

DEPARTMENT OF COMMERCE**Bureau of Industry and Security**

15 CFR Parts 732, 734, 736, 740, 742, 744, 746, 748, 758, 770, 772, and 774

[Docket No. 231013–0248]

RIN 0694–AI94

Implementation of Additional Export Controls: Certain Advanced Computing Items; Supercomputer and Semiconductor End Use; Updates and Corrections

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

ACTION: Interim final rule; request for comments.

SUMMARY: On October 7, 2022, the Bureau of Industry and Security (BIS) released the interim final rule (IFR), “Implementation of Additional Export Controls: Certain Advanced Computing and Semiconductor Manufacturing Items; Supercomputer and Semiconductor End Use; Entity List Modification” (October 7 IFR), which amended the Export Administration Regulations (EAR) to implement controls on advanced computing integrated circuits (ICs), computer commodities that contain such ICs, and certain semiconductor manufacturing items, and to make other EAR changes to implement appropriate related controls, including on certain “U.S. person” activities. This Advanced Computing/Supercomputing IFR (AC/S IFR) addresses comments received in response to only the part of the October 7 IFR that controls advanced computing ICs and computer commodities that contain such ICs. This rule also makes other changes to make the controls more effective and less burdensome, including by correcting and clarifying the controls to more effectively achieve the policy objectives identified in the October 7 IFR. This AC/S IFR is published concurrently with a second BIS IFR, “Export Controls on Semiconductor Manufacturing Items,” which addresses public comments received in response to other portions of the October 7 IFR. Together, these IFRs revise the October 7 IFR controls to more effectively achieve BIS’s focused national security policy objectives. These revisions protect U.S. national security interests by further restricting China’s ability to obtain critical technologies to modernize its military capabilities in ways that threaten the national security interests of the United States and its allies.

DATES: This rule is effective November 17, 2023, except for amendatory instruction 11 amending supplement no. 1 to part 736 of the EAR, which is effective from November 17, 2023, to January 1, 2026.

Comments must be received by BIS no later than December 18, 2023.

ADDRESSES: Comments on this rule may be submitted to the Federal rulemaking portal (www.regulations.gov). The [regulations.gov](http://www.regulations.gov) ID for this rule is: BIS–2022–0025. Please refer to RIN 0694–AI94 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 through <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 questions on the license requirements in the October 7 IFR or the revisions included in this AC/S IFR, contact Aaron Amundson, Director, Information Technology Controls Division, Bureau of Industry and Security, Department of Commerce, Phone: (202) 482–5299, Email: rp2@bis.doc.gov. For emails, include “Advanced computing controls” in the subject line.

SUPPLEMENTARY INFORMATION:

Background**A. Introduction**

On October 7, 2022, BIS released the interim final rule (IFR), “Implementation of Additional Export Controls: Certain Advanced Computing and Semiconductor Manufacturing Items; Supercomputer and Semiconductor End Use; Entity List Modification,” which made critical changes to the Export Administration Regulations (15 CFR parts 730–774) (EAR) in two areas to address U.S. national security concerns and requested public comments on the newly imposed measures. This IFR was published in the **Federal Register** on October 13, 2022 (October 7 IFR) (87 FR 62186). BIS imposed these new controls to protect U.S. national security interests by restricting certain exports to China that would advance China’s military modernization and surveillance efforts. With a calibrated approach, focused on key, cutting-edge technologies, BIS also sought not to undercut U.S. technology leadership or unduly interfere with commercial trade. As noted in the Export Control Reform Act of 2018 (50 U.S.C. 4801–4852, ECRA), the national security of the United States requires that the United States maintain its leadership in the science, technology, engineering, and manufacturing sectors, including technology that is essential to innovation.

The advanced computing ICs and supercomputing capacity controlled through the October 7 IFR are critical for preventing or limiting the further development of weapons of mass destruction, advanced weapons systems, and high-tech surveillance applications that create national security concerns, including through their use in exascale supercomputing, and artificial intelligence (AI) capabilities. Advanced AI models, trained on advanced computing ICs, can be used to improve the design and use of the items listed above. The PRC seeks to use advanced computing ICs and supercomputing capacity in the development and deployment of these AI models to further its goal of surpassing the military capabilities of the United States and its allies.

The October 7 IFR imposed controls on two sets of items and activities. First, the rule established new Export Control Classification Numbers (ECCNs) and end-use controls on certain advanced computing ICs, computer commodities that contain such ICs, and supercomputers. Second, it established a new ECCN for certain semiconductor manufacturing equipment (SME) and

end-use controls related to the “development” and “production” of three types of “advanced-node ICs,” as well as end-use controls on the “development” and “production” of SME.

Today, BIS addresses these two issues separately through publication of this AC/S IFR and a second BIS IFR, “Export Controls on Semiconductor Manufacturing Items” (SME IFR). Together, these IFRs further advance the U.S. national security objectives identified above and further discussed in section C of this rule. This AC/S IFR focuses on the advanced computing controls and related end use provisions of the October 7 IFR and amends the EAR to expand the scope of the October 7 IFR while responding to comments from stakeholders about the advanced computing controls and related end use controls adopted in the October 7 IFR. This AC/S IFR: (1) revises ECCN 3A090 to remove paragraph a, including paragraphs a.1 through a.4, and adds in its place simplified control paragraphs .a and .b, along with a conforming change to ECCN 3A991.p; (2) replaces the criterion “any other item on CCL that meet or exceed the performance parameters of 3A090 or 4A090” by positively identifying those ECCNs in new .z paragraphs in nine ECCNs, along with various conforming changes related to the new .z paragraphs in other parts of the EAR; (3) clarifies the scope of “U.S. person” and end-use controls related to supercomputers and advanced computing items; (4) makes ECCNs 3A991.p and 4A994.l eligible for License Exception Consumer Communication Devices (CCD, 15 CFR 740.19); (5) expands the Regional Stability (RS) license requirements and amends the RS licensing policy to adopt an additional case-by-case license review policy for certain RS items and adopts a presumption of approval for license applications for destinations other than Macau and Country Group D:5, except for items destined to an entity headquartered in or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5 and with licenses for items destined to Macau and Country Group D:5 being reviewed under a presumption of denial license review policy; (6) broadens the country scope for these controls, with respect to the items controlled for RS reasons as well as the advanced computing Foreign Direct Product (FDP) rule and advanced computing provisions in § 744.23, to destinations specified in Country Groups D:1, D:4, and D:5 in supplement no. 1 to part 740

that are not also specified in Country Groups A:5 or A:6, and with respect to the supercomputer and advanced-node integrated circuit § 744.23 provisions, broadens the country scope from China and Macau to Macau and destinations in Country Group D:5; (7) clarifies that the model certificate published in the October 7 IFR may be used for all FDP rules; (8) adds five new red flags to assist with compliance, including for recognizing “direct products” under the FDP rules; (9) adds one new Temporary General License (TGL); (10) creates a new license exception for Notified Advanced Computing (NAC); and (11) makes other corrections and clarifications.

B. Public Comments and BIS’s Responses

BIS received 43 responsive public comments, covering 78 specific topics, in response to the October 7 IFR. This rule summarizes and addresses comments on the advanced computing provisions, as well as general comments applicable to all aspects of the October 7 IFR that are not otherwise addressed in this SME IFR. BIS appreciates the many public comments it received, and encourages continued engagement and feedback, including comments on the SME and AC/S IFRs which allow for a 60-day comment period and, for most provisions, a 30-day delayed effective date.

Complexity and Compliance Burden

Topic 1: A commenter noted that the October 7 IFR is so complex that only a small group of people with significant expertise in the EAR and semiconductors can fully understand the rulemaking. This commenter noted that many small and medium enterprises, or even large foreign multinationals, not highly versed in these details will either not know if they are following the rule, or out of an abundance of caution, “over-comply” by restricting legitimate exports and trade not otherwise subject to these rules. Another commenter noted that ensuring compliance will result in dramatic increases in compliance-related costs and associated burdens. This commenter noted that the number of specific components, other commodities, software, and technology affected by the new rules is in the tens of millions, and each item requires marking, analysis, or other handling to ensure compliance. Another commenter noted that this complexity may result in misunderstandings and non-compliance, so simpler controls are more effective in furthering BIS’s objectives.

BIS response: BIS does not agree that the rules are so complex that only a handful of people with expertise will be able to understand the controls. Nevertheless, BIS is revising the October 7 IFR to facilitate the public’s understanding of the IFR and to simplify the provisions, *e.g.*, changing the text of ECCN 3A090 to simplify the calculations required. BIS has taken into account the commenters’ concerns over increases in compliance-related controls and associated burdens and made changes in this AC/S IFR to make the controls more focused, which should help reduce these burdens and compliance costs where possible. In addition, Section C.10 discusses changes to enhance compliance, including the addition of five new red flags to assist with compliance. BIS has conducted a robust outreach program and posted FAQs on the October 7 IFR to assist public understanding. Reducing complexity and improving clarity are also two key objectives of this AC/S IFR and the SME IFR.

Topic 2: A member of Congress noted that they had been told by one of their constituents that the October 7 IFR is overly broad in its current form and will damage and disrupt both American industry and global semiconductor supply chains by excluding basic U.S. products that are not subject to specific export controls. This commenter has also been assured by their constituent that the resulting vacuum will be filled by foreign-produced products, including those made in China. This member of Congress shares BIS’s stated goal of protecting “critical U.S. national security and foreign policy interests.” However, this member of Congress believes that we must ensure these regulations are focused and do not extend beyond their intended national security objectives.

BIS response: BIS shares concerns about imposing unilateral controls that create an unlevel playing field for U.S. products and companies. BIS intends the controls to be as focused as possible, while at the same time achieving U.S. national security and foreign policy objectives. One example is adding .z paragraphs to nine ECCNs in order to replace the broad regional stability control for all items that contain “advanced-node ICs,” see discussion in Section C.3.A. BIS is adopting additional changes to better achieve these objectives in this AC/S IFR and in the SME IFR.

Dialogue With Industry for the October 7 IFR, Taking Into Account Potential Burden to Industry, Unintended Consequences, and Economic Impacts

Topic 3: Some commenters noted that taking time to have meaningful engagement with industry will help head off unintended consequences. These commenters noted that while there will be emergencies that require swift action without time for industry consultation, the U.S. government, and particularly BIS, should endeavor to conduct meaningful engagement with industry and relevant Technical Advisory Committees (TACs) whenever possible. These commenters emphasized it is critical that BIS prioritize and meaningfully leverage this engagement when a rule of this breadth and complexity is under consideration, including prior to publishing a final rule for the October 7 IFR. These commenters noted that given the complexity of the October 7 IFR and the global supply chain, BIS should conduct in-depth consultations with industry experts—both in semiconductor companies and more broadly in industries that incorporate semiconductors—in advance of releasing a final rule. Another commenter noted that the economic analysis that needs to be done for the impact of this October 7 IFR and similar rules requires industry input.

BIS response: BIS agrees that having meaningful engagement with industry through the BIS TACs and soliciting public comments prior to implementing controls is beneficial for the agency as well as the private sector and can reduce unintended consequences. BIS also agrees that it is important to obtain input on the economic impact of export controls. BIS's primary objective is protecting U.S. national security and foreign policy interests, so at times the agency must act quickly and decisively to ensure those national security and foreign policy interests are protected. For the October 7 IFR, BIS did consult with its TACs, but the national security and foreign policy concerns at stake required that controls be put in place expeditiously. Because BIS was aware that there may be some unintended impacts from the October 7 IFR, BIS published the October 7 IFR as an interim final rule with a request for comments, which allowed for BIS in this AC/S IFR and SME IFR to make additional changes to the control structure and address some of those unintended consequences. Since the rule was published, BIS has engaged extensively with its TACs to revise the control parameters of ECCN 3A090.

Topic 4: A commenter noted that longer delayed effective dates would ease company confusion and help improve compliance. This commenter suggested that BIS consider implementing such rules in the future with a delayed implementation period to allow for industry to study the rules and implement effective compliance programs. This approach would have significantly avoided the unintended confusion that this new complex rule created. One commenter noted that BIS would have benefitted from having more time to consider the October 7 IFR prior to publication and noted that based on this commenter's interactions with BIS shortly after the October 7 IFR was published, BIS did not seem ready to advise the public on its own rule.

BIS response: In this AC/S IFR and SME IFR, BIS is adopting a 30-day delayed effective date, except as noted in the AC/S IFR and SME IFR where a sooner effective date is warranted. BIS agrees that longer delayed effective dates can ease confusion by companies and help improve compliance, but BIS also needs to account for the national security and foreign policy concerns it is addressing. An extended delayed effective date can undermine those national security and foreign policy concerns. For example, a six-month delayed effective date for the October 7 IFR would have provided additional time for outreach and for companies to adjust to the controls, but that six month delay would have also allowed end users in China substantial time to acquire key pieces of SME needed to help them achieve advanced nodes of semiconductor fabrication and to stockpile various "parts" and "components" needed for future development of supercomputers. BIS acted expeditiously in imposing controls because of national security and foreign policy concerns. In addition, to better enable compliance and understanding of the rule, the agency provided FAQs to the public (which were updated as needed), conducted a public hour-long briefing on the rule by BIS leadership the day of publication, and extended the public comment period for the October 7 IFR to enable industry to raise concerns for the agency's consideration. To ensure BIS was providing fulsome public guidance, the agency also held internal training for staff responsible for primary public interactions. BIS takes this type of deliberative approach to ensure, as much as possible, that there is consistency and accuracy in the responses being given to the public.

Topic 5: A commenter noted that in the past, BIS had sought industry input

prior to publishing rules and should return to that practice. This commenter noted that until recent years, it had been the long-standing practice for BIS to obtain technical and other inputs from both the public and the TACs before publishing rules (other than those implementing new controls agreed to with the multilateral regimes) given that there is much about commercial supply chains, technologies, and economics that the U.S. Government does not fully understand.

BIS response: This commenter may be referring to agency practice during Export Control Reform (ECR), during which the Departments of Commerce and State generally published related rules on a proposed basis. At that time, the items that were being proposed to be moved to the EAR were already controlled under the ITAR, so there was not the same urgent national security imperative as was present with the October 7 IFR. Before that time, the vast majority of BIS's rules were published *as direct* final or interim final rules. Accordingly, the commenter is not correct that recently BIS has deviated from past precedent. Since ECR, BIS has continued to publish notices and proposed rules, such as with the Section 1758 rules (other than those implementing multilateral agreements). When BIS has needed to quickly implement controls for national security or foreign policy reasons, BIS has published interim final rules with requests for public comment to gain public input while simultaneously allowing the agency to impose needed controls, and if necessary, amend those controls in response to public comment, as BIS is doing in this AC/S IFR. The imposition of controls without first issuing a proposed rule is consistent with BIS's statutory authority in ECRA, enacted in 2018, and is thus another distinction from rules promulgated before 2018.

Other Ways That BIS Can Consult With Industry To Better Improve the Effectiveness of Policies in This Area

Topic 6: A commenter requested that BIS should publish, or at least make available for TAC review, the policy justifications for current Category 3 and 4 controls. BIS is increasingly asking industry for input on significant new controls related to semiconductors and associated technology in Categories 3 and 4 and to provide effective feedback and assessment, and it would be helpful to understand the specific policy rationale for new and existing control classifications. Another commenter requested if required by Congress or other parties to publicly release

licensing data surrounding the October 7 IFR, that BIS should strive to provide the most complete data possible, while still protecting confidential business information. This commenter requested that the data should include statistics on licenses that (i) are still pending review, (ii) received an “intent to deny” response, (iii) were “returned without action,” and (iv) issued with restrictive conditions. The data on approvals and denials should also be connected to what the licensing policy is for such items and when those licensing policies were created.

BIS response: This comment is somewhat outside the scope of the October 7 IFR, but BIS is addressing it given its relevance to overall controls. BIS understands the commenter’s intent by asking for this type of engagement with the TACs. BIS does attempt to share background information on how controls developed over the years as well as the basis and policy goals of those controls with the BIS TACs, particularly during closed TAC sessions. BIS subject matter experts and its TACs are also encouraged to take a fresh look at the controls on a regular basis regardless of what the original rationale may have been for imposing controls. Similarly, whether in response to a proposed rule or IFR, the agency seeks the public’s input on controls so that the public can help assess whether policy goals are being met. BIS has made every effort to share open source information related to its policy objectives for this rule and the SME IFR as part of this rulemaking.

In response to the comment that the agency should release specific information to the public or Congress, BIS notes that, with limited exceptions related to requests from Congressional committees of appropriate jurisdiction, the agency is required by statute to withhold from disclosure certain categories of information absent a determination that the release is in the U.S. national interest. That statutory restriction on release is intended to protect the business confidential information noted by the commenter. BIS agrees that when such licensing data is released, it will provide an accurate account of the relevant licensing information.

Topic 7: A commenter noted that ECRA section 1765 (50 U.S.C. 4824) requires BIS to submit to Congress by the end of the year a report on the implementation of ECRA during the previous year. Subsection (a)(2) requires that the annual report include a description of “the impact of [all that year’s] controls on the scientific and technological leadership of the United

States.” In addition, ECRA section 1752(1) (50 U.S.C. 4811(1)) states that the United States should “use export controls only after full consideration of the impact on the economy of the United States.” Similarly, ECRA section 1752(3) states that the impact of the implementation of new controls on U.S. leadership and competitiveness “must be evaluated on an ongoing basis and applied in imposing controls . . . to avoid negatively affecting such leadership.” This commenter believes that it is important for BIS to obtain formal industry input on this specific topic so that its report to Congress is accurate and complete.

BIS response: BIS agrees that it may be beneficial to allow for public input to assist BIS in preparing this annual report. BIS intends in the next annual cycle for this report to publish a notice to solicit comments in the area. BIS will then evaluate the amount and type of public input provided to the agency to determine if continuing to publish this type of notice is worthwhile in the future.

Free Trade, Addressing U.S. Relationship With China, and Benefits From Trade With China

Topic 8: A commenter requested that especially at a time when U.S.-China relations are fraught, we should aim to strengthen ties and increase cooperation to reduce the risk of military conflict and to allow the United States and the whole world to benefit from the fruits of our shared innovations.

BIS response: The U.S. Government works with China in multiple ways to reduce tensions and find areas in which the two governments can work together. Where the policies of the Chinese Communist Party (CCP) run counter to U.S. national security and foreign policy interests, the U.S. Government takes appropriate actions to address its concerns, including by ensuring that items subject to the EAR are not used to assist CCP military advancement.

Topic 9: A commenter noted that trade with China brings many important benefits to the U.S. economy and American workers. This commenter noted that advanced U.S. manufacturers of all sizes and their American business partners and consumers have benefitted from globally integrated supply chains that have improved efficiency and lowered production costs for U.S. firms. Revenues generated in China are often reinvested in global and U.S. research and development (R&D) activities, which in turn allows U.S. companies to maintain their competitive edge over PRC and foreign competition. Another commenter noted a belief that the

October 7 IFR is counter to U.S. free trade advocacy and could boomerang negatively on the United States if China retaliates with similar trade restrictions.

BIS response: BIS agrees with the importance of continued trade with China. China’s military-civil fusion policy has made it much more challenging for the U.S. Government, as well as exporters, reexporters, and transferors, to be able to clearly identify items and transactions that will be only for civil end uses. BIS has tried to address this circumstance by imposing focused controls. Focused controls can be more complex than the imposition of broad controls (such as on an entire country), but BIS has adopted focused controls to restrict trade as necessary for national security or foreign policy reasons while not impairing trade for civil applications.

Regarding the comment that the October 7 IFR is counter to U.S. free trade advocacy and could lead to the imposition of trade controls by China, BIS notes the national security and foreign policy reasons described in that rule as the reasons for the imposition of those controls. See 87 FR 62186–88 (noting, among other things, China’s use of advanced computers for its military modernization efforts, military decision making, planning, and logistics, cognitive electronic warfare, radar, signals intelligence, and jamming, as well as China’s use of supercomputers to improve calculations in weapons design and testing including for WMD such as nuclear weapons and hypersonics and other advanced missile systems). These controls were not implemented as protective trade measures, but rather were imposed to protect U.S. national security. BIS is aware of and takes into account concerns about the implications of imposing controls, but those concerns cannot deter BIS from taking actions to protect U.S. national security and foreign policy interests.

Importance of Regular Review of These Controls To Achieve the National Security and Foreign Policy Objectives Outlined in the October 7 IFR, and for Consistency With ECRA

Topic 10: A commenter noted that ECRA requires that any controls imposed under section 4812, which include end-use controls, “must be evaluated on an ongoing basis . . . to avoid negatively affecting U.S. leadership in the science, technology, engineering, and manufacturing sectors, including foundational technology that is essential to innovation.” ECRA section 4811(3). The commenter noted that the October 7 IFR needs to be

reviewed regularly. Another commenter noted that the October 7 IFR demonstrates a significant U.S. policy shift, as articulated by U.S. National Security Advisor Jake Sullivan, that the previous U.S. “sliding scale approach . . . to stay only a couple of generations ahead . . . is not the strategic environment we are in today.” Yet, the United States will struggle to maintain “as large a lead as possible” if the government pursues a unilateral approach that alienates allies and trading partners and restricts companies from selling consumer technologies worldwide.

BIS response: BIS intends, consistent with all export controls administered under the EAR, to review the controls from the October 7 IFR on a regular basis to determine if any updates are needed to make those controls more effective. Since the October 7 IFR was announced, BIS has been reviewing these controls, not just in response to the public comments received, but also based on BIS’s experience in administering and enforcing the controls, as well as discussions with allies. These considerations have resulted in the changes made to the October 7 IFR included in this AC/S IFR and SME IFR. BIS will continue to review these controls on an ongoing basis and make changes as warranted, including to controls that use specified control parameters that over time may need to be reevaluated. BIS notes that National Security Advisor Sullivan’s remarks provide an example of the Administration previewing policy and related controls and are responsive to other comments requesting this type of guidance. Consistent with the policy described by National Security Adviser Sullivan, the October 7 IFR controls resulted from the speed of the technological advancements that could be leveraged for the most sensitive national security activities, as well as furthering human rights violations. The controls established in the October 7 IFR and these rules are needed to address the current national security threats presented by China.

Agrees With the National Security and Foreign Policy Concerns Identified in the October 7 IFR for Why These Changes Were Needed

Topic 11: A commenter noted that monitoring the production of more supercomputers and AI will benefit the world at large. The commenter sees the October 7 IFR as the best option for national security and regional stability purposes because it addresses the military use of these computers. If these AI and supercomputers are left

unmonitored, they may fall into the wrong hands and become a threat to the world at large.

BIS response: BIS agrees.

Topic 12: A commenter noted that given the likely importance of AI capabilities to national security and economic prosperity, the commenter expects significant pressure for China to stay at the frontier of AI. The commenter noted that all viable paths for doing so may be explored. This pressure will mount over time, as the importance of AI technology grows and as the AI-relevant ICs produced outside of China outpace the technology to which AI-developers in China, including the People’s Liberation Army (PLA), have access. Another commenter noted that the October 7 IFR chip controls were implemented to prevent human rights abuses and protect international security interests by making it more difficult for the government of China to attain advanced AI capabilities. This commenter noted that the use of these supercomputers to monitor the activities of PRC citizens is inappropriate and this is why the October 7 IFR is the best option.

BIS response: BIS acknowledges both comments and takes PRC human rights abuses seriously. China has been transparent about its military-civil fusion (MCF) strategy and the importance it places on advanced AI as part of MCF. China has already demonstrated on numerous occasions how it has been leveraging advanced technologies against its own people. See, e.g., 84 FR 54002 (Oct. 2, 2019) (adding Xinjiang Uighur Autonomous Region (XUAR) People’s Government Public Security Bureau, eighteen of its subordinate municipal and county bureaus, and several other entities in China to the Entity List because they were implicated in human rights violations and abuses in the implementation of China’s campaign of repression, mass arbitrary detention, and high-technology surveillance against Uighurs, Kazakhs, and other members of Muslim minority groups in the XUAR).

U.S. CHIPS Act and Sufficiency of Existing Company Compliance Programs

Topic 13: A commenter noted that the U.S. CHIPS Act will help keep the United States in the lead for semiconductors. The U.S. CHIPS Act, which appropriated over \$52 billion to shore up the semiconductor ecosystem in the United States, will enable continued U.S. leadership in leading-edge semiconductors and SME, and

help preserve the large technological differential vis-à-vis China.

BIS response: The October 7 IFR was designed to address the U.S. national security and foreign policy concerns with China over acquiring these capabilities and their use in WMD-related applications. BIS agrees that the U.S. CHIPS Act is important for helping to promote U.S. to maintain its leadership in semiconductors. The most comprehensive and effective policy both restricts key technologies from China where needed to address national security and foreign policy concerns and promotes U.S. and allied country technology leadership.

Topic 14: A commenter noted that companies’ sophisticated export compliance programs should mitigate the need for additional controls. This commenter noted that many U.S. companies—as well as multinational companies from U.S. allied countries and partners with a U.S. presence—have longstanding, sophisticated export control compliance programs to acquire export licenses and ensure that their products and processes are not facilitating the technological development of items by a sanctioned entity, military end user, or military end use.

BIS response: BIS notes that compliance programs are designed to follow the rules as they are written. While BIS applauds efforts by companies to conduct extensive due diligence, this does not replace the need for regulations addressing national security and foreign policy concerns.

China Will Obtain the Items it Needs Regardless of U.S. Controls

Topic 15: A commenter noted that research indicates that China’s military systems primarily rely on older and less sophisticated chips made in China, on which U.S. export controls will have limited effect. The commenter noted should China require more advanced chips for AI-driven systems, they will likely be able to develop and produce them—at significant cost and on a slower timeline.

BIS response: Certain PRC weapons systems may not rely on the most advanced ICs. However, for the most advanced weapons systems such as hypersonic missiles or for super computers that are used to make more advanced WMD or design and produce more advanced weapons systems, advanced ICs are critical to PRC efforts.

Topic 16: A commenter noted that restricting U.S. persons in assisting China’s advanced semiconductor manufacturing is not going to be enough. This commenter noted that

some U.S. persons working in financial institutions (e.g., venture capital and private equity) help China to invest in the semiconductor industry and help PRC companies obtain semiconductor talent, intellectual property, and equipment from all over the world.

BIS response: BIS shares these concerns that certain actors will try to evade the regulations imposed through the October 7 IFR and these rules. These concerns underpinned the October 7 IFR controls such as the expanded “U.S. persons” control under § 744.6, two new end use controls under § 744.23, and the two new foreign direct product rules and expanded Entity List FDP rule under § 734.9. To address concerns around U.S. investment, the Administration issued Executive Order 14105 that will address outbound investment from the United States.

China and Macau Retaliation To Gain Greater Market Share for PRC Indigenous Companies Worldwide and PRC Companies Filling the Void Left by U.S. Companies

Topic 17: A commenter’s association members expressed concern that one unintended consequence of the October 7 IFR may be that China will increase its production of legacy node semiconductors and flood global markets with those products at significantly reduced prices.

BIS response: While the October 7 IFR was not intended to impact legacy node semiconductors in China, BIS acknowledges the possibility that these controls may generate spillover effects. The type of concern described in the comment relate to issues to be addressed through other authorities and forums and are outside of BIS’s authorities.

Topic 18: A commenter noted that the October 7 IFR has given a significant boost to China’s own materials suppliers.

BIS response: BIS is aware that the restrictions imposed under the October 7 IFR may give PRC indigenous providers an opportunity to try to fill potential new voids in the market. The October 7 controls, in particular the CCL controls, were intended to impose license requirements on key gateway items that PRC entities would need but which are not indigenously manufactured in China. BIS intends to continue to monitor such developments and adjust its controls as warranted. BIS encourages the public to provide specific information on PRC indigenous capabilities in comments responding to this AC/S IFR and SME IFR. See section D question 5.

ECCN 3A090

Topic 19: A commenter noted that there needs to be guidance on the circumstances in which controls extend to components controlled under ECCNs 4A003.b and 3A090.a. The commenter noted that ECCN 4A003.b already controls ICs with the 4A003.b characteristics of 29 Weighted TeraFLOPS (WT), soon to be 70 WT. In addition, 4A090 controls devices with ICs exceeding 4800 bits x TOPS. The commenter noted that there is no guidance as to which of these two limits is to apply to license applications for export to China. This commenter also noted that ECCN 4A003.b (Adjusted Peak Performance (APP) exceeding 29 WT) already covers the much higher, by an order of magnitude, 4A090.a license requirement limit, with no guidance as to which of these limits is to apply to license applications for export to China. The commenter notes that these differences present inconsistencies in the EAR.

BIS response: The APP formula in ECCN 4A003 and the bits x TOPS metric (now modified to a TPP metric) in ECCN 3A090 apply to different commodities. ECCNs 3A090 and 4A090 control items based on the performance of a single chip, while the APP formula in ECCN 4A003 describes aggregate performance across multiple chips. However, BIS acknowledges that a computer or component could exceed the performance parameters of both ECCNs 4A003.b and 4A090 or 3A090. The October 7 IFR accounted for this possibility by applying controls to items classified on the Commerce Control List (CCL) other than under ECCNs 4A090/3A090 that meet or exceed the 4A090/3A090 performance thresholds. This AC/S IFR clarifies this issue by adding a .z “items” paragraph to ECCN 4A003 to control items that meet or exceed ECCN 4A090 specifications. This change is intended to provide clear guidance regarding the relationship between ECCNs 4A090 and 4A003.b and .z.

Topic 20: A commenter had a question on interpreting Technical Note 2 under ECCN 3A090. The commenter noted that the term “bit-manipulation operations, and/or bitwise operations” seems susceptible of a broad interpretation including any kind of data processing, and questioned whether this was the intent. The commenter asked how exporters should think about classifying a component for a router or a switch that meets or exceeds the technical control parameters under ECCN 3A090 but which would otherwise be classified

under an ECCN in Category 5, Part 1 or Part 2.

BIS response: The October 7 controls were not intended to apply to telecommunications equipment or parts and components designed for telecommunications equipment. For example, 4A090 is in Category 4, which applies to computers. BIS would not classify a router or switch in Category 4. Therefore, a router or switch that meets the control parameters of 4A090 would not be subject to these controls. Category 5 Part 2 could capture some of these items, because that category also applies to general purpose computing equipment with encryption functionality.

Topic 21: A commenter noted that with respect to the “aggregate bidirectional transfer rate” provision of 3A090, BIS should incorporate either an additional technical note in the CCL under 3A090, or a definition of “aggregate bidirectional transfer rate” with a specific explanation of how this rate is calculated over all inputs and outputs in part 772.

BIS response: BIS retains this parameter in the revised ECCN 3A090 included in this AC/S IFR. For greater clarity, including for providing greater clarity on how to apply the criterion of “aggregate bidirectional transfer rate,” the AC/S IFR revises the Technical Notes to 3A090 by removing the five technical notes and replacing those with four technical notes. Most importantly, this AC/S IFR replaces bits x TOPS with ‘Total processing performance’ (‘TPP’) values and defines objective criteria that can be used to calculate the TPP value. See section C.1. below for additional information on the revision to these technical notes.

Topic 22: A commenter noted that for ECCN 3A090 and programmable ICs, there is no inherent communications or calculations capability. The commenter requested that BIS issue guidance on how to (1) address this complex calculation/interpretation theoretical performance situation, perhaps via a practical manual, and (2) leverage metrics from other programmable device ECCNs that are already on the CCL, such as under 3A001.a.7, 3A991.d, or others.

BIS response: The rewrite of ECCN 3A090 included in this rule addresses this comment. BIS, in consultation with its Information Systems Technical Advisory Committee (ISTAC), considered compiling a practitioner’s guide but ultimately decided that changing the text of ECCN 3A090 to simplify the calculation was a better approach.

Topic 23: A commenter noted that performance parameter calculations

stated in ECCN 3A090 are unclear and requested further guidance, such as a formula or additional details regarding the types of performance parameters that need to be included in the calculations.

BIS response: BIS agrees. This AC/S IFR includes a revision to ECCN 3A090 to adopt alternative control parameters to address the concerns identified by the commenters.

Topic 24: A commenter noted that guidance needs to be provided on how to calculate the 3A090 TOPS Performance Metric. ECCN 3A090 introduces a new performance metric, TOPS (trillions of operations per second). The commenter noted that undertaking a TOPS determination is difficult because the definition of TOPS relies on the term “operations.” The word “operations” is not defined in the October 7 IFR and does not have a consistent industry definition.

BIS response: BIS agrees that there is ambiguity in the TOPS calculation. For this reason, BIS has amended the text of ECCN 3A090. This AC/S IFR replaces bits x TOPS with “Total processing performance” (“TPP”) values and defines objective criteria that can be used to calculate the TPP value in ECCN 3A090. BIS worked closely with its ISTAC in developing this updated technical note.

ECCN 4A090

Topic 25: A commenter noted that ECCN 4A090 creates a “see through” rule similar to something found in the State Department’s International Traffic in Arms Regulations (ITAR) that is too broad for a civilian end item that happens to include even a single IC classified as 3A090. This commenter noted that consistent with § 770.2(b)(1), computers and electronic assemblies that incorporate a single IC classified as 3A090 should be excluded from the 4A090 control if the physical incorporation is not used to evade the requirement for a license.

BIS response: BIS does not agree. The structure of ECCN 4A090.a is needed to ensure that incorporation of ECCN 3A090 items into higher level items is not conducted to circumvent the intent of the 3A090 controls. BIS also notes that this is not a “see through” rule because the high level computer, “electronic assembly” or “component” is still classified under 4A090. The incorporation of the 3A090 commodity changes the technical characteristics of those referenced items, which leads to control under 4A090 instead of other CCL entries. This structure is not new to Category 4. To calculate the APP value for a 4A994 computer, an exporter has to determine the APP value of the

CPU. Exporters must apply the same analysis to 4A090.

Topic 26: A commenter requested BIS should confirm that an appliance would not be considered a “computer” for purposes of ECCN 4A090. BIS also should confirm that a printed circuit board specially designed for such appliance would not be considered an “electronic assembly” for purposes of ECCN 4A090.

BIS response: For control under ECCN 4A090, an item must be a general purpose computer. For example, BIS does not classify network security appliances or DNA sequencing appliances in Category 4. When evaluating such systems, exporters should determine the classification of the item without regard to whether it contains a 3A090 IC or has encryption functionality. If the appliance would be controlled in Category 4, then 4A090 controls would likely apply.

Topic 27: A commenter noted the ECCN 4E001 has an NS control that is likely not intended and should be corrected. This technology in ECCN 4E001 is now subject to both RS and NS1 controls, even though the discussion in the October 7 IFR focuses only on RS controls. The application of NS1 controls creates new authorization requirements (including deemed export requirements) for all countries except Canada. The commenter requests that BIS revise ECCN 4E001 to exclude technology for commodities controlled by 4A090 or software specified by 4D090 from the NS1 controls.

BIS response: BIS agrees the NS control was not intended. This AC/S IFR makes this correction.

Topic 28: A commenter requested BIS revise ECCN 4E001 to remove control of “use” technology for 4A090. The commenter noted that this appears to be over-controlled and beyond the intent of the October 7 IFR. The October 7 IFR imposes controls on the technology for the “development,” “production,” and “use” of 4A090 items controlled under 4E001, but only imposes controls on the “development” or “production” of 3A090 items controlled under 3E001—but not the “use” technology of 3A090. This results in the technology to “use” a 4A090 computer part (which happens to have a 3A090 IC onboard) having higher controls than the “use” technology of the 3A090 IC itself. The commenter noted that this approach appears to be inconsistent as applied to other, more-controlled items.

BIS response: BIS agrees. This AC/S IFR revises ECCN 4E001.a to add an exclusion for technology for the “use” of a 4A003 computer.

Topic 29: A commenter requests that BIS issue a FAQ or regulatory clarification on the classification of ECCN 4E001 technology when 3A090 or 4A090 are applicable. The commenter noted what it believes is a growing body of ambiguity that stems from the “see through” nature of 3A090 items incorporated into the higher-level 4A090 items and the impacts that has on associated technology. Exporters are in a quandary reading 4E001, which controls the technology for the “development,” “production,” or “use” of 4A090.

BIS response: Under ECCN 4E001 for 4A090 commodities, BIS controls technology that is “required” for the computer achieving or exceeding the 3A090 parameters. In some cases, this may occur through a relatively unsophisticated step, such as inserting a card in a slot in the computer, which BIS would consider to be “development” or “production” and as noted in the BIS response to Topic 28, this AC/S IFR adds an exclusion to 4E001 for “use” Technology for 4A090. Other instances may require more technical know-how that may rise to the level of controlled 4E001 technology. The application ultimately turns on an analysis of what is “required” for exceeding the control level. BIS intends to issue a new FAQ to address this topic more broadly.

Relationship of New Controls to Category 5—Part 2, as it Relates to “or Identified Elsewhere on the CCL That Meet or Exceed the Performance Parameters of ECCNs 3A090 or 4A090, Consistent With § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) of the EAR” Under § 742.6(a)(6)

Topic 30: Several commenters raised concerns with the October 7 IFR under § 742.6(a)(6), along with other provisions in the October 7 IFR, e.g., § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii), using the criteria “or identified elsewhere on the CCL that meet or exceed the performance parameters of ECCNs 3A090 or 4A090.” These commenters had concerns that this approach was unprecedented under the EAR in several respects and created ambiguity regarding the correct classification, such as whether an item should be classified under 3A090 or 4A090 or under an encryption ECCN, e.g., 5A002 or 5A992. These commenters emphasized that company compliance systems were not set up to address this type of dual classification complexity and that mistakes in classification would likely occur and significant questions would be raised for managing export clearance. These commenters requested BIS to

adopt an alternative approach that would be more in line with how items are typically classified on the CCL by either creating additional ECCNs to control these items that would otherwise meet or exceed the performance parameters of ECCN 3A090 or 4A090 or to add under the relevant additional ECCNs an “items” level paragraph to identify the items that would meet or exceed the performance parameters of ECCN 3A090 or 4A090.

BIS response: BIS is changing this aspect of the October 7 IFR. BIS recognizes that certain aspects of the criteria used in the October 7 IFR deviated from standard EAR practices, e.g., imposing an RS license requirement on certain ECCNs that did not contain an RS control. However, BIS did not intend to change underlying classifications. For example, an ECCN 5A002 commodity that met or exceeded the control parameters in 3A090 or 4A090, would have still been classified under ECCN 5A002, but would require a license under § 742.6(a)(6). BIS agrees with the commenters that because of the special RS license requirements, that effectively would mean exporters, reexporters, and transferors would have to identify and treat that 5A002 commodity that met or exceeded the control parameters in 3A090 or 4A090 differently. BIS also agrees with the concerns raised by these commenters that it would create significant burdens and possibly confusion for exporters, reexporters, or transferors.

To address this issue, this AC/S IFR removes the criteria of concern and instead identifies the nine ECCNs on the CCL that BIS determined meet or exceed the control parameters in ECCNs 3A090 or 4A090. As a result, when classifying an item, review can focus on these nine ECCNs, which addresses the commenter’s concerns. In addition, BIS agrees that creating a distinct classification for “items” in each of these ECCNs under a new .z “items” paragraph is warranted. This AC/S IFR also adds an RS control for these nine ECCNs, as well as adding Related Controls to cross reference 3A090, 4A090, 3A991.p, and 4A994.l. This rule provides additional guidance for export clearance of these .z items, as well as 3A090 and 4A090 to make it easier for exporters and recipients outside the United States to identify these items, and for the U.S. Government to have greater transparency into what items are being exported. This AC/S IFR also revises §§ 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) and 742.6(a)(6) to remove the criterion and add in their place the .z ECCNs.

Additional discussion about the addition of the .z paragraphs can be found in section C.3 of this rule.

Additional Changes for ECCNs in the October 7 IFR

Topic 31: A commenter requested BIS change new ECCNs from 000 series to 900 series. This commenter noted that because they are U.S. unilateral controls, BIS should change the ECCN numbers from 3A090, 3B090, 4A090, 4D990 to 3A990, 3B990, 4A990, 4D990. This same commenter requested deleting the term “specially designed” in various places as used in the ECCNs included in the October 7 IFR and replacing the use of the term with other technical control parameters. This commenter referenced documents from the Coordinating Committee for Multilateral Export Controls (COCOM), including COCOM 1951 Administrative Principle 4, in supporting their position on the removal of “specially designed” from these ECCNs.

BIS response: BIS does not agree. These items will be submitted to the Wassenaar Arrangement for adoption as multilateral controls, so it is appropriate that they are placed in the “000” series. BIS also does not agree on the removal of “specially designed.” The term “specially designed” is needed in these ECCNs to define the intended scope of the control. In addition, BIS notes COCOM has been defunct since March 31, 1994.

Topic 32: A commenter noted that the WTOPs parameters need further study in ECCNs 3A991.p, 4A003, and 4A994.b and .l.

BIS response: BIS does not see an inconsistency between ECCN 4A994.b and 4A994.l. ECCN 4A994.b captures computers using 64-bit or greater processors, and 4A994.l captures processors with lower bit rates. BIS agrees that some items could be captured under both 4A994.b and 4A994.l but notes that there are computers that fall under 4A994.l but not 4A994.b.

License Exception Eligibility for New Advanced Computing and Semiconductor Manufacturing Items Under § 740.2(a)(9)

Topic 33: A commenter noted the October 7 IFR’s limitations on the use of License Exception ENC are difficult to implement. The commenter noted that many of the items affected were already eligible for License Exception ENC, so removing license exception eligibility will be a challenge for items “listed elsewhere in the CCL which meet or exceed the performance parameters of ECCN 3A090 or 4A090.” This

commenter requested that BIS consider amending the rule to create ECCNs 5x090 and 5x092 or additional items paragraphs in existing ECCNs for 5x002 and 5x992 items that meet or exceed the performance parameters of ECCN 3A090 or 4A090. This would allow industry to set up more manageable rules for their electronic inventory control and shipping systems.

BIS response: BIS agrees and addressed this with the addition of .z “items” paragraphs in nine ECCNs on the CCL, as described under the BIS response to Topic 30.

Topic 34: A commenter requested confirmation that License Exception Servicing and Replacement of parts and equipment (RPL) covers transfers (in-country), or in the alternative that § 740.2(a)(9) be expanded to authorize License Exception Temporary imports, exports, reexports, and transfers (in-country) (TMP). This commenter noted that the exclusion of “transfer (in-country)” from the scope of § 740.10 suggests that License Exception RPL would not cover in-country movements that constitute a transfer (in-country) as defined in § 734.16. Alternatively, this commenter requested that BIS expand the scope of license exceptions available for § 740.2(a)(9) to include License Exception TMP, specifically § 740.9(a)(6) which authorizes exports, reexports, and transfers (in-country) for inspection, test, calibration, and repair.

BIS response: Section 740.1(a) already specifies that any license exception authorizing reexports also authorizes in-country transfers, provided the terms and conditions for reexports under that license exception are met. This includes License Exception RPL. This SME IFR expands the number of license exceptions available for advanced compute items in § 740.2(a)(9)(ii) by adding License Exception TMP under § 740.9(a)(6) because this authorization is intended to work with License Exception RPL.

Level of Complexity of New FDP Rules

Topic 35: A commenter noted that the new FDP rules create significant complexity when manufacturing products outside the United States using U.S.-origin technology, software, tools, or equipment. The commenter noted that with the three new FDP rules, a non-U.S. manufacturer using U.S. technology or software must now know or have additional information about a number of things, including whether the item: (1) involves one of thirty-eight new “Footnote 4” companies on the Entity List; (2) is or contains an advanced IC that meets ECCN 3A090 or 4A090, or is their related software or

technology, and is ultimately destined for Macau or a destination specified in Country Group D:5; (3) will ultimately be used in a “supercomputer” in Macau or a destination specified in Country Group D:5; or (4) will be used in the development or production of an item that will ultimately be used in a “supercomputer” in Macau or a destination specified in Country Group D:5. Another commenter noted that because of the complexity there will likely be some non-compliance simply because foreign companies cannot understand or do not have enough information to make proper determinations. This commenter noted that this complexity will make compliance with the EAR difficult for non-U.S. manufacturers, many of whom will not comply, not out of maliciousness, but simple ignorance or misunderstanding.

BIS response: BIS agrees that with the addition of new FDP rules to the EAR, foreign manufacturers have increased compliance burdens. In adding new FDP rules, including the two new FDP rules and expanded Entity List FDP rule added in the October 7 IFR, BIS has tried to be as focused as possible. Accordingly, each FDP rule has its own criteria that needs to be reviewed. Each FDP rule essentially poses a series of questions or criteria; if one of the required questions or criteria is determined to be inapplicable, that FDP rule can be ruled out as governing the transaction. By taking this approach, many of the FDP rules can be ruled out fairly quickly. However, if the questions as to whether the criteria apply are answered in the affirmative, additional questions need to be asked based on the criteria of the respective FDP rule being reviewed to ultimately determine whether the foreign made direct product is subject to the EAR. BIS included a model certificate in the October 7 IFR to assist people in applying the FDP rules included in the October 7 IFR. In this AC/S IFR, the model certificate is broadened for use with all the FDP rules to ease the compliance burden on foreign manufacturers. BIS has been conducting a robust outreach program and updating its outreach materials on the BIS website to address these types of issues. As noted above, the basic approach to applying the FDP rules has been in the EAR for many years and has not changed with respect to the need to answer a series of questions. What is new is some of the additional criteria for the new FDP rules, in particular the end user and end use-based criteria included in some of the FDP rules. Once these additional criteria become familiar to

foreign manufacturers and incorporated into compliance programs, these concerns should be reduced. BIS will conduct outreach on this rulemaking to assist exporters as they develop experience with the new controls.

Topic 36: A commenter noted that the FDP rules capturing least sensitive items will lead to designing out U.S.-origin content. Expanding the U.S. export control jurisdiction to less sensitive items also drives foreign partners away from U.S. technology, software, and tool suppliers, as those are the basis on which BIS hangs its expanded jurisdiction. The commenter requested that the China-focused FDP rules be narrowed to apply only to specific products that are listed on the CCL with a license requirement to China, and should never apply to EAR99 items or Anti-Terrorism (AT)-only controlled items.

BIS response: BIS does not agree that the scope of these FDP rules should be further narrowed. BIS calibrated the scope of the commodities controlled based on the current national security and foreign policy concerns. Because many of these lower-level items may be technology level agnostic, it is still warranted to keep them within the product scope of the FDP rules.

Clarify Relationship Between FDP Rules and Other EAR License Requirements

Topic 37: A commenter requested BIS clarify whether reexports or exports from abroad of FDP items also must consider other EAR license requirements in parts 742, 744, and 746.

BIS response: For a foreign-made product that is located outside of the United States to be subject to the EAR, the foreign made product would need to meet the criteria under one or more of the FDP rules under § 734.9 or be subject to the EAR because it exceeds the applicable *de minimis* threshold. If the foreign-made item is not subject to the EAR, then none of the other EAR license requirements would be applicable. However, if the export from abroad or reexport of the foreign-made item was subject to the EAR, then the other EAR license requirements would need to also be taken into account. Because the export from abroad or reexport would already require a license, the impact of those other license requirements would primarily be additional license review policies that may be applicable.

Need To Continuously Monitor the FDP Rules and revise license review Policies as Needed

Topic 38: A commenter noted that BIS needs to continuously monitor the

effectiveness of the FDP rules, which are unilateral. The commenter noted that if BIS cannot succeed at getting allies and partners to agree to substantively similar controls, BIS should adopt a temporary licensing policy that would authorize the provision of such services and exports by U.S. persons for civil applications and if not otherwise prohibited by the EAR and readily available from non-U.S. providers, in both quantity and quality, as substitutes.

BIS response: BIS is continuously reviewing the FDP rules and will make any appropriate changes as warranted based on activity involving the adoption of multilateral and/or effective plurilateral controls, as well as trends BIS may be seeing or hearing about the designing out of U.S.-origin content.

Topic 39: One commenter raised issues related to the legality of the amendments made in the FDP rule provisions.

BIS response: BIS has determined that these changes are consistent with ECRA.

Topic 40: A commenter asked if a foreign-made item not otherwise subject to the EAR is nonetheless subject to the EAR under the Entity List FDP rule (§ 734.9(e)(2)) if it is shipped by an unlisted entity to another unlisted entity for incorporation into a commodity when the shipper knows all other components for the commodity had been shipped by a Footnote 4 entity, but the foreign-made item will not be incorporated into, or used to produce or develop, any commodity produced, purchased or ordered by a listed entity. This same commenter asked whether the answer would change if a Footnote 4 entity is a shareholder, or if a Footnote 4 entity is a shareholder in the third-party assembler/seller. Another commenter asked whether a Footnote 4 entity that profits from a transaction by and among unlisted entities, but has no other role or involvement, is a party to the transaction under § 734.9(e)(2)(ii)(B).

BIS response: The answer to these types of scenarios would be fact-specific. While the Footnote 4 entity described in these scenarios does not necessarily fall under one of the illustrative examples of parties to the transaction under § 734.9(e)(2)(ii)(B), additional analysis would be needed to determine whether the Footnote 4 entity was actually a party to the transaction. For example, if the items will ultimately be going to the Footnote 4 entity or ultimately for the Footnote 4 entity's use or if profits were obtained by the Footnote 4 entity acting as a purchaser, or intermediate or ultimate consignee, then the Footnote 4 entity would be considered a party to the transaction. In scenarios where a person is not sure

whether the Footnote 4 entity would be considered a party to a transaction, they may contact BIS to request additional guidance by identifying all of the relevant information that they have regarding the involvement of that party in the transaction.

Topic 41: A commenter asked whether BIS will consider providing guidance as to what other activities may constitute a Footnote 4 entity's being a "party" to the transaction for purposes of the Entity List FDP rule. We understand that the phrase "e.g., as a 'purchaser,' 'intermediate consignee,' 'ultimate consignee,' or 'end-user,'" as used in § 734.9(e)(2)(ii)(B), signals that the list of referenced parties is not exhaustive. However, the use of "e.g." creates significant compliance uncertainty.

BIS response: BIS confirms that this commenter is correct that the 'e.g.' signifies that what follows is merely an illustrative list of parties to the transaction. If an exporter, reexporter, or transferor is determining whether an additional party that does not fill the role of one of the illustrative parties identified, but otherwise appears to be a party to the transaction, is a party to the transaction, they may submit an advisory opinion request to BIS in which they describe the role of that other party. BIS will advise if that party is considered a party to the transaction.

Advanced Computing FDP Rule— § 734.9(h)

Topic 42: A commenter requested BIS clarify the relationship between § 734.9(h) and § 742.6 for ECCN 5A002 and License Exception ENC. This commenter noted that the EAR should in the Advanced Computing FDP, reference the license requirements under § 742.15 Encryption items (EI) controls because this is important for determining which additional EAR restrictions may be applicable. For example, § 740.2 restrictions may restrict the use of License Exception ENC.

BIS response: This AC/S IFR adds .z 'items' paragraphs to nine ECCNs, including to ECCN 5A002.z and makes conforming changes to add these .z ECCNs, such as 5A002.z, to § 734.9(h)(1)(i)(B)(2) or (h)(1)(ii)(B)(2), which is also responsive to this comment.

Topic 43: A commenter noted that the new § 734.9(h) Advanced computing FDP rule is not needed because it is already covered by pre-existing § 734.9(b) National Security FDP rule.

BIS response: BIS does not agree. There is some cross over between these two FDP rules, but the Advanced

Computing FDP rule extends to certain items that the National Security FDP rule does not, so the Advanced Computing FDP rule is necessary to address the national security and foreign policy concerns included in the October 7 IFR.

Narrow the Scope of § 744.23 Fabrication Controls

Topic 44: A commenter noted that § 744.23 should only apply to the direct end use of an item. This commenter noted as an example that networking equipment used for the enterprise network of a semiconductor or supercomputer manufacturer is not a direct use in the "development," "production," "use," operation, installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of a "supercomputer" or IC as opposed to design software, materials, or test equipment and should be excluded from the license requirement.

BIS response: BIS agrees that if the item is not used in the "development," "production," operation, installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of a "supercomputer," IC, or SME, as applicable, the item would not be within the scope of § 744.23. However, the exporter would need to analyze the relationship between the activities involving the enterprise network and any prohibited end uses to confirm no license is required.

Topic 45: A commenter noted that resellers of supercomputers should not meet the definition of a company that is involved in the "development," "production," "use," operation, installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of a "supercomputer" under § 744.23.

BIS response: BIS agrees and confirms in this AC/S IFR that the mere act of selling a "supercomputer" is not within the prohibited scope of § 744.23, but selling a "supercomputer" with knowledge that a violation of § 744.23 has occurred, is about to occur, or is intended to occur in connection with an item subject to the EAR could be a violation of § 764.2(e) of the EAR.

As-a-Service (IaaS) Solutions and the October 7 Controls

Topic 46: A commenter noted that PRC "supercomputer" controls may be bypassed by as-a-Service (IaaS) solutions. The commenter noted that the October 7 IFR limits engagements towards China "supercomputer" activity in China and may preclude

some high-performance compute capability to China. With the availability of IaaS solutions, however, China compute workloads can be offloaded to computers located in other states, possibly including those in the United States. This commenter noted that without a multilateral end use/end user control, non-U.S. states, even Wassenaar Arrangement partners, may give China computational access to their equivalent "supercomputers" via an IaaS arrangement. The commenter noted that while § 744.6 provides controls on U.S. persons for various situations involving PRC semiconductor fabrication, there does not appear to be a parallel U.S. person control for supercomputing.

This comment requests that BIS clarify intent regarding supercomputing IaaS, particularly in light of previous Advisory Opinions on computing IaaS, including January 2009: Application of EAR to Grid and Cloud Computing Services, and January 2011: Cloud Computing and Deemed Exports.

BIS response: BIS is also concerned regarding the potential for China to use IaaS solutions to undermine the effectiveness of the October 7 IFR controls and continues to evaluate how it may approach this through a regulatory response. See section D question 1 of this rule.

Information Needed From Other Parties To Comply With These Controls

Topic 47: A commenter noted that the burden to detect upgrades of PRC computers into "supercomputers" is difficult because it is a fluid moving target and that a PRC computer installation that does not meet the threshold at one point may be quietly upgraded by the operator (using 3rd party items) to exceed the "supercomputer" threshold later. Exporters, reexporters, and transferors may not be able to rely on static End Use Statements or similar certifications, due to this "moving target" characteristic and this may require exporters to obtain End Use Statements to all PRC computer installations (regardless of size) for every transaction, which presents a high burden. The commenter notes this is a situation in which publishing a list of known § 744.23 supercomputer targets will result in compliance that is more effective, more consistent, and less burdensome.

BIS response: BIS intends to continue to identify "supercomputer" related entities on the Entity List. BIS started this process in the October 7 IFR and will continue adding more "supercomputer" entities as they are

identified and approved for addition by the ERC to the Entity List. BIS emphasizes that § 744.23 and the expanded § 744.6 both contain “knowledge” provisions. The compliance expectation is that exporters, reexporters, and transferors will evaluate the information coming to them in the normal course of business. Obtaining end-user statements is a good compliance practice that BIS encourages, but BIS does not expect that exporters, reexporters, or transferors will obtain these from every computer user in China, so exporters, reexporters, and transferors should look at all information they have to determine when additional due diligence may be warranted.

Topic 48: A commenter requested that BIS confirm that the due diligence specified in BIS FAQ, IV.A2, “Appropriate due diligence includes review of publicly available information, capability of items to be provided or serviced, proprietary market data, and end-use statements” constitutes a reasonable level of due diligence in this context, as well.

BIS response: BIS confirms here that the same type of due diligence specified in BIS FAQ IV.A2 that applies for § 744.6 also applies to § 744.23.

Permit License Exception Eligibility

Topic 49: A commenter requested BIS revise § 744.23(c) to permit the use of license exceptions specified in § 740.2(a)(9) for items lawfully exported or reexported prior to October 7, 2022.

BIS response: BIS does not agree. Not including License Exceptions RPL and TMP in § 744.23(c) will make the controls more effective because of the importance of parts and components to continued operation of items, which may have been received by indigenous companies in China without a required license prior to the October 7 IFR. Based on the national security and foreign policy concerns identified in the October 7 IFR, BIS would no longer support the use of these EAR items in China.

Other Requested Clarifications to § 744.23

Topic 50: A commenter requested BIS confirm that standalone data storage equipment would not be considered a “component” subject to § 744.23(a)(1)(ii), which has been redesignated as paragraph (a)(1)(ii)(B) in this SME IFR. This commenter noted that the data storage equipment is self-contained and not physically incorporated into a computer (e.g., it consists of a storage controller and an

array of storage drives in a separate enclosure).

BIS response: BIS does not agree. BIS does not consider standalone data storage equipment classified as ECCN 5A002 to be controlled under § 744.23(a)(1)(ii), now redesignated as (a)(1)(ii)(B), because standalone storage equipment is not a computer or component of a computer. Standalone data storage equipment classified as ECCN 5A002 is considered a “component” for purposes of § 744.23(a)(1)(ii)(B). This SME IFR clarifies this point by adding “the incorporation into, or the “development” or “production” of any “component” or “equipment” that will be used in, a “supercomputer” ” to make it clear that § 744.23(a)(1)(ii)(B) is intended to cover “components” of a separate computer going into a supercomputer, e.g., a chip going into a server which is going into a supercomputer.

Topic 51: A commenter requested that BIS clarify how broadly exporters may interpret the term “used” in determining the product scope under § 744.23(a)(1), which has been redesignated as paragraph (a)(1)(i) in this SME IFR. This commenter seeks confirmation that their understanding is correct that any product that does not contribute to the “development” and “production” of the product would fall outside the scope of these controls. For example, storage devices and networking devices may be present in a facility, but they are not “used” for the specified end use, and therefore would not be subject to control under this provision and can be exported without a license. Other examples include so-called Facility Monitoring and Control Systems (e.g., HVAC, clean room temperature, and chillers, pumps and boilers, as well as so-called voltage sag correctors, which provide protection for electric equipment from voltage variations).

BIS response: Section 744.23(a) specifies that the license requirements apply when the item will be used in an end use described under paragraph (a)(2)(i) or (ii) of this section, which has been redesignated as paragraph (a)(1)(ii)(A) and (B) in this SME IFR. The terms “development” and “production” encompass all of the items used in those activities, so BIS takes an expansive view of what items would be caught under those terms.

Topic 52: A commenter asked BIS to confirm whether the scope and reach of § 744.23(a)(2)(iii), which has been redesignated as paragraph (a)(2)(i) in this SME IFR, apply equally to application of the controls over the

shipment from outside the United States of foreign-origin items not subject to the EAR under the requirements of § 744.6(c)(2)(i) and (ii).

BIS response: For purposes of the “U.S. person” prohibition under § 744.6(c)(2)(i) and (ii), BIS will attempt to maintain consistent approaches in interpreting §§ 744.6(c)(2) and 744.23. BIS’s response to Topic 61 on § 744.23, which lays out how BIS would interpret § 744.6(c)(2) for a similar fact pattern involving the U.S. person control.

Topic 53: A commenter requested BIS clarify whether the controls extend to projected future activity not yet started under § 744.23(a)(2)(iii) and (iv), which have been redesignated as paragraphs (a)(2)(i) and (ii) in this SME IFR. The commenter noted that there is confusion regarding the proper tense of the rules and asks whether the language as written includes aspirational production and development in the future. BIS should clarify whether “fabricates” applies in the context of a fabrication facility that has plans for future advanced node production or whether the rule applies to current advanced node production only.

BIS response: Aspirational development or production in the future would raise a red flag that would require additional due diligence to determine whether a license is required under § 744.23(a)(2)(iii) and (iv), which have been redesignated as paragraphs (a)(2)(i) and (ii) in this SME IFR. This AC/S IFR adds a new red flag to provide additional compliance guidance on these types of scenarios.

Entity List Changes for Footnote 4 Entities

Topic 54: A commenter noted that it is not clear what specific activities involving expanded Entity List (Footnote 4) entities may be prohibited, assuming the product scope is met, especially if the activity does not involve providing any products to the Footnote 4 entity and the entity is not a party to the transaction between the parties buying and providing the foreign-made item.

BIS response: The Entity List license requirements apply to exports, reexports, and transfers (in-country) that are subject to the EAR when a listed entity is a party to the transaction. This is also the scope of the license requirement for the entities on the Entity List with a footnote 4 designation, but because of the footnote 4 designation, the license requirement specified in § 744.11(a)(2)(ii) (Footnote 4 entities) is also applicable, which specifies a license is required for reexport, export from abroad, or transfer

(in-country) of any foreign-produced item subject to the EAR pursuant to § 734.9(e)(2) of the EAR when an entity designated with footnote 4 on the Entity List in supp. no. 4 to this part is a party to the transaction, or that will be used in the “development” or “production” of any “part,” “component,” or “equipment” produced, purchased, or ordered by any such entity. Section 744.11(a)(2)(ii) also includes a cross reference to § 744.23 for additional license requirements that may apply to these entities, so the § 744.23 license requirements also need to be taken into account.

Topic 55: A commenter noted that § 744.11 states that a license is required for the incorporation of a foreign-made item into any “part,” “component,” or “equipment,” produced by a Footnote 4 entity. However, BIS does not specify if a license is needed for a scenario in which a third-party procures parts, components, or equipment made by a Footnote 4 entity and incorporates a foreign made item into Footnote 4’s product, and the procedure is not done on behalf of the Footnote 4 entity, nor will the final product be destined for a Footnote 4 entity. The commenter requests BIS release additional clarification on whether license requirements apply to sales to third parties assembling a mixture of foreign-made and Footnote 4 entity components that are not destined for a footnote 4 entity.

BIS response: The license requirement under § 744.11(a)(2)(ii) extends to items that will be used in the “development” or “production” of any “part,” “component,” or “equipment” produced by any such entity. Therefore, in a scenario in which a third-party procures items produced by a Footnote 4 entity and adds to it using a foreign-made item, the license requirements would still apply in that scenario to that foreign-made item because even if the Footnote 4 entity is not subsequently receiving the items or receiving compensation from the third-party that used its item, the further processing using the foreign-made item would be part of the larger “production” process of the Footnote 4 entity.

Topic 56: A commenter requested BIS revise the 28 Entity List footnote entries to address an inconsistency in the license requirement by inserting “for additional license requirements for Foreign-Direct Product)” after “(See § 734.9(e) and 744.11 of the EAR).”

BIS response: BIS does not agree that a change needs to be added to these entities. The Footnote 4 text provides additional context on the meaning and

scope of this parenthetical phrase included in the 28 entities.

Requested Changes or Clarifications to “Supercomputers” Definition in § 772.1

Topic 57: A commenter requested BIS clarify what is intended by closely coupled compute cores in Note 2 of the “supercomputers” definition. Specifically, the commenter asks BIS to clarify whether “closely coupled compute cores” refers to a system in which all hardware and software components are linked together and dependent on one another and whether the type of interconnect is relevant to this analysis.

BIS response: Note 2 of the “supercomputer” definition is meant to provide a general statement of scope of a typical supercomputer. It is not intended to impose additional requirements beyond the main definition. By using the term “closely coupled compute cores,” BIS intended to note that supercomputers typically have thousands of cores working in parallel in the same location and connected by a high-speed interconnect such as Infiniband or Ethernet. BIS also intended to make clear that computers that are connected together through the internet over long distances are not the type of computer that would meet the definition of “supercomputer.”

Topic 58: A commenter requested that BIS identify the items of real concern regarding the “supercomputer” end use. Hitting the threshold of “supercomputer” is not difficult, and when triggered under the October 7 IFR, even items included in 5A992 will be prohibited. The commenter noted that could prohibit even a standard laptop from being shipped if it is somehow being “used” in a supercomputer.

BIS response: BIS does not agree that the area of concern for supercomputers was not adequately identified in the October 7 IFR and the definition of “supercomputer” in § 772.1. The definition includes clear technical parameters for the types of supercomputers that are of concern. Specifically, a computing “system” having a collective maximum theoretical compute capacity of 100 or more double-precision (64-bit) petaflops or 200 or more single-precision (32-bit) petaflops within a 41,600 ft³ or smaller envelope. The definition includes Note 1 and 2 to further clarify the types of computers of concern. The preamble of the October 7 IFR identified the national security and foreign policy concerns associated with a computer system that can operate at these levels.

Requested Changes or Clarifications to Other Definitions

Topic 59: A commenter noted that the definition of “transfer (in-country)” should not cover in-country movements to effectuate repair services. This commenter noted that in considering whether an in-country movement constitutes a change in end user, this commenter believes that an entity performing repairs or otherwise servicing an item is not an “end user” as defined in part 772 of the EAR. Specifically, the repair/service company is not the party that ultimately uses the item, but is instead taking an action on behalf of the user and specifically for the purpose of returning the repaired item to the user. As a service/repair company does not fall within the scope of an end user under the EAR, temporary in-country movements to or from repair/service companies should not constitute a change in end user.

BIS response: This commenter’s understanding of the scope of transfer (in-country) is not correct and is inconsistent with long-standing agency interpretation of the scope of transfer (in-country). The person that receives the item is changing the end use of the item by using the item for a repair or servicing of the item, or, in the case of destruction, for destroying the item. The definition of end user includes the phrase “ultimately uses the item,” but does not specify that the item needs to be used for its intended end use. Someone repairing or servicing an item is using the item for a different purpose. Someone that is destroying an item is using the item for a specific purpose—the destruction of the item. Even transferring the item to another party for storage (a type of end use) would be considered a change in end use and end user because that other party would be using the item by storing it for future use by another party. BIS notes that one exception to this would be if another party came to service or destroy an item at the location of the authorized end user, such as coming to repair or to destroy a machine tool that would not be considered a transfer (in-country), provided the authorized end user maintained possession and control of the item at their facility. For most transfers (in-country), such as when an item is received under a BIS license and needs to be transferred (in-country) to a repair center, paragraph (a)(6) of License Exception TMP is used to authorize the transfer (in-country) to a repair facility and License Exception RPL is used to authorize the transfer (in-country) back to the original party. However, for the part 744 end use and end user controls,

License Exceptions TMP and RPL are not available, so a license is required for that activity. Lastly, BIS adds that if the item had been received with no license requirement (*i.e.*, No License Required (NLR)) or under authorization of a license exception that did not have terms specific to end use or end user, such as License Exception GBS (not applicable for China, but included as an example), then a transfer (in-country) to a repair center would not require an authorization, provided there were no parts 744 or 746 license requirements applicable that applied to transfers (in-country). BIS also highlights that because the RS license requirement under § 744.6(a)(6) extends to transfers (in-country) for the items controlled for RS in this AC/S IFR and SME IFR that an EAR authorization is required for all transfers (in-country) of items subject to the EAR unless the original authorization also authorizes subsequent transfers (in-country), *e.g.*, if a 3A090.a item was received under a BIS license by an ultimate consignee listed on the license and was being transferred within China to authorized end users on the license.

Appropriateness of the Scope of U.S. Person Control

Topic 60: A commenter noted that the October 7 IFR is overly broad, particularly with respect to the prohibitions on U.S. person “support” for certain semiconductor manufacturing activities in § 744.6(c)(2). In the absence of clear scoping restrictions, these broad controls create difficulty for U.S. companies and individuals trying to comply and make it almost impossible for them to understand what they can and cannot do.

BIS response: This AC/S IFR has narrowed the scope of § 744.6 where warranted to better focus the controls on activities of national security concern. This rule has also clarified the scope of “U.S. person” activities that are caught, which incorporates FAQs previously published on the BIS website. Additional discussion of amendments to § 744.6 can be found in Section C.4 of this rule.

Topic 61: A commenter noted that a “U.S. person” should not have to obtain a license under § 744.23(a)(2)(iv) because an item could potentially be used in an end use of concern. This commenter asked why a U.S. person with no knowledge of a proscribed activity, but with knowledge of a non-proscribed activity for a dual use computer or IC, should be required to seek a license involving a non-U.S.-origin item, simply because of a BIS

theory, based on no knowledge, that the activity “could involve” WMD use.

BIS response: The “U.S. person” would have a “knowledge” under § 744.6(c)(2)(iv), now redesignated as § 744.6(c)(2)(ii), that the CCL Category 3, B, C, D, or E item was for use for “development” or “production” of integrated circuits at a “facility,” which this SME IFR updates to “of an entity headquartered in either Macau or a destination specified in Country Group D:5.” When this SME IFR and AC/S IFR use the term “headquartered” in these two rules, it includes parent entities. China’s use of ICs in WMD-related activities warrants imposition of a higher level of affirmative duty to “know” in order to not be subject to a license requirement.

“U.S. Person” Control Due Diligence Requirements, as Well as Certain Limitations on Foreign Companies Identifying People by Nationality

Topic 62: Some commenters noted that requiring positive knowledge is a burden shift for an end use control. This commenter noted that the § 744.6(c)(2)(iv)–(vi) requirement represents an unprecedented burden shift. Whereas BIS has previously required that companies not engage in willful blindness or ignorance regarding the end use of their exports, this component of the rule effectively mandates diligence via a licensing requirement.

BIS response: BIS does not agree with these commenters that the control requiring positive knowledge is unprecedented. For example, § 744.3(a)(3) (which has been in the EAR for about 19 years) imposes a license requirement for all items subject to the EAR when the exporter, reexporter, or transferor has “knowledge” that the item subject to the EAR “will be used in the design, “development,” “production,” operation, installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of any rocket systems or unmanned aerial vehicles in or by a country listed in Country Group D:4, but you are unable to determine the characteristics (*i.e.*, range capabilities) of the rocket systems or unmanned aerial vehicles, or whether the rocket systems or unmanned aerial vehicles, regardless of range capabilities, will be used in a manner prohibited under paragraph (a)(2) of this section.” A more recent example that was added in 2014 to part 746 under § 746.5(a)(1)(i) specifies that a license is required to export, reexport, or transfer (in-country) any item subject to the EAR listed in supplement no. 2 to this part and items

specified in ECCNs 0A998, 1C992, 3A229, 3A231, 3A232, 6A991, 8A992, and 8D999 when you “know” that the item will be used directly or indirectly in exploration for, or production of, oil or gas in Russian deepwater (greater than 500 feet) or Arctic offshore locations or shale formations in Russia or Belarus, or are unable to determine whether the item will be used in such projects.

Topic 63: A commenter noted that for the first time, BIS has used the EAR to inform all U.S. persons around the globe that certain specific activities of U.S. persons are regulated because they could support prohibited WMD activities in China. This commenter noted that the regulated activities all involve shipping, transmitting, transferring (in-country), or servicing, or facilitating the shipment, transmission, or transfer (in-country), of certain items that are “not subject to the EAR” to or within China.

BIS response: BIS does not agree. The regulated activities are consistent with other regulated activities under § 744.6 and the activities are being regulated because they could support prohibited WMD activities in China and Macau.

Topic 64: A commenter noted that many foreign employers do not track whether persons are U.S. persons, which will make it harder to comply with these U.S. person controls. The application of these new controls will be complicated, as U.S. person status is not widely maintained by non-U.S. employers. These new controls raise certain specific practical implementation concerns.

BIS response: BIS does not agree that a “U.S. person” restriction applies to a non-U.S. person entity (*e.g.*, a foreign corporation) that employs the U.S. person, unless the entity had knowledge of the individual’s U.S. person status and that the individual was in violation of an applicable U.S. person control. While a corporation may not track the U.S. person status of its personnel, a natural person would be positioned to “know” whether they were a “U.S. person.”

U.S. Person Control Impact on U.S. Persons Working Outside the U.S. and on Innovation

Topic 65: A commenter noted that without clarification as to the scope of what U.S. person activities constitute support for the development of certain advanced semiconductors and associated technologies in China, § 744.6(c)(2) will have a chilling effect on U.S. academic collaborations with universities in China as well as on U.S. university recruitment of highly

qualified students and researchers from China in the semiconductor field. This may detrimentally impact U.S. leadership and competitiveness in the advanced semiconductor sector.

Another commenter noted that the U.S. person control may result in companies not hiring U.S. persons. This commenter noted that despite added clarifications from BIS regarding the scope of these restrictions, the relevant provisions continue to be mired in uncertainty. Companies, consequently, may choose to interpret the U.S. persons provisions broadly, and needlessly restrict their U.S. person employees and contractors from engaging in a number of business-critical functions, which prevents such persons from participating fully in company operations. In any event, U.S. person individuals can often be readily replaced by non-U.S. person individuals without impeding the shipment of non-EAR items to a covered fabrication facility.

BIS response: The intent of the October 7 IFR and this AC/S IFR and SME IFR is to impose controls as focused as possible in addressing the ongoing U.S. national security and foreign policy concerns discussed in these rules. BIS does not intend the new controls to chill research by U.S. universities or undercut U.S. technological leadership where such activity does not present national security or foreign policy concerns. With its initial FAQs on the October 7 IFR, BIS clarified the intended scope of the “U.S. persons” controls. This AC/S IFR adds those clarifications to the EAR. In addition, this AC/S IFR clarifies that the scope of § 744.6 does not include information or software that would otherwise be excluded from the EAR based on the exclusion criteria under part 734, e.g., under § 734.7 Published and § 734.8 “Technology” or “software” that arises during, or results from, fundamental research, as well as specifying this in § 744.6(d)(1)(ii). BIS does not intend for the October 7 IFR controls to result in foreign companies not wanting to hire “U.S. persons.” BIS believes the clarifications made to § 744.6 in this AC/S IFR and SME IFR should reduce these concerns. The U.S. person changes made in this rule are discussed in Section C.4.

Topic 66: A commenter noted that the U.S. person control has broad applicability to many people outside the U.S. and could be discriminatory to them. It is important for BIS to take into account that many individuals located abroad fall within the definition of “U.S. person” even if they have never lived in the United States or are currently permanently residing outside of the U.S.

and these individuals should not be singled out due to their citizenship, which can lead to discrimination and other claims under the laws of certain countries.

BIS response: The intent of the October 7 IFR was to be as focused as possible in addressing ongoing U.S. national security and foreign policy concerns. Being a “U.S. person” has many benefits, but also certain responsibilities that go along with being a “U.S. person,” such as not being involved in specified activities that are of concern for WMD reasons as specified under § 744.6. The U.S. Department of Treasury’s Office of Foreign Assets Controls (OFAC) also has certain responsibilities and restrictions that go along with being a U.S. person, so BIS also directs commenters in this area to review the applicable OFAC controls on U.S. persons that may be applicable.

Whether To Use Export, Reexport, and Transfer (In-Country) Controls or a U.S. Person Control To Address This National Security Issue

Topic 67: A commenter requested that the new restrictions on semiconductor manufacturing be implemented solely through BIS’s traditional jurisdiction over exports, reexports, and transfers (in-country) of items subject to the EAR, rather than a new, untested, and overly broad restriction on U.S. person “support” activities.

BIS response: The national security and foreign policy concerns addressed in the October 7 IFR required that BIS use its full set of regulatory tools under the EAR, which included using CCL-based controls, end-use controls, and end-user controls. For the end-use controls, BIS used both a standard end-use control and expanded the “U.S. person” control to appropriately address its concerns. This AC/S IFR and SME IFR have focused and clarified the scope of both §§ 744.6 and 744.23.

Provide More Information on Restricted U.S. Person Activities

Topic 68: A commenter requested BIS amend the list of controlled activities to specify whether additional business processes are controlled or not. This commenter noted that doing so will decrease compliance delays arising from ambiguous language. For example, it is not clear if restrictions apply to a U.S. person that processes product payments but does not conduct physical transfer of subject items.

BIS response: This AC/S IFR adds paragraph (c)(3) (Scope of activities of “U.S. persons” that require a license under § 744.6(c)(2) of the EAR),

including sub-paragraph (c)(3)(i) that provides greater specificity on the “U.S. person” activities that are caught, consistent with the FAQs posted on the BIS website on January 25, 2023 on the scope of the “U.S. persons” control in § 744.6(c)(2). This AC/S IFR adds paragraph (c)(3)(ii) (*Due diligence*) to provide compliance guidance for this “U.S. person” control, and adds paragraph (d)(1) (*Exclusion of certain administrative and clerical activities*) to add greater specificity on the “U.S. person” activities that are excluded.

U.S. Persons Giving Up U.S. Citizenship or Permanent Residency in Order To Participate in PRC Innovation Efforts

Topic 69: A commenter noted that some U.S. persons may give up their U.S. nationality to help China build advanced semiconductors, and they would be compensated by the PRC government to obtain a third country passport. This commenter noted in this scenario that the now-former U.S. persons’ spouses may still be U.S. citizens, so these persons will be able to return to the United States when they retire after making money in China. This commenter believes this is a very clear loophole in the October 7 IFR.

BIS response: The October 7 IFR and this AC/S IFR and SME IFR used the various export control tools that BIS has under its jurisdiction to address U.S. national security and foreign policy concerns. BIS included an expanded “U.S. person” control because of its concerns that these types of items that are being used by China are part of their WMD programs. BIS highly discourages any “U.S. person” from relinquishing U.S. nationality to help China engage in military advancement and human rights violations. BIS does not have regulatory authority over immigration matters, so BIS is not positioned to respond to that aspect of the comment. However, being a U.S. citizen or legal permanent resident of the U.S. has certain benefits and legal rights that are not afforded to foreign persons. BIS cautions anyone that is considering giving up their U.S. nationality for purposes of work in the advanced semiconductor industry in China to weigh those considerations carefully and not assume they would be able to return to the United States following participation in activities contrary to U.S. national security and foreign policy interests. BIS also notes that a person who relinquished their U.S. nationality would become a foreign person for purposes of ERC assessment.

Meaning and Scope of ‘Support’ Under U.S. Person Control in § 744.6(b)(6)

Topic 70: A commenter noted that the exact definition of “support” is not clear under the October 7 IFR. BIS should consider reconfiguring certain definitions to factor in business processes in the logistics sector. This commenter requested that BIS publish additional guidance on how logistics firms can understand and apply “support” requirements to their supply chains without inducing severe operational disruptions.

BIS response: The term ‘support’ is defined for purposes of § 744.6 under paragraph (b)(6). BIS also notes that the term ‘support’ is not a new term added in the October 7 IFR. However, based on the comments received in response to the October 7 IFR, BIS agrees that additional clarifications should be made on what types of activities involving ‘support’ are excluded, such as certain logistics activities. This AC/S IFR states here that for logistics companies, the prohibited act is the actual delivery, by shipment, transmittal, or transfer (in-country), of the item and the act of authorizing the same.

Topic 71: A commenter noted that § 744.6 prohibits U.S. persons from providing “support” for WMD-related end uses and § 744.6(c) provides that certain specified activities by U.S. persons involving items not subject to the EAR used in semiconductor fabrication could involve “support” for a prohibited WMD-related end use, but it does not say that these specified activities are the only activities by U.S. persons related to semiconductor fabrication that are considered prohibited “support” for WMD-related end uses.

BIS response: This commenter misses the intent of the phrase “which could involve ‘support’ for the [WMD]-related end uses set forth in paragraph (b) of this section” in the introductory text of § 744.6(c)(2). The prohibition under § 744.6(c)(2) is limited to the exhaustive listing of ‘support’ activities defined under § 744.6(b)(6). The phrase “which could involve” is an acknowledgement that in certain cases these activities described under § 744.6(c)(2) may not involve WMD-related activities, but BIS believes that there is a significant possibility that in Macau or a destination specified in Country Group D:5 such end-uses could involve WMD-related activities. In cases in which a “U.S. person” believes the prohibited activity does not involve a WMD-related activity, the “U.S. person” can set forth its reasoning in the license application.

Topic 72: A commenter asked BIS to confirm whether expediting a part or component shipment with a supplier or vendor, by a “U.S. person,” is within the scope of the controls in § 744.6 or § 744.23 if there is knowledge that such a part or component will be exported, reexported, or transferred to a covered fabrication facility. Another commenter noted that it is unclear whether the reference to “support” in § 744.6(c)(2) incorporates all of the definitions of “support” under § 744.6(b)(6) in the activities that are prohibited under § 744.6(c)(2).

BIS response: For the comment regarding expediting a part or component, whether that activity is captured would depend on whether the act was limited to a U.S. person conducting administrative or clerical activities or otherwise implementing a decision already approved by other persons, consistent with § 744.6(d)(1)(i), added in this rule. In addition, the reference to “support” in § 744.6(c)(2) incorporates all of the definitions of “support” under § 744.6(b)(6) in the activities that are prohibited under § 744.6(c)(2).

BIS Has Experience With Regulating Facilitating, but Should Adopt a Definition That Is Narrower Than That Used by OFAC

Topic 73: A commenter noted that restrictions on exports of services by U.S. persons are traditionally administered by OFAC, which has accordingly developed a framework of guidance and authorizations over time to facilitate the implementation of these restrictions. Some commenters noted that the scope of “facilitate” should be narrower under EAR than under the OFAC sanctions. These commenters noted that while BIS and OFAC share some overlapping jurisdiction, the underlying statutory authorities for the EAR and the OFAC regulations are no longer aligned—the current EAR is legally framed by ECRA, not the International Emergency Economic Powers Act (IEEPA). These commenters noted that this distinction underscores that controls on “facilitation” or “facilitating” enacted by BIS under the authority of the EAR or ECRA must be more limited than controls imposed by OFAC under IEEPA’s broad authority.

BIS response: BIS has long experience with regulating activity using the term facilitating as Section 744.6 has been in the EAR since the early 1990s. Use of this term under the EAR is specific to BIS, and other interpretations from other agencies are not applicable under the EAR. Moreover, BIS interpretations should not be applied to the regulations

of any other export control agencies, such as OFAC. Questions on the use of OFAC regulations terminology should be directed to OFAC.

Topic 74: A commenter requested BIS adopt the definition of ‘facilitation’ as, “Authorizing, servicing, and conducting support on the production of advanced nodes.” Another commenter requested that facilitating should be replaced with the term authorizing if that is what is really intended, noting that BIS guidance indicates that “facilitating” such activities means “authorizing” such activities. Without such an amendment, U.S. persons can be unnecessarily cut out from fully engaging in the business of their employer.

BIS response: The term ‘facilitation’ in the context of § 744.6(b)(6)(iii) has broader application than to just paragraph (c)(2), so it would not be appropriate to adopt the suggested definitions. Authorizing is an important part of the scope of facilitating, but there are additional activities that fall under facilitating that also need to be caught, so removing facilitating and adding in its place authorizing is not accepted.

Meaning and Scope of Definition of ‘Production’

Topic 75: A commenter requested that BIS provide an exact definition of “production” because it is not clear under the October 7 IFR.

BIS response: “Production” is a foundational EAR term that is already defined in § 772.1. The term is also defined and used in the multilateral export control regimes. As a result, there should be no ambiguity in how the term is used and no need for an additional definition for this term.

Meaning and Scope of Definition of ‘Servicing’

Topic 76: A commenter requested that BIS provide an exact definition of “servicing” because it is not clear under the October 7 IFR.

BIS response: The term servicing has been used in the EAR for many decades and in various EAR provisions, such as under License Exception RPL under §§ 740.10 and 764.2(e), and in General Prohibition 10 under § 736.2(b)(10). This term is intended to have an expansive meaning and BIS believes it is well understood in the context of the EAR. For example, in the context of License Exception RPL, servicing means inspection, testing, calibration or repair, including overhaul and reconditioning (see § 740.10(b)(2)(i)). BIS has also provided guidance through FAQs on the October 7 IFR on what U.S. person activities are captured by servicing for

purposes of § 744.6. BIS interprets the meaning of servicing in the context of § 744.6 consistent with the expansive definition provided under License Exception RPL.

Scope of Information Covered Under the “U.S. Person” Control

Topic 77: Commenter requests that BIS clarify the scope of “any item not subject to the EAR” in § 744.6(c)(2) to specifically exclude technology and software that is published and/or that arises during or results from fundamental research. Another commenter is concerned that, without further clarification from BIS regarding the scope of “support” and “facilitating,” these terms could be interpreted to include core university activities such as training and teaching students and researchers from China in the United States. This commenter requests that BIS expand FAQ IV.A2 to further clarify that these terms do not include training and teaching of students and researchers from China in the United States.

BIS response: BIS agrees. As noted above, this AC/S IFR in responding to these comments clarifies that the scope of § 744.6(c)(2) does not include information or software that would otherwise be excluded from the EAR based on the exclusion criteria under part 734, e.g., under § 734.7 Published and § 734.8 “Technology” or “software” that arises during, or results from, fundamental research, which this AC/S IFR specifies in § 744.6(d)(1)(ii).

Exclude Certain Activities When Employer Has a BIS Authorization To Engage in Those Activities

Topic 78: A commenter requested BIS issue guidance that activities of U.S. persons in support of licensed activities by their employer are excluded from the scope of the controls. It would be unfortunate for a U.S. person to unintentionally violate the EAR because the items subject to the EAR that they are exporting or reexporting subject to a BIS license happen to include an item that was not subject to the EAR, such as bundled software or a spare part.

BIS response: BIS clarifies here in this AC/S IFR that existing BIS licenses would also cover such “U.S. person” activities as described in the commenter’s scenario. BIS cautions that if the activity being provided goes outside the scope of the BIS license, then a separate analysis of that “U.S. person” activity must be conducted.

C. Expansion of Export Controls on Advanced Computing Items and Supercomputers

This section describes the specific EAR revisions adopted in this IFR, which expand and refine the October 7 IFR with respect to advanced computing items and supercomputers, and addresses the national security concerns that led to an expansion of the country scope for these commodities and related software and technology.

Overview of EAR Changes

This AC/S IFR revises ECCN 3A090 to remove paragraph a, including paragraphs a.1 through a.4, and adds in its place a simplified control paragraph. Those changes, as well as a conforming change to ECCN 3A991.p, are discussed below in section C.1 of this rule. This rule also introduces License Exception Notified Advanced Computing (NAC), which is discussed in section C.2. In response to public comments, the rule also replaces the criteria “any other item on CCL that meet or exceed the performance parameters of 3A090 or 4A090” by positively identifying those ECCNs in new .z paragraphs, along with various conforming changes related to the new .z paragraphs in other parts of the EAR. The public comments on this issue are described in section B under Topics 19–24; additional details about those changes, and the accompanying conforming changes including to the Automated Export System (AES), can be found in section C.3.

In addition, this rule broadens the country scope for the Regional Stability controls to destinations specified in Country Groups D:1, D:4, and D:5 in supplement no. 1 to part 740 that are not also specified in Country Groups A:5 or A:6 and amends the licensing policy, as described in section C.4. Section C.5 discusses clarifications to the scope of “U.S. person” and end-use controls related to supercomputers and advanced computing items. Section 744.23 is expanded to capture PRC operations outside of China in light of ongoing national security concerns related to diversion and misuse of items subject to the EAR; those changes are discussed in section C.6. As discussed in section C.7, this rule adds ECCNs 3A991.p and 4A994.l to License Exception Consumer Communication Device (CCD).

As discussed in section C.8, this rule also broadens the country scope with respect to the advanced computing FDP rule to destinations specified in Country Groups D:1, D:4, and D:5 that are not also specified in Country Groups A:5 or A:6. Section C.9 describes changes

clarifying that the model certificate published in the October 7 IFR may be used for all FDP rules. Section C.10 discusses changes to enhance compliance, including the addition of five new red flags to assist with compliance, including adding a red flag for enhanced FDP guidance for recognizing “direct products.” The addition of one new TGL is described in section C.11. Additional corrections and clarifications made in this rule are described in section C.12.

Lastly, BIS requests specific comments on several issues, which are listed and described in section D.

National Security and Foreign Policy Considerations for Expanding Controls and Country Scope

As noted earlier in the rule, these advanced or frontier AI capabilities, such as large dual-use AI foundation models with capabilities of concern are particularly problematic because their use can lead to improved design and execution of WMD and advanced conventional weapons. Military decision-making aided by these AI models can improve speed, accuracy, planning, and logistics. The use of such items in development and deployment of these AI models would further China’s goals of surpassing the military capability of the United States and its allies, a goal noted in the February 6, 2023 Annual Threat Assessment of the U.S. Intelligence Community. That same report indicated that “China is rapidly expanding and improving its artificial intelligence (AI) and big data analytics capabilities, which could expand beyond domestic use.” These national security concerns were paramount in the issuance of this AC/S IFR.

Consistent with the national security and foreign policy concerns described in the October 7 IFR, BIS is updating the EAR to enhance effectiveness of the controls in addressing these ongoing concerns. Following the implementation of the controls last year, BIS continued to study and assess their effectiveness. This rule strengthens and improves those controls by addressing the national security considerations that have come to light through open-source reporting, public comments, and the intelligence community. Through this process, BIS learned that certain additional ICs could provide nearly comparable AI model training capability as those controlled in the October 7 IFR. BIS also seeks to further impair diversion channels through third countries, particularly those with AI commercial and research ties to the PRC.

In addition, credible open source reporting identified PRC companies using foreign subsidiaries to purchase chips subject to EAR controls, and accessing and operating datacenters located outside of the PRC with the ICs subject to EAR controls. Moreover, BIS is also concerned about certain additional ICs, which in turn can be used to train frontier AI models that have the most significant potential for advanced warfare applications, including unmanned intelligent combat systems, enhanced battlefield situational awareness and decision making, multidomain operations, automatic target recognition, autopiloting, missile fusion, precise guidance for hypersonic platforms, and cyber attacks. Accordingly, to address these issues, BIS is making several changes to the rule.

First, to prevent technical workarounds, BIS is adding a performance density parameter to the original control and including a new structure for the control. A performance density parameter prevents the workaround of simply purchasing a larger number of smaller datacenter AI chips which, if combined, would be equally powerful as restricted chips.

Second, to address PRC operations inside and outside of China and Macau seeking to acquire advanced ICs through transshipment and diversion, and accessing datacenters with advanced ICs, the rule expands controls to destinations in country groups D:1, D:4, and D:5 that are not also in Country Groups A:5 or A:6. Additionally, the rule also adds two new end use controls to prevent circumvention of the controls. Moreover, in section D, this rule is also soliciting comment from Infrastructure as a Service (IaaS) providers and other stakeholders on additional regulations in this area, including know your customer requirements that can be adopted to address uses that present a national security or foreign policy concern.

Third, because advanced-ICs have varying capabilities implicating national security concerns, with this rule, BIS is controlling a wider scope of advanced-ICs through adoption of a tiered approach. Thus, first, for the most powerful data-center ICs (as described in ECCN 3A090.a), which are of the greatest national security and foreign policy concern, BIS is imposing a license requirement to any destination specified in Country Groups D:1, D:4, or D:5 that are not also in Country Groups A:5 or A:6. Second, for advanced-ICs that are less powerful but could be used to train large-scale AI systems by a sufficiently well-resourced actor (as

described in ECCN 3A090.b, as well as certain 3A090.a commodities) BIS is providing license exception NAC for destinations in Country Groups D:1, D:4, or D:5, but use of such license exception will require pre-notification of the export or reexport to Macau or a destination specified in Country Group D:5.

This AC/S IFR also adds a new red flag to assist semiconductor fabrication facilities' additional compliance with the advanced computing FDP rule as described under section C.10.A.

1. Revision of ECCN 3A090 and Conforming Change to 3A991.p

A. Revisions to 3A090 control parameters to ensure ICs for AI training are controlled.

In ECCN 3A090, this AC/S IFR revises the "items" paragraph in the List of Items Controlled section to remove paragraph a, including paragraphs a.1 through a.4, and adds in its place a simplified paragraph .a and .b. The revised 3A090.a control parameter will control ICs with one or more digital processing units having either: (1) a 'total processing performance' of 4800 or more, or (2) a 'total processing performance' of 1600 or more and a 'performance density' of 5.92 or more. The new ECCN 3A090.b will control ICs with one or more digital processing units having either: (1) a 'total processing performance' of 2400 or more and less than 4800 and a 'performance density' of 1.6 or more and less than 5.92, or (2) a 'total processing performance' of 1600 or more and a 'performance density' of 3.2 or more and less than 5.92. See Technical Notes to ECCN 3A090 for calculating 'total processing performance' and 'performance density.' Together, these paragraphs expand the scope of control as compared to the October 7 IFR. This action is necessary to ensure that ICs below the October 7 ECCN 3A090 parameters that were still useful for training advanced AI with military applications would be controlled.

To more precisely control the types of ICs presenting the concerns described above in section C of this rule, ICs that meet certain performance thresholds described in Note 2 are not subject to 3A090 controls. Thus, no license is required for these ICs under 3A090; however, such ICs may require a license under another ECCN.

The scope of this control is calibrated through the addition of several Notes to ECCN 3A090 and a new license exception, the former discussed below in sections C.1.B, C.1.C, and C.1.F and the latter discussed in section C.2. BIS excludes from ECCN 3A090 ICs that (1)

are not designed or marketed for use in datacenters, and (2) do not have a 'total processing performance' of 4800 or more (see Note 2). As discussed in section C.2 of this rule, License Exception NAC provides a path for prior notification to BIS when exporting or reexporting eligible items to the PRC and Macau. The notification requirements do not apply for transfers (in-country) within the PRC and Macau. Eligible items for License Exception NAC are defined as those ICs under ECCN 3A090.b (including ICs that *are* designed or marketed for use in a data center) and specific ICs under 3A090.a (*not* designed or marketed for use in a data center).

B. Addition of exclusion for 'non-datacenter integrated circuits' from the expanded 3A090 control parameter.

In ECCN 3A090, this AC/S IFR adds a new Note 2 to 3A090 to specify that 3A090 does not apply to non-datacenter integrated circuits that are (a) not designed or marketed for use in datacenters; and (b) do not have a 'total processing performance' of 4800 or more. In response to this AC/S IFR, BIS seeks comments on how to refine these parameters to more granularly cover additional ICs that would not raise concerns for use in training large-scale AI systems. See section D question 6 of this rule.

The purpose of this Note 2 is to ensure that as implementation occurs in the future, the expanded ECCN 3A090.a and .b control parameters do not increasingly control certain non-datacenter ICs.

C. Revisions to technical notes for clarity.

This AC/S IFR also makes several revisions to the Technical Notes to address the various comments that BIS received noting that there are multiple ways to calculate the TOPS calculations and identifying that the criteria provided in the Technical Notes included in the October 7 IFR under ECCN 3A090 were not adequate for a consistent interpretation on how to calculate the TOPS calculation. BIS agreed that revisions were needed. This AC/S IFR revises the five technical notes for clarity. Most importantly, this AC/S IFR replaces bits x TOPS with 'Total processing performance' ('TPP') values and defines clear, objective criteria that can be used to calculate the 'TPP' value.

In ECCN 3A991, this AC/S IFR amends Technical Note for 3A991.p, paragraph 3, to conform with the changes to the Technical Notes to ECCN 3A090.

D. Expanded license requirement.

This AC/S IFR also revises the License Requirements section for the RS license requirement that applies to the entire ECCN 3A090 to expand the scope of the destination-based license requirements by removing China and Macau and adding in its place any destination specified in Country Groups D:1, D:4, or D:5 that is not also specified in Country Groups A:5 or A:6. This expanded license requirement is warranted because of the potential diversion concern for these activities of concern in or with Macau or a destination specified in Country Group D:5. However, for destinations to or within destinations not specified in Country Group D:5 (except Macau), license applications will generally be reviewed under a presumption of approval license review policy under § 742.6(b)(10) paragraph (b)(10)(ii) (License review policy for paragraph (a)(6)(iii)). See section C.4 for fuller description of the license review policies that will be applicable to these destinations referenced in this paragraph.

This AC/S IFR also adds a cross reference in the RS control in ECCN 3A090 to *see* § 742.6(a)(6)(iii) of the EAR.

E. Addition of Note 3 to 3A090 and adding Related Controls cross references from related ECCNs.

This AC/S IFR, as a conforming change for the addition of Note 3 to 3A090, adds a Related Controls reference to Note 3 to 3A090 in ECCNs 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z.

2. Addition of License Exception Notified Advanced Computing (NAC) for Consumer-Grade ICs With AI Capabilities

In § 740.8, which prior to the effective date of this rule was reserved, this AC/S IFR adds new license exception NAC. This license exception is for ICs under ECCN 3A090.b (*i.e.*, ICs designed or marketed for use in datacenters) and non-datacenter ICs under 3A090.a (*i.e.*, ICs *not* designed or marketed for use in datacenters and that *do have* a ‘total processing performance’ of 4800 or more). NAC is available for exports, reexports, and transfers in or within Country Groups D:1, D:4, or D:5 with different requirements applicable to Macau and destinations specified in Country Group D:5. The purpose of the notification process, which is only required for exports and reexports to Macau or destinations specified in Country Group D:5, is to provide BIS and its interagency export controls partners the opportunity to evaluate the

national security risk posed by ICs that fall within this parameter.

This license exception as specified under the paragraph (a) (Eligibility requirements) will authorize export, reexport, and transfer (in-country) of any item classified in ECCNs 3A090, 4A090, 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z, except for items designed or marketed for use in a datacenter and meeting the parameters of 3A090.a. License Exception NAC authorizes exports, reexports, or transfers (in-country) to any destination specified in Country Groups D:1, D:4, or D:5, provided the applicable criteria specified under paragraphs (a) and (b) are met. For exports and reexports to Macau or destinations specified in Country Group D:5, in addition to meeting the criteria under paragraphs (a) and (b), the notification requirements under paragraph (c) of License Exception NAC must all be met. The notification requirement does not apply to exports or reexports to any destination specified in Country Groups D:1 or D:4 (other than Macau or destinations also specified in Country Group D:5) nor does it apply to transfers (in-country) to any destination.

Paragraph (a)(1) (Written purchase order) requires that any export or reexport authorized under License Exception NAC must be made pursuant to a written purchase order, except for commercial samples which are not subject to this purchase order requirement. Written purchase orders are not required for transfers (in-country). Exports, reexports, or transfers (in-country) to or within any other destination identified under Country Groups D:1, D:4, or D:5 are authorized under License Exception NAC, provided the applicable criteria under paragraphs (a) and (b) are met.

Paragraph (a)(2) (Notification to BIS) specifies that for exports or reexports to Macau or a destination specified in Country Group D:5, you must notify BIS prior to exporting or reexporting, according to the procedures set forth in paragraph (c) of License Exception NAC. Paragraph (a)(2) specifies that if you intend to engage in multiple exports or reexports after the signing of the purchase order, you need only notify BIS prior to the first export or reexport. Paragraph (a)(2) is not required for transfers (in-country) within Macau or a destination specified in Country Group D:5.

Paragraph (b) (Restrictions) apply to all exports, reexports, or transfers (in-country) authorized under License Exception NAC. Paragraph (b)(1) (Prohibited end uses and end users)

specifies that License Exception NAC is not able to overcome any part 744 or 746 license requirements, except for a license required under § 744.23(a)(3) for reexports or exports to any destination other than those specified in Country Groups D:1, D:4, or D:5 (excluding any destination also specified in Country Groups A:5 or A:6) for an entity that is headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5. The restriction under paragraph (b)(2) (‘Military end use’ or ‘military end user’) specifies that no exports, reexports, or transfers (in-country) may be made under License Exception NAC to or for a ‘military end use’ as defined in § 744.21(f) or ‘military end user’ as defined in § 744.21(g). This ‘military end use’ or ‘military end user’ restriction applies to a broader country scope than those prohibited under §§ 744.17 and 744.21.

Paragraph (c) (Prior notification procedures) specifies the notification requirements that must be followed prior to making any export or reexport to Macau or a destination specified in Country Group D:5 under License Exception NAC. Paragraph (c)(1) (Procedures) specifies the requirement to make this notification prior to using License Exception NAC as well as what Blocks need to be completed in SNAP-R for submitting a notification request. You do not need to submit a commodity classification determination from BIS with your notification, but doing so will be helpful in limiting any concerns associated with the technical nature of the item because BIS will already be familiar with the item’s performance characteristics if it has conducted a classification review.

Paragraph (c)(2) (Action by BIS) specifies that BIS intends during the 25-calendar day review period to review the notification together with the other export control agencies. Paragraph (c)(3) (Status of pending NAC notification requests) describes the process for entities to follow in BIS’s System for Tracking Export License Applications (STELA) (<https://snapr.bis.doc.gov/stela>) to obtain the status of a pending NAC notification or verify the status in BIS’s Simplified Network Applications Processing Redesign (SNAP-R) System. Paragraph (c)(3) also specifies that if no objection to a NAC notification is raised, STELA will, on the twenty-fifth calendar day following the date of registration, provide a confirmation of that fact and a NAC confirmation number to be submitted in AES. Paragraph (c)(3) also indicates that if the NAC notification is not approved, on the twenty-fifth calendar day following

the date of registration, STELA will provide you with confirmation if you cannot use License Exception NAC.

BIS intends to post an announcement on the BIS website once entities may submit License Exception NAC notifications with the goal that License Exception NAC requests may be submitted prior to the effective date of this rule.

This AC/S IFR, as a conforming change for the addition of License Exception NAC, adds a NAC paragraph to the List-Based License Exception section under ECCNs 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, 5D002.z, and 5D992.z.

3. Replacing Criteria for Any Other Item on CCL That Meet or Exceed the Performance Parameters of 3A090 or 4A090 by Positively Identifying Those ECCNs and Adopting .z Paragraphs

The October 7 IFR under § 742.6(a)(6), along with other provisions in the October 7 IFR, used the criteria “or identified elsewhere on the CCL that meet or exceed the performance parameters of ECCNs 3A090 or 4A090.” As described above, commenters on the October 7 IFR raised significant concerns that this type of catch-all text deviated from the common structure of the CCL under supplement no. 1 to part 774 of the EAR, would be burdensome and possibly unimplementable for many exporters, reexporters, and transferors, and would lead to confusion regarding the appropriate classification and control of items on the CCL.

Commenters strongly encouraged BIS to adopt a more conventional approach to implementing these changes by either adding new ECCNs to control those additional items that would otherwise meet or exceed the performance parameters of ECCNs 3A090 or 4A090, or by identifying a positive list of additional ECCNs that may warrant this additional control on the CCL and then creating separate “items” level paragraphs in each of these respective ECCNs.

After reviewing the concerns raised by the commenters, BIS agrees that a more conventional structure is needed for imposing this aspect of the October 7 IFR. Accordingly, BIS is identifying a positive list of the nine additional ECCNs for which BIS has determined also have performance characteristics or functions that meet or exceed the performance parameters of ECCNs 3A090 or 4A090 and is adding a new “items” level paragraph in the List of Items Controlled section of each of these nine ECCNs by adding .z paragraphs to each. This AC/S IFR makes several

changes to the EAR to implement this important change to the October 7 IFR. For ease of reference these changes are described here under four types of changes: (1) adding .z paragraphs to nine ECCNs; (2) revising Related Controls for 3A090, 3A991, 4A090, 4A994 and the nine ECCNs to cross reference each other to assist with classification; (3) making other EAR conforming changes needed because of the addition of .z paragraphs; and (4) changing export clearance requirements to increase transparency of .z, 3A090, and 4A090 shipments.

A. Adding .z paragraphs to nine ECCNs.

This final rule revises nine ECCNs 3A001, 4A003, 4A004, 4A005, 5A002, 5A004, 5A992, 5D002, and 5D992 to address overlapping controls with ECCNs 3A090, 4A090, 3A991.p and 4A994.l by adding .z paragraphs to each of these nine ECCNs. These changes are intended to make it easier for exporters, reexporters, and transferors to identify these items subject to controls added in the October 7 IFR and to more easily distinguish these items from other items controlled under these same nine ECCNs. Each .z paragraph uses the same structure, but there are differences in the .z paragraphs because the overlapping controls with 3A090 and 4A090, as well as 3A991.p and 4A994.l, are not the same for each of the nine ECCNs. Despite the differences in the text used for each .z paragraph, the commonality in the paragraphs’ structure should assist understanding. Some of the .z paragraphs are limited to one paragraph, but others such as ECCN 5A002 have several paragraphs under the .z paragraph. BIS is adopting the .z structure because no ECCN currently has a .z “items” level paragraph. Similar to the structure used with the .x and .y paragraphs for the “600 series,” 9x515, and 0x5zz ECCNs, using a common “items” paragraph designation will make it easier for exporters, reexporters, and transferors to identify these items, as well as for the U.S. Government to identify these items under these nine ECCNs.

For each ECCN this rule revises to add a .z paragraph, this rule reserves the items level paragraph from where the items paragraph ended prior to this AC/S IFR becoming effective up through paragraph .y. For example under ECCN 5A002, this rule revises 5A002 to reserve paragraphs .f through .y. This rule does the same in each of the other eight ECCNs that are being revised to add the .z paragraphs, but depending on how many items paragraphs each ECCN had before the effective date of this AC/S IFR, different paragraphs are reserved.

BIS includes as an illustrative example some of the .z paragraphs from ECCN 5A002 that this AC/S IFR adds. The introductory text of the 5A002.z paragraph identifies “Other commodities, as follows” and then includes additional control parameters to identify these .z commodities. ECCN 5A002, because of the complexity of the ECCN and the overlapping controls with 3A090 and 4A090, has several .z subparagraphs that are tied to the other “items” paragraphs in 5A002. For example, 5A002.z.1 controls commodities that are described in 5A002.a and that also meet or exceed the performance parameters in 3A090 or 4A090. Similarly, 5A002.z.2 controls commodities that are described in 5A002.b and that also meet or exceed the performance parameters in 3A090 or 4A090. Some of the other relevant ECCNs have a simpler and shorter structure and may be limited to a single .z paragraph. However, regardless of how many .z paragraphs are added, each .z paragraph functions the same way because it references an item that is described elsewhere in the same ECCN that also meets or exceeds the performance parameters in 3A090, 4A090, 3A991.p, or 4A994.l, as applicable and specified in the respective .z paragraph. By classifying these items in their own .z paragraph, it will be easier for exporters, reexporters, and transferors to identify these items and the additional controls and other restrictions that are applicable to them.

In ECCN 3A001, this AC/S IFR reserves paragraphs j. through y. and adds paragraphs z.1 through .4 to the “items” paragraph in the List of Items Controlled section and makes the following conforming changes by adding certain 3A001.z items to the NS1, RS1, MT1 and NP1 Controls paragraphs and adding a RS control that applies to items controlled by 3A001.z for destinations specified in Country Groups D:1, D:4, or D:5. This AC/S IFR adds 3A001.z to the exclusion on using License Exception LVS.

In ECCN 4A003, this AC/S IFR reserves paragraphs h. through y. and adds paragraphs .z.1 through .z.4 in the List of Items Controlled section and makes a corresponding change to the Reason for Control section by adding a RS control for items controlled by 4A003.z for destinations specified in Country Groups D:1, D:4, or D:5. This AC/S IFR adds 4A003.z to the exclusion on using License Exception LVS. This AC/S IFR also adds a new Note to List Based License Exception in ECCN 4A003 to specify that the related equipment specified under ECCN 4A003.g, z.2, or z.4 are eligible for

License Exception GBS if three conditions are met. The related equipment must be exported, reexported, or transferred (in-country) as part of a computer system, the computer system must either be designated as NLR or eligible for License Exception APP, and the related equipment must be eligible for License Exception APP.

In ECCN 4A004, this AC/S IFR reserves paragraphs d. through y. and adds paragraph .z in the List of Items Controlled section and makes a corresponding change to the Reasons for Control section by adding a RS control that applies to items controlled by 4A004.z (1) for destinations specified in Country Groups D:1, D:4, or D:5 that are not also specified in Country Groups A:5 or A:6 and (2) to or with any destination not specified in Country Groups D:1, D:4, or D:5 when the export, reexport or transfer (in-country) includes an ultimate consignee or end user headquartered in a destination in Country Groups D:1, D:4, or D:5 that is not also specified in Country Groups A:5 or A:6. This AC/S IFR adds 4A004.z to the exclusion on using License Exception LVS.

In ECCN 4A005, this AC/S IFR revises the heading to add the parenthetical phrase “(see List of Items Controlled).” This AC/S IFR revises the phrase that referenced “[T]he list of items controlled is contained in the ECCN heading” in the “Items” paragraph in the List of Items Controlled section to add the phrase “except for the commodities controlled under 4A005.z.” This rule reserves paragraphs a. through .y, adds paragraph .z, and makes a corresponding change to the Reasons for Control section to add a RS control that applies to items controlled by 4A005.z for destinations specified in Country Groups D:1, D:4, or D:5 that are not also specified in Country Groups A:5 or A:6. This AC/S IFR also adds 4A005.z to the exclusion on using License Exception ACE.

BIS notes that although the general restriction on the use of license exceptions under § 740.2(a)(9)(ii) and the terms and conditions of certain list-based license exceptions, such as LVS or GBS, or the terms of License Exception STA, would preclude the use of these EAR license exceptions for destinations specified in Country Groups D:1, D:4, or D:5, that are not also specified in Country Groups A:5 or A:6, that this AC/S IFR as an additional safeguard still adds exclusions for the new .z paragraphs for these ECCNs as an additional reminder to exporters, reexporters, and transferors that these

license exceptions are not available for .z items for these destinations.

In ECCN 5A002, this AC/S IFR reserves paragraphs f. through y. and adds paragraphs .z.1 through .5 in the List of Items Controlled section and makes the following conforming changes by adding a RS control that applies to items controlled by 5A002.z for destinations specified in Country Groups D:1, D:4, or D:5 that are not also specified in Country Groups A:5 or A:6. This AC/S IFR also adds 5A002.z to the exclusion on using License Exceptions LVS and ENC.

In ECCN 5A992, this AC/S IFR reserves paragraphs d. through y. and adds paragraphs .z.1 and .2 in the List of Items Controlled section and makes a corresponding change to the Reasons for Control section by revising the RS control that applies for 5A992.z items destined to or within destinations specified in Country Groups D:1, D:4, or D:5 that are not also specified in Country Groups A:5 or A:6.

In ECCN 5A004, this AC/S IFR reserves paragraphs c. through y. and adds paragraphs .z.1 and .2 in the List of Items Controlled section and makes the following conforming change by adding a RS control that applies to items controlled by 5A004.z for destinations specified in Country Groups D:1, D:4, or D:5 that are not also specified in Country Groups A:5 or A:6. This AC/S IFR also adds 5A004.z to the exclusion on using License Exceptions LVS and ENC.

In ECCN 5D002, this AC/S IFR reserves paragraphs e. through y. and adds paragraphs .z.1 through .9 in the List of Items Controlled section and makes the following conforming change by adding a RS control that applies to items controlled by 5D002.z for destinations specified in Country Groups D:1, D:4, or D:5 that are not also specified in Country Groups A:5 or A:6. This AC/S IFR also adds 5D002.z to the exclusion on using License Exception ENC.

In ECCN 5D992, this AC/S IFR reserves paragraphs d. through y. and adds paragraph .z in the List of Items Controlled section and makes a corresponding change to the Reasons for Control section by revising the RS control that applies for destinations specified in Country Groups D:1, D:4, or D:5 that are not also specified in Country Groups A:5 or A:6.

B. Revising Related Controls for 3A090, 4A090, 5E001, and the Nine ECCNs to cross reference each other to assist with classification.

BIS includes Related Controls paragraphs in the List of Items Controlled section of ECCNs to alert

persons classifying items of related controls that may be applicable. This rule revises the Related Controls paragraphs in ECCNs 3A090 and 4A090 to add references to the nine ECCNs that this final rule adds .z paragraphs to, as applicable. Because the cross over that is being addressed is not identical for each of these nine ECCNs with .z paragraphs added, the revisions to the Related Controls paragraphs are not identical in all cases.

In ECCN 3A001, this AC/S IFR adds a reference to see also ECCN 3A090.

In ECCN 3A090, this AC/S IFR adds a reference to see also 3A001.z, 5A002.z, 5A004.z, 5A992.z, 5D002.z, and 5D992.z.

In ECCN 3A991, this AC/S IFR adds a reference to see also ECCNs 5A002.z, 5A004.z, and 5A992.z.

In ECCN 4A003, this AC/S IFR adds a reference to see also ECCN 4A090.

In ECCN 4A004, this AC/S IFR adds a reference to see also ECCN 4A090.

In ECCN 4A005, this AC/S IFR adds a reference to see also ECCN 4A090.

In ECCN 4A090, this AC/S IFR adds a reference to see also ECCNs 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, 5A992.z, 5D002.z, and 5D992.z.

In ECCN 4A994, this AC/S IFR adds a reference to see also ECCNs 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, and 5A992.z.

In ECCN 5A002, this AC/S IFR adds a reference to see also ECCNs 3A090 and 4A090.

In ECCN 5A004, this AC/S IFR adds a reference to see also ECCNs 3A090 and 4A090.

In ECCN 5A992, this AC/S IFR adds a reference to see also ECCNs 3A090 and 4A090.

In ECCN 5D002, this AC/S IFR adds a reference to see also ECCNs 3D001.z and 4D001.z.

In ECCN 5D992, this AC/S IFR adds a reference to see also ECCNs 3D001.z and 4D001.z.

In ECCN 5E001, this AC/S IFR adds a reference to see also ECCN 3A001.z.

C. Other EAR conforming changes needed because of addition of .z paragraphs.

This AC/S IFR makes various changes to other ECCNs and other parts of the EAR to make conforming changes where needed as a result of the addition of the .z items paragraphs to the nine ECCNs 3A001, 4A003, 4A004, 4A005, 5A002, 5A004, 5A992, 5D002, and 5D992.

These changes are made to ensure that certain provisions that currently apply for other items controlled under these nine ECCNs are not narrowed or expanded as a result of the addition of the .z paragraphs. In other cases, specific “items” paragraphs from these

nine ECCNs are identified in other provisions where in certain cases, it was needed to also add in references to ensure the same provisions will apply to the .z paragraphs. Because some of the nine ECCNs include ECCNs, such as 5A002 and 5D002, which are referenced in various other provisions of the EAR, this AC/S IFR needed to make various conforming changes to these other ECCNs and parts of the EAR. Although this appears to be extensive revision, the intent in most cases is to ensure that the scope of the controls prior to this AC/S IFR generally does not change. The changes are described below in the order they appear in the EAR.

Conforming Changes in Part 734

In § 734.4(b)(2), this AC/S IFR removes ECCNs 5A992.c and 5D992.c and adds in their place ECCNs 5A992 and 5D992. These requirements are intended to apply to the entire ECCNs, so these changes are needed to account for the addition of .z to 5A992 and 5D992.

In § 734.9(h)(1)(i)(B)(2) and (h)(1)(ii)(B)(2), this AC/S IFR revises these two paragraphs to remove the phrase “elsewhere on the CCL and meets the performance parameters in 3A090 or 4A090” and adds a more specific reference to “meeting the performance parameters in ECCNs 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, or 5A992.z.” By adding this more specific reference tied to the new .z paragraphs, this AC/S IFR will make it easier for foreign manufacturers to comply with this aspect of the Advanced Computing Foreign Direct Product (FDP) rule and to more easily apply the *de minimis* provisions.

Conforming Changes in Part 740

In § 740.2 Restrictions on all License Exceptions, this AC/S IFR revises the general restriction on the use of license exceptions under paragraph (a)(9)(ii), which will now be paragraph (a)(9)(ii)(B) because of the revisions made in this SME IFR, to remove the phrase “elsewhere on the CCL which meets or exceeds the performance parameters in ECCNs 3A090 or 4A090” and adds in its place the more specific reference to “specified in ECCNs 3A001.z; 3D001 (for “software” for commodities controlled by 3A001.z, 3A090), 3E001 (for “technology” for commodities controlled by 3A001.z); 4A003.z; 4A004.z; 4A005.z; 4D001 (for “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z); 4E001 (for “technology” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z); 5A002.z;

5A004.z; 5A992.z; 5D002.z; 5D992.z; 5E002 (for “technology” for commodities controlled by 5A002.z or 5A004.z); “software” specified by 5D002 (for 5A002.z or 5A004.z commodities); 5E992 (for “technology” for commodities controlled by 5A992.z or “software” controlled by 5D992.z).” By adding this more specific reference tied to the new .z paragraphs, this AC/S IFR will make it easier for exporters, reexporters, and transferors to know when this general restriction will apply on the use of license exceptions. In the introductory text of paragraph (a)(9)(ii), this AC/S IFR adds a reference to new License Exception NAC by adding the phrase “NAC, under the provisions of § 740.8.”

In addition to amending § 740.2(a)(9) to prohibit the use of license exceptions for certain ECCNs, including those with a .z paragraph, BIS also notes restrictions for certain license exceptions as a reminder for exporters. In § 740.7 Computers (APP), this AC/S IFR adds a reference to 4A003.z.2 or z.4 after the reference to 4A003.g in paragraph (b)(1) to remind exporters that this restriction on the use of License Exception APP will also apply when a commodity that is described in 4A003.g is controlled under 4A003.z.2 or .z.4.

In § 740.16 Additional permissive reexports (APR), this AC/S IFR revises paragraphs (a)(2) and (b)(2)(ii) to add a reference to 3A001.z to ensure that the restrictions under 3A001.b.2 or b.3 will continue to apply when a commodity described under one of those two “items” paragraphs is controlled under 3A001.z.

In § 740.17 Encryption Commodities, Software and Technology (ENC), this AC/S IFR makes several conforming changes to ensure the intended scope of this license exception is not changed as a result of the addition of the .z “items” paragraphs:

Under the fifth sentence of the introductory text to § 740.17, this AC/S IFR removes the reference to 5A992.c and 5D992.c and adds in its place a reference to 5A992 and 5D992.

Under paragraph (b)(1) to § 740.17, this AC/S IFR adds a reference after 5A002.a to 5A002.z.1 and removes the reference to 5A992.c and 5D992.c and adds in its place a reference to 5A992 and 5D992. BIS could have added a reference to 5D992.z, but because ECCN 5D992 only includes “items” paragraphs .c and .z, it was simpler to add a reference to 5D992.

Under paragraph (b)(2)(i)(D) to § 740.17, this AC/S IFR after 5A002.c adds a reference to 5A002.z.3 to ensure the intended scope of this provision is

not changed as a result of the addition of the .z “items” paragraph.

Under the Note to paragraph (b)(2) to § 740.17, this AC/S IFR adds after ECCN 5A002.b a reference to 5A002.z.2 and after 5D002.b a reference to 5D002.z.5 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

Under (b)(3) introductory text to § 740.17, this AC/S IFR removes 5A992.c and 5D992.c and adds in their place references to 5A992 and 5D992. BIS could have added a reference to 5D992.z, but because ECCN 5D992 only includes “items” paragraphs .c and .z, it was simpler to add a reference to 5D992.

Under (b)(3)(i) introductory text to § 740.17, this AC/S IFR after 5A002.a adds a reference to 5A002.z.1 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

Under paragraph (b)(3)(iii)(B) to § 740.17, this AC/S IFR after 5D002.a.3.b adds a reference to 5D002.z.4, and after 5D002.c.3.b adds a reference to 5D002.z.9 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

Under paragraph (b)(3)(iv) to § 740.17, this AC/S IFR after 5A002.b adds a reference to 5A002.z.2, and after 5D002.b adds a reference to 5D002.z.5 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

Under paragraph (e)(3) second sentence to § 740.17, this AC/S IFR removes the reference to 5A992.c and 5D992.c and adds in its place a reference to 5A992 and 5D992. BIS could have added a reference to 5D992.z, but because ECCN 5D992 only includes “items” paragraphs .c and .z, it was simpler to add a reference to 5D992.

Under paragraph (f)(1) to § 740.17, this AC/S IFR adds after 5A004.a a reference to 5A004.z.1 and z.2, after 5D002.a.3.a a reference to 5D002.z.3 and z.8 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

Conforming Changes in Parts 742, 746, and 748

In § 742.6 Regional stability, this AC/S IFR revises paragraph (a)(6)(i), to remove the phrases beginning with “5A992 (that meet or exceed the performance parameters of ECCNs 3A090 or 4A090)” and “5D992 (that meet or exceed the performance parameters of ECCNs 3A090 or 4A090).” Also in paragraph (a)(6)(iii), this AC/S IFR removes the phrase “elsewhere on the CCL that meet or exceed the performance parameters of ECCNs

3A090 or 4A090” and in its place references the nine .z ECCNs “3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z.” As noted and requested by several commenters, having a positive listing of relevant ECCNs will significantly ease the burden on exporters, reexporters, and transferors and the controls will be easier to implement.

In § 746.8 Sanctions against Russia and Belarus, this AC/S IFR adds .c after 5A992 and 5D992. This AC/S IFR makes this change to ensure that 5A992.z and 5D992.z commodities and software will not be within the scope of this exclusion.

In § 742.15 (Encryption items), this AC/S IFR revises the third sentence of paragraph (a)(1) to remove the .c after 5A992.c and 5D992.c to ensure the scope of requirement is not changed by the addition of 5A992.z and 5D992.z.

In § 746.10 ‘Luxury Goods’ Sanctions Against Russia and Belarus and Russian and Belarusian Oligarchs and Malign Actors, this AC/S IFR adds .c after 5A992 and 5D992. This AC/S IFR makes this change to ensure that 5A992.z and 5D992.z commodities and software will not be within the scope of this exclusion.

In supplement no. 7 to part 748—Authorization Validated End-User (VEU): List of Validated End-Users, Respective Items Eligible For Export, Reexport And Transfer, And Eligible Destinations, this AC/S IFR revises the VEU entry for “Advanced Micro Devices China, Inc.” in China to remove the reference to 4A003 and add in its place the more specific reference to 4A003.b through .g to ensure that the currently approved scope of this VEU entry does not change because of the addition of 4A003.z. In addition, this AC/S IFR revises the entry for “Shanghai Huahong Grace Semiconductor Manufacturing Corporation” in China to remove the reference to 5A002 and add in its place the more specific reference to 5A002.a through .e; remove the reference to 5A004 and add in its place a more specific reference to 5A004.a through .b; and remove 5A992 and adds in its place a reference to 5A992.c. Also in supplement no. 7 to part 748, this AC/S IFR revises the heading of the supplement to add the parenthetical phrase “(in-country)” after the term “transfer” for clarity on the scope of the VEU authorizations under this supplement and for consistency with other EAR the provisions, such as the definition of “transfer (in-country).”

Conforming Changes to §§ 770.2 and 772.1

In § 770.2 Item interpretations, this AC/S IFR after 4A003.g adds a reference to 4A003.z.2 and .z.4 in paragraph (1)(2) to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

In § 772.1 Definitions of terms as used in the Export Administration Regulations (EAR), this AC/S IFR revises Note 1 to the term “specially designed,” to add the parenthetical phrase “(except for .z)” after ECCNs 5A992 and 5D992 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

In ECCNs 3D001, 3E001, 4D001, 4E001, 5D002 5E002, and 5E992, this AC/S IFR revises the License Requirement section of each of these nine ECCNs to add related “software” and “technology” controls for the new .z items added to the nine ECCNs 3A001, 4A003, 4A004, 4A005, 5A002, 5A004, 5A992, 5D002, and 5D992 to impose the same license requirements on the related “software” and “technology” as applies to the .z commodities this AC/S IFR adds.

Conforming Changes to the CCL

In ECCN 3D001, this AC/S IFR revises the TSR paragraph in the List Based License Exceptions section to add after ECCN 3A001.b.8 a reference to 3A001.z to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

In ECCN 3E001, this AC/S IFR revises the TSR paragraph in the List Based License Exceptions section to add after ECCNs 3A001.b.8, 3A001.e.4, 3A001.b.2, and 3A001.b.3 references to 3A001.z after each of these items paragraphs to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph. Also in ECCN 3E001 under the Special Conditions for STA section, this AC/S IFR adds after ECCN 3A001.b.2 and .b.3 a reference to 3A001.z to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph. Also in Note 2 in the “items” paragraph in the List of Items Controlled section, this rule adds after 3A001.a.3 and .14 a reference to 3A001.z to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

In Note 3 to Category 4—Computers, this AC/S IFR after 5A002.a adds a reference to 5A002.z.1 and z.6, and after 5A004.b adds a reference to 5A004.z; after 5D002.c.3 adds references to

5D002.z.6, 5D002.z.8, and z.9. These changes are made to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

In the Technical Note paragraph 2 in the TECHNICAL NOTE ON “ADJUSTED PEAK PERFORMANCE” (“APP”) at the end Category 4—Computers, this AC/S IFR after 4A003.c adds a reference to 4A003.z.1 and z.3 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

In Note 3 to Category 5—Telecommunications and “Information Security” Part 1—Telecommunications, this AC/S IFR after 5A002.a adds a reference to 5A002.z.1 and z.6; after 5A004.b adds a reference to 5A004.z; after 5D002.c.1 adds a reference to 5D002.z.6; and after 5D002.c.3 adds a reference to 5D002.z.8 and z.9 to ensure the intended scope of this note is not changed as a result of the addition of the .z “items” paragraph.

In Note 3 (Cryptography Note) to Category 5—Telecommunications and “Information Security” Part 2—“Information Security,” to ensure the intended scope of this note is not changed as a result of the addition of the .z “items” paragraph, this AC/S IFR after 5D002.a.1 adds 5D002.z.1; after 5D002.b adds 5D002.z.5; and after 5D002.c.1 adds 5D002.z.6. In addition, under the N.B. to Note 3 (Cryptography Note), this AC/S IFR removes 5A992.c and 5D992.c and adds in their place 5A992 and 5D992. BIS could have added a reference to 5A992.z and 5D992.z, but because ECCNs 5A992 and 5D992 only include “items” paragraphs .c and .z, it was simpler to add references to 5A992 and 5D992.

In ECCN 5B002 under “items” paragraph .b in the List of Items Controlled section, this AC/S IFR after 5D002.a adds a reference to 5D002.z.1 through z.4 and after 5D002.c adds a reference to 5D002.z.6 through z.9 to ensure the intended scope of this provision is not changed as a result of the addition of the .z “items” paragraph.

In ECCN 5E002, this AC/S IFR under “items” paragraph a in the List of Items Controlled section after 5D002.a adds a reference to 5D002.z.1 through .z.3, and after 5D002.c adds a reference to 5D002.z.6 through .z.8. Also in the Note to 5E002.a, this AC/S IFR after 5D002.a.3.b adds a reference to 5D002.z.4; and after 5D002.c.3.b adds a reference to 5D002.z.9. Lastly under “items” paragraph b in the List of Items Controlled section, this AC/S IFR after 5A002.b adds a reference to 5A002.z.2. All of these changes are made to ECCN 5E002 to ensure the intended scope of

these provisions is not changed as a result of the addition of the .z “items” paragraph.

In ECCN 5E992, this AC/S IFR revises “items” paragraph b in the List of Items Controlled section to remove 5D992.c and add in its place 5D992. BIS could have added a reference to 5D992.z, but because ECCN 5D992 only includes an “items” paragraph .c and .z, it was simpler to add a reference to 5D992.

In ECCN 9A004, this AC/S IFR under “items” paragraph d in the List of Items Controlled section, after 3A001.b.1.a.4 adds a reference to 3A001.z (if also described in 3A001.b.1.a.4), after 5A002.c adds a reference to 5A002.z.3, and after 5A002.e adds a reference to 5A002.z.5 and z.10 to ensure the intended scope of these provisions is not changed as a result of the addition of the .z “items” paragraph.

In ECCN 9A515 under Note 2 to 9A515.d and .e, this AC/S IFR after 3A001.a adds a reference to 3A001.z to ensure the intended scope of this note is not changed as a result of the addition of the .z “items” paragraph. In addition, under “items” paragraph x.4 in the List of Items Controlled section, this rule after 3A001.e.4 adds a reference to 3A001.z, after 3A001.b.4 adds a reference to 3A001.z; and under “items” paragraph x.6 after 3A001.b.8 adds a reference to 3A001.z. All of these changes to ECCN 9A515 are made to ensure the intended scope of these provisions is not changed as a result of the addition of the .z “items” paragraph.

Conforming Changes to Supp. No. 6 to Part 774

In supplement no. 6 to part 774— Sensitive List, this AC/S IFR revises paragraphs: (3)(i) to add after 3A001.b.2 the parenthetical phrase “(including those described under 3A001.b.2 that are controlled by 3A001.z)”; (3)(ii) to add after 3A001.b.3 the parenthetical phrase “(including those described under 3A001.b.3 that are controlled by 3A001.z);” (3)(iv) to add after 3A001.b.3 the phrase “equipment described under 3A001.b.2 or 3A001.b.3 that are controlled under 3A001.z” and after 3A002.g.1 to add the phrase “and equipment described under 3A002.g.2 that are controlled under 3A002.z;” and lastly under (3)(v) after 3A001.b.3, adds the phrase “equipment described under 3A001.b.2 or 3A001.b.3 that are controlled under 3A001.z” and after 3A002.g.1 adds the phrase “and equipment described under 3A002.g.2 that are controlled under 3A002.z.” All of these changes to the Sensitive List are made to ensure the intended scope of these provisions is not changed as a

result of the addition of the .z “items” paragraph.

D. Export clearance changes to increase transparency of .z, 3A090, and 4A090 shipments.

i. *Identification of .z items in AES.*
The identification of items under .z paragraphs will assist exporters, reexporters, and transferors by having a distinct classification of these items under these nine ECCNs, which will assist companies in reducing their compliance burdens and keeping better track of these items. For all shipments to China, regardless of dollar value, an Electronic Export Information (EEI) filing is required in AES for any items classified under an ECCN on the CCL pursuant to the requirement under § 758.1(b)(10), which includes the nine ECCNs that this rule adds .z paragraphs to, unless authorized under License Exception GOV under § 740.11. The mandatory EEI filing requirement in AES is important for transparency into which CCL items are being shipped to China. However, classification information filed in AES is at the ECCN level and does not include the “items” level classification. One exception to this practice is in the case of end-item firearms for exporters who wish to use the EEI filing in AES as the method for submitting conventional arms reporting to BIS instead of submitting separate reports to BIS. They do so by entering the items level classification as the first text to appear in the Commodity description block in the EEI filing in AES.

The benefit for exporters would be undermined if they are not allowed to identify in the EEI filing in AES the .z items level classification because their shipments to a destination specified in Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6, could potentially be stopped if someone from the U.S. Government had questions as to whether, for example, the item was classified under ECCN 5A002.a or under 5A002.z. The U.S. Government also has an interest in being able to easily identify the .z items in the EEI filing data in AES. The solution to this problem, to benefit both exporters and the U.S. Government, BIS applies the successful model that has been used for identifying end-item firearms in the EEI data in AES by adopting a similar type of requirement for these .z paragraphs for EEI filings in AES. In § 758.1 (The Electronic Export Information (EEI) Filing to the Automated Export System (AES)), this rule adds a new paragraph (g)(5) (Exports of .z items that meet or exceed the performance parameters of ECCN 3A090 or 4A090). New paragraph

(g)(5) imposes a requirement for identifying .z items by “items” level classification in the EEI filing in AES. New paragraph (g)(5) specifies that for any export of .z items controlled under ECCNs 3A001, 4A003, 4A004, 4A005, 5A002, 5A004, 5A992, 5D002, or 5D992 in addition to any other required data for the associated EEI filing, the EEI filer must include the items paragraph classification (*i.e.*, .z), when applicable, for ECCNs 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, or 5A992.z, 5D002.z, or 5D992.z. as the first text to appear in the Commodity description block in the EEI filing in AES.

ii. *Identification of 3A090, 4A090, and .z commodities on the commercial invoice.* In § 758.6, this AC/S IFR revises paragraph (a)(2) to expand the list of ECCNs that an exporter must incorporate as an integral part of the commercial invoice. Prior to this final rule becoming effective, this requirement was limited to ECCN(s) for any 9x515 or “600 series” “items” being shipped (*i.e.*, exported in tangible form). This AC/S IFR adds 3A090 and 4A090, and the seven commodity .z ECCNs 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, and 5A992.z, to the requirement. This AC/S IFR does not add ECCNs 5D002.z and 5D992.z to § 758.6 because these exports would typically be done in an intangible format. However, even when EEI is not required to be filed in AES for an intangible export, BIS still encourages exporters, as a good compliance practice, to identify the .z classification for ECCN 5D002.z and 5D992.z on the commercial invoice when applicable. For the nine ECCNs with a .z paragraph, the requirement to include the classification only applies to commodities classified under the .z paragraphs. If the commodity is classified under any other items paragraph in one of those nine .z ECCNs, then the requirement under § 758.6(a)(2) is not applicable. This AC/S IFR also specifies that the requirement for identifying ECCN 3A090 includes identifying the commodity as either 3A090.a or .b.

BIS is adding this additional export clearance requirement to increase the transparency of these items for entities receiving these items overseas. In particular, with the foreign direct product rules from the October 7 IFR also tied to these ECCNs, it will assist foreign manufacturers and other parties to be able to more easily identify when they receive a 3A090, 4A090, or a 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, or 5A992.z ECCN item. BIS is aware that companies outside the United States have

requested in the past on several occasions that BIS broaden the requirement under § 758.6(a)(2) to require additional ECCNs to be included on the commercial invoice to assist them and reduce their burden. There were also a significant number of comments in response to the October 7 IFR that expressed concern that the burdens being imposed in particular on reexporters may lead to a designing out of U.S.-origin content, so broadening this requirement for U.S. exporters to assist foreign manufacturers is a tangible way that BIS can reduce the burden on reexporters, while at the same time helping to improve the effectiveness of the October 7 IFR by ensuring greater transparency for these items. BIS does not anticipate any change in the burden for exporters as a result of this expanded requirement.

4. Expansion of RS License Requirements, and Adoption of Additional Presumption of Approval License Review Policy With Certain Exclusions That Will Be Presumption of Denial

A. Expansion of RS license requirement from China and Macau to include Country Groups D:1, D:4, and D:5.

In § 742.6 Regional stability, the AC/S IFR revises paragraph (a)(6) (RS requirement that applies to advanced computing and semiconductor manufacturing items) to reflect the expanded scope of this paragraph for certain items. BIS is revising paragraph (a)(6)(i) to remove references to 3A090 and 4A090 and the associated software and technology, adding .z items created by this AC/S IFR, and imposing a license requirement for these items under new paragraph (a)(6)(iii) (Exports, reexports, transfers (in-country) to or within destinations specified in Country Groups D:1, D:4, and D:5, excluding destinations also specified in Country Groups A:5 or A:6). This AC/S IFR adds these items under a separate paragraph (a)(6)(iii) because of the expanded country scope of destinations in Country Groups D:1, D:4, and D:5 that are not also specified in Country Groups A:5 or A:6, which will apply to these items. The broader country scope license requirement for these items identified under paragraph (a)(6)(iii) is warranted to address diversion concerns from these destinations specified in Country Groups D:1, D:4, and D:5 (excluding destinations also specified in Country Groups A:5 or A:6) to China and Macau. BIS notes that these additional countries are members of Country Group D:1, D:4, or D:5 because of concerns related to national security

or missile technology proliferation, or as countries subject to a U.S. arms embargo, respectively. A fuller description of the national security concerns that led to these changes can be found in section C of this rule, including a description of the different license review policies that apply to some of these additional Country Group D:1, D:4, or D:5 destinations compared to China and Macau. See section C.4 for the description of the license review policies.

Also, in § 742.6(a)(6), the AC/S IFR removes § 742.6(a)(6)(ii) (Deemed exports) and redesignates that paragraph as (a)(6)(iv), as described further below under Section C.3.B. In addition, this AC/S IFR removes the former license requirement under paragraph (a)(6)(i) that applied to exports from abroad originating in either China or Macau, and adds that under paragraph (a)(6)(ii), including adding references to the .z items this AC/S IFR adds to the EAR, consistent with § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) of the EAR. This AC/S IFR redesignates this text also under paragraph (a)(6)(ii) because BIS is not expanding the country scope of the FDP rules under § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) of the EAR. This AC/S IFR also removes paragraph (a)(6)(ii) (which this SME IFR redesignated as (a)(6)(iii) and this AC/S IFR redesignates as (a)(6)(iv)), as described further below under section C.3.B). Also, in § 742.6, this rule redesignates the introductory text of paragraph (b)(10) (Advanced computing and semiconductor manufacturing items) as new paragraph (b)(10)(i) (License review policy for paragraphs (a)(6)(i) and (ii)) to specify the license review policy that applies to those two new paragraphs. This AC/S IFR specified that such license applications will be reviewed consistent with license review policies in § 744.23(d) of the EAR, except applications will be reviewed on a case-by-case basis if no license would be required under part 744 of the EAR rule.

This AC/S IFR also adds a new paragraph (b)(10)(ii) (License review policy for paragraph (a)(6)(iii)) to specify license applications for items specified in paragraph (a)(6)(iii) to or within destinations not specified in Country Group D:5 (except Macau) will be reviewed on a presumption of approval basis, unless the export, reexport, or transfer (in-country) is to an entity headquartered in or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5, in which case license applications will be reviewed under a presumption of denial. This AC/S IFR also specifies

that license applications for items to or within Macau or destinations specified in Country Group D:5 for items specified in paragraph (a)(6)(iii) will be reviewed under a presumption of denial.

In conformity to the changes described above, this AC/S IFR also revises ECCNs 3A001, 3D001, 3E001, 4A003, 4A004, 4A005, 5A002, 5A004, and 5D002 to add a RS license requirement and a reference to destinations specified in Country Groups D:1, D:4, or D:5 (excluding destinations specified in Country Groups A:5 or A:6). Similarly, the RS license requirement in ECCNs 3A090, 4A090, 5A992, and 5D992 is revised to remove the reference to “China and Macau” and to add in its place a reference to destinations specified in Country Groups D:1, D:4, or D:5 (excluding destinations specified in Country Groups A:5 or A:6).

B. Exclusion of deemed exports and deemed reexports.

This AC/S IFR removes § 742.6(a)(6)(iii) that, prior to the effective date of this SME IFR, specified that deemed exports and deemed reexports were excluded from the license requirements under paragraph (a)(6) and redesignates this paragraph as paragraph (a)(6)(iv). See section D question 4 for specific public comments BIS is seeking on the application of deemed exports and deemed reexports.

5. Clarifications for “U.S. Person” End Use Control

A. Clarification of the scope of “U.S. persons” activities controlled under § 744.6(c)(2) with the addition of new paragraph (c)(3).

This AC/S IFR revises paragraphs (c)(2)(i) and (ii) to broaden the country scope of those controls from Macau and China to apply to Macau and destinations specified in Country Group D:5 when you know the item will be used in the “development” or “production” of ICs at a facility of an entity headquartered in or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5.

This AC/S IFR also adds a paragraph (c)(3) (*Scope of activities of “U.S. persons” that require a license under § 744.6(c)(2) of the EAR*) to clarify the scope of activities that are caught under § 744.6(c)(2)(i) through (iii). This clarification, partially codifying previously issued guidance from BIS through Frequently Asked Questions for the October 7 IFR, addresses questions received regarding the types of activities of “U.S. persons” that are intended to be

caught and are subject to the paragraph (c)(2)(i) through (iii) license requirements. This AC/IFR adds paragraph (c)(3)(i) to specify that the “U.S. persons” controls in § 744.6(c)(2) apply to persons who meet the criteria under paragraph (c)(3)(i)(A), (B), or (C).

The persons subject to the license requirements under paragraph (c)(3)(i)(A) are “U.S. persons” that authorize the shipment, transmittal, or transfer (in-country) of items not subject to the EAR, under paragraph (c)(3)(i)(B) are “U.S. persons” that conduct the delivery, by shipment, transmittal, or transfer in-country, of items not subject to the EAR, and under paragraph (c)(3)(i)(C) are “U.S. person” that service, including maintaining, repairing, overhauling, or refurbishing items not subject to the EAR.

This AC/S IFR also adds paragraph (c)(3)(ii) (*Due diligence*) to illustrate the type of due diligence that should be undertaken when reviewing a transaction for purposes of § 744.6(c)(2)(i) through (iii). “U.S. persons” should conduct due diligence to determine whether the end use for the item not subject to the EAR involves the “development” or “production” of “advanced-node integrated circuits versus other legacy ICs.” Paragraph (c)(3)(ii) provides examples of what appropriate due diligence may include, including guidance for how to resolve potential red flags.

Lastly, this AC/S IFR adds a new paragraph (d)(1) (Exclusion of certain administrative and clerical activities and information otherwise excluded), which includes adding new paragraph (d)(1)(i) (*Exclusion of Certain administrative and clerical activities*) to specify the types of “U.S. person” activities that are excluded from the controls in § 744.6. This AC/S IFR also adds new paragraph (d)(1)(ii) that clarifies that the scope of § 744.6(c)(2) does not include information or software that would otherwise be excluded from the EAR based on the exclusion criteria under part 734, e.g., under § 734.7 Published and § 734.8 “Technology” or “software” that arises during, or results from, fundamental research. This AC/S IFR also adds paragraph (d)(1)(iii) to add an exclusion of law enforcement and intelligence operations of the U.S. Government to specify the “U.S. persons” criteria in § 744.6(c)(2)(i)–(iii) do not extend to “U.S. persons” conducting law enforcement and intelligence operations of the U.S. Government.

B. Addition of guidance for submitting license applications for “U.S. persons” activities.

In supplement no. 2 to part 748—Unique Application and Submission Requirements, this rule adds a new paragraph (s) (“U.S. person” support activities that require a license under § 744.6), to provide guidance on how to apply for a license application for “U.S. person” activities that require a license application under § 744.6. The guidance, codifying and expanding upon previously issued BIS Frequently Asked Questions on this issue, is under new paragraph (s). The provision specifies that applicants should use the reexport designation on the SNAP–R form and in the “Additional Information” section of the license application, they should note that a license is required for the transaction under § 744.6 of the EAR. The guidance also specifies that in the special purpose field, the applicant should describe the specific activity the “U.S. person” is engaged in that requires a license. In addition, the guidance specifies the applicant should provide the ECCN of the technology or item or, if unknown, use EAR99 (regardless of whether the items are subject to the EAR), as well as a complete explanation of the activity in supplemental documentation.

In § 748.8 (Unique application and submission requirements), this rule makes a conforming change to add a new paragraph (d) (U.S. person support activities that require a license under § 744.6). This rule also, as additional conforming changes with the existing supplement no. 2 to part 748, adds paragraphs (s) (Exports of firearms and certain shotguns temporarily in the United States); (t) (“600 Series Major Defense Equipment”); and (z) (Semiautomatic firearms controlled under ECCN 0A501.a). Paragraphs (s), (t), and (z) were included in supplement no. 2 to part 748, but were inadvertently omitted from the text in § 748.8, so this rule corrects that oversight.

6. Expansion of § 744.23 To Add Two Additional End-Use license Requirements

A. Addition of end-use control for Macau and D:5 headquartered (headquartered in or whose ultimate parent company is headquartered in Macau or Country Group D:5), companies when located outside of D:1, D:4, or D:5.

In § 744.23 “Supercomputer” and semiconductor manufacturing end use, this rule expands the scope of the end-use controls under this section by adding two new end-use controls. First, this AC/S IFR adds under paragraph (a)(3)(i) a new advanced computing end-use control which will apply to any item subject to the EAR and specified in

ECCN 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z. A license will be required under paragraph (a)(3)(i) for the export, reexport, or transfer (in-country) to or within any destination not specified in Country Groups D:1, D:4, or D:5 (excluding any destination also specified in Country Groups A:5 or A:6) of commodities identified in ECCNs 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, or 5D002.z, or 5D992.z when the exporter, reexporter, or transferor has “knowledge” at the time of the export, reexport, or transfer (in-country) that item is destined for any entity that is headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5. This additional end-use control is needed to ensure that the national security objectives of the October 7 IFR and this AC/S IFR are not undermined by Macau, PRC or other Country Group D:5 entities setting up cloud or data servers in other countries to allow these headquartered companies of concern to continue to train their AI models in ways that would be contrary to U.S. national security interests. This expanded end-use control is intended to target entities of concern, such as a PRC-headquartered cloud or data server provider located outside of China in a destination other than Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6. The license requirements under this end-use control apply to destinations in Country Group A:5 and A:6 and any other destination not specified in Country Groups D:1, D:4, or D:5.

B. Addition of end-use control for “production” of advanced computing items in any destination worldwide when using certain direct products exported from Macau or a destination specified in Country Group.

This AC/S IFR adds an additional end-use control for the items identified under paragraph (a)(3)(ii) to specify an end-use control applies to any “technology” subject to the EAR and specified in ECCN 3E001 (for 3A090) “technology” when the technology meets all of the following: the technology is developed by an entity headquartered in or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5; the technology is subject to the EAR pursuant to the FDP rule in § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) of the EAR; and the technology is for the reexport or transfer (in-country) from or within Macau or a

destination specified in Country Group D:5 to any destination worldwide of 3E001. The FDP rule requirement highlighted above is intended to better ensure the intent of these two FDP rules are not able to be circumvented by trying to conduct these types of activities outside of Macau or destinations specified in Country Group D:5 by entities headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5.

C. Expansion of Country Scope to conform to broader country scope included in this AC/S IFR.

This AC/S IFR as a conforming change also revises paragraphs (a)(1)(ii)(A) and (B) and (a)(2)(i) and (ii) to remove China and add in its place the broader country scope of Macau and any destination specified in Country Group D:5.

D. Revision of Supercomputer end-use control.

This AC/S IFR revises paragraph (a)(1)(ii)(A) and (B) to broaden the destination scope of the supercomputer end-use control by replacing “China or Macau” with “Macau or a destination specified in Country Group D:5.”

7. Addition of ECCNs 3A991.p .z, 4A994.l, or .z to License Exception CCD

In § 740.19 Consumer communications devices (CCD), this final rule adds a new paragraph (b)(17) to add commodities described under 3A991.p or 4A994.l, as commodities eligible for License Exception CCD. ECCNs 3A991.p and 4A994.l were not included in the October 7 IFR. BIS determined it is warranted to add these commodities as eligible commodities under License exception CCD because these ECCNs are for low-level items and are in line with other items identified as eligible for License Exception CCD. This AC/S IFR as a conforming change also revises paragraph (b)(16) to remove the period and add a semi-colon and the word “and” after the semi-colon to reflect the addition of new paragraph (b)(17).

8. Broadening the Country Scope of the Advanced Computing FDP Rule

In § 734.9(h) (Advanced computing FDP rule), this AC/S IFR broadens the country scope of the advanced computing FDP rule by revising paragraph (h)(2) (Destination or end use scope of the advanced computing FDP rule). Specifically, BIS revises paragraphs (h)(2)(i) and (ii) by removing “PRC or Macau” and adding in its place a “destination specified in Country Groups D:1, D:4, or D:5, excluding any

destination also specified in Country Groups A:5 or A:6.” Under revised paragraph (h)(2)(i) the country scope also extends worldwide when the “direct product” is to or for an entity headquartered in or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Groups D:5. This AC/IFR also adds a new Note to paragraph (h)(2) to clarify that the requirements apply when any of these headquartered in or whose ultimate parent company is headquartered in, companies are a party to the transaction involving the foreign-produced item, e.g., as a “purchaser,” “intermediate consignee,” “ultimate consignee,” or “end-user.” Additional corrections and clarifications to this section are described in Section C.11.A of this rule.

9. Clarification That Model Certificate May Be Used for All Foreign Direct Product (FDP) Rules

In supplement no. 1 to part 734—Model Certification for Purposes of Advanced Computing FDP rule, this AC/S IFR revises the heading to Model Certification for Purposes of the FDP rules, and revises paragraph (a) of that supplement to clarify that the model certification may be used for any of the FDP rules under § 734.9. This AC/S IFR revises paragraph (a) to clarify that the model certificate may be provided by any entity in a supply chain or to an exporter, reexporter, or transferor of the item. In addition, this rule adds an example to improve public understanding that the model certification may flow more than one way (forward or backwards) in a supply chain.

This AC/S IFR also revises paragraph (b) (model criteria), to revise the introductory text of paragraph (b) and the text of paragraph (b)(2) to make the model certification applicable for any of the FDP rules under § 734.9. New paragraphs (b)(2)(i) through (ix) to provide model criteria for any of the FDP rules that is applicable to their scenario.

This AC/S IFR removes paragraph (b)(3) because the substance of paragraph (b)(3) is already addressed under paragraph (b)(2).

This AC/S IFR also redesignates paragraph (b)(4) as (3) and revises the newly redesignated paragraph to make a conforming edit to add the phrase “or exporter(s), reexporter(s), or transferor(s)” to clarify that the model certification can flow in either direction in a supply chain. This AC/S IFR also revises Note 1 to paragraph (b) to clarify that the model certification can flow from the exporter, reexporter, or

transferor to another entity in the supply chain or may flow the other way from a consignee back to an exporter, reexporter, or transferor in the supply chain. The purpose of the model certification is to enhance awareness of the potential applicability of the FDP rules in supply chains, so there is flexibility for how entities use the model certification between different entities involved in supply chains to help achieve that objective.

10. Changes To Enhance and Assist With Compliance

A. Addition of five new red flags to assist with compliance.

In supplement no. 3 to part 732—BIS’s “Know Your Customer” Guidance and Red Flags, this AC/S IFR adds five new red flags that are intended to provide additional compliance guidance to assist exporters, reexporters, and transferors as part of their compliance programs for the October 7 IFR. Several commenters on the October 7 IFR requested BIS add red flags to the EAR that have applicability for the types of transactions involving items from the October 7 IFR, similar to what was done when the “600 series” military items were moved to the EAR under Export Control Reform. BIS agreed with the commenters and adds five new red flags to assist exporters, reexports, and transfers identify potential red flags.

New red flag 15 identifies a scenario where, prior to the October 7 IFR, a customer’s website or other marketing materials indicated that the company had advertised or otherwise indicated its capability for “developing” or “producing” “advanced-node integrated circuits.” This type of activity would raise a red flag and require additional due diligence.

New red flag 16 is a variant of some of the red flags regarding a mismatch between what a customer says an item would be used for, and the item’s traditional use. New red flag 16 provides a similar type of example but makes it specific to items intended for the “development” or “production” of “advanced-node integrated circuits.”

New red flag 17 identifies a scenario where the customer is “known” to “develop” or “produce” items for companies located in Macau or a destination specified in Country Group D:5 that are involved with supercomputers, which would also trigger a red flag under the EAR. This type of scenario may be indicative that the items that are being “developed” or “produced” may be for use in supercomputers and warrants additional due diligence.

New red flag 18 addresses how exporters, reexporters, or transferors should evaluate anticipated future capabilities, which was another issue about which commenters sought additional compliance guidance, in particular the end-use controls under § 744.23(a)(2)(i), (ii), or (iii), which have been redesignated as paragraph (a)(1)(i)(A) and (B) and (a)(2)(i) in this SME IFR. New red flag 18 specifies that in scenarios where a customer has indicated intent to “develop” or “produce” supercomputers or integrated circuits in Macau or a destination specified in Country Group D:5 in the future that would otherwise be restricted under § 744.23(a)(2)(i), (ii), or (iii), redesignated as paragraphs (a)(1)(i)(A) and (B) and (a)(2)(i), raises a red flag under the EAR.

New red flag 19 addresses how semiconductor fabrication facilities can identify when they receive an order from a destination in Country Groups D:1, D:4, or D:5 or worldwide from an entity headquartered in or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5 where the item to be produced is likely a “direct product” that will be subject to the EAR under § 734.9(h). Red flag 19 is part of BIS’s efforts to provide guidance to semiconductor fabrication facilities trying to develop enhanced FDP guidance for recognizing “direct products.” Specifically, BIS is adding this new red flag 19 to better assist any semiconductor fabrication facility that is or will be producing, for a company headquartered in or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5 an IC, or a computer, “electronic assembly,” or “component” that incorporates an IC that meets certain specified criteria under § 734.9(h)(1)(i)(B)(2) and (h)(1)(ii)(B)(2) that there is a high degree of likelihood (“knowledge”) that the “direct product” that is or will be “produced” is within the product scope of § 734.9(h). This criteria specifies that if the item that is or will be produced is an IC, or a computer, “electronic assembly,” or “component” that incorporates more than 50 billion transistors and high-bandwidth memory (HBM), it raises a red flag that there is a high degree of likelihood that a license is required under the EAR for reexport or export from abroad of that “direct product” if destined to any destination in Country Groups D:1, D:4, or D:5 excluding destinations also specified in Country Groups A:5 or A:6 unless the red flag is resolved. BIS emphasizes

here in this AC/S IFR that red flag 19 is only applicable if the entity has “knowledge” the criteria of the red flag 19 are met. If the entity does not have “knowledge” that the transaction would otherwise meet the criteria under red flag 19, then this red flag is not applicable.

A reexporter or transferor may take additional steps as part of their compliance program to attempt to resolve the red flag, e.g., obtaining additional information from the entity requesting the item to be produced, in order to determine whether the item being produced is outside the scope of § 734.9(h)(1)(i)(B)(2) and (h)(1)(ii)(B)(2). The addition of red flag 19 in this rule includes adding a Technical note to (b)19, which will provide technical guidance on how to calculate the red flag criteria under red flag 19. A reexporter or transferor may also submit a license to BIS to ask for assistance in determining whether the foreign item to be produced, is subject to the EAR as a “direct product” on the basis of the § 734.9(h), but BIS encourages semiconductor fabrication facilities to try to resolve these red flags themselves before applying for a license. Direct products that are subject to the EAR under paragraphs (h)(1)(i)(B)(2) and (h)(1)(ii)(B)(2) of § 734.9 require a license under the EAR for reexport or export from abroad of that direct product if destined to any destination specified in Country Groups D:1, D:4 or D:5 that is not also specified in Country Groups A:5 or A:6. BIS notes that this red flag 19 can be overcome with positive “knowledge” of the classification of the item that is or will be produced, provided the semiconductor fabrication facility has positively determined that the item that is or will be produced is not an item identified under paragraph (h)(1)(i)(B)(2) or (h)(1)(ii)(B)(2), then that foreign made product is not subject to the EAR on the basis of § 734.9(h).

BIS is also interested in soliciting additional public comments in this area of identifying ways to assist semiconductor fabrication facility compliance in recognizing “direct products.” See section D of this rule for the additional comments BIS is interested in receiving in this area.

11. Changes To Minimize the Impact on Supply Chains—Adoption of TGL—Advanced Computing Items

In supplement no. 1 to part 736—General Orders, this AC/S IFR, revises paragraph (d) (General Order No. 4) to add a new paragraph (d)(2) (TGL—Advanced computing items). The new TGL for advanced computing items will

overcome the license requirements specified in § 742.6(a)(6)(iii), provided the terms and conditions under paragraphs (d)(3) through (5) are met. This AC/S IFR adds new paragraph (d)(2)(i) (*Product scope*) to specify the items that may be authorized under this new TGL. These items are limited to the items subject to the EAR that are specified in ECCNs 3A001.z; 3A090; 3D001 (for “software” for commodities controlled by 3A001.z, 3A090); 3E001 (for “technology” for commodities controlled by 3A001.z, 3A090); 4A003.z; 4A004.z; 4A005.z; 4A090; 4D001 (for “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z); 4D090; 4E001 (for “technology” for commodities controlled by 4A003.z, 4A004.z, 4A005.z, 4A090 or “software” specified by 4D001 (for 4A003.z, 4A004.z, and 4A005.z), 4D090); 5A002.z; 5A004.z; 5A992.z; 5D002.z; 5D992.z; 5E002 (for “technology” for commodities controlled by 5A002.z or 5A004.z or “software” specified by 5D002 (for 5A002.z or 5A004.z commodities)); or 5E992 (for “technology” for commodities controlled by 5A992.z or “software” controlled by 5D992.z).

The TGL—Advanced computing items is limited to the end use scope specified in paragraphs (d)(2)(ii) (*End-use scope*). Paragraph (d)(2)(i) has a different product scope than the original TGL that was included in the October 7 IFR, but is otherwise similar in the scope of activity authorized, although the destination scope is broader. Paragraph (d)(2)(ii) requires that the recipient (1) is located in, but not headquartered in or whose ultimate parent company is not headquartered in, a destination specified in Country Groups D:1, D:4, or D:5 that is not also specified in Country Groups A:5 or A:6. The end-use scope of this paragraph authorizes entities to continue or engage in integration, assembly (mounting), inspection, testing, quality assurance, and distribution of items covered by items specified in paragraph (d)(2)(i) provided the items are for ultimate end use (1) outside of destinations specified in Country Groups D:1, D:4, or D:5, excluding destinations also specified in Country Groups A:5 or A:6, and (2) by entities that are not headquartered in, or whose ultimate parent company is not headquartered in, Macau or Country Group D:5.

This AC/S IFR, as additional conforming changes to the TGL revisions made in the SME IFR, revises the introductory text of paragraph (d) (General Order No. 4) to add a reference to paragraph (d)(2) that this AC/S IFR adds. This AC/S IFR also revises

paragraph (d)(3) (Validity date) to add a sentence to specify the validity date for paragraph (d)(2). The TGL under paragraph (d)(1) (added in this SME IFR) of supplement no. 1 to part 736 and the TGL under paragraph (d)(2) (added in this AC/S IFR) of supplement no. 1 to part 736 will both expire on December 31, 2025, approximately a 2-year validity period. This AC/S IFR also revises paragraph (d)(4) (End-use and end-user restrictions) to revise paragraph (d)(4)(i) (*Restrictions related to part 744*) to add a reference to new paragraph (d)(2). This AC/S IFR under paragraph (d)(4)(ii) (*Indigenous production*) redesignates the text added in this SME IFR as new paragraph (d)(4)(ii)(A) and adds a new paragraph (d)(4)(ii)(B) to impose a similar restriction on indigenous production, but specific to the new TGL—Advanced computing items added under paragraph (d)(2).

12. Additional Corrections and Clarifications

A. Conforming changes to headings for the Foreign Direct Product (FDP) rules for clarity and consistency with advanced computing rule.

In § 734.9, this AC/S IFR also revises paragraph (a) to: add the paragraph heading (Definitions and model certification); redesignate the existing Definitions text as new paragraph (a)(1) (Definitions); and move and redesignate existing paragraph (h)(3) as new paragraph (a)(2) (Model certification). This rule also makes conforming changes to reflect that the model certification may be used for any of the FDP rules in § 734.9 instead of being limited for use with the advanced computing FDP rule under § 734.9(h).

In § 734.9 (Foreign Direct Product (FDP) Rules), this AC/S IFR makes conforming changes to the headings of paragraphs (b)(1)(ii), (c)(1)(ii), (d)(1)(ii), (f)(1)(ii), and (g)(1)(ii) by removing the heading “Direct product” of a complete plant or ‘major component’ of a plant” and adding in its place the heading “Product of a complete plant or ‘major component’ of a plant that is a ‘direct product’.” This change is made to conform these paragraph headings to the headings used in the advanced computing rule for paragraphs (e)(1)(i)(B), (e)(2)(i)(B), (h)(1)(ii), and (i)(1)(i)(B) of § 734.9.

In § 734.9, this AC/S IFR, as a clarifying change, revises the first sentence of the introductory text of the section, and paragraphs (e)(1)(i)(B), (e)(2)(i)(B), (f)(1)(ii)(A), (g)(1)(ii), and (i)(1)(ii) to remove the term ‘plant’ and add in its place the more precise term ‘complete plant.’ This AC/S IFR makes

this change, so the term ‘complete plant’ is used consistently throughout the section. For purposes of this section, prior to publication of this rule, BIS interpreted the term ‘plant’ and ‘complete plant’ the same, so this is not a substantive change, but is intended to reduce any confusion regarding whether the two formulations of the term have different meanings. Additional changes were made throughout the section to ensure that the complete plant provisions are identical.

In § 734.3 (Items subject to the EAR), this AC/S IFR makes a conforming change to paragraphs (a)(4) and (5) to remove the reference to § 736.2(b)(3) and add in its place a reference to § 734.9. Also in § 734.3, this AC/S IFR as a conforming change to § 734.9, revises paragraph (a)(5) to remove the term “direct products” and add in its place the term products, so it reads certain foreign-produced products and adds the phrase “that is a “direct product” of specified “technology” or “software”” after the phrase products of a complete plant or major component of plant. This change is made to conform with the other clarifications made on this under § 734.9.

B. Clarifying changes.

In supplement no. 1 to part 774—Commerce Control List, this AC/S IFR revises four ECCNs as follows:

In ECCN 4A090, this AC/S IFR revises “items” paragraph (a) in the List of Items Controlled section, to add the words “meets or,” to make it clear that this control parameter applies to computers, “electronic assemblies,” and “components” containing integrated circuits, any of which meets or exceeds the performance parameters of ECCN 3A090.a.

In ECCN 4A994, this AC/S IFR revises “items” paragraph (l) in the List of Items Controlled section, to add the words “meets or,” to make it clear that this control parameter applies to computers, “electronic assemblies,” and “components,” n.e.s., containing integrated circuits, any of which meets or exceeds the performance parameters of ECCN 3A991.p.

In ECCNs 5A992 and 5D992, this AC/S IFR revises the Country Chart column in the License Requirements section in both of these ECCNs to revise “RS” control to specify the RS control applies to .z items in these ECCNs and the license requirement applies to or within destinations specified in Country Groups D:1, D:4, and D:5 that are not also specified in Country Groups A:5 or A:6, along with adding a cross reference to see § 742.6(a)(6)(iii) of the EAR. This change is made for consistency with the

other ECCNs that reference § 742.6(a)(6), which specify China and Macao.

C. Conforming changes to ECCNs to not undermine deemed export and deemed reexport exclusion.

This AC/S IFR revises two ECCNs: 4D001 and 4E001 to make conforming changes to ensure these National Security (NS) controlled software and technology controls do not undermine the intent of the deemed export and deemed reexport exclusion under § 742.6(a)(6)(iv). This AC/S IFR does this by adding exclusions where needed to each of these NS controlled ECCNs to exclude the relevant software and technology from these ECCNs that are associated with ECCNs 4A090 and 4D090. This software and technology were intended to be excluded from these NS controls but were inadvertently not excluded in the October 7 IFR. To correct this oversight, this rule makes the following changes to two ECCNs:

In ECCN 4D001, this rule revises “items” paragraph (a) in the List of Items Controlled section to add an exclusion for 4D090 for the software controlled under 4D001.a.

In ECCN 4E001, this rule revises the NS control column the License Requirements section to exclude technology for 4A090 or “software” specified by ECCN 4D090 from the NS control under 4E001.

D. Typographical, grammatical, and other conforming corrections.

In § 732.2(b) introductory text, this AC/S IFR makes a conforming change to the third sentence that referenced supplement no. 1 to part 734 which, prior to September 1, 2016, described several practical examples describing publicly available technology and software that are outside the scope of the EAR. These examples were removed from the EAR on September 1, 2016, and are now found on the BIS website, but the needed conforming change was not made at that time to this paragraph (b). Subsequently, the October 7 IFR added a new supplement no. 1 to part 734, but also inadvertently did not update this reference to supplement no. 1 to part 734 in § 732.2(b). However, in the context of this paragraph, supplement no. 1 to part 734 should no longer be referenced and instead a reference to the FAQ guidance on the BIS website at <https://www.bis.doc.gov> should replace this text. This rule revises the third sentence to make this change and adds a cross reference by adding a new fourth sentence to inform the public to See the FAQs under the heading, *EAR Definitions, Technology and Software, Fundamental Research, and Patents FAQs*, for where the

guidance can be found on the BIS website. This rule also makes this same type of conforming change to § 734.2(a)(1).

In § 734.9, this AC/S IFR revises paragraph (h)(3) to make a grammatical correction to remove an unneeded “s” from the word “items.” As described above, this rule also redesignates paragraph (h)(3) as new paragraph (a)(2).

D. BIS Seeks Public Comments on the Following Additional Questions

In addition to welcoming comments on the topics and BIS responses and description of the regulatory changes described above under sections A through C, BIS in this AC/S IFR also specifically seeks comments on the following questions:

1. *Addressing access to “development” at an infrastructure as a service (IaaS) provider by customers to develop or with the intent to develop large dual-use AI foundation models with potential capabilities of concern, such as models exceeding certain thresholds of parameter count, training compute, and/or training data.* This AC/S IFR seeks public comments on what additional regulations or other requirements may be warranted to address this national security concern relating to AI. BIS also seeks input from IaaS providers on the feasibility for them in complying with additional regulations in this area, how they would identify whether a customer is “developing” or “producing” a dual-use AI foundation model, and what actions would be needed to address this national security concern while minimizing the business process changes that would be required to comply with these regulations.

2. *Developing technical solutions to exempt items otherwise classified under ECCNs 3A090 and 4A090.* This AC/S IFR seeks public comments on proposed technical solutions that limit items specified under ECCN 3A090 or 4A090 from being used in conjunction with large numbers of other such items in ways that enable training large dual-use AI foundation models with capabilities of concern. Such items could then be exempted from these ECCNs. An example approach would be to limit a product that contains a set of ICs, including ECCN 3A090 AI accelerators, CPUs, and network interface cards—which could form a high-bandwidth domain including up to e.g., 256 AI accelerators, from communicating outside the product or set beyond 1 GB/s in at least one of the input or output direction. In one possible implementation of this concept, each device in the set might provide a

cryptographic signature to other devices in the set, and then have a tamperproof silicon root-of-trust in each device that would hold the private keys for the cryptographic signatures. This approach could constrain a 3A090 item from being used to train large dual-use AI foundation models with capabilities of concern, while allowing AI training capabilities at a small or medium scale. In particular, the AC/S IFR seeks specific technical proposals that would be difficult to circumvent; comments on the timeline and costs to bring such proposals to market; and comments on the demand for such ICs and products. The AC/S IFR also seeks additional proposals for exemptions involving hardware-based technical solutions that create the ability to limit training of large dual-use AI foundation models with capabilities of concern.

3. *Identifying ways to assist semiconductor fabrication facility compliance in recognizing “direct products.”* As discussed further under section C.10 above, this AC/S IFR adds new red flag 19 in supplement no. 3 to part 732 of the EAR to assist any facility where “production” of “advanced node ICs” occurs to follow guidance to recognize “direct products.” New red flag 19 will assist semiconductor fabrication facilities to more easily identify “direct products” that they are or will be producing that are subject to the EAR on the basis of the FDP rule. In order to be most effective, this enhanced FDP guidance or any additional guidance that is developed needs to identify criteria that (1) are already “knowable” or easily determined by the semiconductor fabrication facilities and (2) should be highly indicative of an IC that will meet the FDP scope under § 734.9(h)(1)(i)(B)(2) and (h)(1)(ii)(B)(2). BIS believes that the criteria added under new red flag 19 meets this two-part test and will assist semiconductor manufacturing facilities to more easily identify their regulatory obligations under the EAR. However, in addition to the criteria BIS included in new red flag 19 in supplement no. 3 to part 732, BIS also seeks any refinements to those criteria or alternative criteria that would better achieve those two objectives.

4. *Deemed exports and deemed reexports.* BIS specifically seeks public comment on the applicability of deemed exports and deemed reexports in § 742.6(a)(6)(iv). Commenters are asked to provide feedback regarding the impact of this provision on their business and operations, in particular, what if any impact companies would experience if a license were required for deemed exports and deemed reexports.

Commenters are also asked to provide guidance on what, if any, practices are utilized to safeguard technology and intellectual property and the role of foreign person employees in obtaining and maintaining U.S. technology leadership.

5. *Control parameters under 3A090, in particular Note 2 to 3A090.* In response to this AC/S IFR, BIS seeks comments on how to refine the parameters under ECCN 3A090 to more granularly cover only ICs that would raise concerns for use in training large-scale AI systems and to and to more specifically define ICs not designed or marketed for us in datacenters.

6. *Definition of headquartered companies.* BIS seeks comments on the definition entities headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5, including comments on the ability to access information required to assess the status of a foreign party and any other factors that would support the policy goal of limiting access to advanced computing capability by Macau parties or a destination specified in Country Group D:5 parties.

7. BIS is interested in receiving public comments in response to this AC/S IFR on the technical parameters included in the definition of “supercomputer” and how those relate to the end-use control under § 744.23(a)(1). BIS is particularly interested in whether the definition of “supercomputer” may result increasingly in commercial datacenters falling under the definition of “supercomputer” and the end-use control under § 744.23(a)(1). BIS welcomes comments on the definition of “supercomputer,” as well on what additional criteria could be added to § 744.23(a)(1) to better focus the control to ensure that supercomputers used to support foreign government agencies would be caught under the end-use control, but other datacenters strictly involved in the commercial sector would not be covered.

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 the Export Control Reform Act of 2018 (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.

Rulemaking Requirements

1. Executive Orders 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). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits and of reducing costs, harmonizing rules, and promoting flexibility. This interim final rule has been designated a “significant regulatory action” under Executive Order 12866.

2. Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) (PRA), unless that collection of information displays a currently valid Office of Management and Budget (OMB) Control Number.

This rule involves 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.

This AC/S IFR will affect the collection under control number 0694–0088, for the multipurpose application because of the addition of the notification requirement for exports and reexports to China in order to use new License Exception Notified Advanced Computing (NAC) under § 740.8 that this rule adds to the EAR. BIS estimates that the new License Exception NAC notification will result in an increase of 3,000 multi-purpose applications submitted annually to BIS and an increase of 950 burden hours under this collection. BIS also anticipates the submission annually of 200 license applications as a result of the revision to license requirements included in this AC/S IFR, but because the original estimate that was included in the October 7 IFR (*i.e.*, that BIS estimates that these new controls under the EAR imposed by the October 7 IFR would result in an increase of 1,700 license applications submitted annually to BIS) was higher than the actual number of

license applications BIS has received over the first year of the October IFR changes being in place, BIS does not anticipate any changes in these estimates as a result of the changes include in this AC/S IFR for license applications submitted to BIS as a result of this AC/S IFR with the one exception of the increase in burden hours for the License Exception NAC notifications, which was not accounted for in the October 7 IFR because License Exception NAC was not part of the EAR at that time.

This AC/S IFR will affect the information collection under control number 0607–0152, for filing EEI in AES because this rule adds § 758.1(g)(5) to impose a requirement for identifying .z items by “items” level classification in the EEI filing in AES. This change is not anticipated to result in a change in the burden under this collection because filers are already required to provide a description in the Commodity description block in the EEI filing in AES. This regulation also involves a collection previously approved by the OMB under control number 0694–0122, “Licensing Responsibilities and Enforcement” because this rule under the revision to § 758.6(a)(2) will require the ECCN(s) for any 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z to be included on the commercial invoice, similar to the previous requirement to include the “600 series” and 9x515 ECCNs on the commercial invoice. BIS does not anticipate a change in the total burden hours associated with the PRA and OMB control number 0694–0122 as a result of this rule.

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 Executive Order 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)).

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 Parts 732 and 748

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

15 CFR Part 734

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

15 CFR Parts 740 and 758

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

15 CFR Part 742

Exports, Terrorism.

15 CFR Part 744

Exports, Reporting and recordkeeping requirements, Terrorism.

15 CFR Parts 746 and 774

Exports, Reporting and recordkeeping requirements.

15 CFR Parts 736, 770, and 772

Exports.

For the reasons stated in the preamble, parts 732, 734, 736, 740, 742, 744, 746, 748, 758, 770, 772, and 774 of the Export Administration Regulations (15 CFR parts 730 through 774) are amended as follows:

PART 732—STEPS FOR USING THE EAR

- 1. The authority citation for part 732 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.*; 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. Effective November 17, 2023, § 732.2 is amended by revising paragraph (b) introductory text to read as follows:

§ 732.2 Steps regarding scope of the EAR.

* * * * *

(b) *Step 2: Publicly available technology and software.* This step is relevant for both exports and reexports. Determine if your technology or

software is publicly available as defined and explained at part 734 of the EAR. The Bureau of Industry and Security (BIS) website at <https://www.bis.doc.gov> contains several practical examples describing publicly available technology and software that are outside the scope of the EAR under the FAQ section of the website. See the FAQs under the heading, *EAR Definitions, Technology and Software, Fundamental Research, and Patents FAQs* at <https://www.bis.doc.gov/index.php/documents/compliance-training/export-administration-regulations-training/1554-ear-definitions-faq/file>. The examples are illustrative, not comprehensive. Note that encryption software classified under ECCN 5D002 on the Commerce Control List (refer to supplement no.1 to part 774 of the EAR) is subject to the EAR even if publicly available, except for publicly available encryption object code software classified under ECCN 5D002 when the corresponding source code meets the criteria specified in § 740.13(e) of the EAR. The following also remains subject to the EAR: “software” or “technology” for the production of a firearm, or firearm frame or receiver, controlled under ECCN 0A501, as referenced in § 734.7(c) of the EAR.

* * * * *

■ 3. Effective November 17, 2023, supplement no. 3 to part 732 is amended by adding paragraphs (b)15 through 19 to read as follows:

Supplement No. 3 to Part 732—BIS’s “Know Your Customer” Guidance and Red Flags

* * * * *

(b) * * *

15. The customer’s website or other marketing materials prior to October 7, 2022, indicated that the company had advertised or otherwise indicated its capability for “developing” or “producing” “advanced-node integrated circuits.”

16. The customer has made representations that the items in question are not intended for use in the “development” or “production” of “advanced-node integrated circuits,” but the items that are being requested to be exported, reexported, or transferred (in-country) to this customer are typically exclusively or predominantly used for the production of “advanced-node integrated circuits.”

17. The customer is “known” to “develop” or “produce” items for companies located in Macau or a destination specified in Country Group D:5 that are involved with “supercomputers.”

18. The exporter has “knowledge” indicating this customer intends to “develop” or “produce” “supercomputers” or integrated circuits in the future that would otherwise be restricted under § 744.23(a)(1)(i) or (a)(2)(i).

19. The exporter has “knowledge” that it is or seeks to be producing at a facility where “production” of “advanced node ICs” occur, for a company headquartered in either Macau or a destination specified in Country Group D:5, an integrated circuit, or a computer, “electronic assembly,” or “component” that will incorporate (A) more than 50 billion transistors and (B) high-bandwidth memory (HBM). This raises a red flag that needs to be resolved or a license may be required under the EAR for reexport or export from abroad of that direct product if destined to Macau or a destination specified in Country Group D:5 (see supplement no. 1 to part 774 and part 742 of the EAR for the CCL-based license requirements for items identified under § 734.9(h)(1)(i)(B)(2) and (h)(1)(ii)(B)(2) of the EAR), absent a determination that the item being produced is outside the product scope of these paragraphs under § 734.9(h)(1)(i)(B)(2) and (h)(1)(ii)(B)(2).

Technical note to (b)19: To calculate the number of transistors within a die, a foundry has two options. First, the foundry may take the transistor density of the process node used to manufacture the die and multiply this density by the area of the die. This number may be significantly higher than the true transistor count, but if the result is below the relevant transistor threshold, then the foundry can be confident that the die in question will not exceed that threshold. Second, to adjudicate edge cases, the foundry may use standard design verification tools to estimate the number of (both active and passive) transistors on the die using the GDS file. Regardless of approach, if the foundry has knowledge that multiple chiplets will be included in a single package, then the foundry should estimate the aggregate number of transistors in any chiplets the foundry is responsible for manufacturing. A foundry does not need to count the transistors of chiplets that it is not responsible for manufacturing itself.

PART 734—SCOPE OF THE EXPORT ADMINISTRATION REGULATIONS

■ 4. Effective November 17, 2023, the authority citation for part 734 is revised 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.*; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 13020, 61 FR 54079, 3 CFR, 1996 Comp., p. 219; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; E.O. 13637, 78 FR 16129, 3 CFR, 2014 Comp., p. 223; Notice of November 8, 2022, 87 FR 68015, 3 CFR, 2022 Comp., p. 563.

■ 5. Effective November 17, 2023, § 734.2 is amended by revising the last sentence of paragraph (a)(1) and adding three sentences at the end of the paragraph to read as follows:

§ 734.2 Subject to the EAR.

(a) * * *

(1) * * * Publicly available technology and software not subject to the EAR are described in §§ 734.7,

734.8, and 734.10. The Bureau of Industry and Security (BIS) website at <https://www.bis.doc.gov> contains several practical examples describing publicly available technology and software that are outside the scope of the EAR under the FAQ section of the website. See the FAQs under the heading, *EAR Definitions, Technology and Software, Fundamental Research, and Patents FAQs*. The examples are illustrative, not comprehensive.

* * * * *

■ 6. Effective November 17, 2023, § 734.3 is amended by revising paragraphs (a)(4) and (5) to read as follows:

§ 734.3 Items subject to the EAR.

(a) * * *

(4) Certain foreign-produced “direct products” of specified “technology” and “software,” as described in § 734.9 of the EAR; and

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

(5) Certain foreign-produced products of a complete plant or any major component of a plant that is a “direct product” of specified “technology” or “software” as described in § 734.9 of the EAR.

* * * * *

■ 7. Effective November 17, 2023, § 734.4 is amended by revising paragraph (b)(2) to read as follows:

§ 734.4 De minimis U.S. content.

* * * * *

(b) * * *

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

* * * * *

■ 8. Effective November 17, 2023, § 734.9 is amended by:

■ a. Revising the first sentence of the introductory text and paragraph (a), the headings for paragraphs (b)(1)(ii), (c)(1)(ii), and (d)(1)(ii), revising paragraphs (e)(1)(i)(B), (e)(2)(i)(B), the heading for paragraph (f)(1)(ii), and revising paragraphs (f)(1)(ii)(A), (g)(1)(ii), (h)(1)(i)(B)(2), (h)(1)(ii)(B)(2), and (h)(2)(i) and (ii);

■ b. Adding a note to paragraph (h)(2);

■ c. Removing paragraph (h)(3); and

■ d. Revising paragraph (i)(1)(ii).

The revisions and addition read as follows:

§ 734.9 Foreign-Direct Product (FDP) Rules.

Foreign-produced items located outside the United States are subject to

the EAR when they are a “direct product” of specified “technology” or “software,” or are produced by a complete plant or ‘major component’ of a plant that itself is a “direct product” of specified “technology” or “software.” * * *

(a) *Definitions and model certification*—(1) *Definitions*. The terms defined in this paragraph are specific to § 734.9 of the EAR. These terms are indicated by single quotation marks. Terms that are in double quotation marks are defined in part 772 of the EAR.

(i) *Major component*. A major component of a plant located outside the United States means “equipment” that is essential to the “production” of an item, including testing “equipment.”

(ii) [Reserved]

(2) *Model certification*. Exporters, reexporters, and transferors may obtain a written certification from a supplier that asserts an item being provided would be subject to the EAR if future transactions meet the destination or end user scope of one or more of the Foreign Direct Product (FDP) rules under § 734.9. The model certificate described by BIS in supplement no. 1 to part 734 is not required under the EAR, but through its provision, the certificate may assist exporters, reexporters, and transferors with the process of resolving potential red flags regarding whether an item is subject to the EAR based on § 734.9. The model certificate provided by BIS contemplates signature by an official or designated employee of the certifying company and inclusion of all the information described in paragraph (b) of supplement no. 1 to part 734. While this certificate is expected to be useful for a company to understand the application of the EAR to an item, BIS does not view this as the only step to be completed during a company’s due diligence process. See supplement no. 1 to part 734 and supplement no. 3 to part 732 of the EAR.

(b) * * *

(1) * * *

(ii) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* * * *

* * * * *

(c) * * *

(1) * * *

(ii) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* * * *

* * * * *

(d) * * *

(1) * * *

(ii) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* * * *

* * * * *

(e) * * *

(1) * * *

(i) * * *

(B) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* A foreign-produced item meets the product scope of this paragraph if the foreign-produced item is produced by any complete plant or ‘major component’ of a plant that is located outside the United States, when the complete plant or ‘major component’ of a plant, whether made in the U.S. or a foreign country, itself is a “direct product” of U.S.-origin “technology” or “software” that is specified in ECCN 3D001, 3D991, 3E001, 3E002, 3E003, 3E991, 4D001, 4D993, 4D994, 4E001, 4E992, 4E993, 5D001, 5D991, 5E001, or 5E991 of the CCL.

* * * * *

(2) * * *

(i) * * *

(B) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* A foreign-produced item meets the product scope of this paragraph if the foreign-produced item is produced by any complete plant or ‘major component’ of a plant that is located outside the United States, when the complete plant or ‘major component’ of a plant, whether made in the U.S. or a foreign country, itself is a “direct product” of U.S.-origin “technology” or “software” that is specified in ECCN 3D001, 3D991, 3E001, 3E002, 3E003, 3E991, 4D001, 4D993, 4D994, 4E001, 4E992, 4E993, 5D001, 5D002, 5D991, 5E001, 5E002, or 5E991 of the CCL.

(f) * * *

(1) * * *

(ii) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* * * *

(A) A foreign-produced item meets the product scope of this paragraph if the foreign-produced item is produced by any complete plant or ‘major component’ of a plant that is located outside the United States, when the complete plant or ‘major component’ of a plant, whether made in the United States or a foreign country, itself is a “direct product” of U.S.-origin “technology” or “software” that is specified in any ECCN in product groups D or E of the CCL; and

* * * * *

(g) * * *

(1) * * *

(ii) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* A foreign-produced item meets the product scope of this paragraph if the foreign-produced item

is produced by any complete plant or ‘major component’ of a plant that is located outside the United States, when the complete plant or ‘major component’ of a plant, whether made in the United States or a foreign country, itself is a “direct product” of U.S.-origin “technology” or “software” that is specified in any ECCN in product groups D or E in any categories of the CCL.

* * * * *

(h) * * *

(1) * * *

(i) * * *

(B) * * *

(2) An integrated circuit, computer, “electronic assembly,” or “component” specified in ECCN 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, or 5A992.z.

(ii) * * *

(B) * * *

(2) An integrated circuit, computer, “electronic assembly,” or “component” specified in ECCN 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, or 5A992.z.

* * * * *

(2) * * *

(i) Destined to a destination specified in Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6, or will be incorporated into any “part,” “component,” “computer,” or “equipment” not designated EAR99 that is destined to a destination specified in Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6, or worldwide to an entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5; or

(ii) “Technology” “developed” by an entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5, for the “production” of a mask or an integrated circuit wafer or die.

Note to paragraph (h)(2): These end-use requirements under paragraph (h) apply when any entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or destination specified in Country Group D:5, is a party to any transaction involving the foreign-produced item, e.g., as a “purchaser,” “intermediate consignee,” “ultimate consignee,” or “end-user.”

(i) * * *

(1) * * *

(ii) *Product of a complete plant or ‘major component’ of a plant that is a “direct product.”* A foreign-produced

item meets the product scope of this paragraph if the foreign-produced item is produced by any complete plant or ‘major component’ of a plant that is located outside the United States, when the complete plant or ‘major component’ of a plant, whether made in the United States or a foreign country, itself is a “direct product” of U.S.-origin “technology” or “software” that is specified in ECCN 3D001, 3D991, 3E001, 3E002, 3E003, 3E991, 4D001, 4D994, 4E001, 4E992, 4E993, 5D001, 5D002, 5D991, 5E001, 5E002, or 5E991 of the CCL.

* * * * *

■ 9. Effective November 17, 2023, supplement no. 1 to part 734 is revised to read as follows:

Supplement No. 1 to Part 734—Model Certification for Purposes of the FDP Rule

(a) *General.* This supplement is included in the EAR to assist exporters, reexporters, and transferors in determining whether the items being exported, reexported, or transferred (in-country) are subject to the EAR based on one or more of the Foreign Direct Product (FDP) rules under § 734.9. The model certificate provided by BIS in supplement no. 1 to this part is not required under the EAR, but through its provision, the certificate may assist exporters, reexporters, and transferors with the process of resolving potential red flags regarding whether an item is subject to the EAR based on one or more of the FDP rules under § 734.9. The model certificate provided in this supplement by BIS contemplates signature by an official or designated employee of the certifying company and inclusion of the information described in paragraph (b) of this supplement. The certificate may be provided by any entity in a supply chain or by an exporter, reexporter, or transferor of the item. For example, the certificate may be provided by an exporter, reexporter, or transferor to any other entity later in a supply chain. Similarly, any entity later in a supply chain may request a certificate from an exporter, reexporter, or transferor earlier in a supply chain. Any certification relied on for this part must be retained pursuant to recordkeeping provisions in part 762 of the EAR. Obtaining the certification set forth in this supplement no. 1 to part 734 does not relieve exporters, reexporters and transferors of their obligation to exercise due diligence in determining whether items are subject to the EAR, including by following the “Know Your Customer” guidance in supplement no. 3 to part 732 of the EAR.

(b) *Model criteria.* A certification will be most useful if it meets the criteria described in this supplement and if it contains at least the following information:

(1) The certification must be signed by an organization official specifically authorized to certify the document as being accurate and complete. The certifying official attests that the information herein supplied in response to this paragraph is complete and correct to the best of his/her “knowledge.”

(2) The organization [INSERT NAME OF THE CERTIFYING OFFICIAL’S COMPANY] has reviewed the criteria for the foreign direct product (FDP) rules under § 734.9 the U.S. Export Administration Regulations (EAR) (15 CFR 730–774) and attests that from the certifying official’s “knowledge” of the item, [INSERT A DESCRIPTION OF THE ITEMS], provided to [INSERT NAME OF THIS CUSTOMER], are subject to the EAR if future transactions are within the country/ destination and/or end use scope or end-user scope of one or more of the following FDP rules [include whichever ones are applicable]:

(i) Country scope of § 734.9(b)(2), *i.e.*, exported or reexported to or transferred within a destination listed in Country Group D:1, E:1, or E:2 (see supplement no.1 to part 740 of the EAR);

(ii) Country scope of § 734.9(c)(2), *i.e.*, exported or reexported to or transferred within a destination listed in Country Group D:5, E:1, or E:2 (see supplement no.1 to part 740 of the EAR);

(iii) Country scope of § 734.9(d)(2), *i.e.*, exported or reexported to or transferred within a destination listed in Country Group D:1, D:3, D:4, D:5, E:1, or E:2 (see supplement no.1 to part 740 of the EAR);

(iv) End-user scope of § 734.9(e)(1)(ii) or (e)(2)(ii) for a Footnote 1 or Footnote 4 entity, respectively (see supplement no. 4 to part 744);

(v) Destination scope of § 734.9(f)(2), *i.e.*, exported or reexported to or transferred within Russia, Belarus, or the temporarily occupied Crimea region of Ukraine or will be incorporated into or used in the “production” or “development” of any “part,” “component,” or “equipment” specified in any ECCN on the CCL or in supplement no. 6 or 7 to part 746 of the EAR and produced in or destined to Russia, Belarus, or the temporarily occupied Crimea region of Ukraine;

(vi) End-user scope of § 734.9(g)(2) for a Footnote 3 entity (see supplement no. 4 to part 744);

(vii) Destination and end-use scope of § 734.9(h)(2), *i.e.*, the foreign-produced item is: destined to a destination specified in Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6, or will be incorporated into any “part,” “component,” “computer,” or “equipment” not designated EAR99 that is destined to a destination specified in Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6, or worldwide to an entity headquartered in, or whose ultimate parent company is headquartered in, either a destination specified in Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6; or technology developed by an entity headquartered in, or whose ultimate parent company is headquartered in, either Country Groups D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6, for the “production” of a mask or an integrated circuit wafer or die;

(viii) Country and end-use scope of § 734.9(i)(2), *i.e.*, used in the design, “development,” “production,” operation,

installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of, a “supercomputer” located in or destined to Macau or a destination specified in Country Group D:5; or incorporated into, or used in the “development,” or “production,” of any “part,” “component,” or “equipment” that will be used in a “supercomputer” located in or destined to Macau or a destination specified in Country Group D:5;

(ix) Destination scope of § 734.9(j)(2), *i.e.*, is destined to Iran or will be incorporated into or used in the “production” or “development” of any “part,” “component,” or “equipment,” including any modified or designed “components,” “parts,” “accessories,” and “attachments” therefor, identified in supplement no. 7 to part 746 of the EAR or is specified in any ECCN on the CCL that is located in or destined to Iran; and

(3) My organization affirms its commitment to comply with all applicable requirements under the EAR.

[INSERT NAME(S) OF CONSIGNEE(S) OR EXPORTER(S), REEXPORTERS), OR TRANSFERORS AS APPLICABLE].

[INSERT DATE(S) SIGNED]

Note 1 to paragraph (b): When multiple consignees engaged in a production process (or other type of collaborative activity, such as joint development) will be exporting, reexporting, transferring, or receiving items subject to the EAR, a single model certification statement for multiple consignees may be used.

(c) *Additional information.* Because this is only a model certification, parties to the transaction may add additional elements to the certification and/or use it for multiple purposes as part of their compliance program. For example, if a company has ten affiliated companies in a multi-step supply chain, instead of obtaining a model certification for each export, reexport, or transfer (in-country), the exporter, reexporter, or transferor may request all ten parties to sign the certification, if appropriate, which may further reduce the burden on parties participating in the supply chain.

PART 736—GENERAL PROHIBITIONS

■ 10. The authority citation for part 736 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.*; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 13020, 61 FR 54079, 3 CFR, 1996 Comp., p. 219; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; E.O. 13338, 69 FR 26751, 3 CFR, 2004 Comp., p. 168; Notice of November 8, 2022, 87 FR 68015 (November 10, 2022); Notice of May 8, 2023, 88 FR 30211 (May 10, 2023).

■ 11. Effective November 17, 2023, to January 1, 2026, supplement no. 1 to part 736 is amended by:

- a. Revising paragraph (d) introductory text;
- b. Adding paragraph (d)(2); and
- c. Revising paragraphs (d)(3) and (4).

The revisions and addition read as follows:

Supplement No. 1 to Part 736—General Orders

* * * * *

(d) General Order No. 4. Exports, reexports, or transfers (in-country) authorized under the Temporary General Licenses (TGL) specified under paragraphs (d)(1) and (2) of this supplement must also comply with the terms and conditions under paragraphs (d)(3) through (5) of this supplement.

* * * * *

(2) *TGL—Advanced computing items.* This TGL only overcomes the license requirements described in § 742.6(a)(6)(iii) of EAR when:

(i) *Product scope.* The items subject to the EAR that are specified in ECCNs 3A001.z; 3A090; 3D001 (for “software” for commodities controlled by 3A001.z, 3A090); 3E001 (for “technology” for commodities controlled by 3A001.z, 3A090); 4A003.z; 4A004.z; 4A005.z; 4A090; 4D001 (for “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z); 4D090; 4E001 (for “technology” for commodities controlled by 4A003.z, 4A004.z, 4A005.z, 4A090 or “software” specified by 4D001 (for 4A003.z, 4A004.z, and 4A005.z), 4D090); 5A002.z; 5A004.z; 5A992.z; 5D002.z; 5D992.z; 5E002 (for “technology” for commodities controlled by 5A002.z or 5A004.z or “software” specified by 5D002 (for 5A002.z or 5A004.z commodities)); or 5E992 (for “technology” for commodities controlled by 5A992.z or “software” controlled by 5D992.z) of the Commerce Control List (CCL); and

(ii) *End-use scope.* Any item identified under the paragraph (d)(2)(i) of this supplement, may be exported, reexported, or transferred (in-country) to or within a destination specified in Country Groups D:1, D:4, or D:5 (and not specified in Country Groups A:5 or A6) when the recipient is located in but is not headquartered or whose ultimate parent company is not headquartered in Macau or Country Group D:5 to continue or engage in integration, assembly (mounting), inspection, testing, quality assurance, and distribution of items covered by items specified in paragraph (d)(2)(i) for the ultimate end use of these items outside of destinations specified in Country Groups D:1, D:4, or D:5 (and not specified in Country Groups A:5 or A6) by entities not headquartered or whose ultimate parent company is not headquartered in Macau or a destination specified in Country Group D:5.

(3) *Validity date.* The TGLs under paragraphs (d)(1) and (2) of this supplement expire on December 31, 2025.

(4) *End-use and end-user restrictions—(i) Restrictions related to part 744 of the EAR.* The TGL under paragraphs (d)(1) and (2) of this supplement does not overcome the license requirements of § 744.11 or § 744.21 of the EAR when an entity listed in supplements no. 4 or 7 to part 744 is a party to the transaction as described in § 748.5(c) through (f) of the EAR, or when there is knowledge of any other prohibited end use

or end user (other than the § 744.23 provisions specified above in the TGL).

(ii) *Indigenous production.* (A) The TGL under paragraph (d)(1) of this supplement cannot be used for the indigenous “development” or “production” of Category 3B tools in either Macau or a destination specified in Country Group D:5, *i.e.*, where the “part,” “component,” or “equipment” is “developed” or “produced” at the direction of an entity that is headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5.

(B) The TGL under paragraph (d)(2) of this supplement cannot be used for the indigenous “development” or “production” of any item identified under paragraph (d)(2)(i) of this supplement where the “part,” “component,” or “equipment” is “developed” or “produced” at the direction of an entity that is headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5.

* * * * *

PART 740—LICENSE EXCEPTIONS

■ 12. 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.

■ 13. Effective November 17, 2023, § 740.2 is amended by revising paragraphs (a)(9)(ii) introductory text and (a)(9)(ii)(B) to read as follows:

§ 740.2 Restrictions on all License Exceptions.

* * * * *

- (a) * * *
- (9) * * *

(ii) The item is identified in paragraph (a)(9)(ii)(A) or (B) of this section, is being exported, reexported, or transferred (in-country) to or within a destination specified in Country Group D:1, D:4, or D:5, excluding any destination also specified in Country Groups A:5 or A:6, and the license exception is other than: TMP, restricted to eligibility under the provisions of § 740.9(a)(6); NAC, under the provisions of § 740.8; RPL, under the provisions of § 740.10, including § 740.10(a)(3)(v), which prohibits exports and reexports of replacement parts to a destination specified in Country Group E:1 (see supplement no. 1 to this part)); GOV, restricted to eligibility under the provisions of § 740.11(b); or TSU under the provisions of § 740.13(a) and (c). Items restricted to eligibility only for the foregoing license exceptions are:

* * * * *

(B) An integrated circuit, “electronic assembly” or “component” or related

software or technology specified in ECCNs 3A001.z; 3D001 (for “software” for commodities controlled by 3A001.z, 3A090); 3E001 (for “technology” for commodities controlled by 3A001.z); 4A003.z; 4A004.z; 4A005.z; 4D001 (for “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z); and 4E001 (for “technology” for commodities controlled by 4A003.z, 4A004.z, 4A005.z); 5A002.z; 5A004.z; 5A992.z; 5D002.z; 5D992.z; 5E002 (for “technology” for commodities controlled by 5A002.z or 5A004.z); “software” specified by 5D002 (for 5A002.z or 5A004.z commodities); 5E992 (for “technology” for commodities controlled by 5A992.z or “software” controlled by 5D992.z).

* * * * *

■ 14. Effective November 17, 2023, § 740.7 is amended by revising paragraph (b)(1) to read as follows:

§ 740.7 Computers (APP).

* * * * *

- (b) * * *

(1) Related equipment controlled under ECCN 4A003.g, z.2, or z.4 may not be exported or reexported under this license exception when exported or reexported separately from eligible computers authorized under this license exception.

* * * * *

■ 15. Effective November 17, 2023, § 740.8 is added to read as follows:

§ 740.8 Notified Advanced Computing (NAC).

(a) *Eligibility requirements.* License Exception NAC permits the export, reexport, and transfer (in-country) of any item classified in ECCN 3A090, 4A090, 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z, except for items designed or marketed for use in a datacenter and meeting the parameters of 3A090.a. License Exception NAC authorizes exports, reexports, and transfers (in-country) to or within any destination specified in Country Groups D:1 or D:4, and transfers (in-country) within Macau or any destination specified in Country Group D:5, provided your export, reexport, or transfer (in-country) meets *all* of the applicable criteria identified under paragraph (b) of this section. The notification requirements do not apply for transfers (in-country). License Exception NAC also permits exports and reexports to Macau or a destination specified in Country Group D:5, or to an entity headquartered in, or with an ultimate parent headquartered in, Macau or a destination specified in

Country Group D:5, of these items, provided your export or reexport meets all of the applicable criteria identified under paragraphs (b) and (c) of this section, as applicable:

(1) *Written purchase order.* The export or reexport is made pursuant to a written purchase order unless specifically excepted in this section. Exports or reexports of commercial samples are not subject to this purchase order requirement, but such transactions are obligated to comply with paragraph (a)(2) of this section.

(2) *Notification to BIS.* Prior to any exports or reexports to Macau or a destination specified in Country Group D:5, the exporter or reexporter must notify BIS in accordance with the procedures set forth in paragraph (c) of this section. For multiple exports or reexports, the exporter or reexporter need only notify BIS prior to the first export or reexport. A notification under this paragraph is not required for transfers (in-country) within Macau or a destination specified in Country Group D:5. BIS will provide further information on the notification process in policy guidance.

(b) *Restrictions.* License Exception NAC may not be used for restricted activities under paragraph (b)(1) or (2) of this section.

(1) *Prohibited end uses and end users.* No exports, reexports, or transfers (in-country) may be made under License Exception NAC that are subject to a license requirement under part 744 or 746 of the EAR, except for a license required under § 744.23(a)(3) for reexports or exports to any destination other than those specified in Country Groups D:1, D:4, or D:5 (excluding any destination also specified in Country Groups A:5 or A:6) for an entity that is headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5; and

(2) *'Military end use' or 'military end user.'* No exports, reexports, or transfers (in-country) may be made under License Exception NAC to or for a 'military end use,' as defined in § 744.21(f), or 'military end user,' as defined in § 744.21(g).

(c) *Prior notification procedures—(1) Procedures.* At least twenty-five calendar days prior to exports or reexports to or within Macau or a destination specified in Country Group D:5, you must provide prior notification under License Exception NAC by submitting a completed application in SNAP-R in accordance with § 748.1 of the EAR. The following blocks must be completed, as appropriate: Blocks 1, 2, 3, 4, 5 (by marking box 5 "Other"), 9,

14, 16, 17, 18, 19, 21, 22 (a), (e), (f), (g), (h), (i), (j), 22(d), 23, 24, and 25 according to the instructions described in supplement no. 1 to part 748 of the EAR. Box 9 under special purpose must include NAC.

(2) *Action by BIS.* If the information provided is complete, BIS will inform you within twenty-five calendar days of notification if you may use License Exception NAC. Note that the fact that you have been advised by BIS that you can use License Exception NAC does not exempt you from other licensing requirements under the EAR, such as those based on "knowledge" of a prohibited end use or end user as referenced in general prohibition five (part 736 of the EAR) and set forth in part 744 of the EAR.

(3) *Status of pending NAC notification requests.* You must log into BIS's System for Tracking Export License Applications (STELA) (<https://snapr.bis.doc.gov/stela>) for status of your pending NAC notification or to verify the status in BIS's Simplified Network Applications Processing Redesign (SNAP-R) System. STELA will provide the date the NAC notification is registered. STELA will, on the twenty-fifth calendar day following the date of registration, provide a confirmation of the fact that you can use License Exception NAC and a NAC confirmation number to be submitted in AES or provide you with confirmation if you cannot use License Exception NAC. In addition, BIS may provide such confirmation by email, telephone, fax, courier service, or other means.

■ 16. Effective November 17, 2023, § 740.16 is amended by revising paragraphs (a)(2) and (b)(2)(ii) to read as follows:

§ 740.16 Additional permissive reexports (APR).

* * * * *

(a) * * *

(2) The commodities being reexported are not controlled for NP, CB, MT, SI, or CC reasons; described in ECCNs 0A919, 3A001.b.2, b.3 (except those that are being reexported for use in civil telecommunications applications), or .z, 6A002, or 6A003; or commodities classified under a 0x5zz ECCN; and

* * * * *

(b) * * *

(2) * * *

(ii) Commodities in 3A001.b.2, b.3 (except those that are being reexported for use in civil telecommunications applications), or .z;

* * * * *

■ 17. Effective November 17, 2023, § 740.17 is amended by revising the fifth

sentence of the introductory text and revising paragraphs (b)(1), (b)(2)(i)(D), the note to paragraph (b)(2), paragraphs (b)(3) introductory text (retaining note), (b)(3)(i) introductory text, (b)(3)(iii)(B), and (b)(3)(iv), the second sentence of paragraph (e)(3) introductory text, and revising paragraph (f)(1) to read as follows:

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

* * * Items described in paragraphs (b)(1) and (b)(3)(i), (b)(3)(ii) or (b)(3)(iv) of this section that meet the criteria set forth in Note 3 to Category 5—Part 2 of the Commerce Control List (the "mass market" note) are classified under ECCN 5A992 or 5D992 following self-classification or classification by BIS and are no longer subject to "EI" and "NS" controls. * * *

* * * * *

(b) * * *

(1) *Immediate authorization.* This paragraph (b)(1) authorizes the exports, reexports, and transfers (in-country) of the associated commodities self-classified under ECCNs 5A002.a, z.1, or 5B002, and equivalent or related software therefor classified under 5D002, except any such commodities, software, or components described in paragraph (b)(2) or (3) of this section, subject to submission of a self-classification report in accordance with § 740.17(e)(3) of the EAR. Items described in this paragraph (b)(1) that meet the criteria set forth in Note 3 to Category 5—Part 2 of the Commerce Control List (the "mass market" note) are classified as ECCN 5A992 or 5D992 following self-classification or classification by BIS and are removed from "EI" and "NS" controls.

(2) * * *

(i) * * *

(D) *Quantum cryptography.* ECCN 5A002.c, z.3, or 5D002 "quantum cryptography" commodities or software;

* * * * *

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

(3) *Classification request required for specified commodities, software, and components.* Thirty (30) days after a classification request is submitted to BIS in accordance with paragraph (d) of this section and subject to the reporting requirements in paragraph (e) of this section, this paragraph authorizes exports, reexports, and transfers (in-country) of the items submitted for

classification, as further described in this paragraph (b)(3), to any end user, provided the item does not perform the functions, or otherwise meet the specifications, of any item described in paragraph (b)(2) of this section. Items described in paragraph (b)(3)(ii) or (iv) of this section that meet the criteria set forth in Note 3 to Category 5—Part 2 of the CCL (the “mass market” note) are classified under ECCN 5A992 or 5D992 following classification by BIS.

(i) *Non-“mass market” “components,” toolsets, and toolkits.* Specified components classified under ECCN 5A002.a, or z.1, and equivalent or related software classified under ECCN 5D002 that do not meet the criteria set forth in Note 3 to Category 5—Part 2 of the CCL (the “mass market” note) and are not described by paragraph (b)(2) or (b)(3)(ii) of this section, as follows:

(iii) * * *
 (B) *Digital forensics and investigative tools.* Items specified in ECCNs: 5A004.b, z.3; 5D002.a.3.b or z.4; or 5D002.c.3.b or z.9 in supplement no. 1 to part 774 of the EAR.

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

(e) * * *
 (3) * * * Specifically, this reporting requirement applies to “mass market” encryption components and ‘executable software’ that meet the criteria of the Cryptography Note—Note 3 to Category 5—Part 2 of the CCL (“mass market” note) and are classified under ECCN 5A992 or 5D992 following self-classification, as well as to non-“mass market” encryption commodities and software that remain classified in ECCN 5A002, 5B002, or 5D002 following self-classification, provided these items are not further described by paragraph (b)(2) or (3) of this section.

(f) * * *
 (1) “Cryptanalytic items,” classified in ECCN 5A004.a, z.1 or z.2, 5D002.a.3.a, c.3.a, z.3, or z.8, or 5E002;

■ 18. Effective November 17, 2023, § 740.19 is amended by revising paragraphs (b) introductory text and (b)(16) and adding paragraph (b)(17) to read as follows:

§ 740.19 Consumer communications devices (CCD).

(b) *Eligible commodities and software.* Commodities and “software” in paragraphs (b)(1) through (17) of this section are eligible for export, reexport, or transfer (in-country) under this section to and within Cuba, Russia, and Belarus.

(16) Consumer “software” (except “encryption source code”) classified under ECCNs 4D994, 5D991 or 5D992.c or designated EAR99 to be used for equipment described in paragraphs (b)(1) through (17) of this section; and

(17) Commodities described under 3A991.p or 4A994.l.

PART 742—CONTROL POLICY—CCL BASED CONTROLS

■ 19. The authority citation for part 742 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. 3201 *et seq.*; 42 U.S.C. 2139a; 22 U.S.C. 7201 *et seq.*; 22 U.S.C. 7210; Sec. 1503, Pub. L. 108–11, 117 Stat. 559; E.O. 12058, 43 FR 20947, 3 CFR, 1978 Comp., p. 179; E.O. 12851, 58 FR 33181, 3 CFR, 1993 Comp., p. 608; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Presidential Determination 2003–23, 68 FR 26459, 3 CFR, 2004 Comp., p. 320; Notice of November 8, 2022, 87 FR 68015 (November 10, 2022).

■ 20. Effective November 17, 2023, § 742.6 is amended by revising paragraphs (a)(6) and (b)(10) to read as follows:

§ 742.6 Regional stability.

(a) * * *
 (6) *RS requirement that applies to advanced computing and semiconductor manufacturing items—(i) Exports, reexports, transfers (in-country) to or within Macau or Country Group D:5.* A license is required for items specified in ECCNs 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c; and associated software and technology in 3D001 (for 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c), 3D002 (for 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c), and 3E001 (for 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c) being exported, reexported, or transferred (in-country) to or within Macau or a destination specified in Country Group D:5 in supplement no. 1 to part 740 of the EAR.

(ii) *Exports from abroad originating in either Macau or a destination specified in Country Group D:5.* A license is also required for the export from abroad

originating in either Macau or a destination specified in Country Group D:5 to any destination worldwide excluding any destination also specified in Country Groups A:5 or A:6, of 3E001 (for 3A090) technology developed by an entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5 that is the direct product of software subject to the EAR and is for the “production” of commodities identified in ECCNs 3A090, 4A090, 3A001.z, 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, or 5A992.z, consistent with § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) of the EAR.

(iii) *Exports, reexports, transfers (in-country) to or within destinations specified in Country Groups D:1, D:4, and D:5, excluding destinations also specified in Country Groups A:5 or A:6.* A license is required for items specified in ECCNs 3A001.z; 3A090; 3D001 (for “software” for commodities controlled by 3A001.z, 3A090); 3E001 (for “technology” for commodities controlled by 3A001.z, 3A090); 4A003.z; 4A004.z; 4A005.z; 4A090; 4D001 (for “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z); 4D090 (for “software” for commodities controlled by 4A090); 4E001 (for “technology” for commodities controlled by 4A003.z, 4A004.z, 4A005.z, 4A090 or “software” specified by 4D001 (for 4A003.z, 4A004.z, and 4A005.z), 4D090 (for “software” for commodities controlled by 4A090)); 5A002.z; 5A004.z; 5A992.z; 5D002.z; 5D992.z; 5E002 (for “technology” for commodities controlled by 5A002.z or 5A004.z or “software” specified by 5D002 (for 5A002.z or 5A004.z commodities)); or 5E992 (for “technology” for commodities controlled by 5A992.z or “software” controlled by 5D992.z) being exported, reexported, or transferred (in-country) to or within a destination specified in Country Groups D:1, D:4, and D:5, excluding destinations also specified in Country Groups A:5 or A:6, in supplement no. 1 to part 740 of the EAR.

(iv) *Deemed exports and reexports.* The license requirements in paragraphs (a)(6)(i) through (iii) of this section do not apply to deemed exports or deemed reexports.

(b) * * *
 (10) *Advanced computing and semiconductor manufacturing items—(i) License review policy for paragraphs (a)(6)(i) and (ii) of this section.* License applications for items specified in

paragraphs (a)(6)(i) and (ii) of this section will be reviewed consistent with license review policies in § 744.23(d) of the EAR, except applications will be reviewed on a case-by-case basis if no license would be required under part 744 of the EAR.

(ii) *License review policy for paragraph (a)(6)(iii) of this section.* License applications for items specified in paragraph (a)(6)(iii) of this section to or within destinations not specified in Country Group D:5 (except Macau) will be reviewed on a presumption of approval basis, unless the export, reexport, or transfer (in-country) is to an entity headquartered in, whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5, in which case license applications will be reviewed under a presumption of denial. License applications for items to or within Macau or destinations specified in Country Group D:5 for items specified in paragraph (a)(6)(iii) will be reviewed under a presumption of denial.

* * * * *

■ 21. Effective November 17, 2023, § 742.15 is amended by revising the third, fourth, and fifth sentences of paragraph (a)(1) to read as follows:

§ 742.15 Encryption items.

* * * * *

(a) * * *

(1) * * * Following classification or self-classification, items that meet the criteria of Note 3 to Category 5—Part 2 of the Commerce Control List (the “mass market” note), are classified under ECCN 5A992 or 5D992 and are no longer subject to this Section (see § 740.17 of the EAR). Before submitting a license application, please review License Exception ENC to determine whether this license exception is available for your item or transaction. For exports, reexports, or transfers (in-country) of encryption items that are not eligible for a license exception, you must submit an application to obtain authorization under a license or an Encryption Licensing Arrangement.

* * * * *

PART 744—CONTROL POLICY: END-USER AND END-USE BASED

■ 22. The authority citation for part 744 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. 3201 *et seq.*; 42 U.S.C. 2139a; 22 U.S.C. 7201 *et seq.*; 22 U.S.C. 7210; E.O. 12058, 43 FR 20947, 3 CFR, 1978 Comp., p. 179; E.O. 12851, 58 FR 33181, 3 CFR, 1993 Comp., p. 608; E.O. 12938, 59 FR 59099, 3 CFR, 1994 Comp., p. 950; E.O. 13026, 61 FR 58767, 3

CFR, 1996 Comp., p. 228; E.O. 13099, 63 FR 45167, 3 CFR, 1998 Comp., p. 208; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; E.O. 13224, 66 FR 49079, 3 CFR, 2001 Comp., p. 786; Notice of November 8, 2022, 87 FR 68015, 3 CFR, 2022 Comp., p. 563; Notice of September 7, 2023, 88 FR 62439 (September 11, 2023).

■ 23. Effective November 17, 2023, § 744.6 is amended by revising paragraphs (c)(2)(i) and (ii) and adding paragraphs (c)(3) and (d)(1) to read as follows:

§ 744.6 Restrictions on specific activities of “U.S. persons.”

* * * * *

(c) * * *

(2) * * *

(i) *“Development” or “production” of “advanced-node ICs.”* To or within Macau or a destination specified in Country Group D:5, any item not subject to the EAR that you know will be used in the “development” or “production” of integrated circuits at a “facility” of an entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5 where “production” of “advanced-node integrated circuits” occurs;

(ii) *Category 3 items for “development” or “production” of “advanced-node ICs.”* To or within Macau or a destination specified in Country Group D:5, any item not subject to the EAR and meeting the parameters of any ECCN in Product Groups B, C, D, or E in Category 3 of the CCL that you know will be used in the “development” or “production” of integrated circuits at a “facility” of an entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5 where “production” of integrated circuits occurs, but you do not know whether “production” of “advanced-node integrated circuits” occurs at such “facility”;

* * * * *

(3) *Scope of activities of “U.S. persons” that require a license under paragraph (c)(2) of this section.* (i) *Controlled activities.* The U.S. persons controls in paragraphs (c)(2)(i) through (iii) of this section apply to persons who:

- (A) Authorize the shipment, transmittal, or transfer (in-country) of items not subject to the EAR and described in paragraphs (c)(2)(i) through (iii) of this section;
- (B) Conduct the delivery, by shipment, transmittal, or transfer (in-country), of items not subject to the EAR described in paragraphs (c)(2)(i) through (iii) of this section; or

(C) Service, including maintaining, repairing, overhauling, or refurbishing items not subject to the EAR described in paragraphs (c)(2)(i) through (iii) of this section.

(ii) *Due diligence.* Appropriate due diligence includes but is not limited to review of publicly available information, capability of items to be provided, proprietary market data, and end-use statements. “U.S. persons” should conduct due diligence to assess whether the item is for the “development” or “production” of “advanced-node integrated circuits” at a “facility” of an entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5, consistent with paragraphs (c)(2)(i) through (iii) of this section. As set forth in paragraph (c)(2)(ii), for items specified in Category 3B, 3C, 3D, or 3E ECCNs, license requirements may apply even when the “U.S. person” does not know whether the activity is for the “development” or “production” of “advanced-node integrated circuits.” In addition, some of the exclusions may require due diligence, such as those in paragraphs (d)(3) and (5) of this section. “U.S. persons” should follow the “Know Your Customer” guidance in supplement no. 3 to part 732 of the EAR. “U.S. persons” can also submit Advisory Opinion requests to BIS pursuant to § 748.3(c) of the EAR for guidance on specific fabrication facilities. To submit an Advisory Opinion request, email RPD2@bis.doc.gov.

(d) * * *

(1) *Exclusion of certain administrative and clerical activities and information otherwise excluded—(i) Exclusion of certain administrative and clerical activities.* Given the policy objective of these controls, the “U.S. persons” criteria in paragraphs (c)(2)(i) through (iii) of this section do not extend to “U.S. persons” conducting administrative or clerical activities (e.g., arranging for shipment or preparing financial documents) or otherwise implementing a decision to approve a restricted shipment, transmittal, or in-country transfer, or to activities of “U.S. persons” that are not directly related to the provision or servicing of specific items to the “development” or “production” of “advanced-node integrated circuits.”

(ii) *Exclusion of information otherwise excluded under the EAR under part 734.* The exclusion of certain activities specified in paragraph (c)(3) of this section only applies to paragraph (c)(2) of this section, and does not, for example, limit the scope of paragraph

(b) of this section or apply to other uses of the term facilitate or facilitation found elsewhere in the EAR. The scope of paragraph (c)(2) of this section does not include information or software that would otherwise be excluded from the EAR based on the exclusion criteria under part 734, e.g., under § 734.7 (entitled “Published”) Tand § 734.8 “Technology” or “software” that arises during, or results from, fundamental research.

(iii) *Exclusion of law enforcement and intelligence operations of the U.S. Government.* Given the policy objective of these controls, the “U.S. persons” criteria in paragraphs (c)(2)(i) through (iii) of this section do not extend to “U.S. persons” conducting law enforcement and intelligence operations of the U.S. Government.

* * * * *

■ 24. Effective November 17, 2023, § 744.23 is amended by revising paragraphs (a)(1)(ii) and (a)(2) and adding paragraph (a)(3) to read as follows:

§ 744.23 “Supercomputer” and semiconductor manufacturing end use.

* * * * *

(a) * * *
(1) * * *

(ii) *Destination and end-use scope.* (A) The “development,” “production,” operation, installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of a “supercomputer” located in or destined to Macau or a destination specified in Country Group D:5 of supplement no. 1 to part 740 of the EAR; or

(B) The incorporation into, or the “development” or “production” of any “component” or “equipment” that will be used in a “supercomputer” located in or destined to Macau or a destination specified in Country Group D:5.

(2) *“Advanced-node ICs”*—(i) *Any item at a “production” “facility” of “advanced-node ICs.”* Any items subject to the EAR when you know the items will be used in the “development” or “production” of ICs destined to a “facility” located in Macau or a destination specified in Country Group D:5 where “production” of “advanced-node ICs” occurs.

(ii) *Category 3 items to a “facility” where the technology node is unknown.* Any item subject to the EAR specified in an ECCN in Product Groups B, C, D, or E in Category 3 of the CCL when you know the item will be used in the “development” or “production” of ICs destined to a “facility” located in Macau or a destination specified in Country Group D:5 where “production” of integrated circuits occurs, but you do

not know whether “production” of “advanced-node ICs” occurs at such “facility.”

(3) *Advanced computing items.* (i) Any item subject to the EAR and specified in ECCN 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z destined to any destination other than those specified in Country Groups D:1, D:4, or D:5 (excluding any destination also specified in Country Groups A:5 or A:6) for an entity that is headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5 (e.g., a PRC-headquartered cloud or data server provider located in a destination not otherwise excluded).

(ii) ECCN 3E001 (for 3A090) “technology” when it meets all of the following:

(A) The technology is developed by an entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or a destination specified in Country Group D:5;

(B) The “technology” is subject to the EAR pursuant to the foreign direct product rule in § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) of the EAR;

(C) The “technology” is for reexport or transfer (in-country) from or within a destination specified in Country Group D:1, D:4, D:5, excluding any destination also specified in Country Groups A:5 or A:6, to any destination worldwide; and

(D) The “technology” is for the “production” of commodities or software specified in ECCN 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, or 5A992.z.

Note 1 to paragraph (a)(3)(ii): This paragraph (a)(3)(ii) includes items subject to the EAR pursuant to the foreign direct product rule in § 734.9(h)(1)(i)(B)(1) and (h)(2)(ii) of the EAR.

* * * * *

PART 746—EMBARGOES AND OTHER SPECIAL CONTROLS

■ 25. Effective November 17, 2023, the authority citation for part 746 is revised 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. 287c; Sec 1503, Pub. L. 108–11, 117 Stat. 559; 22 U.S.C. 2151 note; 22 U.S.C. 6004; 22 U.S.C. 7201 *et seq.*; 22 U.S.C. 7210; E.O. 12854, 58 FR 36587, 3 CFR, 1993 Comp., p. 614; E.O. 12918, 59 FR 28205, 3 CFR, 1994 Comp., p. 899; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; E.O. 13338, 69 FR 26751, 3 CFR, 2004 Comp., p. 168; Presidential Determination 2003–23, 68 FR 26459, 3 CFR, 2004 Comp., p. 320;

Presidential Determination 2007–7, 72 FR 1899, 3 CFR, 2006 Comp., p. 325; Notice of May 810, 2023, 88 FR 30211 (May 10, 2023).

■ 26. Effective November 17, 2023, § 746.8 is amended by revising paragraph (a) introductory text to read as follows:

§ 746.8 Sanctions against Russia and Belarus.

(a) *License requirements.* For purposes of paragraphs (a)(1) and (2) of this section, commodities specified under ECCN 5A991, and commodities and software classified under ECCNs 5A992.c or 5D992.c that have been ‘classified in accordance with § 740.17’ do not require a license to or within Russia or Belarus for the following civil end-users: wholly-owned U.S. subsidiaries, branches, or sales offices; joint ventures between two or more U.S. companies, including the wholly-owned subsidiaries, branches, or sales offices of such joint ventures; joint ventures between U.S. companies and companies headquartered in countries from Country Group A:5 and A:6 in supplement no. 1 to part 740 of the EAR, including the wholly-owned subsidiaries, branches, or sales offices of such joint ventures; wholly-owned subsidiaries, branches, or sales offices of companies headquartered in countries from Country Group A:5 and A:6 in supplement no. 1 to part 740; or joint ventures between two or more companies headquartered in Country Group A:5 and A:6 in supplement no. 1 to part 740, including the wholly-owned subsidiaries, branches, or sales offices of such joint ventures.

* * * * *

■ 27. Effective November 17, 2023, § 746.10 is amended by revising paragraph (a) introductory text to read as follows:

§ 746.10 ‘Luxury Goods’ Sanctions Against Russia and Belarus and Russian and Belarusian oligarchs and malign actors.

(a) *License requirements.* For purposes of paragraphs (a)(1) and (2) of this section, commodities specified under ECCN 5A991, and commodities and software classified under ECCNs 5A992.c or 5D992.c that have been ‘classified in accordance with § 740.17’ do not require a license to or within Russia or Belarus for the following civil end-users: wholly-owned U.S. subsidiaries, branches, or sales offices; joint ventures between two or more U.S. companies, including the wholly-owned subsidiaries, branches, or sales offices of such joint ventures; joint ventures between U.S. companies and companies headquartered in countries from Country Group A:5 and A:6 in

supplement no. 1 to part 740 of the EAR, including the wholly-owned subsidiaries, branches, or sales offices of such joint ventures; wholly-owned subsidiaries, branches, or sales offices of companies headquartered in countries from Country Group A:5 and A:6 in supplement no. 1 to part 740; or joint ventures between two or more companies headquartered in Country Group A:5 and A:6 in supplement no. 1 to part 740, including the wholly-owned subsidiaries, branches, or sales offices of such joint ventures.

PART 748—APPLICATIONS (CLASSIFICATION, ADVISORY, AND LICENSE) AND DOCUMENTATION

■ 28. Effective November 17, 2023, the authority citation for part 748 is revised 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.*; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 14, 2023, 88 FR 55549 (August 16, 2023).

■ 29. Effective November 17, 2023, § 748.8 is amended by adding paragraphs (d), (s), (t), and (z) to read as follows:

§ 748.8 Unique application and submission requirements.

(d) U.S. person support activities that require a license under § 744.6.

(s) Exports of firearms and certain shotguns temporarily in the United States.

(t) “600 Series Major Defense Equipment.”

(z) Semiautomatic firearms controlled under ECCN 0A501.a.

■ 30. Effective November 17, 2023, supplement No. 2 to part 748 is amended by adding paragraph (d) to read as follows:

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

(d) “U.S. person” support activities that require a license under § 744.6 of the EAR. Use SNAP–R for submitting a license

application for “U.S. person” activities. Applicants should use the reexport designation on the SNAP–R form and include in the “Additional Information” section of the license application that a license is required for the transaction under § 744.6 of the EAR. In the special purpose field, specify the specific activities the “U.S. person” is engaged. The applicant should provide, as relevant: the ECCN of the technology or item or, if unknown, use the EAR99 designation (regardless of whether the items being dealt with are subject to the EAR); and a complete explanation of the activity in supplemental documentation.

■ 31. Effective November 17, 2023, supplement no. 7 to part 748 is amended by revising the heading and the entries for “Advanced Micro Devices China, Inc” and “Shanghai Huahong Grace Semiconductor Manufacturing Corporation” under “China (People’s Republic of)” to read as follows:

Supplement No. 7 to Part 748—Authorization Validated End-User (VEU): List of Validated End-Users, Respective Items Eligible for Export, Reexport and Transfer (In-Country), and Eligible Destinations

Country	Validated end-user	Eligible items (by ECCN)	Eligible destination	Federal Register
China (People’s Republic of).	Advanced Micro Devices China, Inc.	3D002, 3D003, 3E001 (limited to “technology” for items classified under 3C002 and 3C004 and “technology” for use during the International Technology Roadmap for Semiconductors (ITRS) process for items classified under ECCNs 3B001 and 3B002), 3E002 (limited to “technology” for use during the ITRS process for items classified under ECCNs 3B001 and 3B002), 3E003.e (limited to the “development” and “production” of integrated circuits for commercial applications), 4D001 and 4E001 (limited to the “development” of products under ECCN 4A003.b through .g).	Advanced Micro Devices (Shanghai) Co., Ltd., Buildings 33 (Unit 1), 46, 47, 48 & 49, River Front Harbor, Zhangjiang Hi-Tech Park, No. 1387 Zhang Dong Road, Pudong District, Shanghai, China 201203. AMD Technology Development (Beijing) Co., Ltd., North and South Buildings, RaycomInfotech, Park Tower C, No. 2 Science Institute South Rd., Zhong Guan Cun, Haidian District, Beijing, China 100190. AMD Products (China) Co. Ltd., North and South Buildings, RaycomInfotech Park Tower C, No. 2 Science Institute South Rd., Zhong Guan Cun, Haidian District, Beijing, China 100190.	75 FR 25763, 5/10/10. 76 FR 2802, 1/18/11. 78 FR 3319, 1/16/13. 81 FR 40785, 6/23/16. 88 FR [INSERT PAGE NUMBER], 10/25/23.
	Shanghai Huahong Grace Semiconductor Manufacturing Corporation.	1C350.c.4, 1C350.d.14, 2B230, 2B350.d.2, 2B350.g.3, 2B350.i.4, 3B001.a.1, 3B001.b, 3B001.e, 3B001.f, 3B001.h, 3C002, 3C004, 5B002, and 5E002 (controlled by ECCNs 5A002.a through .e, 5A004.a through .b, or 5A992.c that have been successfully reviewed under the encryption review process specified in Sections 740.17(b)(2) or 740.17(b)(3) of the EAR).	Shanghai Huahong Grace Semiconductor Manufacturing Corporation—HFab 2, 668 Guoshoujing Road, Zhangjiang Hi-Tech Park, Shanghai 201203 China. Shanghai Huahong Grace Semiconductor Manufacturing Corporation—HFab 1, 1188 Chuanqiao Road, Pudong, Shanghai 201206 China.	78 FR 32981, 6/3/13. 88 FR [INSERT PAGE NUMBER], 10/25/23.

Country	Validated end-user	Eligible items (by ECCN)	Eligible destination	Federal Register
			Shanghai Huahong Grace Semiconductor Manufacturing Corporation—GFab1, 1399 Zuchongzhi Road, Zhangjiang Hi-Tech Park, Shanghai 201203 China.	
*	*	*	*	*

PART 758—EXPORT CLEARANCE REQUIREMENTS

■ 32. The authority citation for part 758 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.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783.

■ 33. Effective November 17, 2023, § 758.1 is amended by adding paragraph (g)(5) to read as follows:

§ 758.1 The Electronic Export Information (EEI) Filing to the Automated Export System (AES).

* * * * *

(g) * * *

(5) *Exports of .z items that meet or exceed the performance parameters of ECCN 3A090 or 4A090.* This paragraph (g)(5) imposes a requirement for identifying .z items by “items” level classification in the EEI filing in AES. For any export of .z items controlled under ECCNs 3A001, 4A003, 4A004, 4A005, 5A002, 5A004, 5A992, 5D002, or 5D992 in addition to any other required data for the associated EEI filing, you must include the items paragraph classification (*i.e.*, .z), when applicable, as the first text to appear in the Commodity description block in the EEI filing in AES.

* * * * *

■ 34. Effective November 17, 2023, § 758.6 is amended by revising paragraph (a)(2) to read as follows:

§ 758.6 Destination control statement and other information furnished to consignees.

(a) * * *

(2) The ECCN(s) for any 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, 9x515 or “600 series” “items” being shipped (*i.e.*, exported in tangible form). For the seven ECCNs with a .z paragraph, the requirement to include the classification only applies to commodities classified under the .z paragraphs. If the commodity is classified under any other paragraph in one of those seven ECCNs, then the requirement under this paragraph is not

applicable. For ECCN 3A090, identify the commodity as either 3A090.a or .b.
* * * * *

PART 772—DEFINITIONS OF TERMS

■ 35. The authority citation for part 772 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.*; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783.

■ 36. Effective November 17, 2023, § 772.1 is amended by revising the last sentence in note 1 to the definition for “specially designed” to read as follows:

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

* * * * *

Specially designed. * * *

NOTE 1: * * * For purposes of “specially designed,” ECCNs 0B505.c, 0B999, 0D999, 1B999, 1C992, 1C995, 1C997, 1C999, 3A991, 4A994, 5A992 (except for .z), 5D992 (except for .z), 6A998 (except for .b), and 9A991 are treated as ECCNs controlled exclusively for AT reasons.

* * * * *

PART 774—THE COMMERCE CONTROL LIST

■ 37. 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.

■ 38. Effective November 17, 2023, supplement no. 1 to part 774 is amended by:

- a. Revising ECCNs 3A001, 3A090, 3A991, 3D001, 3E001;
- b. Revising Note 3 to Category 4—Computers;
- c. Revising ECCNs 4A003, 4A004, 4A005, 4A090, 4A994, 4D001, and 4E001;
- d. Revising Technical Note paragraph 2 in the TECHNICAL NOTE ON

“ADJUSTED PEAK PERFORMANCE” (“APP”) at the end Category 4—Computers;

■ e. Revising the Note 3. to Category 5—Telecommunications and “Information Security” Part 1—Telecommunications introductory text;

■ f. Revising ECCN 5E001;

■ g. Revising Note 3 and the N/B. to Note 3 (Cryptography Note) to Category 5—Telecommunications and “Information Security” Part 2—“Information Security”; and

■ h. Revising ECCNs 5A002, 5A992, 5A004, 5B002, 5D002, 5D992, 5E002, 5E992, 9A004, and 9A515.

The revisions read as follows:

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

* * * * *

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

Reason for Control: NS, RS, MT, NP, AT

<i>Control(s)</i>	<i>Country chart (see supp. No. 1 to part 738)</i>
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NS applies to “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers in 3A001.b.2 and discrete microwave transistors in 3A001.b.3, except those 3A001.b.2 and b.3 items being exported or reexported for use in civil telecommunications applications.

NS Column 1.

NS applies to entire entry, except 3A001.z.

NS Column 2.

Control(s)	Country chart (see <i>supp. No. 1 to part 738</i>)	and “technology” for the “production” or “development” of such microprocessors.	a.1. Integrated circuits designed or rated as radiation hardened to withstand any of the following:
RS applies “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers in 3A001.b.2 and discrete microwave transistors in 3A001.b.3, except those 3A001.b.2 and b.3 items being exported or reexported for use in civil telecommunications applications.	RS Column 1.	List Based License Exceptions (See Part 740 for a Description of All License Exceptions)	a.1.a. A total dose of 5×10^3 Gy (Si), or higher;
RS applies to 3A001.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.	<p>LVS: N/A for MT, NP or 3A001.z; N/A for “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers in 3A001.b.2 and discrete microwave transistors in 3A001.b.3, except those that are being exported or reexported for use in civil telecommunications applications.</p> <p>Yes for: \$1500: 3A001.c \$3000: 3A001.b.1, b.2 (exported or reexported for use in civil telecommunications applications), b.3 (exported or reexported for use in civil telecommunications applications), b.9, .d, .e, .f, and .g. \$5000: 3A001.a (except a.1.a and a.5.a when controlled for MT), .b.4 to b.7, and b.12.</p> <p>GBS: Yes for 3A001.a.1.b, a.2 to a.14 (except a.5.a when controlled for MT), b.2 (exported or reexported for use in civil telecommunications applications), b.8 (except for “vacuum electronic devices” exceeding 18 GHz), b.9., b.10, .g, and .h, and .i.</p> <p>NAC: Yes, for 3A001.z; N/A for all other 3A001 commodities.</p>	a.1.b. A dose rate upset of 5×10^6 Gy (Si)/s, or higher; or
MT applies to 3A001.a.1.a and .z when usable in “missiles”; and to 3A001.a.5.a and .z when “designed or modified” for military use, hermetically sealed and rated for operation in the temperature range from below -54 °C to above $+125$ °C.	MT Column 1.	Special Conditions for STA <i>STA:</i> License Exception STA may not be used to ship any item in 3A001.b.2 or b.3, except those that are being exported or reexported for use in civil telecommunications applications, to any of the destinations listed in Country Group A:5 or A:6 (See Supplement No. 1 to part 740 of the EAR).	a.1.c. A fluence (integrated flux) of neutrons (1 MeV equivalent) of 5×10^{13} n/cm ² or higher on silicon, or its equivalent for other materials; Note: 3A001.a.1.c does not apply to Metal Insulator Semiconductors (MIS).
NP applies to pulse discharge capacitors in 3A001.e.2 and superconducting solenoidal electromagnets in 3A001.e.3 that meet or exceed the technical parameters in 3A201.a and 3A201.b, respectively.	NP Column 1.	List of Items Controlled <i>Related Controls:</i> (1) See Category XV of the USML for certain “space-qualified” electronics and Category XI of the USML for certain ASICs, ‘transmit/receive modules,’ or ‘transmit modules’ “subject to the ITAR” (see 22 CFR parts 120 through 130). (2) See also 3A090 (including Note 4 to 3A090), 3A101, 3A201, 3A611, 3A991, and 9A515. <i>Related Definitions:</i> ‘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. For the purposes of integrated circuits in 3A001.a.1, 5×10^3 Gy(Si) = 5×10^5 Rads (Si); 5×10^6 Gy (Si)/s = 5×10^8 Rads (Si)/s.	a.2. “Microprocessor microcircuits,” “microcomputer microcircuits,” microcontroller microcircuits, storage integrated circuits manufactured from a compound semiconductor, analog-to-digital converters, integrated circuits that contain analog-to-digital converters and store or process the digitized data, digital-to-analog converters, electro-optical or “optical integrated circuits” designed for “signal processing”, field programmable logic devices, custom integrated circuits for which either the function is unknown or the control status of the equipment in which the integrated circuit will be used is unknown, Fast Fourier Transform (FFT) processors, Static Random-Access Memories (SRAMs), or ‘non-volatile memories,’ having any of the following:
AT applies to entire entry.	AT Column 1.	Items: a. General purpose integrated circuits, as follows: Note 1: Integrated circuits include the following types: —“Monolithic integrated circuits”; —“Hybrid integrated circuits”; —“Multichip integrated circuits”; —Film type integrated circuits, including silicon-on-sapphire integrated circuits”; —“Optical integrated circuits”; —“Three dimensional integrated circuits”; —“Monolithic Microwave Integrated Circuits” (“MMICs”).	a.2.a. “Microprocessor microcircuits,” “microcomputer microcircuits,” microcontroller microcircuits, storage integrated circuits manufactured from a compound semiconductor, analog-to-digital converters, integrated circuits that contain analog-to-digital converters and store or process the digitized data, digital-to-analog converters, electro-optical or “optical integrated circuits” designed for “signal processing”, field programmable logic devices, custom integrated circuits for which either the function is unknown or the control status of the equipment in which the integrated circuit will be used is unknown, Fast Fourier Transform (FFT) processors, Static Random-Access Memories (SRAMs), or ‘non-volatile memories,’ having any of the following: Technical Note: For the purposes of 3A001.a.2, ‘non-volatile memories’ are memories with data retention over a period of time after a power shutdown.
Reporting Requirements: See § 743.1 of the EAR for reporting requirements for exports under 3A001.b.2 or b.3 under License Exceptions, and Validated End-User authorizations.			a.2.b. Rated for operation at an ambient temperature above 398 K (+125 °C);
License Requirements Note: See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software”			a.2.c. Rated for operation over the entire ambient temperature range from 218 K (-55 °C) to 398 K (+125 °C); Note: 3A001.a.2 does not apply to integrated circuits designed for civil automobile or railway train applications.
			a.3. “Microprocessor microcircuits,” “microcomputer microcircuits” and microcontroller microcircuits, manufactured from a compound semiconductor and operating at a clock frequency exceeding 40 MHz; Note: 3A001.a.3 includes digital signal processors, digital array processors and digital coprocessors.
			a.4. [Reserved]
			a.5. Analog-to-Digital Converter (ADC) and Digital-to-Analog Converter (DAC) integrated circuits, as follows:
			a.5.a. ADCs having any of the following:
			a.5.a.1. A resolution of 8 bit or more, but less than 10 bit, with a “sample rate” greater than 1.3 Giga Samples Per Second (GSPS);
			a.5.a.2. A resolution of 10 bit or more, but less than 12 bit, with a “sample rate” greater than 600 Mega Samples Per Second (MSPS);
			a.5.a.3. A resolution of 12 bit or more, but less than 14 bit, with a “sample rate” greater than 400 MSPS;
			a.5.a.4. A resolution of 14 bit or more, but less than 16 bit, with a “sample rate” greater than 250 MSPS; or
			a.5.a.5. A resolution of 16 bit or more with a “sample rate” greater than 65 MSPS;
			N.B.: For integrated circuits that contain analog-to-digital converters and store or process the digitized data see 3A001.a.14.

Technical Notes: For the purposes of 3A001.a.5.a:

1. A resolution of n bit corresponds to a quantization of 2^n levels.

2. The resolution of the ADC is the number of bits of the digital output that represents the measured analog input. Effective Number of Bits (ENOB) is not used to determine the resolution of the ADC.

3. For “multiple channel ADCs”, the “sample rate” is not aggregated and the “sample rate” is the maximum rate of any single channel.

4. For “interleaved ADCs” or for “multiple channel ADCs” that are specified to have an interleaved mode of operation, the “sample rates” are aggregated and the “sample rate” is the maximum combined total rate of all of the interleaved channels.

a.5.b. Digital-to-Analog Converters (DAC) having any of the following:

a.5.b.1. A resolution of 10-bit or more but less than 12-bit, with an ‘adjusted update rate’ of exceeding 3,500 MSPS; or

a.5.b.2. A resolution of 12-bit or more and having any of the following:

a.5.b.2.a. An ‘adjusted update rate’ exceeding 1,250 MSPS but not exceeding 3,500 MSPS, and having any of the following:

a.5.b.2.a.1. A settling time less than 9 ns to arrive at or within 0.024% of full scale from a full scale step; or

a.5.b.2.a.2. A ‘Spurious Free Dynamic Range’ (SFDR) greater than 68 dBc (carrier) when synthesizing a full scale analog signal of 100 MHz or the highest full scale analog signal frequency specified below 100 MHz; or

a.5.b.2.b. An ‘adjusted update rate’ exceeding 3,500 MSPS;

Technical Notes: For the purposes of 3A001.a.5.b:

1. ‘Spurious Free Dynamic Range’ (SFDR) is defined as the ratio of the RMS value of the carrier frequency (maximum signal component) at the input of the DAC to the RMS value of the next largest noise or harmonic distortion component at its output.

2. SFDR is determined directly from the specification table or from the characterization plots of SFDR versus frequency.

3. A signal is defined to be full scale when its amplitude is greater than -3 dBfs (full scale).

4. ‘Adjusted update rate’ for DACs is:

a. For conventional (non-interpolating) DACs, the ‘adjusted update rate’ is the rate at which the digital signal is converted to an analog signal and the output analog values are changed by the DAC. For DACs where the interpolation mode may be bypassed (interpolation factor of one), the DAC should be considered as a conventional (non-interpolating) DAC.

b. For interpolating DACs (oversampling DACs), the ‘adjusted update rate’ is defined as the DAC update rate divided by the smallest interpolating factor. For interpolating DACs, the ‘adjusted update rate’ may be referred to by different terms including:

- input data rate
- input word rate
- input sample rate
- maximum total input bus rate
- maximum DAC clock rate for DAC clock input.

a.6. Electro-optical and “optical integrated circuits”, designed for “signal processing” and having all of the following:

a.6.a. One or more than one internal “laser” diode;

a.6.b. One or more than one internal light detecting element; and

a.6.c. Optical waveguides;

a.7. ‘Field programmable logic devices’ having any of the following:

a.7.a. A maximum number of single-ended digital input/outputs of greater than 700; or

a.7.b. An ‘aggregate one-way peak serial transceiver data rate’ of 500 Gb/s or greater;

Note: 3A001.a.7 includes:

—Complex Programmable Logic Devices (CPLDs);

—Field Programmable Gate Arrays (FPGAs);

—Field Programmable Logic Arrays (FPLAs);

—Field Programmable Interconnects (FPICs).

N.B.: For integrated circuits having field programmable logic devices that are combined with an analog-to-digital converter, see 3A001.a.14.

Technical Notes: For the purposes of 3A001.a.7:

1. Maximum number of digital input/outputs in 3A001.a.7.a is also referred to as maximum user input/outputs or maximum available input/outputs, whether the integrated circuit is packaged or bare die.

2. ‘Aggregate one-way peak serial transceiver data rate’ is the product of the peak serial one-way transceiver data rate times the number of transceivers on the FPGA.

a.8. [Reserved]

a.9. Neural network integrated circuits;

a.10. Custom integrated circuits for which the function is unknown, or the control status of the equipment in which the integrated circuits will be used is unknown to the manufacturer, having any of the following:

a.10.a. More than 1,500 terminals;

a.10.b. A typical “basic gate propagation delay time” of less than 0.02 ns; or

a.10.c. An operating frequency exceeding 3 GHz;

a.11. Digital integrated circuits, other than those described in 3A001.a.3 to 3A001.a.10 and 3A001.a.12, based upon any compound semiconductor and having any of the following:

a.11.a. An equivalent gate count of more than 3,000 (2 input gates); or

a.11.b. A toggle frequency exceeding 1.2 GHz;

a.12. Fast Fourier Transform (FFT) processors having a rated execution time for an N -point complex FFT of less than $(N \log_2 N)/20,480$ ms, where N is the number of points;

Technical Note: For the purposes of 3A001.a.12, when N is equal to 1,024 points, the formula in 3A001.a.12 gives an execution time of 500 μ s.

a.13. Direct Digital Synthesizer (DDS) integrated circuits having any of the following:

a.13.a. A Digital-to-Analog Converter (DAC) clock frequency of 3.5 GHz or more and a DAC resolution of 10 bit or more, but less than 12 bit; or

a.13.b. A DAC clock frequency of 1.25 GHz or more and a DAC resolution of 12 bit or more;

Technical Note: For the purposes of 3A001.a.13, the DAC clock frequency may be specified as the master clock frequency or the input clock frequency.

a.14. Integrated circuits that perform or are programmable to perform all of the following:

a.14.a. Analog-to-digital conversions meeting any of the following:

a.14.a.1. A resolution of 8 bit or more, but less than 10 bit, with a “sample rate” greater than 1.3 Giga Samples Per Second (GSPS);

a.14.a.2. A resolution of 10 bit or more, but less than 12 bit, with a “sample rate” greater than 1.0 GSPS;

a.14.a.3. A resolution of 12 bit or more, but less than 14 bit, with a “sample rate” greater than 1.0 GSPS;

a.14.a.4. A resolution of 14 bit or more, but less than 16 bit, with a “sample rate” greater than 400 Mega Samples Per Second (MSPS); or

a.14.a.5. A resolution of 16 bit or more with a “sample rate” greater than 180 MSPS; and

a.14.b. Any of the following:

a.14.b.1. Storage of digitized data; or

a.14.b.2. Processing of digitized data;

N.B. 1: For analog-to-digital converter integrated circuits see 3A001.a.5.a.

N.B. 2: For field programmable logic devices see 3A001.a.7.

Technical Notes: For the purposes of 3A001.a.14:

1. A resolution of n bit corresponds to a quantization of 2^n levels.

2. The resolution of the ADC is the number of bits of the digital output of the ADC that represents the measured analog input. Effective Number of Bits (ENOB) is not used to determine the resolution of the ADC.

3. For integrated circuits with non-interleaving “multiple channel ADCs”, the “sample rate” is not aggregated and the “sample rate” is the maximum rate of any single channel.

4. For integrated circuits with “interleaved ADCs” or with “multiple channel ADCs” that are specified to have an interleaved mode of operation, the “sample rates” are aggregated and the “sample rate” is the maximum combined total rate of all of the interleaved channels.

b. Microwave or millimeter wave items, as follows:

Technical Note: For purposes of 3A001.b, the parameter peak saturated power output may also be referred to on product data sheets as output power, saturated power output, maximum power output, peak power output, or peak envelope power output.

b.1. “Vacuum electronic devices” and cathodes, as follows:

Note 1: 3A001.b.1 does not control “vacuum electronic devices” designed or rated for operation in any frequency band and having all of the following:

a. Does not exceed 31.8 GHz; and

b. Is “allocated by the ITU” for radio-communications services, but not for radio-determination.

Note 2: 3A001.b.1 does not control non-“space-qualified” “vacuum electronic devices” having all the following:

a. An average output power equal to or less than 50 W; and

b. *Designed or rated for operation in any frequency band and having all of the following:*

1. *Exceeds 31.8 GHz but does not exceed 43.5 GHz; and*

2. *Is "allocated by the ITU" for radio-communications services, but not for radio-determination.*

b.1.a. Traveling-wave "vacuum electronic devices," pulsed or continuous wave, as follows:

b.1.a.1. Devices operating at frequencies exceeding 31.8 GHz;

b.1.a.2. Devices having a cathode heater with a turn on time to rated RF power of less than 3 seconds;

b.1.a.3. Coupled cavity devices, or derivatives thereof, with a "fractional bandwidth" of more than 7% or a peak power exceeding 2.5 kW;

b.1.a.4. Devices based on helix, folded waveguide, or serpentine waveguide circuits, or derivatives thereof, having any of the following:

b.1.a.4.a. An "instantaneous bandwidth" of more than one octave, and average power (expressed in kW) times frequency (expressed in GHz) of more than 0.5;

b.1.a.4.b. An "instantaneous bandwidth" of one octave or less, and average power (expressed in kW) times frequency (expressed in GHz) of more than 1;

b.1.a.4.c. Being "space-qualified"; or

b.1.a.4.d. Having a gridded electron gun;

b.1.a.5. Devices with a "fractional bandwidth" greater than or equal to 10%, with any of the following:

b.1.a.5.a. An annular electron beam;

b.1.a.5.b. A non-axisymmetric electron beam; or

b.1.a.5.c. Multiple electron beams;

b.1.b. Crossed-field amplifier "vacuum electronic devices" with a gain of more than 17 dB;

b.1.c. Thermionic cathodes, designed for "vacuum electronic devices," producing an emission current density at rated operating conditions exceeding 5 A/cm² or a pulsed (non-continuous) current density at rated operating conditions exceeding 10 A/cm²;

b.1.d. "Vacuum electronic devices" with the capability to operate in a 'dual mode.'

Technical Note: For the purposes of 3A001.b.1.d, 'dual mode' means the "vacuum electronic device" beam current can be intentionally changed between continuous-wave and pulsed mode operation by use of a grid and produces a peak pulse output power greater than the continuous-wave output power.

b.2. "Monolithic Microwave Integrated Circuit" ("MMIC") amplifiers that are any of the following:

N.B.: For "MMIC" amplifiers that have an integrated phase shifter see 3A001.b.12.

b.2.a. Rated for operation at frequencies exceeding 2.7 GHz up to and including 6.8 GHz with a "fractional bandwidth" greater than 15%, and having any of the following:

b.2.a.1. A peak saturated power output greater than 75 W (48.75 dBm) at any frequency exceeding 2.7 GHz up to and including 2.9 GHz;

b.2.a.2. A peak saturated power output greater than 55 W (47.4 dBm) at any frequency exceeding 2.9 GHz up to and including 3.2 GHz;

b.2.a.3. A peak saturated power output greater than 40 W (46 dBm) at any frequency exceeding 3.2 GHz up to and including 3.7 GHz; or

b.2.a.4. A peak saturated power output greater than 20 W (43 dBm) at any frequency exceeding 3.7 GHz up to and including 6.8 GHz;

b.2.b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 16 GHz with a "fractional bandwidth" greater than 10%, and having any of the following:

b.2.b.1. A peak saturated power output greater than 10 W (40 dBm) at any frequency exceeding 6.8 GHz up to and including 8.5 GHz; or

b.2.b.2. A peak saturated power output greater than 5 W (37 dBm) at any frequency exceeding 8.5 GHz up to and including 16 GHz;

b.2.c. Rated for operation with a peak saturated power output greater than 3 W (34.77 dBm) at any frequency exceeding 16 GHz up to and including 31.8 GHz, and with a "fractional bandwidth" of greater than 10%;

b.2.d. Rated for operation with a peak saturated power output greater than 0.1 nW (−70 dBm) at any frequency exceeding 31.8 GHz up to and including 37 GHz;

b.2.e. Rated for operation with a peak saturated power output greater than 1 W (30 dBm) at any frequency exceeding 37 GHz up to and including 43.5 GHz, and with a "fractional bandwidth" of greater than 10%;

b.2.f. Rated for operation with a peak saturated power output greater than 31.62 mW (15 dBm) at any frequency exceeding 43.5 GHz up to and including 75 GHz, and with a "fractional bandwidth" of greater than 10%;

b.2.g. Rated for operation with a peak saturated power output greater than 10 mW (10 dBm) at any frequency exceeding 75 GHz up to and including 90 GHz, and with a "fractional bandwidth" of greater than 5%; or

b.2.h. Rated for operation with a peak saturated power output greater than 0.1 nW (−70 dBm) at any frequency exceeding 90 GHz;

Note 1: [Reserved]

Note 2: The control status of the "MMIC" whose rated operating frequency includes frequencies listed in more than one frequency range, as defined by 3A001.b.2.a through 3A001.b.2.h, is determined by the lowest peak saturated power output control threshold.

Note 3: Notes 1 and 2 following the Category 3 heading for product group A. Systems, Equipment, and Components mean that 3A001.b.2 does not control "MMICs" if they are "specially designed" for other applications, e.g., telecommunications, radar, automobiles.

b.3. Discrete microwave transistors that are any of the following:

b.3.a. Rated for operation at frequencies exceeding 2.7 GHz up to and including 6.8 GHz and having any of the following:

b.3.a.1. A peak saturated power output greater than 400 W (56 dBm) at any frequency exceeding 2.7 GHz up to and including 2.9 GHz;

b.3.a.2. A peak saturated power output greater than 205 W (53.12 dBm) at any

frequency exceeding 2.9 GHz up to and including 3.2 GHz;

b.3.a.3. A peak saturated power output greater than 115 W (50.61 dBm) at any frequency exceeding 3.2 GHz up to and including 3.7 GHz; or

b.3.a.4. A peak saturated power output greater than 60 W (47.78 dBm) at any frequency exceeding 3.7 GHz up to and including 6.8 GHz;

b.3.b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 31.8 GHz and having any of the following:

b.3.b.1. A peak saturated power output greater than 50 W (47 dBm) at any frequency exceeding 6.8 GHz up to and including 8.5 GHz;

b.3.b.2. A peak saturated power output greater than 15 W (41.76 dBm) at any frequency exceeding 8.5 GHz up to and including 12 GHz;

b.3.b.3. A peak saturated power output greater than 40 W (46 dBm) at any frequency exceeding 12 GHz up to and including 16 GHz; or

b.3.b.4. A peak saturated power output greater than 7 W (38.45 dBm) at any frequency exceeding 16 GHz up to and including 31.8 GHz;

b.3.c. Rated for operation with a peak saturated power output greater than 0.5 W (27 dBm) at any frequency exceeding 31.8 GHz up to and including 37 GHz;

b.3.d. Rated for operation with a peak saturated power output greater than 1 W (30 dBm) at any frequency exceeding 37 GHz up to and including 43.5 GHz;

b.3.e. Rated for operation with a peak saturated power output greater than 0.1 nW (−70 dBm) at any frequency exceeding 43.5 GHz; or

b.3.f. Other than those specified by 3A001.b.3.a to 3A001.b.3.e and rated for operation with a peak saturated power output greater than 5 W (37.0 dBm) at all frequencies exceeding 8.5 GHz up to and including 31.8 GHz;

Note 1: The control status of a transistor in 3A001.b.3.a through 3A001.b.3.e, whose rated operating frequency includes frequencies listed in more than one frequency range, as defined by 3A001.b.3.a through 3A001.b.3.e, is determined by the lowest peak saturated power output control threshold.

Note 2: 3A001.b.3 includes bare dice, dice mounted on carriers, or dice mounted in packages. Some discrete transistors may also be referred to as power amplifiers, but the status of these discrete transistors is determined by 3A001.b.3.

b.4. Microwave solid state amplifiers and microwave assemblies/modules containing microwave solid state amplifiers, that are any of the following:

b.4.a. Rated for operation at frequencies exceeding 2.7 GHz up to and including 6.8 GHz with a "fractional bandwidth" greater than 15%, and having any of the following:

b.4.a.1. A peak saturated power output greater than 500 W (57 dBm) at any frequency exceeding 2.7 GHz up to and including 2.9 GHz;

b.4.a.2. A peak saturated power output greater than 270 W (54.3 dBm) at any frequency exceeding 2.9 GHz up to and including 3.2 GHz;

b.4.a.3. A peak saturated power output greater than 200 W (53 dBm) at any frequency exceeding 3.2 GHz up to and including 3.7 GHz; or

b.4.a.4. A peak saturated power output greater than 90 W (49.54 dBm) at any frequency exceeding 3.7 GHz up to and including 6.8 GHz;

b.4.b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 31.8 GHz with a “fractional bandwidth” greater than 10%, and having any of the following:

b.4.b.1. A peak saturated power output greater than 70 W (48.45 dBm) at any frequency exceeding 6.8 GHz up to and including 8.5 GHz;

b.4.b.2. A peak saturated power output greater than 50 W (47 dBm) at any frequency exceeding 8.5 GHz up to and including 12 GHz;

b.4.b.3. A peak saturated power output greater than 30 W (44.77 dBm) at any frequency exceeding 12 GHz up to and including 16 GHz; or

b.4.b.4. A peak saturated power output greater than 20 W (43 dBm) at any frequency exceeding 16 GHz up to and including 31.8 GHz;

b.4.c. Rated for operation with a peak saturated power output greater than 0.5 W (27 dBm) at any frequency exceeding 31.8 GHz up to and including 37 GHz;

b.4.d. Rated for operation with a peak saturated power output greater than 2 W (33 dBm) at any frequency exceeding 37 GHz up to and including 43.5 GHz, and with a “fractional bandwidth” of greater than 10%;

b.4.e. Rated for operation at frequencies exceeding 43.5 GHz and having any of the following:

b.4.e.1. A peak saturated power output greater than 0.2 W (23 dBm) at any frequency exceeding 43.5 GHz up to and including 75 GHz, and with a “fractional bandwidth” of greater than 10%;

b.4.e.2. A peak saturated power output greater than 20 mW (13 dBm) at any frequency exceeding 75 GHz up to and including 90 GHz, and with a “fractional bandwidth” of greater than 5%; or

b.4.e.3. A peak saturated power output greater than 0.1 nW (–70 dBm) at any frequency exceeding 90 GHz; or

b.4.f. [Reserved]

N.B.:

1. For “MMIC” amplifiers see 3A001.b.2.

2. For ‘transmit/receive modules’ and ‘transmit modules’ see 3A001.b.12.

3. For converters and harmonic mixers, designed to extend the operating or frequency range of signal analyzers, signal generators, network analyzers or microwave test receivers, see 3A001.b.7.

Note 1: [Reserved]

Note 2: The control status of an item whose rated operating frequency includes frequencies listed in more than one frequency range, as defined by 3A001.b.4.a through 3A001.b.4.e, is determined by the lowest peak saturated power output control threshold.

b.5. Electronically or magnetically tunable band-pass or band-stop filters, having more than 5 tunable resonators capable of tuning across a 1.5:1 frequency band (f_{\max}/f_{\min}) in less than 10 ms and having any of the following:

b.5.a. A band-pass bandwidth of more than 0.5% of center frequency; or

b.5.b. A band-stop bandwidth of less than 0.5% of center frequency;

b.6. [Reserved]

b.7. Converters and harmonic mixers, that are any of the following:

b.7.a. Designed to extend the frequency range of “signal analyzers” beyond 90 GHz;

b.7.b. Designed to extend the operating range of signal generators as follows:

b.7.b.1. Beyond 90 GHz;

b.7.b.2. To an output power greater than 100 mW (20 dBm) anywhere within the frequency range exceeding 43.5 GHz but not exceeding 90 GHz;

b.7.c. Designed to extend the operating range of network analyzers as follows:

b.7.c.1. Beyond 110 GHz;

b.7.c.2. To an output power greater than 31.62 mW (15 dBm) anywhere within the frequency range exceeding 43.5 GHz but not exceeding 90 GHz;

b.7.c.3. To an output power greater than 1 mW (0 dBm) anywhere within the frequency range exceeding 90 GHz but not exceeding 110 GHz; or

b.7.d. Designed to extend the frequency range of microwave test receivers beyond 110 GHz;

b.8. Microwave power amplifiers containing “vacuum electronic devices” controlled by 3A001.b.1 and having all of the following:

b.8.a. Operating frequencies above 3 GHz;

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

b.8.c. A volume of less than 400 cm³;

Note: 3A001.b.8 does not control equipment designed or rated for operation in any frequency band which is “allocated by the ITU” for radio-communications services, but not for radio-determination.

b.9. Microwave Power Modules (MPM) consisting of, at least, a traveling-wave “vacuum electronic device,” a “Monolithic Microwave Integrated Circuit” (“MMIC”) and an integrated electronic power conditioner and having all of the following:

b.9.a. A ‘turn-on time’ from off to fully operational in less than 10 seconds;

b.9.b. A volume less than the maximum rated power in Watts multiplied by 10 cm³/W; and

b.9.c. An “instantaneous bandwidth” greater than 1 octave ($f_{\max} > 2f_{\min}$) and having any of the following:

b.9.c.1. For frequencies equal to or less than 18 GHz, an RF output power greater than 100 W; or

b.9.c.2. A frequency greater than 18 GHz;

Technical Notes: For the purposes of 3A001.b.9:

1. To calculate the volume in 3A001.b.9.b, the following example is provided: for a maximum rated power of 20 W, the volume would be: $20 \text{ W} \times 10 \text{ cm}^3/\text{W} = 200 \text{ cm}^3$.

2. The ‘turn-on time’ in 3A001.b.9.a refers to the time from fully-off to fully operational, i.e., it includes the warm-up time of the MPM.

b.10. Oscillators or oscillator assemblies, specified to operate with a single sideband (SSB) phase noise, in dBc/Hz, less (better) than $-(126 + 20\log_{10}F - 20\log_{10}f)$ anywhere within the range of 10 Hz \leq F \leq 10 kHz;

Technical Note: For the purposes of 3A001.b.10, F is the offset from the operating

frequency in Hz and f is the operating frequency in MHz.

b.11. ‘Frequency synthesizer’ “electronic assemblies” having a “frequency switching time” as specified by any of the following:

b.11.a. Less than 143 ps;

b.11.b. Less than 100 ms for any frequency change exceeding 2.2 GHz within the synthesized frequency range exceeding 4.8 GHz but not exceeding 31.8 GHz;

b.11.c. [Reserved]

b.11.d. Less than 500 μ s for any frequency change exceeding 550 MHz within the synthesized frequency range exceeding 31.8 GHz but not exceeding 37 GHz;

b.11.e. Less than 100 μ s for any frequency change exceeding 2.2 GHz within the synthesized frequency range exceeding 37 GHz but not exceeding 75 GHz;

b.11.f. Less than 100 μ s for any frequency change exceeding 5.0 GHz within the synthesized frequency range exceeding 75 GHz but not exceeding 90 GHz; or

b.11.g. Less than 1 ms within the synthesized frequency range exceeding 90 GHz;

Technical Note: For the purposes of 3A001.b.11, a ‘frequency synthesizer’ is any kind of frequency source, regardless of the actual technique used, providing a multiplicity of simultaneous or alternative output frequencies, from one or more outputs, controlled by, derived from or disciplined by a lesser number of standard (or master) frequencies.

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

b.12. ‘Transmit/receive modules,’ ‘transmit/receive MMICs,’ ‘transmit modules,’ and ‘transmit MMICs,’ rated for operation at frequencies above 2.7 GHz and having all of the following:

b.12.a. A peak saturated power output (in watts), P_{sat} , greater than 505.62 divided by the maximum operating frequency (in GHz) squared [$P_{\text{sat}} > 505.62 \text{ W} * \text{GHz}^2/f_{\text{GHz}}^2$] for any channel;

b.12.b. A “fractional bandwidth” of 5% or greater for any channel;

b.12.c. Any planar side with length d (in cm) equal to or less than 15 divided by the lowest operating frequency in GHz [$d \leq 15 \text{ cm} * \text{GHz} * N/f_{\text{GHz}}$] where N is the number of transmit or transmit/receive channels; and

b.12.d. An electronically variable phase shifter per channel.

Technical Notes: For the purposes of 3A001.b.12:

1. A ‘transmit/receive module’ is a multifunction “electronic assembly” that provides bi-directional amplitude and phase control for transmission and reception of signals.

2. A ‘transmit module’ is an “electronic assembly” that provides amplitude and phase control for transmission of signals.

3. A ‘transmit/receive MMIC’ is a multifunction “MMIC” that provides bi-directional amplitude and phase control for transmission and reception of signals.

4. A ‘transmit MMIC’ is a “MMIC” that provides amplitude and phase control for transmission of signals.

5. 2.7 GHz should be used as the lowest operating frequency (f_{GHz}) in the formula in 3A001.b.12.c for transmit/receive or transmit modules that have a rated operation range extending downward to 2.7 GHz and below [$d \leq 15 \text{ cm} * \text{GHz} * N/2.7 \text{ GHz}$].

6. 3A001.b.12 applies to 'transmit/receive modules' or 'transmit modules' with or without a heat sink. The value of d in 3A001.b.12.c does not include any portion of the 'transmit/receive module' or 'transmit module' that functions as a heat sink.

7. 'Transmit/receive modules' or 'transmit modules,' 'transmit/receive MMICs' or 'transmit MMICs' may or may not have N integrated radiating antenna elements where N is the number of transmit or transmit/receive channels.

c. Acoustic wave devices as follows and "specially designed" "components" therefor:

c.1. Surface acoustic wave and surface skimming (shallow bulk) acoustic wave devices, having any of the following:

c.1.a. A carrier frequency exceeding 6 GHz;

c.1.b. A carrier frequency exceeding 1 GHz, but not exceeding 6 GHz and having any of the following:

c.1.b.1. A 'frequency side-lobe rejection' exceeding 65 dB;

c.1.b.2. A product of the maximum delay time and the bandwidth (time in ms and bandwidth in MHz) of more than 100;

c.1.b.3. A bandwidth greater than 250 MHz; or

c.1.b.4. A dispersive delay of more than 10 μs ; or

c.1.c. A carrier frequency of 1 GHz or less and having any of the following:

c.1.c.1. A product of the maximum delay time and the bandwidth (time in μs and bandwidth in MHz) of more than 100;

c.1.c.2. A dispersive delay of more than 10 μs ; or

c.1.c.3. A 'frequency side-lobe rejection' exceeding 65 dB and a bandwidth greater than 100 MHz;

Technical Note: For the purposes of 3A001.c.1, 'frequency side-lobe rejection' is the maximum rejection value specified in data sheet.

c.2. Bulk (volume) acoustic wave devices that permit the direct processing of signals at frequencies exceeding 6 GHz;

c.3. Acoustic-optic "signal processing" devices employing interaction between acoustic waves (bulk wave or surface wave) and light waves that permit the direct processing of signals or images, including spectral analysis, correlation or convolution;

Note: 3A001.c does not control acoustic wave devices that are limited to a single band pass, low pass, high pass or notch filtering, or resonating function.

d. Electronic devices and circuits containing "components," manufactured from "superconductive" materials, "specially designed" for operation at temperatures below the "critical temperature" of at least one of the "superconductive" constituents and having any of the following:

d.1. Current switching for digital circuits using "superconductive" gates with a product of delay time per gate (in seconds) and power dissipation per gate (in watts) of less than 10^{-14} J; or

d.2. Frequency selection at all frequencies using resonant circuits with Q-values exceeding 10,000;

e. High energy devices as follows:

e.1. 'Cells' as follows:

e.1.a. 'Primary cells' having any of the following at 20 °C:

e.1.a.1. 'Energy density' exceeding 550 Wh/kg and a 'continuous power density' exceeding 50 W/kg; or

e.1.a.2. 'Energy density' exceeding 50 Wh/kg and a 'continuous power density' exceeding 350 W/kg;

e.1.b. 'Secondary cells' having an 'energy density' exceeding 350 Wh/kg at 20 °C;

Technical Notes:

1. For the purposes of 3A001.e.1, 'energy density' (Wh/kg) is calculated from the nominal voltage multiplied by the nominal capacity in ampere-hours (Ah) divided by the mass in kilograms. If the nominal capacity is not stated, energy density is calculated from the nominal voltage squared then multiplied by the discharge duration in hours divided by the discharge load in Ohms and the mass in kilograms.

2. For the purposes of 3A001.e.1, a 'cell' is defined as an electrochemical device, which has positive and negative electrodes, an electrolyte, and is a source of electrical energy. It is the basic building block of a battery.

3. For the purposes of 3A001.e.1.a, a 'primary cell' is a 'cell' that is not designed to be charged by any other source.

4. For the purposes of 3A001.e.1.b, a 'secondary cell' is a 'cell' that is designed to be charged by an external electrical source.

5. For the purposes of 3A001.e.1.a, 'continuous power density' (W/kg) is calculated from the nominal voltage multiplied by the specified maximum continuous discharge current in ampere (A) divided by the mass in kilograms. 'Continuous power density' is also referred to as specific power.

Note: 3A001.e does not control batteries, including single-cell batteries.

e.2. High energy storage capacitors as follows:

e.2.a. Capacitors with a repetition rate of less than 10 Hz (single shot capacitors) and having all of the following:

e.2.a.1. A voltage rating equal to or more than 5 kV;

e.2.a.2. An energy density equal to or more than 250 J/kg; and

e.2.a.3. A total energy equal to or more than 25 kJ;

e.2.b. Capacitors with a repetition rate of 10 Hz or more (repetition rated capacitors) and having all of the following:

e.2.b.1. A voltage rating equal to or more than 5 kV;

e.2.b.2. An energy density equal to or more than 50 J/kg;

e.2.b.3. A total energy equal to or more than 100 J; and

e.2.b.4. A charge/discharge cycle life equal to or more than 10,000;

e.3. "Superconductive" electromagnets and solenoids, "specially designed" to be fully charged or discharged in less than one second and having all of the following:

Note: 3A001.e.3 does not control "superconductive" electromagnets or

solenoids "specially designed" for Magnetic Resonance Imaging (MRI) medical equipment.

e.3.a. Energy delivered during the discharge exceeding 10 kJ in the first second;

e.3.b. Inner diameter of the current carrying windings of more than 250 mm; and

e.3.c. Rated for a magnetic induction of more than 8 T or "overall current density" in the winding of more than 300 A/mm²;

e.4. Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels, and solar arrays, which are "space-qualified," having a minimum average efficiency exceeding 20% at an operating temperature of 301 K (28°C) under simulated 'AM0' illumination with an irradiance of 1,367 Watts per square meter (W/m²);

Technical Note: For the purposes of 3A001.e.4, 'AM0', or 'Air Mass Zero', refers to the spectral irradiance of sun light in the earth's outer atmosphere when the distance between the earth and sun is one astronomical unit (AU).

f. Rotary input type absolute position encoders having an "accuracy" equal to or less (better) than 1.0 second of arc and "specially designed" encoder rings, discs or scales therefor;

g. Solid-state pulsed power switching thyristor devices and 'thyristor modules', using either electrically, optically, or electron radiation controlled switch methods and having any of the following:

g.1. A maximum turn-on current rate of rise (di/dt) greater than 30,000 A/ μs and off-state voltage greater than 1,100 V; or

g.2. A maximum turn-on current rate of rise (di/dt) greater than 2,000 A/ μs and having all of the following:

g.2.a. An off-state peak voltage equal to or greater than 3,000 V; and

g.2.b. A peak (surge) current equal to or greater than 3,000 A;

Note 1: 3A001.g. includes:

—Silicon Controlled Rectifiers (SCRs)

—Electrical Triggering Thyristors (ETTs)

—Light Triggering Thyristors (LTTs)

—Integrated Gate Commutated Thyristors (IGCTs)

—Gate Turn-off Thyristors (GTOs)

—MOS Controlled Thyristors (MCTs)

—Solidtrons

Note 2: 3A001.g does not control thyristor devices and 'thyristor modules' incorporated into equipment designed for civil railway or "civil aircraft" applications.

Technical Note: For the purposes of 3A001.g, a 'thyristor module' contains one or more thyristor devices.

h. Solid-state power semiconductor switches, diodes, or 'modules', having all of the following:

h.1. Rated for a maximum operating junction temperature greater than 488 K (215 °C);

h.2. Repetitive peak off-state voltage (blocking voltage) exceeding 300 V; and

h.3. Continuous current greater than 1 A.

Technical Note: For the purposes of 3A001.h, 'modules' contain one or more solid-state power semiconductor switches or diodes.

Note 1: Repetitive peak off-state voltage in 3A001.h includes drain to source voltage, collector to emitter voltage, repetitive peak

reverse voltage and peak repetitive off-state blocking voltage.

Note 2: 3A001.h includes:

- Junction Field Effect Transistors (JFETs)
- Vertical Junction Field Effect Transistors (VJFETs)
- Metal Oxide Semiconductor Field Effect Transistors (MOSFETs)
- Double Diffused Metal Oxide Semiconductor Field Effect Transistor (DMOSFET)
- Insulated Gate Bipolar Transistor (IGBT)
- High Electron Mobility Transistors (HEMTs)
- Bipolar Junction Transistors (BJTs)
- Thyristors and Silicon Controlled Rectifiers (SCRs)
- Gate Turn-Off Thyristors (GTOs)
- Emitter Turn-Off Thyristors (ETOs)
- PiN Diodes
- Schottky Diodes

Note 3: 3A001.h does not apply to switches, diodes, or ‘modules’, incorporated into equipment designed for civil automobile, civil railway, or “civil aircraft” applications.

i. Intensity, amplitude, or phase electro-optic modulators, designed for analog signals and having any of the following:

i.1. A maximum operating frequency of more than 10 GHz but less than 20 GHz, an optical insertion loss equal to or less than 3 dB and having any of the following:

i.1.a. A ‘half-wave voltage’ ($V\pi$) less than 2.7 V when measured at a frequency of 1 GHz or below; or

i.1.b. A $V\pi$ of less than 4 V when measured at a frequency of more than 1 GHz; or

i.2. A maximum operating frequency equal to or greater than 20 GHz, an optical insertion loss equal to or less than 3 dB and having any of the following:

i.2.a. A $V\pi$ less than 3.3 V when measured at a frequency of 1 GHz or below; or

i.2.b. A $V\pi$ less than 5 V when measured at a frequency of more than 1 GHz.

Note: 3A001.i includes electro-optic modulators having optical input and output connectors (e.g., fiber-optic pigtails).

Technical Note: For the purposes of 3A001.i, a ‘half-wave voltage’ ($V\pi$) is the applied voltage necessary to make a phase change of 180 degrees in the wavelength of light propagating through the optical modulator.

j. through y. [Reserved]

z. Any commodity described in 3A001 that meets or exceeds the performance parameters in 3A090.

* * * * *

3A090 Integrated circuits as follows (see List of Items Controlled).

License Requirements

Reason for Control: RS, AT

Control(s) Country chart (see Supp. No. 1 to part 738)

RS applies to entire entry. To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.

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

NAC: Yes, for 3A090.a, if the item is not designed or marketed for use in datacenters and has a ‘total processing performance’ of 4800 or more; yes, for 3A090.b, if the item is designed or marketed for use in datacenters.

List of Items Controlled

Related Controls: (1) See ECCNs 3D001, 3E001, 5D002.z, and 5D992.z for associated technology and software controls. (2) See ECCNs 3A001.z, 5A002.z, 5A004.z, and 5A992.z.

Related Definitions: N/A

- Items:**
- a. Integrated circuits having one or more digital processing units having either of the following:
 - a.1. a ‘total processing performance’ of 4800 or more, or
 - a.2. a ‘total processing performance’ of 1600 or more and a ‘performance density’ of 5.92 or more.
 - b. Integrated circuits having one or more digital processing units having either of the following:
 - b.1. a ‘total processing performance’ of 2400 or more and less than 4800 and a ‘performance density’ of 1.6 or more and less than 5.92, or
 - b.2. a ‘total processing performance’ of 1600 or more and a ‘performance density’ of 3.2 or more and less than 5.92.

Note 1 to 3A090: Integrated circuits specified by 3A090 include graphical processing units (GPUs), tensor processing units (TPUs), neural processors, in-memory processors, vision processors, text processors, co-processors/accelerators, adaptive processors, field-programmable logic devices (FPLDs), and application-specific integrated circuits (ASICs). Examples of integrated circuits are in the Note to 3A001.a.

Note 2 to 3A090: 3A090 does not apply to items that are not designed or marketed for use in datacenters and do not have a ‘total processing performance’ of 4800 or more. For integrated circuits that are not designed or marketed for use in datacenters and that have a ‘total processing performance’ of 4800 or more, see license exception NAC.

Note 3 to 3A090: For ICs that are excluded from ECCN 3A090 under Note 2 or 3 to

3A090, those ICs are also not applicable for classifications made under ECCNs 3A001.z, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z because those other CCL classifications are based on the incorporation of an IC that meets the control parameters under ECCN 3A090 or otherwise meets or exceeds the control parameters or ECCNs 3A090 or 4A090. See the Related Controls paragraphs of 3A001.z, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, 5A992.z, 5D002.z, or 5D992.z, which reference back to Note 4 to 3A090.

Technical Notes:

1. ‘Total processing performance’ (‘TPP’) is $2 \times \text{‘MacTOPS’} \times \text{‘bit length of the operation’}$, aggregated over all processing units on the integrated circuit.

a. For purposes of 3A090, ‘MacTOPS’ is the theoretical peak number of Tera (10^{12}) operations per second for multiply-accumulate computation ($D = A \times B + C$).

b. The 2 in the ‘TPP’ formula is based on industry convention of counting one multiply-accumulate computation, $D = A \times B + C$, as 2 operations for purpose of datasheets. Therefore, $2 \times \text{MacTOPS}$ may correspond to the reported TOPS or FLOPS on a datasheet.

c. For purposes of 3A090, ‘bit length of the operation’ for a multiply-accumulate computation is the largest bit-length of the inputs to the multiply operation.

d. Aggregate the TPPs for each processing unit on the integrated circuit to arrive at a total. $\text{‘TPP’} = \text{TPP1} + \text{TPP2} + \dots + \text{TPPn}$ (where n is the number or processing units on the integrated circuit).

2. The rate of ‘MacTOPS’ is to be calculated at its maximum value theoretically possible. The rate of ‘MacTOPS’ is assumed to be the highest value the manufacturer claims in annual or brochure for the integrated circuit. For example, the ‘TPP’ threshold of 4800 can be met with 600 tera integer operations (or 2×300 ‘MacTOPS’) at 8 bits or 300 tera FLOPS (or 2×150 ‘MacTOPS’) at 16 bits. If the IC is designed for MAC computation with multiple bit lengths that achieve different ‘TPP’ values, the highest ‘TPP’ value should be evaluated against parameters in 3A090.

3. For integrated circuits specified by 3A090 that provide processing of both sparse and dense matrices, the ‘TPP’ values are the values for processing of dense matrices (e.g., without sparsity).

4. ‘Performance density’ is ‘TPP’ divided by ‘applicable die area’. For purposes of 3A090, ‘applicable die area’ is measured in millimeters squared and includes all die area of logic dies manufactured with a process node that uses a non-planar transistor architecture.

* * * * *

3A991 Electronic devices, and “components” not controlled by 3A001.

License Requirements

Reason for Control: AT

Control(s) **Country chart**
(see *Supp. No. 1 to*
part 738)

AT applies to entire entry. AT Column 1.

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

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

LVS: N/A

GBS: N/A

List of Items Controlled

Related Controls: (1) For associated “software” for commodities in this ECCN, see 3D991 and for associated “technology” for commodities in this ECCN, see 3E991. (2) See also ECCNs 5A002.z, 5A004.z, and 5A992.z.

Related Definitions: N/A

Items:

a. “Microprocessor microcircuits”, “microcomputer microcircuits”, and microcontroller microcircuits having any of the following:

a.1. A performance speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more;

a.2. A clock frequency rate exceeding 25 MHz; or

a.3. More than one data or instruction bus or serial communication port that provides a direct external interconnection between parallel “microprocessor microcircuits” with a transfer rate of 2.5 Mbyte/s;

b. Storage integrated circuits, as follows:

b.1. Electrical erasable programmable read-only memories (EEPROMs) with a storage capacity;

b.1.a. Exceeding 16 Mbits per package for flash memory types; or

b.1.b. Exceeding either of the following limits for all other EEPROM types:

b.1.b.1. Exceeding 1 Mbit per package; or

b.1.b.2. Exceeding 256 kbit per package and a maximum access time of less than 80 ns;

b.2. Static random access memories (SRAMs) with a storage capacity:

b.2.a. Exceeding 1 Mbit per package; or

b.2.b. Exceeding 256 kbit per package and a maximum access time of less than 25 ns;

c. Analog-to-digital converters having any of the following:

c.1. A resolution of 8 bit or more, but less than 12 bit, with an output rate greater than 200 million words per second;

c.2. A resolution of 12 bit with an output rate greater than 105 million words per second;

c.3. A resolution of more than 12 bit but equal to or less than 14 bit with an output rate greater than 10 million words per second; or

c.4. A resolution of more than 14 bit with an output rate greater than 2.5 million words per second;

d. Field programmable logic devices having a maximum number of single-ended digital input/outputs between 200 and 700;

e. Fast Fourier Transform (FFT) processors having a rated execution time for a 1,024 point complex FFT of less than 1 ms;

f. Custom integrated circuits for which either the function is unknown, or the control status of the equipment in which the integrated circuits will be used is unknown to the manufacturer, having any of the following:

f.1. More than 144 terminals; or

f.2. A typical “basic propagation delay time” of less than 0.4 ns;

g. Traveling-wave “vacuum electronic devices,” pulsed or continuous wave, as follows:

g.1. Coupled cavity devices, or derivatives thereof;

g.2. Helix devices based on helix, folded waveguide, or serpentine waveguide circuits, or derivatives thereof, with any of the following:

g.2.a. An “instantaneous bandwidth” of half an octave or more; and

g.2.b. The product of the rated average output power (expressed in kW) and the maximum operating frequency (expressed in GHz) of more than 0.2;

g.2.c. An “instantaneous bandwidth” of less than half an octave; and

g.2.d. The product of the rated average output power (expressed in kW) and the maximum operating frequency (expressed in GHz) of more than 0.4;

h. Flexible waveguides designed for use at frequencies exceeding 40 GHz;

i. Surface acoustic wave and surface skimming (shallow bulk) acoustic wave devices (*i.e.*, “signal processing” devices employing elastic waves in materials), having either of the following:

i.1. A carrier frequency exceeding 1 GHz;

or

i.2. A carrier frequency of 1 GHz or less;

and

i.2.a. A frequency side-lobe rejection exceeding 55 Db;

i.2.b. A product of the maximum delay time and bandwidth (time in microseconds and bandwidth in MHz) of more than 100; or

i.2.c. A dispersive delay of more than 10 microseconds;

j. Cells as follows:

j.1. Primary cells having an energy density of 550 Wh/kg or less at 293 K (20 °C);

j.2. Secondary cells having an energy density of 350 Wh/kg or less at 293 K (20 °C);

Note: 3A991.j does not control batteries, including single cell batteries.

Technical Notes:

1. For the purposes of 3A991.j energy density (Wh/kg) is calculated from the nominal voltage multiplied by the nominal capacity in ampere-hours divided by the mass in kilograms. If the nominal capacity is not stated, energy density is calculated from the nominal voltage squared then multiplied by the discharge duration in hours divided by the discharge load in Ohms and the mass in kilograms.

2. For the purposes of 3A991.j, a ‘cell’ is defined as an electrochemical device, which

has positive and negative electrodes, and electrolyte, and is a source of electrical energy. It is the basic building block of a battery.

3. For the purposes of 3A991.j.1, a ‘primary cell’ is a ‘cell’ that is not designed to be charged by any other source.

4. For the purposes of 3A991.j.2, a ‘secondary cell’ is a ‘cell’ that is designed to be charged by an external electrical source.

k. “Superconductive” electromagnets or solenoids “specially designed” to be fully charged or discharged in less than one minute, having all of the following:

Note: 3A991.k does not control “superconductive” electromagnets or solenoids designed for Magnetic Resonance Imaging (MRI) medical equipment.

k.1. Maximum energy delivered during the discharge divided by the duration of the discharge of more than 500 kJ per minute;

k.2. Inner diameter of the current carrying windings of more than 250 mm; and

k.3. Rated for a magnetic induction of more than 8T or “overall current density” in the winding of more than 300 A/mm²;

l. Circuits or systems for electromagnetic energy storage, containing “components” manufactured from “superconductive” materials “specially designed” for operation at temperatures below the “critical temperature” of at least one of their “superconductive” constituents, having all of the following:

l.1. Resonant operating frequencies exceeding 1 MHz;

l.2. A stored energy density of 1 MJ/M³ or more; and

l.3. A discharge time of less than 1 ms;

m. Hydrogen/hydrogen-isotope thytrons of ceramic-metal construction and rate for a peak current of 500 A or more;

n. Digital integrated circuits based on any compound semiconductor having an equivalent gate count of more than 300 (2 input gates);

o. Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels, and solar arrays, which are “space qualified” and not controlled by 3A001.e.4;

p. Integrated circuits, *n.e.s.*, having any of the following:

p.1. A processing performance of 8 TOPS or more; or

p.2. An aggregate bidirectional transfer rate over all inputs and outputs of 150 Gbyte/s or more to or from integrated circuits other than volatile memories.

Technical Notes: For the purposes of 3A991.p:

1. This ECCN includes but is not limited to central processing units (CPU), graphics processing units (GPU), tensor processing units (TPU), neural processors, in-memory processors, vision processors, text processors, co-processors/accelerators, adaptive processors, and field-programmable logic devices (FPLDs).

2. TOPS is Tera Operations Per Second or 10¹² Operations per Second.

3. For purposes of 3A991.p, TOPS is 2 × ‘MacTOPS’ aggregated over all processing units on the integrated circuit.

a. For purposes of 3A991.p, ‘MacTOPS’ is the theoretical peak number of Tera (10¹²) operations per second for multiply-accumulate computation ($D = A \times B + C$).

b. The 2 in the formula is based on industry convention of counting one multiply-accumulate computation, $D = A \times B + C$, as 2 operations for purpose of datasheets. Therefore, $2 \times \text{MacTOPS}$ may correspond to the reported TOPS or FLOPS on a datasheet.

* * * * *

3D001 “Software” “specially designed” for the “development” or “production” of commodities controlled by 3A001.b to 3A002.h, 3A090, or 3B (except 3B991 and 3B992).

License Requirements

Reason for Control: NS, RS, AT

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to “software” for commodities controlled by 3A001.b to 3A001.h, 3A002, and 3B (except 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c).	NS Column 1.
NS applies to “software” for commodities controlled by 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c.	To or within destinations specified in Country Group D:5 of supplement no. 1 to part 740 of the EAR or Macau. See § 742.4(a)(4) of the EAR.
RS applies to “software” for commodities controlled by 3A001.z and 3A090.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
AT applies to entire entry.	AT Column 1.

Reporting Requirements

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

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

TSR: Yes, except for “software” “specially designed” for the “development” or “production” of Traveling Wave Tube Amplifiers described in 3A001.b.8 having operating frequencies exceeding 18 GHz; or commodities specified in 3A001.z, 3A090, 3B001.a.4, c, d, f.1.b, k to p, and 3B002.b and c.

Special Conditions for STA

STA: License Exception STA may not be used to ship or transmit “software” “specially designed” for the “development” or “production” of

equipment specified by 3A001.z, 3A090, 3A002.g.1, 3B001.a.4, a.2, c, d, f.1.b, k to p, or 3B002.b and c to any of the destinations listed in Country Group A:6 (See Supplement No. 1 to part 740 of the EAR).

List of Items Controlled

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

The list of items controlled is contained in the ECCN heading.

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3E001 “Technology” according to the General Technology Note for the “development” or “production” of commodities controlled by 3A (except 3A980, 3A981, 3A991, 3A992, or 3A999), 3B (except 3B991 or 3B992) or 3C (except 3C992).

License Requirements

Reason for Control: NS, MT, NP, RS, AT

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to “technology” for commodities controlled by 3A001 (except 3A001.z), 3A002, 3A003, 3B001 (except 3B001 a.4, c, d, f.1.b, k to p), 3B002 (except 3B002.b and c), or 3C001 to 3C006.	NS Column 1.
NS applies to “technology” for 3B001 a.4, c, d, f.1.b, k to p, 3B002.b and c.	To or within Macau or a destination specified in Country Group D:5 of supplement no. 1 to part 740 of the EAR. See § 742.4(a)(4) of the EAR.
MT applies to “technology” for commodities controlled by 3A001 (except for 3A001.z) or 3A101 for MT Reasons.	MT Column 1.
NP applies to “technology” for commodities controlled by 3A001 (except 3A001.z), 3A201, or 3A225 to 3A234 for NP reasons.	NP Column 1.
RS applies to “technology” for commodities controlled in 3A090, when exported from Macau or a destination specified in Country Group D:5.	Worldwide (See § 742.6(a)(6)(ii).

Control(s)	Country chart (see Supp. No. 1 to part 738)
RS applies to “technology” for commodities controlled by 3A001.z, 3A090.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
RS applies to “technology” for commodities controlled by 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c.	To or within destinations specified in Country Group D:5 of supplement no. 1 to part 740 of the EAR or Macau. See § 742.6(a)(6)(i) of the EAR.
AT applies to entire entry.	AT Column 1.

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

Reporting Requirements

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

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

TSR: Yes, except N/A for MT, and “technology” for the “development” or “production” of: (a) vacuum electronic device amplifiers described in 3A001.b.8, having operating frequencies exceeding 19 GHz; (b) solar cells, coverglass-interconnect-cells or covered-interconnect-cells (CIC) “assemblies”, solar arrays and/or solar panels described in 3A001.e.4; (c) “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers in 3A001.b.2; (d) discrete microwave transistors in 3A001.b.3; and (e) commodities described in 3A001.z, 3A090, 3B001.a.4, c, d, f.1.b, k to p, 3B002.b and c.

Special Conditions for STA

STA: License Exception STA may not be used to ship or transmit “technology” according to the General Technology Note for the “development” or “production” of equipment specified by ECCNs 3A002.g.1 or 3B001.a.2 to any of the destinations listed in Country Group A:6 (See Supplement No. 1 to part 740 of the EAR). License Exception STA may not be used to ship or transmit “technology” according to the General Technology Note for the “development” or “production” of

components specified by ECCN 3A001.b.2, b.3, commodities specified in 3A001.z, 3A090, 3B001.a.4, c, d, f.1.b, k to p, or 3B002.b and c, to any of the destinations listed in Country Group A:5 or A:6 (See Supplement No. 1 to part 740 of the EAR).

List of Items Controlled

Related Controls: (1) “Technology” according to the General Technology Note for the “development” or “production” of certain “space-qualified” atomic frequency standards described in Category XV(e)(9), MMICs described in Category XV(e)(14), and oscillators described in Category XV(e)(15) of the USML are “subject to the ITAR” (see 22 CFR parts 120 through 130). See also 3E101, 3E201 and 9E515. (2) “Technology” for “development” or “production” of “Microwave Monolithic Integrated Circuits” (“MMIC”) amplifiers in 3A001.b.2 is controlled in this ECCN 3E001; 5E001.d refers only to that additional “technology” “required” for telecommunications.

Related Definition: N/A
Items:

The list of items controlled is contained in the ECCN heading.

Note 1: 3E001 does not control “technology” for equipment or “components” controlled by 3A003.

Note 2: 3E001 does not control “technology” for integrated circuits controlled by 3A001.a.3 to a.14 or .z, having all of the following:

- (a) Using “technology” at or above 0.130 μm; and
- (b) Incorporating multi-layer structures with three or fewer metal layers.

Note 3: 3E001 does not apply to ‘Process Design Kits’ (‘PDKs’) unless they include libraries implementing functions or technologies for items specified by 3A001.

Technical Note: For the purposes of 3E001 Note 3, a ‘Process Design Kit’ (‘PDK’) is a software tool provided by a semiconductor manufacturer to ensure that the required design practices and rules are taken into account in order to successfully produce a specific integrated circuit design in a specific semiconductor process, in accordance with technological and manufacturing constraints (each semiconductor manufacturing process has its particular ‘PDK’).

* * * * *
CATEGORY 4—COMPUTERS
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Note 3: Commodities and “software” in ECCNs 4A005 and 4D004 that are also controlled in ECCNs 5A002.a, 5A002.z.1, 5A002.z.6, 5A004.a, 5A004.b, 5A004.z, 5D002.c.1, 5D002.c.3, 5D002.z.6, 5D002.z.8, or 5D002.z.9, remain controlled in Category 5—Part 2 by those entries. Category 5—Part 2 does not apply to elements of source code that implement functionality controlled by these Category 4 ECCNs, or to any item subject to the EAR where Encryption Item (EI) functionality is absent, removed or otherwise non-existent.

* * * * *

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

therefor, as follows (see List of Items Controlled) and “specially designed” “components” therefor.

License Requirements

Reason for Control: NS, RS, CC, AT

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to 4A003.b and .c.	NS Column 1.
NS applies to 4A003.g.	NS Column 2.
RS applies to 4A003.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
CC applies to “digital computers” for computerized finger-print equipment.	CC Column 1.
AT applies to entire entry (refer to 4A994 for controls on “digital computers” with a APP >0.0128 but ≤70 WT).	AT Column 1.

Note: For all destinations, except those countries in Country Group E:1 or E:2 of Supplement No. 1 to part 740 of the EAR, no license is required (NLR) for computers with an “Adjusted Peak Performance” (“APP”) not exceeding 70 Weighted TeraFLOPS (WT) and for “electronic assemblies” described in 4A003.c that are not capable of exceeding an “Adjusted Peak Performance” (“APP”) exceeding 70 Weighted TeraFLOPS (WT) in aggregation, except certain transfers as set forth in § 746.3 (Iraq).

Reporting Requirements

Special Post Shipment Verification reporting and recordkeeping requirements for exports of computers to destinations in Computer Tier 3 may be found in § 743.2 of the EAR.

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

LVS: \$5000; N/A for 4A003.b, .c, and .z.
GBS: Yes, for 4A003.g and “specially designed” “parts” and “components” therefor, exported separately or as part of a system.
APP: Yes, for computers controlled by 4A003.b, and “electronic assemblies” controlled by 4A003.c, to the exclusion of other technical parameters. See § 740.7 of the EAR.
NAC: Yes, for 4A003.z; N/A for all other 4A003 commodities.

Note to List Based License Exceptions: Related equipment specified under ECCN

4A003.g, z.2, or z.4 are eligible for License Exception GBS if all the following conditions are met:

- 1. The related equipment is exported, reexported, or transferred (in-country) as part of a computer system,
- 2. The computer system is either designated as NLR or eligible for License Exception APP, and
- 3. The related equipment is eligible for License Exception APP.

List of Items Controlled

Related Controls: (1) See also ECCNs 4A090, 4A994 and 4A980. (2) See also Note 4 to ECCN 3A090.

Related Definitions: N/A

Items:

Note 1: 4A003 includes the following: —‘Vector processors’ (as defined in Note 7 of the “Technical Note on “Adjusted Peak Performance” (“APP”)’); —Array processors; —Digital signal processors; —Logic processors; —Equipment designed for “image enhancement.”

Note 2: The control status of the “digital computers” and related equipment described in 4A003 is determined by the control status of other equipment or systems provided:

- a. The “digital computers” or related equipment are essential for the operation of the other equipment or systems;
- b. The “digital computers” or related equipment are not a “principal element” of the other equipment or systems; and

N.B. 1: The control status of “signal processing” or “image enhancement” equipment “specially designed” for other equipment with functions limited to those required for the other equipment is determined by the control status of the other equipment even if it exceeds the “principal element” criterion.

N.B. 2: For the control status of “digital computers” or related equipment for telecommunications equipment, see Category 5, Part 1 (Telecommunications).

c. The “technology” for the “digital computers” and related equipment is determined by 4E.

- a. [Reserved]
- b. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 70 Weighted TeraFLOPS (WT);
- c. “Electronic assemblies” “specially designed” or modified to be capable of enhancing performance by aggregation of processors so that the “APP” of the aggregation exceeds the limit in 4A003.b;

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

Note 2: 4A003.c does not control “electronic assemblies” “specially designed” for a product or family of products whose maximum configuration does not exceed the limit of 4A003.b.

- d. to f. [Reserved]
- N.B.:** For “electronic assemblies,” modules or equipment, performing analog-to-digital conversions, see 3A002.h.

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

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

h. through y. [Reserved]

z. Commodities specified in 4A003 that also meet or exceed the performance parameters in 4A090.

4A004 Computers as follows (see List of Items Controlled) and “specially designed” related equipment, “electronic assemblies,” and “components” therefor.

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 4A004.z).	NS Column 2.
RS applies to 4A004.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
AT applies to entire entry.	AT Column 1.

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

LVS: \$5000; N/A 4A004.z

GBS: N/A

NAC: Yes, for 4A004.z; N/A for all other 4A004 commodities.

List of Items Controlled

Related Controls: (1) See also ECCN 4A090.

(2) See also Note 4 to ECCN 3A090.

Related Definitions: N/A

Items:

- a. ‘Systolic array computers’;
- b. ‘Neural computers’;
- c. ‘Optical computers’.

Technical Notes:

1. For the purposes of 4A004.a, ‘systolic array computers’ are computers where the flow and modification of the data is dynamically controllable at the logic gate level by the user.

2. For the purposes of 4A004.b, ‘neural computers’ are computational devices designed or modified to mimic the behaviour of a neuron or a collection of neurons, i.e., computational devices which are distinguished by their hardware capability to modulate the weights and numbers of the interconnections of a multiplicity of

computational components based on previous data.

3. For the purposes of 4A004.c, ‘optical computers’ are computers designed or modified to use light to represent data and whose computational logic elements are based on directly coupled optical devices.

d. through y. [Reserved]

z. Commodities that are described in 4A004 and that also meet or exceed the performance parameters in 4A090.

4A005 “Systems,” “equipment,” and “components” therefor, “specially designed” or modified for the generation, command and control, or delivery of “intrusion software” (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 4A005.z).	NS Column 1.
RS applies to items controlled by 4A005.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
AT applies to entire entry.	AT Column 1.

Reporting Requirements

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

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

LVS: N/A

GBS: N/A

APP: N/A

ACE: Yes, except to Country Group E:1 or E:2 and for 4A005.z. See § 740.22 of the EAR for eligibility criteria.

NAC: Yes, for 4A005.z; N/A for all other 4A005 commodities.

Special Conditions for STA

STA: License Exception STA may not be used to ship items specified by ECCN 4A005.

List of Items Controlled

Related Controls: (1) Defense articles described in USML Category XI(b), and software directly related to a defense article, are “subject to the ITAR”; see § 120.33(a)(4). (2) See also ECCNs 4A090. (3) See also Note 4 to ECCN 3A090.

Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading, except for the commodities controlled under 4A005.z.

a. through y. [Reserved]

z. Commodities that are specified in 4A005 that also meet or exceed the performance parameters in 4A090.

4A090 Computers as follows (see List of Items Controlled) and related equipment, “electronic assemblies,” and “components” therefor.

License Requirements

Reason for Control: RS, AT

Control(s)	Country chart (see Supp. No. 1 to part 738)
RS applies to entire entry.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
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

NAC: Yes, for 4A090, if the item incorporates a 3A090.a IC that is not designed or marketed for use in datacenters and has a ‘total processing performance’ of 4800 or more, or if the 4A090 item incorporates a 3A090.b IC, if the item is designed or marketed for use in datacenters.

List of Items Controlled

Related Controls: (1) For associated “software” for commodities in this ECCN, see 4D090, 5D002.z, and 5D992.z and for associated “technology” for commodities in this ECCN, see 4E001. (2) Also ECCNs 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, and 5A992.z. (3) See also Note 4 to ECCN 3A090.

Related Definitions: N/A

Items:

a. Computers, “electronic assemblies,” and “components” containing integrated circuits, any of which meets or exceeds the limit in 3A090.a.

Technical Note: For purposes of 4A090.a, computers include “digital computers,” “hybrid computers,” and analog computers. b. [Reserved]

* * * * *

4A994 Computers, “electronic assemblies” and related equipment, not controlled by 4A001 or 4A003, and “specially designed” “parts” and “components” therefor (see List of Items Controlled).

License Requirements

Reason for Control: AT

Control(s) Country chart (see Supp. No. 1 to part 738)
 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

List of Items Controlled

Related Controls: (1) For associated “software” for commodities in this ECCN, see 4D994 and for associated “technology” for commodities in this ECCN, see 4E992. (2) See also ECCNs 4A003.z, 4A004.z, 4A005.z, 5A002.z, 5A004.z, and 5A992.z.

Related Definitions: N/A

Items:

Note 1: The control status of the “digital computers” and related equipment described in 4A994 is determined by the control status of other equipment or systems provided:

- a. The “digital computers” or related equipment are essential for the operation of the other equipment or systems;
- b. The “digital computers” or related equipment are not a “principal element” of the other equipment or systems; and

N.B. 1: The control status of “signal processing” or “image enhancement” equipment “specially designed” for other equipment with functions limited to those required for the other equipment is determined by the control status of the other equipment even if it exceeds the “principal element” criterion.

N.B. 2: For the control status of “digital computers” or related equipment for telecommunications equipment, see Category 5, Part 1 (Telecommunications).

c. The “technology” for the “digital computers” and related equipment is determined by 4E.

a. Electronic computers and related equipment, and “electronic assemblies” and “specially designed” “parts” and “components” therefor, rated for operation at an ambient temperature above 343 K (70 °C);

b. “Digital computers”, including equipment of “signal processing” or image enhancement”, having an “Adjusted Peak Performance” (“APP”) equal to or greater than 0.0128 Weighted TeraFLOPS (WT);

c. “Electronic assemblies” that are “specially designed” or modified to enhance performance by aggregation of processors, as follows:

- c.1. Designed to be capable of aggregation in configurations of 16 or more processors;
- c.2. [Reserved];

Note 1: 4A994.c applies only to “electronic assemblies” and programmable interconnections with a “APP” not exceeding the limits in 4A994.b, when shipped as unintegrated “electronic assemblies”. It does not apply to “electronic assemblies” inherently limited by nature of their design for use as related equipment controlled by 4A994.k.

Note 2: 4A994.c does not control any “electronic assembly” “specially designed” for a product or family of products whose maximum configuration does not exceed the limits of 4A994.b.

- d. [Reserved];
- e. [Reserved];
- f. Equipment for “signal processing” or “image enhancement” having an “Adjusted Peak Performance” (“APP”) equal to or greater than 0.0128 Weighted TeraFLOPS WT;
- g. [Reserved];
- h. [Reserved];
- i. Equipment containing “terminal interface equipment” exceeding the limits in 5A991;
- j. Equipment “specially designed” to provide external interconnection of “digital computers” or associated equipment that allows communications at data rates exceeding 80 Mbyte/s.

Note: 4A994.j does not control internal interconnection equipment (e.g., backplanes, buses) passive interconnection equipment, “network access controllers” or “communication channel controllers”.

k. “Hybrid computers” and “electronic assemblies” and “specially designed” “parts” and “components” therefor containing analog-to-digital converters having all of the following characteristics:

- k.1. 32 channels or more; and
- k.2. A resolution of 14 bit (plus sign bit) or more with a conversion rate of 200,000 conversions/s or more.

l. Computers, “electronic assemblies,” and “components,” n.e.s., containing integrated circuits, any of which meets or exceeds the limit of ECCN 3A991.p.

Technical Note: For the purposes of 4A994.l, computers include “digital computers,” “hybrid computers,” and analog computers.

* * * * *

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

License Requirements

Reason for Control: NS, RS, CC, AT

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry, except 4A003.z, 4A004.z, and 4A005.z.	NS Column 1.
RS applies to “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
CC applies to “software” for computerized finger-print equipment controlled by 4A003 for CC reasons.	CC Column 1.
AT applies to entire entry.	AT Column 1.

Reporting Requirements

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

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

TSR: Yes, except for “software” for the “development” or “production” of the following:

- (1) Commodities with an “Adjusted Peak Performance” (“APP”) exceeding 29 WT; or
- (2) Commodities controlled by 4A003.z, 4A004.z, 4A005 or “software” controlled by 4D004.

APP: Yes to specific countries (see § 740.7 of the EAR for eligibility criteria), except “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z.

ACE: (1) Yes for 4D001.a (for the “development”, “production” or “use” of equipment or “software” specified in ECCN 4A005 or 4D004), except to Country Group E:1 or E:2. See § 740.22 of the EAR for eligibility criteria. (2) No for “software” for commodities controlled by 4A003.z, 4A004.z, and 4A005.z

Special Conditions for STA

STA: License Exception STA may not be used to ship or transmit “software” “specially designed” or modified for the “development” or “production” of equipment specified by ECCN 4A001.a.2 or for the “development” or “production” of “digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 29 Weighted TeraFLOPS (WT) to any of the destinations listed in Country Group A:6 (See Supplement No.1 to part 740 of the EAR); and may not be used to ship or transmit “software” specified in 4D001.a “specially designed” for the “development” or “production” of equipment specified by ECCN 4A003.z, 4A004.z, or 4A005 to any of the destinations listed in Country Group A:5 or A:6.

List of Items Controlled

Related Controls: N/A

Related Definitions: N/A

Items:

a. “Software” “specially designed” or modified for the “development” or “production”, of equipment or “software” controlled by 4A001, 4A003, 4A004, 4A005 or 4D (except 4D090, 4D980, 4D993 or 4D994).

b. “Software”, other than that controlled by 4D001.a, “specially designed” or modified for the “development” or “production” of equipment as follows:

- b.1. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 24 Weighted TeraFLOPS (WT);
- b.2. “Electronic assemblies” “specially designed” or modified for enhancing performance by aggregation of processors so that the “APP” of the aggregation exceeds the limit in 4D001.b.1.

* * * * *

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

License Requirements

Reason for Control: NS, MT, RS, CC, AT

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except for technology for 4A003.z, 4A004.z, 4A005.z, 4A090 or "software" specified by 4D001 (for 4A003.z, 4A004.z or 4A005.z), 4D090.	NS Column 1.
MT applies to "technology" for items controlled by 4A001.a and 4A101 for MT reasons.	MT Column 1.
RS applies to "technology" for commodities controlled by 4A003.z, 4A004.z, 4A005.z, 4A090 or "software" specified by 4D001 (for 4A003.z, 4A004.z, and 4A005.z), 4D090.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
CC applies to "software" for computerized finger-print equipment controlled by 4A003 (except 4A003.z) for CC reasons.	CC Column 1.
AT applies to entire entry.	AT Column 1.

Reporting Requirements

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

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

TSR: Yes, except for the following:

- (1) "Technology" for the "development" or "production" of commodities with an "Adjusted Peak Performance" ("APP") exceeding 70 WT or for the "development" or "production" of commodities controlled by 4A005 or "software" controlled by 4D004;
- (2) "Technology" for the "development" of "intrusion software"; or
- (3) "Technology" for the "development" or "production" of commodities controlled by 4A003.z, 4A004.z, 4A005.z, 4A090 or "software" specified by 4D001 (for 4A003.z, 4A004.z, and 4A005.z), 4D090 when destined to destinations in Country Group D:1, D:4, or D:5 of supplement no. 1 to part 740 of the EAR.

APP: Yes to specific countries (see § 740.7 of the EAR for eligibility criteria). No, for "technology" for the "development" or "production" of commodities controlled by 4A003.z, or "software" specified by 4D001

(for 4A003.z) when destined to destinations in Country Group D:1, D:4, or D:5 of supplement no. 1 to part 740 of the EAR.

ACE: Yes for 4E001.a (for the "development", "production" or "use" of equipment or "software" specified in ECCN 4A005 (except 4A005.z to destinations in Country Group D:1, D:4, or D:5) or 4D004) and for 4E001.c, except to Country Group E:1 or E:2. See § 740.22 of the EAR for eligibility criteria.

Special Conditions for STA

STA: License Exception STA may not be used to ship or transmit "technology" according to the General Technology Note for the "development" or "production" of any of the following equipment or "software": a. Equipment specified by ECCN 4A001.a.2; b. "Digital computers" having an 'Adjusted Peak Performance' ("APP") exceeding 70 Weighted TeraFLOPS (WT); or c. "software" specified in the License Exception STA paragraph found in the License Exception section of ECCN 4D001 to any of the destinations listed in Country Group A:6 (See Supplement No. 1 to part 740 of the EAR); and may not be used to ship or transmit "technology" specified in 4E001.a (for the "development", "production" or "use" of equipment or "software" specified in ECCN 4A003.z, 4A004.z, 4A005, 4A090, or "software" specified by 4D001 (for 4A003.z, 4A004.z, and 4A005.z), 4D004, or 4D090); and 4E001.c to any of the destinations listed in Country Group A:5 or A:6.

List of Items Controlled

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

- a. "Technology" according to the General Technology Note, for the "development", "production", or "use" of equipment or "software" controlled by 4A (except 4A980 or 4A994 and "use" of equipment controlled under 4A090 or "software" controlled under 4D001 (for 4A090)) or 4D (except 4D980, 4D993, 4D994 and "use" of software controlled under 4D090).
- b. "Technology" according to the General Technology Note, other than that controlled by 4E001.a, for the "development" or "production" of equipment as follows:
 - b.1. "Digital computers" having an "Adjusted Peak Performance" ("APP") exceeding 24 Weighted TeraFLOPS (WT);
 - b.2. "Electronic assemblies" "specially designed" or modified for enhancing performance by aggregation of processors so that the "APP" of the aggregation exceeds the limit in 4E001.b.1.
- c. "Technology" for the "development" of "intrusion software."

Note 1: 4E001.a and 4E001.c do not apply to "vulnerability disclosure" or "cyber incident response".

Note 2: Note 1 does not diminish national authorities' rights to ascertain compliance with 4E001.a and 4E001.c.

TECHNICAL NOTE ON "ADJUSTED PEAK PERFORMANCE" ("APP")

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Technical Notes

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2. Processor combinations share memory when any processor is capable of accessing any memory location in the system through the hardware transmission of cache lines or memory words, without the involvement of any software mechanism, which may be achieved using "electronic assemblies" specified in 4A003.c, z.1, or z.3.

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CATEGORY 5—TELECOMMUNICATIONS AND "INFORMATION SECURITY"

Part 1—TELECOMMUNICATIONS

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Notes:

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3. Commodities in ECCN 5A001.j, and related "software" specified in 5D001.c (for 5A001.j) that are also controlled in ECCNs 5A002.a, 5A002.z.1, 5A002.z.6, 5A004.a, 5A004.b, 5A004.z, 5D002.c.1, 5D002.c.3, 5D002.z.6, 5D002.z.8, or z 5D002.z.9, remain controlled in Category 5—Part 2 by those entries. Category 5—Part 2 does not apply to elements of source code that implement functionality controlled by these Category 5 Part 1 ECCNs, or to any item subject to the EAR where Encryption Item (EI) functionality is absent, removed or otherwise non-existent.

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

License Requirements

Reason for Control: NS, SL, AT

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry.	NS Column 1.
SL applies to "technology" for the "development" or "production" of equipment, functions or features controlled by 5A001.f.1, or for the "development" or "production" of "software" controlled by ECCN 5D001.a (for 5A001.f.1).	A license is required for all destinations, as specified in § 742.13 of the EAR. Accordingly, a column specific to this control does not appear on the Commerce Country Chart (Supplement No. 1 to Part 738 of the EAR). <i>Note to SL paragraph: This licensing requirement does not supersede, implement, construe or limit the scope of any criminal statute, including, but not limited to, the Omnibus Safe Streets Act of 1968, as amended.</i>
AT applies to entire entry.	AT Column 1.

Reporting Requirements

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

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

TSR: Yes, except for exports or reexports to destinations outside of those countries listed in Country Group A:5 (See Supplement No. 1 to part 740 of the EAR) of “technology” controlled by 5E001 for the “development” or “production” of the following:

- (1) Items controlled by 5A001.b.5, .h or .j;
 - (2) “Software” controlled by 5D001.a that is “specially designed” for the “development” or “production” of equipment, functions or features controlled by 5A001.b.5, 5A001.h, 5A001.j, or 5B001.a (for 5A001.j); or
 - (3) “Software” controlled by 5D001.c (for 5A001.j or 5B001.a (for 5A001.j)).
- ACE:* Yes, for 5E001.a (for 5A001.j, 5B001.a (for 5A001.j), 5D001.a (for 5A001.j), or 5D001.c (for 5A001.j or 5B001.a (for 5A001.j))) except to Country Group E:1 or E:2. See § 740.22 of the EAR for eligibility criteria.

Special Conditions for STA

STA: License Exception STA may not be used to ship or transmit “technology” according to the General Technology Note for the “development” or “production” of equipment, functions or features specified by 5A001.b.3, .b.5 or .h; or for “software” in 5D001.a or .c, that is specified in the STA paragraph in the License Exception section of ECCN 5D001 to any of the destinations listed in Country Group A:6 (See Supplement No.1 to part 740 of the EAR); or “technology” specified in 5E001.a according to the General Technology Note for the “development” or “production” of equipment, functions or features specified by 5A001.j, 5B001.a (for 5A001.j), 5D001.a (for 5A001.j), 5D001.c (for 5A001.j or 5B001.a) to any destinations listed in Country Group A:5 or A:6.

List of Items Controlled

Related Controls: (1) See also 5E101, 5E980 and 5E991. (2) “Technology” for “development” or “production” of “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers that meet the control criteria given at 3A001.b.2 or .z (for commodities also described in 3A001.b.2) is controlled in 3E001; 5E001.d refers only to that additional “technology” “required” for telecommunications.

Related Definitions: N/A

Items:

a. “Technology” according to the General Technology Note for the “development”, “production” or “use” (excluding operation) of equipment, functions or features, controlled by 5A001 or “software” controlled by 5D001.a or 5D001.e.

b. Specific “technology”, as follows:

b.1. “Technology” “required” for the “development” or “production” of telecommunications equipment “specially designed” to be used on board satellites;

b.2. “Technology” for the “development” or “use” of “laser” communication techniques with the capability of automatically acquiring and tracking signals and maintaining communications through exoatmosphere or sub-surface (water) media;

b.3. “Technology” for the “development” of digital cellular radio base station receiving equipment whose reception capabilities that allow multi-band, multi-channel, multi-mode, multi-coding algorithm or multi-protocol operation can be modified by changes in “software”;

b.4. “Technology” for the “development” of “spread spectrum” techniques, including “frequency hopping” techniques.

Note: 5E001.b.4 does not apply to “technology” for the “development” of any of the following:

a. Civil cellular radio-communications systems; or

b. Fixed or mobile satellite Earth stations for commercial civil telecommunications.

c. “Technology” according to the General Technology Note for the “development” or “production” of any of the following:

c.1. [Reserved]

c.2. Equipment employing a “laser” and having any of the following:

c.2.a. A transmission wavelength exceeding 1,750 nm;

c.2.b. [Reserved]

c.2.c. [Reserved]

c.2.d. Employing wavelength division multiplexing techniques of optical carriers at less than 100 GHz spacing; or

c.2.e. Employing analog techniques and having a bandwidth exceeding 2.5 GHz;

Note: 5E001.c.2.e does not control “technology” for commercial TV systems.

N.B.: For “technology” for the “development” or “production” of non-telecommunications equipment employing a “laser”, see Product Group E of Category 6, e.g., 6E00x

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

c.4. Radio equipment having any of the following:

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

c.4.b. Operating at input or output frequencies exceeding 31.8 GHz; or

Note: 5E001.c.4.b does not control “technology” for equipment designed or modified for operation in any frequency band which is “allocated by the ITU” for radio-communications services, but not for radio-determination.

c.4.c. Operating in the 1.5 MHz to 87.5 MHz band and incorporating adaptive techniques providing more than 15 dB suppression of an interfering signal; or

c.5. [Reserved]

c.6. Mobile equipment having all of the following:

c.6.a. Operating at an optical wavelength greater than or equal to 200nm and less than or equal to 400nm; and

c.6.b. Operating as a “local area network”;

d. “Technology” according to the General Technology Note for the “development” or “production” of “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers “specially designed” for telecommunications and that are any of the following:

Technical Note: For purposes of 5E001.d, the parameter peak saturated power output may also be referred to on product data sheets as output power, saturated power output, maximum power output, peak power output, or peak envelope power output.

d.1. Rated for operation at frequencies exceeding 2.7 GHz up to and including 6.8 GHz with a “fractional bandwidth” greater than 15%, and having any of the following:

d.1.a. A peak saturated power output greater than 75 W (48.75 dBm) at any frequency exceeding 2.7 GHz up to and including 2.9 GHz;

d.1.b. A peak saturated power output greater than 55 W (47.4 dBm) at any frequency exceeding 2.9 GHz up to and including 3.2 GHz;

d.1.c. A peak saturated power output greater than 40 W (46 dBm) at any frequency exceeding 3.2 GHz up to and including 3.7 GHz; or

d.1.d. A peak saturated power output greater than 20 W (43 dBm) at any frequency exceeding 3.7 GHz up to and including 6.8 GHz;

d.2. Rated for operation at frequencies exceeding 6.8 GHz up to and including 16 GHz with a “fractional bandwidth” greater than 10%, and having any of the following:

d.2.a. A peak saturated power output greater than 10W (40 dBm) at any frequency exceeding 6.8 GHz up to and including 8.5 GHz; or

d.2.b. A peak saturated power output greater than 5W (37 dBm) at any frequency exceeding 8.5 GHz up to and including 16 GHz;

d.3. Rated for operation with a peak saturated power output greater than 3 W (34.77 dBm) at any frequency exceeding 16 GHz up to and including 31.8 GHz, and with a “fractional bandwidth” of greater than 10%;

d.4. Rated for operation with a peak saturated power output greater than 0.1 nW (–70 dBm) at any frequency exceeding 31.8 GHz up to and including 37 GHz;

d.5. Rated for operation with a peak saturated power output greater than 1 W (30 dBm) at any frequency exceeding 37 GHz up to and including 43.5 GHz, and with a “fractional bandwidth” of greater than 10%;

d.6. Rated for operation with a peak saturated power output greater than 31.62 mW (15 dBm) at any frequency exceeding 43.5 GHz up to and including 75 GHz, and with a “fractional bandwidth” of greater than 10%;

d.7. Rated for operation with a peak saturated power output greater than 10 mW (10 dBm) at any frequency exceeding 75 GHz up to and including 90 GHz, and with a “fractional bandwidth” of greater than 5%; or

d.8. Rated for operation with a peak saturated power output greater than 0.1 nW (–70 dBm) at any frequency exceeding 90 GHz;

e. “Technology” according to the General Technology Note for the “development” or “production” of electronic devices and circuits, “specially designed” for telecommunications and containing “components” manufactured from “superconductive” materials, “specially designed” for operation at temperatures

below the “critical temperature” of at least one of the “superconductive” constituents and having any of the following:

- e.1. Current switching for digital circuits using “superconductive” gates with a product of delay time per gate (in seconds) and power dissipation per gate (in watts) of less than 10^{-14} J; or
- e.2. Frequency selection at all frequencies using resonant circuits with Q-values exceeding 10,000.

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Category 5—Telecommunications and “Information Security”

Part 2—“Information Security”

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Note 3: Cryptography Note: ECCNs 5A002, 5D002.a.1, .b, .c.1, z.1, z.5, and z.6, do not control items as follows:

* * * * *

N.B. to Note 3 (Cryptography Note): You must submit a classification request or self-classification report to BIS for certain mass market encryption commodities and software eligible for the Cryptography Note employing a key length greater than 64 bits for the symmetric algorithm (or, for commodities and software not implementing any symmetric algorithms, employing a key length greater than 768 bits for asymmetric algorithms described by Technical note 2.b to 5A002.a or greater than 128 bits for elliptic curve algorithms, or any asymmetric algorithm described by Technical Note 2.c to 5A002.a) in accordance with the requirements of § 740.17(b) of the EAR in order to be released from the “EI” and “NS” controls of ECCN 5A002 or 5D002. For mass market commodities and software that do not require a self-classification report pursuant to § 740.17(b) and (e)(3) of the EAR, such items are also released from “EI” and “NS” controls and controlled under ECCN 5A992 or 5D992.

* * * * *

5A002 “Information security” systems, equipment and “components,” as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, RS, AT, EI

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry (except 5A002.z).	NS Column 1.
RS applies to items controlled by 5A002.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
AT applies to entire entry.	AT Column 1.

Control(s) **Country chart**
(see Supp. No. 1 to part 738)

EI applies to entire entry. Refer to § 742.15 of the EAR.

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

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

LVS: Yes: \$500 for “components,” except for 5A002.z.

N/A for systems and equipment.

GBS: N/A

ENC: Yes for certain EI controlled commodities, see § 740.17 of the EAR for eligibility, except for 5A002.z.

NAC: Yes, for 5A002.z; N/A for all other 5A002 commodities.

List of Items Controlled

Related Controls: (1) ECCN 5A002.a controls “components” providing the means or functions necessary for “information security.” All such “components” are presumptively “specially designed” and controlled by 5A002.a. (2) See USML Categories XI (including XI(b)) and XIII(b) (including XIII(b)(2)) for controls on systems, equipment, and components described in 5A002.d or .e that are subject to the ITAR. (3) For “satellite navigation system” receiving equipment containing or employing decryption see 7A005, and for related decryption “software” and “technology” see 7D005 and 7E001. (4) Noting that items may be controlled elsewhere on the CCL, examples of items not controlled by ECCN 5A002.a.4 include the following: (a) An automobile where the only ‘cryptography for data confidentiality’ having a ‘described security algorithm’ is performed by a Category 5—Part 2 Note 3 eligible mobile telephone that is built into the car. In this case, secure phone communications support a non-primary function of the automobile but the mobile telephone (equipment), as a standalone item, is not controlled by ECCN 5A002 because it is excluded by the Cryptography Note (Note 3) (See ECCN 5A992.c). (b) An exercise bike with an embedded Category 5—Part 2 Note 3 eligible web browser, where the only controlled cryptography is performed by the web browser. In this case, secure web browsing supports a non-primary function of the exercise bike but the web browser (“software”), as a standalone item, is not controlled by ECCN 5D002 because it is excluded by the Cryptography Note (Note 3) (See ECCN 5D992.c). (5) After classification or self-classification in accordance with § 740.17(b) of the EAR, mass market encryption commodities that meet eligibility requirements are released from “EI” and “NS” controls. These commodities are designated 5A992.c. (6) See also ECCNs

3A090 (including Note 4 to ECCN 3A090), and 4A090.

Related Definitions: N/A
Items:

a. Designed or modified to use ‘cryptography for data confidentiality’ having a ‘described security algorithm’, where that cryptographic capability is usable, has been activated, or can be activated by any means other than secure “cryptographic activation”, as follows:

a.1. Items having “information security” as a primary function;

a.2. Digital communication or networking systems, equipment or components, not specified in paragraph 5A002.a.1;

a.3. Computers, other items having information storage or processing as a primary function, and components therefor, not specified in paragraphs 5A002.a.1 or .a.2;

N.B.: For operating systems see also 5D002.a.1 and .c.1.

a.4. Items, not specified in paragraphs 5A002.a.1 to a.3, where the ‘cryptography for data confidentiality’ having a ‘described security algorithm’ meets all of the following:

a.4.a. It supports a non-primary function of the item; and

a.4.b. It is performed by incorporated equipment or “software” that would, as a standalone item, be specified by ECCNs 5A002, 5A003, 5A004, 5B002 or 5D002.

N.B. to paragraph a.4: See Related Control Paragraph (4) of this ECCN 5A002 for examples of items not controlled by 5A002.a.4.

Technical Notes:

1. For the purposes of 5A002.a, ‘cryptography for data confidentiality’ means “cryptography” that employs digital techniques and performs any cryptographic function other than any of the following:

1.a. “Authentication;”

1.b. Digital signature;

1.c. Data integrity;

1.d. Non-repudiation;

1.e. Digital rights management, including the execution of copy-protected “software;”

1.f. Encryption or decryption in support of entertainment, mass commercial broadcasts or medical records management; or

1.g. Key management in support of any function described in paragraphs 1.a to 1.f of this Technical Note paragraph 1.

2. For the purposes of 5A002.a, ‘described security algorithm’ means any of the following:

2.a. A “symmetric algorithm” employing a key length in excess of 56 bits, not including parity bits;

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

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

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

2.b.3. Discrete logarithms in a group other than mentioned in paragraph 2.b.2 of this Technical Note in excess of 112 bits (e.g., Diffie-Hellman over an elliptic curve); or

2.c. An “asymmetric algorithm” where the security of the algorithm is based on any of the following:

2.c.1. Shortest vector or closest vector problems associated with lattices (e.g., NewHope, Frodo, NTRUEncrypt, Kyber, Titanium);

2.c.2. Finding isogenies between Supersingular elliptic curves (e.g., Supersingular Isogeny Key Encapsulation); or

2.c.3. Decoding random codes (e.g., McEliece, Niederreiter).

Technical Note: An algorithm described by Technical Note 2.c. may be referred to as being post-quantum, quantum-safe or quantum-resistant.

Note 1: Details of items must be accessible and provided upon request, in order to establish any of the following:

a. Whether the item meets the criteria of 5A002.a.1 to a.4; or

b. Whether the cryptographic capability for data confidentiality specified by 5A002.a is usable without “cryptographic activation.”

Note 2: 5A002.a does not control any of the following items, or specially designed “information security” components therefor:

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

a.1. A smart card or an electronically readable personal document (e.g., token coin, e-passport) that meets any of the following:

a.1.a. The cryptographic capability meets all of the following:

a.1.a.1. It is restricted for use in any of the following:

a.1.a.1.a. Equipment or systems, not described by 5A002.a.1 to a.4;

a.1.a.1.b. Equipment or systems, not using ‘cryptographic for data confidentiality’ having a ‘described security algorithm’; or

a.1.a.1.c. Equipment or systems, excluded from 5A002.a by entries b. to f. of this Note; and

a.1.a.2. It cannot be reprogrammed for any other use; or

a.1.b. Having all of the following:

a.1.b.1. It is specially designed and limited to allow protection of ‘personal data’ stored within;

a.1.b.2. Has been, or can only be, personalized for public or commercial transactions or individual identification; and

a.1.b.3. Where the cryptographic capability is not user-accessible;

Technical Note to paragraph a.1.b.1 of

Note 2: For the purposes of 5A002.a Note 2.a.1.b.1, ‘personal data’ includes any data specific to a particular person or entity, such as the amount of money stored and data necessary for “authentication.”

a.2. ‘Readers/writers’ specially designed or modified, and limited, for items specified by paragraph a.1 of this Note;

Technical Note to paragraph a.2 of

Note 2: For the purposes of 5A002.a Note 2.a.2, ‘readers/writers’ include equipment that communicates with smart cards or electronically readable documents through a network.

b. Cryptographic equipment specially designed and limited for banking use or ‘money transactions’;

Technical Note to paragraph b. of Note

2: For the purposes of 5A002.a Note 2.b, ‘money transactions’ in 5A002 Note 2 paragraph b. includes the collection and settlement of fares or credit functions.

c. Portable or mobile radiotelephones for civil use (e.g., for use with commercial civil

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

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

e. Portable or mobile radiotelephones and similar client wireless devices for civil use, that implement only published or commercial cryptographic standards (except for anti-piracy functions, which may be non-published) and also meet the provisions of paragraphs a.2 to a.4 of the Cryptography Note (Note 3 in Category 5—Part 2), that have been customized for a specific civil industry application with features that do not affect the cryptographic functionality of these original non-customized devices;

f. Items, where the “information security” functionality is limited to wireless “personal area network” functionality implementing only published or commercial cryptographic standards;

g. Mobile telecommunications Radio Access Network (RAN) equipment designed for civil use, which also meet the provisions of paragraphs a.2 to a.4 of the Cryptography Note (Note 3 in Category 5—Part 2), having an RF output power limited to 0.1W (20 dBm) or less, and supporting 16 or fewer concurrent users;

h. Routers, switches, gateways or relays, where the “information security” functionality is limited to the tasks of “Operations, Administration or Maintenance” (“OAM”) implementing only published or commercial cryptographic standards;

i. General purpose computing equipment or servers, where the “information security” functionality meets all of the following:

i.1. Uses only published or commercial cryptographic standards; and

i.2. Is any of the following:

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

i.2.b. Integral to an operating system that is not specified by 5D002; or

i.2.c. Limited to “OAM” of the equipment; or

j. Items specially designed for a ‘connected civil industry application’, meeting all of the following:

j.1. Being any of the following:

j.1.a. A network-capable endpoint device meeting any of the following:

j.1.a.1. The “information security” functionality is limited to securing ‘non-arbitrary data’ or the tasks of “Operations, Administration or Maintenance” (“OAM”); or

j.1.a.2. The device is limited to a specific ‘connected civil industry application’; or

j.1.b. Networking equipment meeting all of the following:

j.1.b.1. Being specially designed to communicate with the devices specified by paragraph j.1.a. above; and

j.1.b.2. The “information security” functionality is limited to supporting the ‘connected civil industry application’ of devices specified by paragraph j.1.a. above, or the tasks of “OAM” of this networking equipment or of other items specified by paragraph j. of this Note; and

j.2. Where the “information security” functionality implements only published or commercial cryptographic standards, and the cryptographic functionality cannot easily be changed by the user.

Technical Notes:

1. For the purposes of 5A002.a Note 2.j, ‘connected civil industry application’ means a network-connected consumer or civil industry application other than “information security”, digital communication, general purpose networking or computing.

2. For the purposes of 5A002.a Note 2.j.1.a.1, ‘non-arbitrary data’ means sensor or metering data directly related to the stability, performance or physical measurement of a system (e.g., temperature, pressure, flow rate, mass, volume, voltage, physical location, etc.), that cannot be changed by the user of the device.

b. Being a ‘cryptographic activation token’;

Technical Note: For the purposes of 5A002.b, a ‘cryptographic activation token’ is an item designed or modified for any of the following:

1. Converting, by means of “cryptographic activation”, an item not specified by Category 5—Part 2 into an item specified by 5A002.a or 5D002.c.1, and not released by the Cryptography Note (Note 3 in Category 5—Part 2); or

2. Enabling by means of “cryptographic activation”, additional functionality specified by 5A002.a of an item already specified by Category 5—Part 2;

c. Designed or modified to use or perform “quantum cryptography”;

Technical Note: For the purposes of 5A002.c, “quantum cryptography” is also known as Quantum Key Distribution (QKD).

d. Designed or modified to use cryptographic techniques to generate channelizing codes, scrambling codes or network identification codes, for systems using ultra-wideband modulation techniques and having any of the following:

d.1. A bandwidth exceeding 500 MHz; or

d.2. A “fractional bandwidth” of 20% or more;

e. Designed or modified to use cryptographic techniques to generate the spreading code for “spread spectrum” systems, not specified by 5A002.d, including the hopping code for “frequency hopping” systems.

f. through y. [Reserved]

z. Other commodities, as follows:

z.1. Commodities that are described in 5A002.a and that also meet or exceed the performance parameters in 3A090 or 4A090;

z.2. Commodities that are described in 5A002.b and that also meet or exceed the performance parameters in 3A090 or 4A090;

z.3. Commodities that are described in 5A002.c and that also meet or exceed the performance parameters in 3A090 or 4A090;

z.4. Commodities that are described in 5A002.d and that also meet or exceed the

performance parameters in 3A090 or 4A090; or
 z.5. Commodities that are described in 5A002.e and that also meet or exceed the performance parameters in 3A090 or 4A090.

5A992 Equipment not controlled by 5A002 (see List of Items Controlled)

License Requirements

Reason for Control: RS, AT

Control(s)	Country chart (see Supp. No. 1 to part 738)
RS applies to items controlled by 5A992.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
AT applies to entire entry.	AT Column 1.

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

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

LVS: N/A
 GBS: N/A
 NAC: Yes, for 5A992.z; N/A for all other 5A992 commodities.

List of Items Controlled

Related Controls: See also ECCNs 3A090 (including Note 4 to ECCN 3A090) and 4A090.

Related Definitions: N/A

Items:

- a. [Reserved]
- b. [Reserved]
- c. Commodities classified as mass market encryption commodities in accordance with § 740.17(b) of the EAR.
- d. through y. [Reserved]
- z. Commodities that are described in 5A992.c and that also meet or exceed the performance parameters in 3A090 or 4A090.

* * * * *

5A004 “Systems,” “equipment” and “components” for defeating, weakening or bypassing “information security,” as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, RS, AT, EI

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry (except 5A004.z).	NS Column 1.
RS applies to items controlled by 5A004.z.	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.
AT applies to entire entry.	AT Column 1.
EI applies to entire entry.	Refer to § 742.15 of the EAR.

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

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

LVS: Yes: \$500 for “components,” except for 5A004.z.
 N/A for systems and equipment.
 GBS: N/A
 ENC: Yes for certain EI controlled commodities, except for 5A004.z. See § 740.17 of the EAR for eligibility.
 NAC: Yes, for 5A004.z; N/A for all other 5A004 commodities.

List of Items Controlled

Related Controls: (1) ECCN 5A004.a controls “components” providing the means or functions necessary for “information security.” All such “components” are presumptively “specially designed” and controlled by 5A004.a. (2) See also ECCNs 3A090 (including Note 4 to ECCN 3A090) and 4A090.

Related Definitions: N/A

Items:

- a. Designed or modified to perform ‘cryptanalytic functions.’
- Note:** 5A004.a includes systems or equipment, designed or modified to perform ‘cryptanalytic functions’ by means of reverse engineering.

Technical Note: For the purposes of 5A004.a, ‘cryptanalytic functions’ are functions designed to defeat cryptographic mechanisms in order to derive confidential variables or sensitive data, including clear text, passwords or cryptographic keys.

- b. Items, not specified by ECCNs 4A005 or 5A004.a, designed to perform all of the following:
 - b.1. ‘Extract raw data’ from a computing or communications device; and

- b.2. Circumvent “authentication” or authorisation controls of the device, in order to perform the function described in 5A004.b.1.

Technical Note: For the purposes of 5A004.b.1, ‘extract raw data’ from a computing or communications device means to retrieve binary data from a storage medium, e.g., RAM, flash or hard disk, of the device without interpretation by the device’s operating system or filesystem.

Note 1: 5A004.b does not apply to systems or equipment specially designed for the “development” or “production” of a computing or communications device.

Note 2: 5A004.b does not include:

- a. Debuggers, hypervisors;
- b. Items limited to logical data extraction;
- c. Data extraction items using chip-off or JTAG; or
- d. Items specially designed and limited to jail-breaking or rooting.
- c. through y. [Reserved]
- z. Other commodities, as follows:
 - z.1. Commodities that are described in 5A004.a and that also meet or exceed the performance parameters in 3A090 or 4A090; or
 - z.2. Commodities that are described in 5A004.b and that also meet or exceed the performance parameters in 3A090 or 4A090.

5B002 “Information Security” test, inspection and “production” equipment, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, AT

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry.	NS Column 1.
AT applies to entire entry.	AT Column 1.

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

LVS: N/A
 GBS: N/A
 ENC: Yes for certain EI controlled equipment, see § 740.17 of the EAR for eligibility.

List of Items Controlled

Related Controls: N/A

Related Definitions: N/A

Items:

- a. Equipment “specially designed” for the “development” or “production” of equipment controlled by 5A002, 5A003, 5A004 or 5B002.b;
- b. Measuring equipment “specially designed” to evaluate and validate the “information security” functions of equipment controlled by 5A002, 5A003 or 5A004, or of “software” controlled by 5D002.a, z.1 through z.4, or 5D002.c or z.6 through z.9.

* * * * *

5D002 “Software” as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, RS, AT, EI

Control(s) *Country chart (see Supp. No. 1 to part 738)*

NS applies to entire entry (except 5D002.z).
 RS applies to “software” controlled by 5D002.z.

NS Column 1.
 To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.

AT applies to entire entry.
 EI applies to “software” in 5D002.a.1, a.3, .b, c.1 and c.3, for commodities or “software” controlled for EI reasons in ECCN 5A002, 5A004 or 5D002.

AT Column 1.
 Refer to § 742.15 of the EAR. **Note:** Encryption software is controlled because of its functional capacity, and not because of any informational value of such software; such software is not accorded the same treatment under the EAR as other “software”; and for export licensing purposes, encryption software is treated under the EAR in the same manner as a commodity included in ECCN 5A002.

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

List Based License Exceptions (See Part 740 for a Description of All License Exceptions)
 TSR: N/A
 ENC: Yes for certain EI controlled software, except for 5D002.z. See § 740.17 of the EAR for eligibility.
 NAC: Yes, for 5D002.z; N/A for all other 5D002 software.

List of Items Controlled
Related Controls: (1) After classification or self-classification in accordance with § 740.17(b) of the EAR, mass market encryption software that meets eligibility requirements is released from “EI” and “NS” controls. This software is designated as 5D992.c. (2) See also ECCNs 3D001.z and 4D001.z. (3) See also Note 4 to ECCN 3A090.
Related Definitions: 5D002.a controls “software” designed or modified to use

“cryptography” employing digital or analog techniques to ensure “information security.”

Items:

a. “Software” “specially designed” or modified for the “development,” “production” or “use” of any of the following:

a.1. Equipment specified by 5A002 or “software” specified by 5D002.c.1;

a.2. Equipment specified by 5A003 or “software” specified by 5D002.c.2; or

a.3. Equipment or “software”, as follows:

a.3.a. Equipment specified by 5A004.a or “software” specified by 5D002.c.3.a;

a.3.b. Equipment specified by 5A004.b or “software” specified by 5D002.c.3.b;

b. “Software” having the characteristics of a ‘cryptographic activation token’ specified by 5A002.b;

c. “Software” having the characteristics of, or performing or simulating the functions of, any of the following:

c.1. Equipment specified by 5A002.a, .c, .d or .e;

Note: 5D002.c.1 does not apply to “software” limited to the tasks of “OAM” implementing only published or commercial cryptographic standards.

c.2. Equipment specified by 5A003; or

c.3. Equipment, as follows:

c.3.a. Equipment specified by 5A004.a;

c.3.b. Equipment specified by 5A004.b.

Note: 5D002.c.3.b does not apply to “intrusion software”.

d. [Reserved]
N.B.: See 5D002.b for items formerly specified in 5D002.d.

e. through y. [Reserved]

z. Other software, as follows:

z.1. Software that is described in 5D002.a.1, and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090;

z.2. Software that is described in 5D002.a.2, and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090;

z.3. Software that is described in 5D002.a.3a, and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090;

z.4. Software that is described in 5D002.a.3.b, and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090;

z.5. Software that is described in 5D002.b and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090;

z.6 Software that is described in 5D002.c.1 and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090;

z.7 Software that is described in 5D002.c.2 and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090;

z.8 Software that is described in 5D002.c.3.a and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090; or

z.9 Software that is described in 5D002.c.3.b and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090.

5D992 “Information Security” “software,” not controlled by 5D002, as follows (see List of Items Controlled).

License Requirements
Reason for Control: RS, AT

Control(s) *Country chart (see Supp. No. 1 to part 738)*

RS applies to “software” controlled by 5D992.z.

To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.

AT applies to entire entry.

AT Column 1.

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

List Based License Exceptions (See Part 740 for a Description of All License Exceptions)
 TSR: N/A
 NAC: Yes, for 5D992.z; N/A for all other 5D992.z software.

List of Items Controlled
Related Controls: (1) This entry does not control “software” designed or modified to protect against malicious computer damage, e.g., viruses, where the use of “cryptography” is limited to authentication, digital signature and/or the decryption of data or files. (2) See also ECCNs 3D001.z and 4D001.z. (3) See also Note 4 to ECCN 3A090.
Related Definitions: N/A
Items:

a. [Reserved]

b. [Reserved]

c. “Software” classified as mass market encryption software in accordance with § 740.17(b) of the EAR.

d. through y. [Reserved]

z. Other software that is described in 5D992 and that also meet or exceed the performance parameters in 3D001 for 3A090 or 4D001 for 4A090.

* * * * *

5E002 “Technology” as follows (see List of Items Controlled).

License Requirements
Reason for Control: NS, AT, EI

Control(s)	<i>Country chart</i> (see <i>Supp. No. 1 to part 738</i>)
NS applies to entire entry (except "technology" for commodities controlled by 5A002.z or 5A004.z or "software" specified by 5D002 (for 5A002.z or 5A004.z commodities).	NS Column 1.
RS applies to "technology" for commodities controlled by 5A002.z or 5A004.z or "software" specified by 5D002 (for 5A002.z or 5A004.z commodities).	To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.

AT applies to entire entry.	AT Column 1.
EI applies to "technology" in 5E002.a for commodities or "software" controlled for EI reasons in ECCNs 5A002, 5A004 or 5D002, and to "technology" in 5E002.b.	Refer to § 742.15 of the EAR.

License Requirements Notes:

- (1) See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating "information security" functionality, and associated "software" and "technology" for the "production" or "development" of such microprocessors.
- (2) When a person performs or provides technical assistance that incorporates, or otherwise draws upon, "technology" that was either obtained in the United States or is of U.S.-origin, then a release of the "technology" takes place. Such technical assistance, when rendered with the intent to aid in the "development" or "production" of encryption commodities or software that would be controlled for "EI" reasons under ECCN 5A002, 5A004 or 5D002, may require authorization under the EAR even if the underlying encryption algorithm to be implemented is from the public domain or is not of U.S.-origin.

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

TSR: N/A

ENC: Yes for certain EI controlled technology. See § 740.17 of the EAR for eligibility.

List of Items Controlled

Related Controls: See also 5E992. This entry does not control "technology" "required"

for the "use" of equipment excluded from control under the Related Controls paragraph or the Technical Notes in ECCN 5A002 or "technology" related to equipment excluded from control under ECCN 5A002.

Related Definitions: N/A
Items:

a. "Technology" according to the General Technology Note for the "development," "production" or "use" of equipment controlled by 5A002, 5A003, 5A004 or 5B002, or of "software" controlled by 5D002.a, z.1 through z.3, or 5D002.c, z.6 through z.8.

Note: 5E002.a does not apply to "technology" for items specified by 5A004.b, z.3 or z.4, 5D002.a.3.b, z.4, or 5D002.c.3.b.

b. "Technology" having the characteristics of a 'cryptographic activation token' specified by 5A002.b, z.2.

Note: 5E002 includes "information security" technical data resulting from procedures carried out to evaluate or determine the implementation of functions, features or techniques specified in Category 5—Part 2.

* * * * *

5E992 "Information Security" "technology" according to the General Technology Note, not controlled by 5E002, as follows (see List of Items Controlled).

License Requirements

Reason for Control: AT

Control(s)	<i>Country chart</i> (see <i>Supp. No. 1 to part 738</i>)
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RS applies to "technology" for commodities controlled by 5A992.z or "software" controlled by 5D992.z.

To or within destinations specified in Country Groups D:1, D:4, and D:5 of supplement no. 1 to part 740 of the EAR, excluding any destination also specified in Country Groups A:5 or A:6. See § 742.6(a)(6)(iii) of the EAR.

AT applies to entire entry.

AT Column 1.

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

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

TSR: N/A

List of Items Controlled

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

- a. [Reserved]

b. "Technology", n.e.s., for the "use" of mass market commodities controlled by 5A992 or mass market "software" controlled by 5D992.

* * * * *

9A004 Space launch vehicles and "spacecraft," "spacecraft buses", "spacecraft payloads", "spacecraft" on-board systems or equipment, terrestrial equipment, and air-launch platforms, and "sub-orbital craft", as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, AT

Control(s)	<i>Country chart</i> (see <i>Supp. No. 1 to part 738</i>)
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NS applies to 9A004.g, .u, .v, .w and .x.

NS Column 1.

AT applies to 9A004.g, .u, .v, .w, .x and .y.

AT Column 1.

License Requirement Note: 9A004.b through .f, and .h are controlled under ECCN 9A515.

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

LVS: N/A

GBS: N/A

List of Items Controlled

Related Controls: (1) See also 9A104, 9A515, and 9B515. (2) See ECCNs 9E001 ("development") and 9E002 ("production") for technology for items controlled by this entry. (3) See USML Categories IV for the space launch vehicles and XV for other spacecraft that are "subject to the ITAR" (see 22 CFR parts 120 through 130).

Related Definition: N/A

Items:

- a. Space launch vehicles;
- b. "Spacecraft";
- c. "Spacecraft buses";
- d. "Spacecraft payloads" incorporating items specified by 3A001.b.1.a.4 or z (if also described in 3A001.b.1.a.4), 3A002.g, 5A001.a.1, 5A001.b.3, 5A002.c, z.3 or z.8, 5A002.e, z.5, 6A002.a.1, 6A002.a.2, 6A002.b, 6A002.d, 6A003.b, 6A004.c, 6A004.e, 6A008.d, 6A008.e, 6A008.k, 6A008.l or 9A010.c;
- e. On-board systems or equipment, specially designed for "spacecraft" and having any of the following functions:
 - e.1. 'Command and telemetry data handling';
 - Note:** For the purpose of 9A004.e.1, 'command and telemetry data handling' includes bus data management, storage, and processing.
 - e.2. 'Payload data handling'; or
 - Note:** For the purpose of 9A004.e.2, 'payload data handling' includes payload data management, storage, and processing.
 - e.3. 'Attitude and orbit control';
 - Note:** For the purpose of 9A004.e.3, 'attitude and orbit control' includes sensing and actuation to determine and control the position and orientation of a "spacecraft".

N.B.: Equipment specially designed for military use is “subject to the ITAR”. See 22 CFR parts 120 through 130.

f. Terrestrial equipment specially designed for “spacecraft”, as follows:

- f.1. Telemetry and telecommand equipment “specially designed” for any of the following data processing functions:
 - f.1.a. 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
 - f.1.b. Command data processing for formatting command data being sent to the “spacecraft” to control the “spacecraft bus”;
 - f.2. Simulators “specially designed” for ‘verification of operational procedures’ of “spacecraft”.

Technical Note: For the purposes of 9A004.f.2, ‘verification of operational procedures’ is any of the following:

1. Command sequence confirmation;
 2. Operational training;
 3. Operational rehearsals; or
 4. Operational analysis.
- g. “Aircraft” “specially designed” or modified to be air-launch platforms for space launch vehicles or “sub-orbital craft”.
 - h. “Sub-orbital craft”.
 - i. through t. [RESERVED]
 - u. The James Webb Space Telescope (JWST) being developed, launched, and operated under the supervision of the U.S. National Aeronautics and Space Administration (NASA).
 - v. “Parts,” “components,” “accessories” and “attachments” that are “specially designed” for the James Webb Space Telescope and that are *not*:
 - v.1. Enumerated or controlled in the USML;
 - v.2. Microelectronic circuits;
 - v.3. Described in ECCN 7A004 or 7A104;

or
v.4. Described in an ECCN containing “space-qualified” as a control criterion (See ECCN 9A515.x.4).

w. The International Space Station being developed, launched, and operated under the supervision of the U.S. National Aeronautics and Space Administration.

x. “Parts,” “components,” “accessories” and “attachments” that are “specially designed” for the International Space Station.

y. Items that would otherwise be within the scope of ECCN 9A004.v or .x but that have been identified in an interagency-cleared commodity classification (CCATS) pursuant to § 748.3(e) as warranting control in 9A004.y.

* * * * *

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

License Requirements

Reason for Control: NS, RS, MT, AT

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except .e and .y.	NS Column 1.

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
RS applies to entire entry, except .e and .y.	RS Column 1.
RS applies to 9A515.e.	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)).
MT applies to micro-circuits in 9A515.d and 9A515.e.2 when “usable in” “missiles” for protecting “missiles” against nuclear effects (e.g., Electro-magnetic 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.
AT applies to entire entry.	AT Column 1.

License Requirement Note: 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.

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 enumerated in USML Category IV(d)(2) or USML Category XV(e)(12) 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 enumerated in 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:

“Spacecraft” and other items described in ECCN 9A515 remain subject to the EAR even if exported, reexported, or transferred (in-country) with defense articles “subject to the ITAR” integrated into and included therein as integral parts of the item. In all other cases, such defense articles are subject to the ITAR. For example, a 9A515.a “spacecraft” remains “subject to the EAR” even when it is exported, reexported, or transferred (in-country) with a “hosted payload” described in USML Category XV(e)(17) incorporated therein. In all other cases, a “hosted payload” performing a function described in USML Category XV(a) always remains a USML item. The removal of the defense article subject to the ITAR from the spacecraft is a retransfer under the ITAR and would require an ITAR authorization, regardless of the CCL authorization the spacecraft is exported under. Additionally, transfer of technical data regarding the defense article subject to the ITAR integrated into the spacecraft would require an ITAR authorization.

a. “Spacecraft,” including satellites, and space vehicles and “sub-orbital craft,” whether designated developmental, experimental, research or scientific, not enumerated in USML Category XV or described in ECCN 9A004.u or .w, that:

- a.1. Have electro-optical remote sensing capabilities and having a clear aperture greater than 0.35 meters, but less than or equal to 0.50 meters;
- 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. Provide space-based logistics, assembly, or servicing of another “spacecraft”; or

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

Note: ECCN 9A515.a includes commercial communications satellites, remote sensing satellites, planetary rovers, planetary and interplanetary probes, in-space habitats, and “sub-orbital craft,” not identified in ECCN 9A004 or USML Category XV(a).

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

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/cm² (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/cm² 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 controlled by 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-cm²/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 1 to 9A515.d and .e: Application specific integrated circuits (ASICs), integrated circuits developed and produced for a specific application or function, specifically designed or modified for defense articles and not in normal commercial use are controlled by Category XI(c) of the USML regardless of characteristics.

Note 2 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 55,000 feet 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 the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;

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. Spacecraft 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. through w. [RESERVED]

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

x.1. Enumerated or controlled in 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 to 9A515.x: “Parts,” “components,” “accessories,” and “attachments” specified in USML subcategory XV(e) or enumerated in other USML categories are subject to the controls of that paragraph or category.

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.

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

y.2. Space grade or for spacecraft applications thermistors;

y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);

y.4. Space grade or for spacecraft applications hall effect sensors;

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

y.6. Space grade or for spacecraft applications flight cable assemblies.

* * * * *

■ 39. Effective November 17, 2023, supplement no. 6 to part 774 is amended by revising paragraphs (3)(i) introductory text, (3)(ii) introductory text, and paragraphs (3)(iv) and (v) to read as follows:

Supplement No. 6 to Part 774— Sensitive List

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(3) Category 3

(i) 3A001.b.2 (including those described under 3A001.b.2 that are controlled by 3A001.z)—“Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers that are any of the following:

* * * * *

(ii) 3A001.b.3 (including those described under 3A001.b.3 that are controlled by 3A001.z)—Discrete microwave transistors that are any of the following:

* * * * *

(iv) 3D001—“Software” “specially designed” for the “development” or “production” of equipment controlled under 3A001.b.2, 3A001.b.3, equipment described under 3A001.b.2 or 3A001.b.3 that are controlled under 3A001.z, 3A002.g.1, and equipment described under 3A002.g.2 that are controlled under 3A002.z.

(v) 3E001—“Technology” according to the General Technology Note for the “development” or “production” of equipment controlled under 3A001.b.2, 3A001.b.3, equipment described under 3A001.b.2 or 3A001.b.3 that are controlled under 3A001.z, 3A002.g.1, and equipment described under 3A002.g.2 that are controlled under 3A002.z.

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Thea D. Rozman Kendler,
Assistant Secretary for Export Administration.

[FR Doc. 2023-23055 Filed 10-18-23; 8:45 am]

BILLING CODE 3510-33-P