16: Previous movement of certain spacecraft related items led to positive benefits, but more items should be moved to see greater benefits for the space industry. One commenter noted that previous efforts to remove space-related items from the USML and add them to the CCL have had a positive benefit for commercial and civil space opportunities, helping to make U.S. companies more competitive, reduce costs, and facilitate international cooperation. This commenter also stated that there are additional items that, when intended for use in commercial civil applications, should be removed from the USML and controlled on the CCL.

BIS response: BIS acknowledges that moving additional items to the CCL, provided those items are determined to not warrant ITAR control by State, would generally provide greater flexibility under the EAR because of additional flexibility for the availability of EAR license exceptions and difference in license application requirements, such as not requiring a purchase order to apply for a BIS license for 9x515 spacecraft related items.

Topic 17: Potential for new costs savings or other benefits for the space industry. One commenter stated that to the extent that future regulatory changes clarify existing ambiguities and minimize the need for export authorizations under the ITAR and EAR for a single program, such changes would be expected to result in quantifiable cost savings.

BIS response: BIS agrees that reducing the regulatory burden, including from increasing clarity of the regulatory provisions, can result in cost savings for the industry. The proposed addition of License Exception CSA in this proposed rule is responsive to this comment, as well as other changes included in this proposed rule, and the two related Commerce final rule and IFR that are published concurrently with this proposed rule, that also made changes that were responsive to this comment. BIS welcomes comments in response to this proposed rule whether the proposed changes would result in new cost savings for the space industry (*e.g.,* for the space programs that this commenter references).

Topic 18: Movement of items from USML to CCL resulted in increased cost and complexity. One commenter stated that to date, spacecraft and launch vehicle manufacturers have not seen a cost benefit from moving certain items from the USML to the CCL. This commenter noted that as the categories (*i.e.,* USML Categories and ECCNs) increase in complexity, industry utilizes more resources to classify hardware and associated data/technology.

BIS response: BIS notes that this comment on the Commerce ANPRM is an outlier compared to the other comments received that support the opposite perspective that there have been significant cost savings to the space industry, along with increased opportunities for international collaboration, as a result of these categories increasing in complexity. Because other comments received were supportive, BIS believes that the space industry as a whole has seen these export control changes as reducing costs and increasing opportunities for the space industry. BIS notes that the classification process is a one-time cost, not a recurring cost. In addition, the USML Order of Review and CCL Order of Review should direct a person classifying an item to the appropriate jurisdiction and classification of an item and reduce the need for submitting CJ determinations. BIS welcomes comments in this area whether other commenters feel the same as this commenter taking into consideration the passage of time since 2019 and the additional changes that are proposed to the spacecraft and related items controls in this proposed rule, as well as the Commerce final rule and IFR published concurrently with this proposed rule.

Topic 19: Increased complexity because a greater number of authorizations are available and sometimes needed to cover a large program. One commenter stated that because all spacecraft ''components'' are not in the same ''items'' paragraph .x classification under the ECCNs, spacecraft manufacturers utilize more resources to develop and manage export authorizations. This commenter stated that in many cases, multiple authorizations, which may include in certain cases authorization from State and Commerce, are required for one space industry program.

BIS response: BIS agrees that there are a greater number of authorizations that are now available to authorize exports, reexports, and transfers (in-country). However, for those exporters, reexporters, or transferors that prefer to have a single authorization, there are options to take that more simplified approach. For example, there is the ITAR § 120.5(b) process, so if an exporter prefers to have a single authorization in certain cases, they

could do that with a State license or other approval, provided the EAR item was being exported in or with a defense article and the other applicable terms and conditions of § 120.5(b) of the ITAR are met. Ultimately, having greater flexibility with items moving to the EAR means that different authorizations may be available, but may not apply in every case. Similar to the ITAR § 120.5(b) process, if an exporter wishes to have a single authorization under the EAR for all of the items subject to the EAR, that is possible by applying for a BIS license to cover all of the items for that export, reexport, or transfer (in-country). BIS does not disagree with the commenter that having various authorizations potentially available does result in some additional burdens, but BIS believes those additional authorizations and flexibility it affords to exporters, reexporters, and transferors, outweighs the burdens of having greater options for authorizations under the EAR.

Topic 20: Movement of items from USML to CCL has increased, rather than lessened complexity because this was a unilateral effort that did not involve international agreements or partners. One commenter stated that the movement of items from the USML to the CCL (*e.g.,* spacecraft and related items from the USML to the CCL) has compounded, rather than lessened, the fragmentation of the export control system because this reform effort has been a strictly U.S. program. This commenter asserted that the U.S. Government made no effort to reach international agreement at the multilateral export control regimes on either the technologies transferred from the USML to the CCL nor the accompanying non-technical verbiage.

BIS response: BIS does not agree. BIS notes that there is national discretion for how regime members of the multilateral export control regimes fulfill their commitments. The determination by State that certain items did not warrant control under the ITAR and the subsequent moving of those items, where they are controlled on the CCL, to the EAR was consistent with U.S. Government commitments to the multilateral export control regimes. The additional items that are proposed to be moved from the USML to the CCL in the Department of State proposed rule and the EAR controls that would apply to those items in this Commerce proposed rule would also be consistent with U.S. Government multilateral export control regime commitments. For example, the items moved or proposed to be moved to ECCN 9A515 on the CCL would be controlled for national security (NS) reasons, and for certain items for missile technology (MT) reasons, so nothing that was done in past movements of space and related items from the USML to the CCL, or that is proposed in this proposed rule or the State proposed rule, are inconsistent with U.S. Government multilateral regime commitments. Defined terms under the EAR are consistent with defined terms under the multilateral export control regimes.

Topic 21: License requirement for India for 9A515.e should be added to the Commerce Country Chart or removed. One commenter stated that the regional stability (RS2) license requirement for ECCN 9A515.e destined to India that is in Footnote 7 to the Commerce Country Chart in supplement no. 1 to part 738 is often overlooked. This commenter asked whether this license requirement should be added to the Commerce Country Chart or whether the footnote and license requirement for ECCN 9A515.e should be removed now that India is a member of the Wassenaar Arrangement.

BIS response: BIS clarifies here that the Commerce Country Chart Footnote 7 for the entry for India directs exporters, reexporters, or transferors to review that license requirement. Accordingly, BIS does not agree that the license requirement for India for ECCN 9A515.e is not identified on the Commerce Country Chart. The Commerce Country Chart includes eight footnotes so that exporters, reexporters, and transferors need to be aware of the importance of reviewing any applicable footnote for a country entry they are reviewing on the Commerce Country Chart. BIS also notes that the Footnote 7 structure is important to maintain because India does not require a CCL-based license requirement for RS2 under the RS2 license requirement column on the Commerce Country Chart, so an alternative method is needed to impose that license requirement. BIS has determined that ECCN 9A515.e continues to warrant a license requirement for India. However, BIS also notes that as a Country Group A country that License Exception STA is available to authorize such exports, reexports, or transfers (in-country) destined to or within India.

Topic 22: Clarifying the scope of control status for rovers, habitats, commercial crew vehicles, and other robotic space equipment. Two commenters on the Commerce ANPRM requested that BIS clarify and update the control status for rovers, habitats, commercial crew vehicles, and other robotic space equipment that are designed to operate in outer space but are not hardware ''specially designed'' for a satellite or spacecraft. These commenters stated that such commodities should not fall under ECCN 9A515.

BIS response: This proposed rule is responsive to these comments with the revisions this rule proposes for removing the reference in Note 1 to 9A515 to ''planetary rovers'' and ''in-space habitats'' and the addition of Note 7 to 9A515.

II. Overview of This Proposed Rule

This rule proposes two sets of changes to controls for spacecraft and related items under the EAR pursuant to the legal authority of the Export Control Reform Act of 2018 (ECRA) (codified, as amended, at 50 U.S.C. 4801–4852). Section 1753(a) of ECRA (50 U.S.C. 4812) authorizes the regulation of ''(1) the export, reexport, and in-country transfer of items subject to the jurisdiction of the United States, whether by United States persons or by foreign persons.'' First, BIS proposes amending the EAR to conform to State's proposed changes related to USML Categories IV and XV. Second, BIS proposes adding a new license exception to the EAR for certain Commercial Space Activities (CSA), which would mirror certain exemptions proposed to be made available for defense articles under the ITAR. BIS welcomes comments that identify any further amendments to the EAR (and corresponding amendments to the ITAR) that better enable a globally competitive U.S. space industrial base while continuing to protect U.S. national security and foreign policy interests.

A. EAR Changes To Conform to ITAR Changes Related to USML Categories IV and XV

BIS is proposing changes to Export Control Classification Number (ECCN) 9A515, the addition of 9C515, and changes to 9D515 and 9E515 in supplement no. 1 to part 774 of the EAR, described under section III.A.1. through .4. BIS estimates that these amendments would result in an additional 90 license applications submitted to BIS annually.

This rule does not propose any changes to ECCN 9A004, but BIS does welcome comments from the public on whether any additional changes to ECCN 9A004 should be made, including whether changes should be made to ECCN 9A004 to remove references to items paragraphs in 9A004 that are otherwise subject to the ITAR or classified under ECCN 9A515. BIS has maintained the current structure of ECCN 9A004 for consistency with the

Wassenaar Arrangement, but does welcome any additional comments on whether the current structure for ECCN 9A004 and how that cross references items subject to ITAR and ECCN 9A515 may be improved.

1. ECCN 9A515

a. *Revises 9A515.a to remove text that is not needed as part of the control parameter.* In ECCN 9A515, this rule proposes revising 9A515.a to remove the phrase 'whether designated developmental, experimental, research or scientific' because this text is not needed as part of the control parameter. ECCN 9A515.a controls all ''spacecraft,'' including satellites, and space vehicles and ''sub-orbital craft'' not enumerated in USML Category XV or described in ECCN 9A004.u or .w, that meet the control parameters under one of the ''items'' paragraphs under 9A515.a.1 through a.5, so the additional text that this rule would remove is not needed to describe the scope of commodities controlled.

b. *Revises 9A515.a.4 to impose a broader control parameter.* This rule proposes expanding the control parameter under 9A515.a.4 to control ''spacecraft'' that perform remote proximity on-orbit services to other spacecraft (*e.g.,* docking, delivery, refueling, or servicing), provide life sustaining operations (*e.g,* space stations, space hotels, outposts, or laboratories), or capture, collect, and remove space debris. This expanded control parameter is needed to control additional ''spacecraft'' that would be moved to the CCL from the USML.

c. *Excluding planetary rovers and in-space habitats not identified in ECCN 9A004 or USML Category XV(a) from the scope of 9A515.a.* This rule proposes revising Note 1 to 9A515.a to remove the terms ''planetary rovers'' and ''in-space habitats.'' This rule also proposes adding new Note 7 to 9A515 to specify these commodities are not within the scope of 9A515.

d. *Revision to Note 2 to 9A515.d and .e to remove text for clarity.* Note 2 to 9A515.d and .e, which provides guidance on the scope of Application Specific Integrated Circuits (ASICs) that are controlled under ECCN 9A515.d. and .e, is proposed to be modified to more clearly describe the items in 9A515.d and .e and related controls.

e. *Revision to 9A515.g.1 to impose a broader control parameter.* This rule proposes expanding the control parameter under 9A515.g.1 to control space-qualified optics (*i.e.,* lens, mirror, membrane having active properties (*e.g.,* adaptive, deformable)) with a largest individual light collecting or focusing area less than 1,020 cm^2; or passive optics with a largest individual light collecting area between 1,020 cm^2 and 2,150 cm^2; or X-ray grazing incidence optics with a total surface area (shells/segments) of less than 25,000 cm^2; or an effective collecting area less than 3,000 cm^2. This expanded control parameter is needed to control additional space-qualified optics that would be moved to the CCL from the USML.

f. *Revision to 9A515.h to remove the term ''spacecraft.''* This rule proposes removing the term ''spacecraft'' before the term thrusters in 9A515.h because the term is not needed. The heading of ECCN 9A515 already makes it clear that the thrusters that are controlled under this ECCN would be thrusters that are for ''spacecraft'' when these thrusters meet the control parameters under 9A515.h.

g. *Addition of 9A515.i.* This rule proposes adding a new 9A515.i to control Electric (Plasma/Ion) thrusters and their associated power control systems operating at in input power of less than 20kW and having an individual thrust of at least 400 milli-Newtons, but not also having a specific impulse better than 1,900 seconds, which the Department of State has proposed moving from the USML to the CCL.

h. *Addition of 9A515.j.* This rule proposes adding a new 9A515.j to capture Control moment gyroscopes (CMG) ''specially designed'' for spacecraft that provide an angular momentum of less than 2.0 (N m sec) or provide a torque of less than Newton meters (N m), which the Department of State has proposed moving from the USML to the CCL. This rule also proposes adding a Note 4 to 9A616.j to specify that if a CMG has 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 it is subject to USML Category XV(e)(13).

i. *Addition of 9A515.k.* This rule proposes adding a new 9A515.k to control hold-down or satellite release mechanisms (*i.e.,* clampbands, adapters, dispensers, or motorized lightbands) not described in USML Category IV(e)(5), excluding those for 1U CubeSats or less.

j. *Clarification of 9A515.y.* This rule proposes adding the term 'as follows' at the end of the introductory text of 9A515.y to make it clear that any item that is ''specially designed'' for purposes of 9A515.x that also meets any of the control parameter descriptions under 9A515.y.1 through y.6 is controlled under 9A515.y.

k. *Addition of Note 8 to 9A515 to specify rovers and in-space habitats are not classified under ECCN 9A515.* This rule proposes to add new Note 8 to 9A515 to specify that rovers and in-space habitats are not classified under ECCN 9A515. Following the CCL Order of Review, a person classifying these commodities would go to the beginning of CCL Category 9 and review the other ECCNs that may be applicable (*e.g.,* ECCN 9A004.r for in-space habitats) and then if none of those are applicable, then the items in question would be designated as EAR99.

l. *Conforming changes.* This rule proposes as a conforming change reserving paragraphs (1) through (w) to reflect the proposed additions to 9A515. In addition to complying with Office of **Federal Register** (OFR) drafting requirements for the designation of Notes, this proposed rule, the Note to 9A515.a would get redesignated as Note 1 to 9A515.a; Note 1 to 9A515.d and .e would get redesignated as Note 2 to 9A515.d and .e; Note 2 to 9A515.d and .e would get redesignated as Note 3 to 9A515.d and .e; and Note to 9A515.x would get redesignated as Note 5 to 9A515.x, Note 5 to 9A515.b and .x would get redesignated as Note 6 to 9A515.b and .x, and Note 6 to 9A515 would get redesignated as Note 7 to 9A515. Lastly, in ECCN 9A515 in the List of Items Controlled section under the Related Controls paragraph, this rule proposes revising the first sentence to removes the phrase 'enumerated on the USML' and add in its place the phrase 'described on the USML' to conform with ITAR terminology used to describe the USML.

2. Addition of New 9C515

a. *Materials classified under new 9C515.* This rule proposes adding a new ''materials'' ECCN to the CCL by adding a new ECCN 9C515, which would control materials, coatings, treatments for reducing in-orbit signatures (*i.e.,* radar, optical, ultraviolet, and infrared) of spacecraft, not described by USML Categories XIII(j) or XV(e)(22), such as blankets, films, tapes, and paints as identified in the List of Items Controlled. This new ECCN 9C515 would only control ''materials'' that are not subject the ITAR. This rule proposes these materials would be controlled under ECCN 9C515, which would consist of materials, coatings, treatments for reducing in-orbit signatures (*i.e.,* radar, optical, ultra violet, and infrared) of spacecraft such as blankets, films, tapes, and paints with either of the following characteristics specified under 9C515.a.1 (*i.e.,* designed to reduce radar, ultra-violet, & infrared signature by 20% or more), or 9C515.a.2

(*i.e.,* designed to reduce optical signature by 50% or more).

b. *Note to 9C515 would clarify materials included and excluded under this new ECCN.* This rule also proposes a note to 9C515 that would clarify the scope of this new ECCN. The new Note under paragraph (1) would specify that materials controlled by 9C515 include structural materials and coatings (including paints), ''specially designed'' for reduced or tailored reflectivity or emissivity in the microwave, infrared, or ultraviolet spectra. Paragraph (2) of the note to 9C515 would specify that this entry does not control materials used for the purpose of reducing brightness from the ground. These first two paragraphs of the Note to 9C515 would be intended to focus the scope of this new ECCN 9C515, so it would not be broader than intended. Paragraph (3) to the Note to 9C515 would include a cross reference back to the USML to specify that 9C515 applies to certain ''materials'' for commodities that meet the definition of defense articles under 22 CFR 120.31 of the ITAR, which describes similar commodities ''subject to the ITAR,'' including USML Category XIII.

c. *License requirements and license exception eligibility for 9C515.* This rule proposes adding new ECCN 9C515 to impose appropriate controls under the EAR for this material that would be moved from the USML to the CCL. This material would be controlled for NS1, RS1, and AT1. No list-based license exceptions would be available for this ''material.'' License Exception STA under the paragraph (c)(1) authorization for Country Group A:5 countries would be eligible, but (c)(2) of License Exception STA (§ 740.20(c)(2)) may not be used for any item in 9C515.

3. ECCN 9D515

a. *Addition of 9D515.c.* This proposed rule would add new ECCN 9D515.c to clarify that this software would be within the scope of 9D515. New 9D515.c would specify that Space Situational Awareness (SSA) analysis ''software'' used to model, simulate, optimize, or perform operations involving spacecraft maneuvers, trajectory planning, or debris tracking would be within the scope of this ECCN. The control parameter would include when this ''software'' is incorporated into a ground system, as well as when the ''software'' is incorporated into a ''spacecraft.''

b. *Conforming change.* In ECCN 9D515's List of Items Controlled section under the Related Controls paragraph (1), this rule proposes revising the first sentence to remove the phrase 'enumerated on USML Category XV' and add in its place the phrase 'described in USML Category XV' for consistency with ITAR terminology used to describe the USML. This rule also proposes revising the same sentence to remove the phrase 'is subject to the control of USML paragraph XV(f)' and add in its place a more general reference of 'subject to the ITAR.'

4. ECCN 9E515

This rule proposes revising ECCN 9E515 to add new items paragraphs 9E515.g, .h, and .i to control certain ''technology'' for new 9A515.i, .j, and .k that this rule also proposes adding to ECCN 9A515 as described further under III.A.1.a through .e.

a. *Addition of 9E515.g.* This rule proposes adding a new 9E515.g to control ''technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.i. This would be a necessary conforming change to reflect the proposed new addition of the control parameter under ECCN 9A515.i to ensure that an EAR authorization would be required under NS1, RS1 worldwide except for exports and reexports to Australia, Canada, and the United Kingdom.

b. *Addition of 9E515.h.* This rule proposes adding a new 9E515.h to control ''technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.j. This would be a needed conforming change to reflect the proposed new addition of the control parameter under ECCN 9A515.j to ensure that an EAR authorization would be required under NS1, RS1 worldwide except for exports and reexports to Australia, Canada, and the United Kingdom.

c. *Addition of 9E515.i.* This rule proposes adding a new 9E515.i to control ''technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.k. This would be a needed conforming change to reflect the proposed new addition of the control parameter under ECCN 9A515.k to ensure an EAR authorization would be required under NS1, RS1 worldwide except for exports and reexports to Australia, Canada, and the United Kingdom.

d. *Conforming change.* This rule proposes reserving ''items'' .j through .x to account for the proposed additions of ECCN 9E515.g, .h, and .i.

B. Addition of New License Exception for Commercial Space Activities (CSA)

1. New License Exception CSA

In part 740 (License Exceptions) to the EAR, BIS proposes adding a new license exception under § 740.26 for Commercial Space Activities (CSA) for official space agency programs and space tourism and research. The new License Exception would consist of paragraphs (a) (*Scope*), (b) (*Exclusions*), and (c) (*Authorizations*). Under *Authorizations,* (c)(1) would provide an *authorization for 'official space agency programs'* and (c)(2) would provide an *authorization for Space Tourism and Research.* The State proposed rule published concurrently with this Commerce proposed rule, proposes similar ITAR exemptions for these types of Civil Space Activities specific to defense articles that are subject to the ITAR.

Paragraph (a) (*Scope*) would specify the two types of authorizations that are available to authorize certain 9x5zz and 9A004 items for certain specified commercial space activities. Paragraph (a) would specify that License Exception CSA would authorize under paragraph (c)(1) exports, reexports, and transfers (in-country) of items subject to the EAR and classified in 9x5zz or 9A004 ECCNs for certain 'official space agency programs.' The paragraph (c)(1) authorization would only be available when the export, reexport, or transfer (in-country) is entirely within the scope of an official space agency program identified in paragraph (c)(1)(i) of License Exception CSA, and subject to the exclusions in paragraph (b). License Exception CSA would also authorize under paragraph (c)(2) exports, reexports, and transfers (in-country) of manned spacecraft subject to the EAR and ''parts,'' ''components,'' ''accessories,'' and ''attachments'' subject to the EAR solely for use in or with such spacecraft, provided the requirements under paragraph (c)(2)(i) through (iv) are met, and subject to the exclusions in paragraph (b).

Paragraph (b) would clarify that License Exception CSA is not available for any export, reexport, or transfer (in-country) that is excluded under paragraphs (b)(1), (2), (3), (4), or (5) of License Exception CSA. These exclusions would not allow the use of License Exception CSA when: (1) a ''proscribed person'' (*e.g.,* any entity listed on the Entity List) is a party to the transaction; (2) a license is required under a part 744 end use or end user control; (3) if the export, reexport, or transfer (in-country) is for the purpose of establishing offshore procurement

arrangements or producing any item classified in a 9x515 or 9A004 ECCN offshore; (4) any export or reexport to or transfer (in-country) within a destination listed in Country Groups D:1, D:4, or D:5 in supplement no. 1 to part 740; or (5) the export, reexport, or transfer (in-country) is any radiation-tolerant hardware classified in ECCN 9A515.d or .e or related ''technology.'' These exclusions from the use of License Exception CSA for these specified end users, end uses, and destinations of concern are needed to protect U.S. national security and foreign policy interests.

The proposed paragraph (c)(1) authorization would authorize exports, reexports, and transfers (in-country) of items subject to the EAR for an 'official space agency programs.' The paragraph (c)(1) authorization would also require that the export, reexport, or transfer (in-country) would need to be entirely within the scope of an official space agency program identified in paragraph (c)(1)(i) of License Exception CSA, and subject to the exclusions in paragraph (b). Paragraph (c)(1)(i) (*Eligible 'official space agency programs'*) would specify, for purposes of the paragraph (c)(1) authorization under License Exception CSA, the following programs for formal spacecraft, independent of the launch vehicles that deliver them to orbit, are eligible for License Exception CSA under the paragraph (c)(1) authorization, provided the terms and conditions of paragraph (c)(1) are met: (1) NASA's Lunar Gateway; (2) NASA's Mars Sample Return (a program that entails multiple spacecraft); (3) Nancy Grace Roman Telescope; (4) The Orion spacecraft; (5) Commercial Low Earth Orbit Development program; and (6) Habitable Worlds Observatory. Paragraph (c)(1)(i) would specify that the authorization under paragraph (c)(1) is only available for items that are subject to the EAR that are for an export, reexport, or transfer (in-country), that is entirely within the scope of 'official space agency programs.' This rule proposes including an example in paragraph (c)(1)(i) for the export of an ECCN 9A515.x ''component'' to a space contractor in France that is ''producing'' a higher level assembly that will be for use in NASA's Lunar Gateway program to assist understanding of the types of exports, reexports, or transfers (in-country) that License Exception CSA would authorize under the paragraph (c)(1) authorization.

The proposed paragraph (c)(2) would authorize the export, reexport, or transfer (in-country) of manned spacecraft subject to the EAR classified under ECCNs 9A004 or 9A515 and ''parts,'' ''components,'' ''accessories,'' and ''attachments'' subject to the EAR solely for use in or with such spacecraft, provided the requirements under paragraphs (c)(2)(i) through (iv) for the spacecraft are met and the export, reexport, or transfer (in-country) is not otherwise excluded from the use of License Exception CSA under paragraph (b). This rule proposes requirements under paragraphs (c)(2)(i) through (iv) that would require that the spacecraft must be limited to: (1) suborbital trajectories; (2) the purpose of the activity must be limited to either space tourism or supporting ''fundamental research;'' (3) the activity must not transfer registration, control, or ownership of the spacecraft to a foreign person; (4) the spacecraft's destinations, including planned diverts and contingencies, must be approved by the Federal Aviation Administration (FAA) or its foreign equivalent in all countries; *and* (5) must not include any destinations listed in Country Groups D:5 or E. The requirement under paragraph (c)(2)(iv) that would allow for foreign equivalents, but excludes foreign equivalents of any destination listed in Country Group D:5 or E, would be intended to ensure that a country such as Russia, which is listed in Country Group D:5, could not issue a foreign equivalent that could meet the terms of the paragraph (c)(2)(iv) requirement, even if the export, reexport, or transfer (in-country) was not destined to or within a destination listed in Country Groups D:1, D:4, or D:5.

Because of the burgeoning space tourism and space research industries, providing paragraph (c)(2) of License Exception CSA would provide more efficient authorization for activities of this type that do not raise national security or foreign policy concerns, provided the terms and conditions of using License Exception CSA are followed. BIS welcomes comments on License Exception CSA, in particular whether the requirements in order to use License Exception CSA are clear and meet the objectives described here. BIS estimates these proposed changes to add new License Exception CSA under § 740.26 would result in a decrease of 100 license applications submitted to BIS annually.

2. Conforming Changes

In § 740.2, as a conforming change, this rule proposes adding a new paragraph (a)(5)(i)(G) to specify that proposed License Exception CSA that would be added to § 740.26 of the EAR would be one of the license exceptions that may be used to export MT-controlled items to destinations other than to or within those identified in Country Groups D:4 or D:5 (see supplement no. 1 to part 740 of the EAR). This proposed rule as a conforming change for the addition of new paragraph (a)(5)(i)(G), would also revise paragraph (a)(5)(i)(E) to remove the word 'and' and add in its place a semi-colon, and would revise paragraph (a)(5)(i)(F) to remove the period at the end of the sentence and add a semi-colon in its place and the word 'and' at the end of the paragraph.

Export Control Reform Act of 2018

On August 13, 2018, the President signed into law the John S. McCain National Defense Authorization Act for Fiscal Year 2019, which included ECRA (codified, as amended, at 50 U.S.C. 4801–4852). ECRA provides the legal basis for BIS's principal authorities and serves as the authority under which BIS issues this rule. In particular, and as noted elsewhere, Section 1753 of ECRA (50 U.S.C. 4812) authorizes the regulation of exports, reexports, and transfers (in-country) of items subject to U.S. jurisdiction. Further, Section 1754(a)(1)–(16) of ECRA (50 U.S.C. 4813(a)(1)–(16)) authorizes, inter alia, the establishment of a list of controlled items; the prohibition of unauthorized exports, reexports, and transfers (in-country); the requirement of licenses or other authorizations for exports, reexports, and transfers (in-country) of controlled items; apprising the public of changes in policy, regulations, and procedures; and any other action necessary to carry out ECRA that is not otherwise prohibited by law. Pursuant to Section 1762(a) of ECRA (50 U.S.C.4821(a)), these changes can be imposed in a final rule without prior notice and comment.

Rulemaking Requirements

1. E.O. 12866, 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 and distributive impacts and equity). E.O. 13563 emphasizes the importance of quantifying both costs and benefits and of reducing costs, harmonizing rules, and promoting flexibility. This proposed rule has been designated a ''significant regulatory action'' under E.O. 12866.

2. Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject

to the requirements of the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501, *et seq.*), unless that collection of information displays a currently valid Office of Management and Budget (OMB) Control Number.

This rule involves the following OMB-approved collections of information subject to the PRA:

- 0694–0088, ''Multi-Purpose Application,'' which carries a burden hour estimate of 29.4 minutes for a manual or electronic submission;
- 0694–0096 ''Five Year Records Retention Period,'' which carries a burden hour estimate of less than 1 minute;
- 0694–0122, ''Licensing Responsibilities and Enforcement;'' and
- 0607–0152 ''Automated Export System (AES) Program,'' which carries a burden hour estimate of 3 minutes per electronic submission.

BIS estimates that the changes included in this proposed rule would result in a decrease of 10 multi-purpose applications. This reduction would be attributable to the addition of License Exception CAS, which would result in an estimated decrease of 100 license applications per year and an estimated increase of 90 license applications per year as a result of the proposed movement of additional space-related items from the USML to the CCL, which BIS estimates would result in a net reduction of 10 license applications annually, if this Commerce proposed rule and State proposed rule are published in final form. However, the reduction of burden falls within the existing estimates currently associated with these control numbers.

Additional information regarding these collections of information—including all background materials—can be found at: *https://www.reginfo.gov/public/do/PRAMain* by using the search function to enter either the title of the collection or the OMB Control Number.

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

4. Pursuant to Section 1762 of ECRA (50 U.S.C. 4821), this action is exempt from the Administrative Procedure Act (APA) (5 U.S.C. 553) requirements for notice of proposed rulemaking, opportunity for public participation, and delay in effective date. While section 1762 of ECRA provides sufficient authority for such an exemption, this action is also independently exempt from these APA requirements because it involves a military or foreign affairs function of the United States (5 U.S.C. 553(a)(1)). However, BIS is accepting comments on this proposed rule.

5. Because a notice of proposed rulemaking and an opportunity for public comment are not required to be given for this rule by 5 U.S.C. 553, or by any other law, the analytical requirements of the Regulatory Flexibility Act, 5 U.S.C. 601, *et seq.,* are not applicable. Accordingly, no regulatory flexibility analysis is required, and none has been prepared.

List of Subjects

15 CFR Part 740

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

15 CFR Part 774

Exports, Reporting and recordkeeping requirements.

For the reasons stated in the preamble, parts 740 and 774 of the Export Administration Regulations (15 CFR parts 730 through 774) are proposed to be amended as follows:

PART 740—LICENSE EXCEPTIONS

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

Authority: 50 U.S.C. 4801–4852; 50 U.S.C. 4601 *et seq.;* 50 U.S.C. 1701 *et seq.;* 22 U.S.C. 7201 *et seq.;* E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783.

■ 2. Section 740.2 is amended by:
■ a. Revising paragraphs (a)(5)(i)(E) and (F); and
■ b. Adding paragraph (a)(5)(i)(G).

The revisions and addition read as follows:

§ 740.2 Restrictions on all License Exceptions.

* * * * *

(a) * * *

(5)(i) * * *

(E) License Exception AVS (§ 740.15(b)(1) through (4), (c)(1), (2), (e), and (f) of the EAR);

(F) License Exception APR for (§ 740.16(c) through (f) of the EAR); and

(G) License Exception CSA (§ 740.26 of the EAR).

* * * * *

■ 3. Add § 740.26 to read as follows:

§ 740.26 Commercial Space Activities (CSA).

(a) *Scope.* License Exception CSA authorizes under paragraph (c)(1) of this section exports, reexports, and transfers (in-country) of items subject to the EAR for certain 'official space agency programs,' when the export, reexport, or transfer (in-country) is entirely within the scope of an official space agency program identified in paragraph (c)(1)(i) of this section, and subject to the exclusions in paragraph (b) of this section. License Exception CSA authorizes under paragraph (c)(2) of this section exports, reexports, and transfers (in-country) of manned spacecraft subject to the EAR and ''parts,'' ''components,'' ''accessories,'' and ''attachments'' subject to the EAR solely for use in or with such spacecraft, provided the requirements under paragraph (c)(2)(i) through (iv) of this section are met, and subject to the exclusions in paragraph (b) of this section.

(b) *Exclusions.* License Exception CSA is not available for any export, reexport, or transfer (in-country) that is excluded under paragraphs (b)(1), (2), (3), (4), or (5) of this section.

(1) A ''proscribed person,'' (*e.g.,* any entity listed on the Entity List) is a party to the transaction;

(2) A license is required under a part 744 end use or end-user control;

(3) For purposes of establishing offshore procurement arrangements or producing any item classified in a 9x515 (including 9E515 ''production'' technology) or 9A004 ECCN offshore;

(4) Any export or reexport to or transfer (in-country) within a destination listed in Country Groups D:1, D:4, or D:5 in supplement no. 1 of this part; *or*

(5) Any export, reexport, or transfer (in-country) of any radiation-tolerant hardware classified in ECCN 9A515.d or .e or related ''technology.''

(c) *Authorizations*—(1) *Authorization for 'official space agency programs.'* This paragraph (c)(1) authorizes exports, reexports, and transfers (in-country) of items subject to the EAR for 'official space agency programs,' provided the export, reexport, or transfer (in-country) is entirely within the scope of an official space agency program identified in paragraph (c)(1)(i) of this section, and subject to the exclusions in paragraph (b) of this section.

(i) *Eligible 'official space agency programs.'* For purposes of the authorization under this paragraph (c)(1), the following programs for formal spacecraft, independent of the launch vehicles that deliver them to orbit, are eligible for License Exception CSA under the authorization of this paragraph (c)(1), provided the terms and conditions of this paragraph (c)(1) are met. The authorization under this paragraph (c)(1) is only available for items that are subject to the EAR that are for an export, reexport, or transfer (in-country), that is entirely within the scope of an 'official space agency programs' (*e.g.,* the export of an ECCN 9A515.x ''component'' to a space contractor in France that is ''producing''

a higher level assembly that will be for use in NASA's Lunar Gateway program).

(A) NASA's Lunar Gateway;

(B) NASA's Mars Sample Return (a program that entails multiple spacecraft);

(C) Nancy Grace Roman Telescope;

(D) The Orion spacecraft;

(E) Commercial Low Earth Orbit Development program; *and*

(F) Habitable Worlds Observatory.

(ii) [Reserved]

(2) *Authorization for Space Tourism and Research.* This paragraph (c)(2) authorizes the export, reexport, or transfer (in-country) of manned spacecraft subject to the EAR classified under ECCNs 9A004 or 9A515 and ''parts,'' ''components,'' ''accessories,'' and ''attachments'' subject to the EAR solely for use in or with such spacecraft, provided the requirements under paragraphs (c)(2)(i) through (iv) of this section for the spacecraft are met and the export, reexport, or transfer (in-country) is not otherwise excluded from the use of License Exception CSA under paragraph (b) of this section:

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

(ii) The purpose of the activity must be limited to either space tourism or supporting ''fundamental research;''

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

(iv) The spacecraft's destinations, including planned diverts and contingencies, must be approved by the Federal Aviation Administration or its foreign equivalent in all countries, and must not include any destinations listed in Country Groups D:5 or E.

PART 774—THE COMMERCE CONTROL LIST

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

Authority: 50 U.S.C. 4801–4852; 50 U.S.C. 4601 *et seq.;* 50 U.S.C. 1701 *et seq.;* 10 U.S.C. 8720; 10 U.S.C. 8730(e); 22 U.S.C. 287c, 22 U.S.C. 3201 *et seq.;* 22 U.S.C. 6004; 42 U.S.C. 2139a; 15 U.S.C. 1824; 50 U.S.C. 4305; 22 U.S.C. 7201 *et seq.;* 22 U.S.C. 7210; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783.

■ 5. Supplement no. 1 to part 774 is amended by:

■ a. Revising ECCNs 9A515;

■ b. Adding ECCN 9C515; and

■ c. Revising ECCNs 9D515 and 9E515.

The revisions and addition read as follows:

SUPPLEMENT NO. 1 TO PART 774—THE COMMERCE CONTROL LIST

* * * * *

9A515 ''Spacecraft'' and related commodities, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, RS, MT, AT

Control(s)	*Country chart (see Supp. No. 1 to part 738)*
NS applies to entire entry, except .e, .x, and .y.	NS Column 1.
RS applies to entire entry, except .e, .x, and .y.	RS Column 1.
MT applies to microcircuits in 9A515.d and 9A515.e.2 when ''usable in'' ''missiles'' for protecting ''missiles'' against nuclear effects (*e.g.,* Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects) MT also applies to 9A515.h when the total impulse capacity is equal to or greater than 8.41×10^5 newton seconds.	MT Column 1.
NS applies to 9A515.x ...	NS Column 2.
RS applies to 9A515.e and .x.	RS Column 2.
RS applies to 9A515.y, except to Russia for use in, with, or for the International Space Station (ISS), including launch to the ISS.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry	AT Column 1.

License Requirement Note:

(1) The Commerce Country Chart is not used for determining license requirements for commodities classified in ECCN 9A515.a.1, .a.2, .a.3, .a.4, and .g. See § 742.6(a)(9), which specifies that such commodities are subject to a worldwide license requirement, except to Australia, Canada, and the United Kingdom.

(2) ECCN 9A004.a through .f apply to certain space launch vehicles, spacecraft, spacecraft buses, spacecraft payloads, onboard systems or equipment, and terrestrial equipment. They are listed in ECCN 9A004.a through .f in order to harmonize 9A004 with the Wassenaar Arrangement Dual-Use List, even though the controls for these items are found under ECCN 9A515 and to direct exporters, reexporters, and transferors to see USML Category IV for 9A004.a. See ECCN 9A515 for 9A004.b through .f, and .h. See this ECCN 9A004 for .g, .h, .r, .s, and .u through .y.

List Based License Exceptions (See Part 740 for a Description of All License Exceptions)

LVS: $1500

GBS: N/A

Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for ''spacecraft'' in ECCNs 9A515.a.1, a.2, a.3, or a.4, ''sub-orbital craft,'' or items in 9A515.g, unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for certain 9x515 and ''600 series'' items). (2) License Exception STA may not be used if the ''spacecraft'' controlled in ECCN 9A515.a.1, a.2, a.3, or a.4 contains a separable or removable propulsion system described in USML Category IV(d)(2) or USML Category XV(e)(12)described on the USML and designated MT. (3) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9A515.

List of Items Controlled

Related Controls: Spacecraft, launch vehicles and related articles that are described on the USML, and technical data (including ''software'') directly related thereto, and all services (including training) directly related to the integration of any satellite or spacecraft to a launch vehicle (including both planning and onsite support), or furnishing any assistance (including training) in the launch failure analysis or investigation for items in ECCN 9A515.a, are ''subject to the ITAR.'' All other ''spacecraft,'' as enumerated below and defined in § 772.1, are subject to the controls of this ECCN. See also ECCNs 3A001, 3A002, 3A991, 3A992, 6A002, 6A004, 6A008, and 6A998 for specific ''space-qualified'' items, 7A004 and 7A104 for star trackers, and 9A004 for the International Space Station (ISS), the James Webb Space Telescope (JWST), and ''specially designed'' ''parts'' and ''components'' therefor. See USML Category XI(c) for controls on certain ''Monolithic Microwave Integrated Circuit'' (''MMIC'') amplifiers. See ECCN 9A610.g for pressure suits used for high altitude aircraft.

Related Definitions: 'Microcircuit' means a device in which a number of passive or active elements are considered as indivisibly associated on or within a continuous structure to perform the function of a circuit.

Items:

See ITAR § 126.8(d) for treatment of ''spacecraft'' described in ECCN 9A515 when exported, reexported, or transferred (in-country) with defense articles ''subject to the ITAR'' incorporated in and included as integral parts of the item.

a. ''Spacecraft,'' including satellites, and space vehicles and ''sub-orbital craft'' not described in USML Category XV or described in ECCN 9A004.r, .u or .w, that:

a.1. Have electro-optical remote sensing capabilities and having:

a.1.a. An active (*e.g.,* adaptive, deformable) individual light collecting area of less than 1,020 cm^2 ;

a.1.b. A passive individual light collecting area of less than 2,150 cm^2«

a.1.c. X-ray, not otherwise described in paragraph (e)(2)(i) or (ii) of USML Category XV, with a total effective collecting area less than 3,000 cm^2; *or*

a.1.d. Xray not otherwise described in paragraph (e)(2)(i) or (ii) of USML Category XV, and with a total effective collecting area greater than or equal to 3,000 cm^2 and an angular resolution greater than 30 milliarcseconds.

a.2. Have remote sensing capabilities beyond NIR (*i.e.,* SWIR, MWIR, or LWIR);

a.3. Have radar remote sensing capabilities (*e.g.,* AESA, SAR, or ISAR) having a center frequency equal to or greater than 1.0 GHz, but less than 10.0 GHz and having a bandwidth equal to or greater than 100 MHz, but less than 300 MHz;

a.4. Perform remote proximity on-orbit services to other spacecraft (*e.g.,* docking, delivery, refueling, or servicing), provide life sustaining operations (*e.g.,* space stations, space hotels, outposts, or laboratories), or capture, collect, and remove space debris; or

a.5. Are not described in ECCN 9A515.a.1, .a.2, .a.3, or .a.4.

Note 1 to 9A515.a: *ECCN 9A515.a includes commercial communications satellites, remote sensing satellites, planetary and interplanetary probes, and ''sub-orbital craft,'' not identified in ECCN 9A004 or USML Category XV(a).*

b. Equipment for telemetry, tracking, and control, as follows:

b.1. Ground control systems and training simulators ''specially designed'' for telemetry, tracking, and control of the ''spacecraft'' controlled in paragraphs 9A004.u or 9A515.a;

b.2. Terrestrial equipment ''specially designed'' for ''spacecraft,'' as follows:

b.2.a. Telemetry and telecommand equipment ''specially designed'' for any of the following data processing functions:

b.2.a.1. Telemetry data processing of frame synchronization and error corrections, for monitoring of operational status (also known as health and safe status) of the ''spacecraft bus;'' *or*

b.2.a.2. Command data processing for formatting command data being sent to the ''spacecraft'' to control the ''spacecraft bus;''

b.2.b. [Reserved]

b.3. Simulators ''specially designed'' for 'verification of operational procedures' of ''spacecraft.''

Technical Note: *For the purposes of 9A515.b.3, 'verification of operational procedures' is any of the following:*

1. Command sequence confirmation;

2. Operational training;

3. Operational rehearsals; or

4. Operational analysis.

c. [Reserved]

d. Microelectronic circuits (*e.g.,* integrated circuits, microcircuits, or MOSFETs) and discrete electronic components rated, certified, or otherwise specified or described as meeting or exceeding all the following characteristics and that are ''specially designed'' for defense articles, ''600 series'' items, or items controlled by ECCNs 9A004.v or 9A515:

d.1. A total dose of 5×10^5 Rads (Si) (5×10^3 Gy (Si));

d.2. A dose rate upset threshold of 5×10^8 Rads (Si)/sec (5×10^6 Gy (Si)/sec);

d.3. A neutron dose of 1×10^{14} n/cm^2 (1 MeV equivalent);

d.4. An uncorrected single event upset sensitivity of 1×10^{-10} errors/bit/day or less, for the CREME–MC geosynchronous orbit, Solar Minimum Environment for heavy ion flux; and

d.5. An uncorrected single event upset sensitivity of 1×10^{-10} errors/part or less for a fluence of 1×10^7 protons/cm^2 for proton energy greater than 50 MeV.

e. Microelectronic circuits (*e.g.,* integrated circuits, microcircuits, or MOSFETs) and discrete electronic components that are rated, certified, or otherwise specified or described as meeting or exceeding the characteristics in either paragraph e.1 or e.2, AND ''specially designed'' for defense articles described in USML Category XV or items controlled by ECCNs 9A004.u or 9A515:

e.1. A total dose $\geq 1 \times 10^5$ Rads (Si) (1×10^3 Gy(Si)) and $< 5 \times 10^5$ Rads (Si) (5×10^3 Gy(Si)); and a single event effect (SEE) (*i.e.,* single event latchup (SEL), single event burnout (SEB), or single event gate rupture (SEGR)) immunity to a linear energy transfer (LET) ≥80 MeV-cm^2/mg; *or*

e.2. A total dose $\geq 5 \times 10^5$ Rads (Si) (5×10^3 Gy (Si)) and not described in 9A515.d.

Note 2 to 9A515.d and .e: *See USML Category XI for military electronics. See 3A611.f for PLDs and ASICs programmed for 600 series items.*

Note 3 to 9A515.d and .e: *See 3A001.a and .z for controls on radiation-hardened microelectronic circuits ''subject to the EAR'' that are not controlled by 9A515.d or 9A515.e.*

f. Pressure suits (*i.e.,* space suits) capable of operating at altitudes greater than or equal to 55,000 ft above sea level.

g. Remote sensing components ''specially designed'' for ''spacecraft'' described in ECCNs 9A515.a.1 through 9A515.a.4 as follows:

g.1. Space-qualified optics (*i.e.,* lens, mirror, membrane having active properties (*e.g.,* adaptive, deformable)) with a largest individual light collecting or focusing area less than 1,020 cm^2; or passive optics with a largest individual light collecting area between 1,020 cm^2 and 2,150 cm^2; or Xray grazing incidence optics with a total surface area (shells/segments) of less than 25,000 cm^2; or an effective collecting area less than 3,000 cm^2;

g.2. Optical bench assemblies ''specially designed'' for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 ''spacecraft;'' *or*

g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 ''spacecraft.''

h. Thrusters using bi-propellants or mono-propellants that provide thrust equal to or less than 150 lbf (*i.e.,* 667.23 N) vacuum thrust.

i. Electric (Plasma/Ion) thrusters and their associated power control systems operating at in input power of less than 20kW and having an individual thrust of at least 400 mN but not also having a specific impulse better than 1,900 sec.

j. Control moment gyroscopes (CMG) ''specially designed'' for spacecraft that provide an angular momentum of less than 2.0 (N m sec) or provide a torque of less than Newton meters (N m).

Note 4 to 9A515.j: *If a CMG has 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 it is subject to USML Category XV(e)(13).*

k. Hold-down, or satellite release mechanisms (*i.e.,* clampbands, adapters, dispensers, or motorized lightbands), not described by USML Category IV(e)(5), excluding those for 1U CubeSats or less.

l. through v. [RESERVED]

w. ''Parts,'' ''components,'' ''accessories,'' and ''attachments'' that would otherwise be within the scope of ECCN 9A515.x but that have been identified by the interagency as warranting control in 9A515.w, as follows:

w.1. [Reserved]

x. ''Parts,'' ''components,'' ''accessories'' and ''attachments'' that are ''specially designed'' for defense articles described in USML Category XV or items controlled by 9A515, and that are NOT:

x.1. Described on the USML or elsewhere within ECCNs 9A515 or 9A004;

x.2. Microelectronic circuits and discrete electronic components;

x.3. Described in ECCNs 7A004 or 7A104;

x.4. Described in an ECCN containing ''space-qualified'' as a control criterion (*i.e.,* 3A001.b.1, 3A001.e.4 or .z, 3A002.g.1, 3A991.o, 3A992.b.3, 6A002.a.1, 6A002.b.2, 6A002.d.1, 6A004.c and .d, 6A008.j.1, 6A998.b, or 7A003.d.2);

x.5. Microwave solid state amplifiers and microwave assemblies (refer to ECCN 3A001.b.4 and .z for controls on these items);

x.6. Travelling wave tube amplifiers (refer to ECCN 3A001.b.8 and .z for controls on these items); *or*

x.7. Elsewhere specified in ECCN 9A515.y.

Note 5 to 9A515.x: *''Parts,'' ''components,'' ''accessories,'' and ''attachments'' described on the USML, either in Category XV(e) or elsewhere, are subject to the ITAR.*

Note 6 to 9A515.b and .x: *This note clarifies the scope of controls over baseband units (BBU). For purposes of 9A515.b and .x, a BBU means a device that interprets the original frequency range of a transmission signal. These devices are not controlled under 9A515.b or .x when they do not perform telemetry, track, and control.*

y. Items that would otherwise be within the scope of ECCN 9A515.x but that have been identified in an interagency-cleared commodity classification (CCATS) pursuant to § 748.3(e) as warranting control in 9A515.y, as follows:

y.1. Discrete electronic components not specified in 9A515.e;

y.2. Thermistors for spacecraft applications;

y.3. RF microwave bandpass ceramic filters (*e.g.,* Dielectric Resonator Bandpass Filters);

y.4. Hall effect sensors for spacecraft applications;

y.5. Subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors for spacecraft applications;

y.6. Flight cable assemblies for spacecraft applications;

y.7. Public address (PA) systems;

y.8. Audio selector panels;

y.9. Spacecraft crew, passenger, or participant lavatories and body waste management systems;

y.10. Spacecraft crew, passenger, or participant hygiene facilities and systems;

y.11. Spacecraft crew, passenger, or participant crew rest equipment or sleeping quarters;

y.12. Spacecraft crew, passenger, or participant galleys or food preparation or serving systems;

y.13. Spacecraft crew, passenger, or participant entertainment systems;
y.14. Spacecraft crew, passenger, or participant exercise systems;
y.15. Spacecraft crew, passenger, or participant laundry systems;
y.16. Spacecraft crew, passenger, or participant safety systems, not including launch abort systems/launch escape systems, ejector seats, spacesuits, flight suits, helmets, or ''parts'' and ''components'' therefor;
y.17. Spacecraft crew, passenger, or participant storage units, facilities, or systems (for items related to human safety, welfare, and health);
y.18. Spacecraft crew, passenger, or participant medical facilities or health-related systems for monitoring, evaluating, or assessing, or for providing treatments;
y.19. Spacecraft crew, passenger, or participant information systems (*e.g.,* personal laptops and phones);
y.20. Name plates, identification plates, and identification systems;
y.21. Internal, external, and emergency lighting systems;
y.22. Humidity and CO2 removal systems;
y.23. Potable water storage systems;
y.24. Water regeneration systems;
y.25. Air filters, filter networks, or air quality systems;
y.26. Space heaters, temperature sensors, or thermostats for human habitation;
y.27. Environmental control systems for human habitation;
y.28. Spacecraft environmental control systems (*e.g.,* air conditioner, air distribution, air filtration and sanitation, CO2 removal, cabin pressure control, dehumidifier, fire suppression system, nitrogen oxygen recharge system, heater systems, thermostats);
y.29. Plant growth systems;
y.30. Fire extinguishers;
y.31. Flame, smoke, or CO2 detectors;
y.32. Fire suppression systems;
y.33. Spacecraft crew, passenger, or participant seats, other than ejection seats, and ''parts'' and ''components;''
y.34. Spaceflight crew, passenger, or participant ejection seat mounted survival aids;
y.35. Spaceflight crew, passenger, or participant life rafts;
y.36. Spacecraft crew, passenger, or participant locator beacons;
y.37. Spacecraft crew, passenger, or participant mirrors;
y.38. Spacecraft crew, passenger, or participant windows;
y.39. Spacecraft locator beacons;
y.40. Viewing windows on non-crewed spacecraft;
y.41. Temperature sensors and pressure transducers;
y.42. Thermal control pumps, accumulators, fluid filters and filter assemblies, control valves, heat exchangers, and radiators;
y.43. Hydraulic, pneumatic, oil, fuel, gas, propellant, fluid, and thermal control fluid reservoirs, filters, filter assemblies, tubing, lines, hoses, check valves, and quick disconnects, and associated fittings, couplings, clamps, brackets, adapters, valves, gaskets, shims, and o-rings;
y.44. Gauges and indicators;
y.45. Filtered and unfiltered panel knobs, indicators, annunciator panels, switches, buttons and dials;
y.46. Spacecraft tires and brake systems (does not include sintered mix or carbon/carbon materials);
y.47. Bearings (*e.g.,* Ball, roller, wheel);
y.48. Energy dissipating pads for cargo or crew;
y.49. Spacecraft bus structures;
y.50. Bracket adapters for bus and payload structures;
y.51. Latches and hinges;
y.52. Boom assemblies;
y.53. Cables, cable assemblies, and connectors;
y.54. Batteries and associated battery management circuitry;
y.55. Germanium coated polyimide tapes (*e.g.,* Kapton tape);
y.56. Multiplexors and Demultiplexors (MUX & DEMUX);
y.57. Switches, switch bank assemblies, beam select switches, transfer switch assemblies, switch matrices, thermal switches;
y.58. Magnetic torque bars;
y.59. Filters, filter networks;
y.60. Network switches;
y.61. Reflectors, antennas;
y.62. Antenna feed horns;
y.63. Diplexers, modulators, demodulators;
y.64. Second surface mirrors;
y.65. Backshells, pins and contacts;
y.66. Measurement devices;
y.67. Electrical power distribution and control units;
y.68. Electrical connectors;
y.69. Non-propulsive landing systems (*e.g.,* skids, inflatable);
y.70. Electric fans;
y.71. Microphones;
y.72. Speakers;
y.73. Circuit breakers; *and*
y.74. Printed circuit boards ''specially designed'' for items classified under 9A515.y

Note 7 to 9A515: An item operating on any celestial body other than Earth is treated as if it is on Earth for classification purposes on the CCL.

Note 8 to 9A515: Rovers and in-space habitats are not classified under ECCN 9A515.

* * * * *

9C515 MATERIALS, COATINGS, TREATMENTS FOR REDUCING IN-ORBIT SIGNATURES (*i.e.,* RADAR, OPTICAL, ULTRAVIOLET, AND INFRARED) OF SPACECRAFT SUCH AS BLANKETS, FILMS, TAPES, AND PAINTS (SEE LIST OF ITEMS CONTROLLED).

License Requirements

Reason for Control: NS, RS, AT

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

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

LVS: N/A
GBS: N/A

Special Conditions for STA

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9C515.

List of Items Controlled

Related Controls: N/A
Related Definitions: N/A
Items:

a. Materials, coatings, treatments for reducing in-orbit signatures (*i.e.,* radar, optical, ultraviolet, and infrared) of spacecraft, not described by USML Categories XIII(j) or XV(e)(22), such as blankets, films, tapes, and paints with either of the following characteristics:

a.1. Designed to reduce radar, ultra-violet, & infrared signature by 20% or more, *or*

a.2. Designed to reduce optical signature by 50% or more.

Note 1 to 9C515:

(1) Materials controlled by this entry include structural materials and coatings (including paints), ''*specially designed*'' *for reduced or tailored reflectivity or emissivity in the microwave, infrared or ultraviolet spectra.*

(2) This entry does not control materials used for the purpose of reducing brightness from the ground.

(3) For commodities that meet the definition of defense articles under 22 CFR 120.3 of the International Traffic in Arms Regulations (ITAR), which describes similar commodities ''*subject to the ITAR*'' *(See 22 CFR parts 120 through 130, including USML Category XIII).*

* * * * *

9D515 ''Software'' ''specially designed'' for the ''development,'' ''production,'' operation, installation, maintenance, repair, overhaul, or refurbishing of ''spacecraft'' and related commodities, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, RS, AT

Control(s)	*Country chart (See Supp. No. 1 to part 738)*
NS applies to entire entry except 9D515.c, .x, and .y.	NS Column 1.
RS applies to entire entry except 9D515.c, .x, and .y.	RS Column 1.
NS applies to 9D515.c and .x.	NS Column 2.
RS applies to 9D515.c and .x.	RS Column 2.
RS applies to 9D515.y, except to Russia for use in, with, or for the International Space Station (ISS), including launch to the ISS.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry	AT Column 1.

List Based License Exceptions (See Part 740 for a Description of All License Exceptions)

TSR: N/A

Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR)

may not be used for 9D515.b, .d, or .e. (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any ''software'' in 9D515.

List of Items Controlled

Related Controls: (1) ''Software'' directly related to articles described in USML Category XV is subject to the ITAR. (2) See also ECCNs 3D001, 6D001, 6D002, and 6D991 for controls of specific ''software'' ''specially designed'' for certain ''space-qualified'' items. (3) For ''software'' for items listed in 9A004.d that are incorporated into ''spacecraft payloads,'' see the appropriate ''software'' ECCN within those Categories.

Related Definitions: N/A

Items:

a. ''Software'' (other than ''software'' controlled in paragraphs .b, .d, or .e of this entry) ''specially designed'' for the ''development,'' ''production,'' operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 9A515 (except 9A515.d or .e) or 9B515.

b. ''Source code'' that:

b.1. Contains the algorithms or control principles (*e.g.,* for clock management), precise orbit determination (*e.g.,* for ephemeris or pseudo range analysis), signal construct (*e.g.,* pseudo-random noise (PRN) anti-spoofing) ''specially designed'' for items controlled by ECCN 9A515;

b.2. Is ''specially designed'' for the integration, operation, or control of items controlled by ECCN 9A515;

b.3. Contains algorithms or modules ''specially designed'' for system, subsystem, component, part, or accessory calibration, manipulation, or control of items controlled by ECCN 9A515;

b.4. Is ''specially designed'' for data assemblage, extrapolation, or manipulation of items controlled by ECCN 9A515;

b.5. Contains the algorithms or control laws ''specially designed'' for attitude, position, or flight control of items controlled in ECCN 9A515; *or*

b.6. Is ''specially designed ''for built-in test and diagnostics for items controlled by ECCN 9A515.

c. Space Situational Awareness (SSA) analysis ''software'' used to model, simulate, optimize, or perform operations involving spacecraft maneuvers, trajectory planning, or debris tracking.

d. ''Software'' ''specially designed'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.d.

e. ''Software'' ''specially designed'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.e.

f. through w. [Reserved]

x. ''Software'' ''specially designed'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.x.

y. Specific ''software'' ''specially designed'' for the ''development,'' ''production,'' operation, or maintenance of commodities enumerated in ECCN 9A515.y.

* * * * *

9E515 ''Technology'' ''required'' for the ''development,'' ''production,'' operation, installation, repair, overhaul, or refurbishing of ''spacecraft'' and related commodities, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, RS, AT

Control(s)	*Country chart (see Supp. No. 1 to part 738)*
NS applies to entire entry except 9E515.x and .y.	NS Column 1.
MT applies to technology for items in 9A515.d, .e.2, and .h, and 9B515.a controlled for MT reasons.	MT Column 1.
NS applies to 9E515.x ...	NS Column 2.
RS applies to 9E515.x ...	RS Column 2.
RS applies to 9E515.y, except to Russia for use in, with, or for the International Space Station (ISS), including launch to the ISS.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry	AT Column 1.

License Requirement Note: *The Commerce Country Chart is not used for determining license requirements for ''technology'' classified ECCN 9E515.f. See § 742.6(a)(9), which specifies that such ''technology'' is subject to a worldwide license requirement, except to Australia, Canada, and the United Kingdom.*

List Based License Exceptions (See Part 740 for a Description of All License Exceptions)

TSR: N/A

Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for ECCN 9E515.b, .d, .e, or .f unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for certain 9x515 and ''600 series'' items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any ''technology'' in 9E515.

List of Items Controlled

Related Controls: Technical data directly related to articles described in USML Category XV are subject to the ITAR. See also ECCNs 3E001, 3E003, 6E001, and 6E002 for specific ''space-qualified'' items. See ECCNs 9E001 and 9E002 for technology for the International Space Station, the James Webb Space Telescope (JWST) and ''parts,'' ''components,'' ''accessories,'' and ''attachments'' ''specially designed'' therefor. See USML Category XV(f) for controls on technical data and defense services related to launch vehicle integration.

Related Definitions: N/A

Items:

a. ''Technology'' ''required'' for the ''development,'' ''production,'' installation, repair (including on-orbit anomaly resolution and analysis beyond established procedures), overhaul, or refurbishing of commodities controlled by ECCN 9A515 (except 9A515.a.1, a.2, a.3, a.4, .b, .d, .e, or .g), ECCN 9B515, or ''software'' controlled by ECCN 9D515.a.

b. ''Technology'' ''required'' for the ''development,'' ''production,'' failure analysis or anomaly resolution of software controlled by ECCN 9D515.b.

c. [Reserved]

d. ''Technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.d.

e. ''Technology'' ''required'' for the ''development,'' ''production,'' failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.e.

f. ''Technology'' ''required'' for the ''development,'' ''production,'' installation, repair (including on-orbit anomaly resolution and analysis beyond established procedures), overhaul, or refurbishing of commodities controlled by ECCN 9A515.a.1, a.2, a.3, a.4, or .g.

g. ''Technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.i.

h. ''Technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.j.

i. ''Technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.k.

j. through w. [Reserved]

x. ''Technology'' ''required'' for the ''development,'' ''production,'' operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.x.

y. Specific ''technology'' ''required'' for the ''production,'' ''development,'' operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software enumerated in ECCN 9A515.y or 9D515.y.

Note 1 to 9E515: *[Reserved]*

Note 2 to 9E515: *Human spaceflight preparation activities directly related to, or required for the following, are not subject to the ITAR or the EAR:*

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

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

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

(iv) 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;

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

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

(vii) Training in ''spacecraft'' or terrestrial mock-ups for connecting to or operating passenger or participant equipment used for purposes other than operating the ''spacecraft;'' or

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

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Thea D. Rozman Kendler,

Assistant Secretary for Export Administration.

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