

ALERT

# BIS Strengthens Export Controls Targeting China's Acquisition of Semiconductor Equipment, Advanced Computing Items, and Supercomputer Technologies

December 6, 2023

For the second year running, and in what may prove to be a regular process, the U.S. Department of Commerce's Bureau of Industry and Security (BIS) has significantly expanded export controls on specific semiconductor and supercomputing capabilities to entities in the People's Republic of China. On October 17, 2023, BIS announced a package of regulations, which built on its October 7, 2022, interim final rule (IFR) and amended the Export Administration Regulations (EAR) to reinforce and expand export controls on a range of goods, software, and technology designed to restrict China's ability to purchase and manufacture advanced computing chips. Following a short, 30-day period to adjust, these rules are now largely in effect.

As with the October 2022 IFR, the U.S. policy imperative giving rise to these regulations is the Chinese government's mobilization of resources to augment its military modernization efforts, including the development of Weapons of Mass Destruction and human rights abuses. According to BIS, the rules are designed to address China's "efforts to obtain semiconductor manufacturing equipment essential to producing advanced integrated circuits needed for the next generation of advanced weapon systems, as well as high-end advanced computing semiconductors necessary to enable the development and production of technologies such as artificial intelligence (AI) used in military applications." This is the next major action in the Biden Administration's continued efforts to counter the growing national security threat posed by China.

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The new export control package is comprised of an IFR amending the EAR's advanced computing/supercomputing controls (AC/S IFR), an IFR amending EAR controls on semiconductor manufacturing equipment (SME IFR), and a final rule adding 13 Chinese entities to the Entity List.

The Entity List designations took immediate effect on October 17, 2023, and the vast majority of IFR regulations took effect on November 17, 2023. BIS conducted a public briefing on the two new IFRs on November 6, 2023, a recording of which is available [here](#). BIS is soliciting comments related to the rules, which are due by **December 18, 2023**.

Below is a summary of key changes in the rules and their impact on both U.S. and non-U.S. companies.

### **AC/S IFR**

The AC/S IFR revises BIS controls on advanced computing items introduced in the October 2022 IFR by expanding the control parameter for restricted chips, adding new measures to address circumvention concerns, and revising restrictions on activities of U.S. persons and prohibited end-uses.

#### ***Parameter Changes***

- The AC/S IFR generally maintains but refines the performance threshold established in the October 2022 IFR while simplifying and expanding the ECCN 3A090 (integrated circuits (ICs)) control parameter.
  - In addition to the performance threshold set in the October 2022 IFR, this rule adds a "performance density" threshold/parameter designed to preempt workarounds of the rules, including combining many smaller chips to be as powerful in the aggregate as a single restricted chip. In ECCN 3A090, the AC/S IFR replaces paragraphs a.1 through a.4 with clarified paragraphs .a and .b, which expand the scope of control.
  - The new 3A090.a control parameter now controls ICs with one or more digital processing units having either: (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.
  - The new 3A090.b now imposes controls on ICs with one or more digital processing units having either: (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.
  - BIS revised the Technical Notes to ECCN 3A090, which include details for calculating total processing performance (TPP) and performance density (as the AC/S IFR replaces bits x TOPS with TPP values). In addition, Note 2 carves out from 3A090 non-datacenter ICs that are (a) not designed or marketed for use in datacenters; and (b) do not have a TPP of 4800 or more.
- The rule clarifies another practical issue by removing the catch-all criterion "any other items on [the] CCL that meet or exceed the performance parameters of 3A090 or 4A090" and replacing it with a positive list of ECCNS subject to Regional Security (RS) controls in the form of new .z paragraphs in nine

ECCNs (*i.e.*, 3A001, 4A003, 4A004, 4A005, 5A002, 5A004, 5A992, 5D002, and 5D992) along with various related conforming changes. BIS notes that “[s]imilar 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.”

### ***Advanced Computing Foreign Direct Product (FDP) Rule***

- U.S. export control restrictions can extend to non-U.S. companies and overseas manufacturing operations in certain cases, including under the EAR’s “foreign direct product (FDP) rules,” which control certain foreign-manufactured direct products of controlled U.S. technology and software. Since 2020, BIS has expanded its FDP rules to more broadly restrict certain foreign countries’ (*e.g.*, China and Russia) access to relatively less-sensitive items (*e.g.*, ICs) produced from (*i.e.*, the “direct product” of) sensitive U.S.-origin technologies. Here, the AC/S IFR expands the country scope of the advanced computing FDP rule in § 734.9(h) beyond China and the special administrative region Macau by revising paragraph (h) (2) to cover any “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.” In addition, the country scope extends globally when the “direct product” is to or for an entity headquartered in (or whose ultimate parent company is headquartered in) a destination specified in Country Group D:5 (*i.e.*, countries subject to arms embargoes) or Macau. Further, a new Note to paragraph (h)(2), meant to capture complex supply chains, clarifies that the requirements apply when any entity headquartered in, or whose ultimate parent company is headquartered in, either Macau or 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.”

### ***License Exception Notified Advanced Computing (NAC)***

- The rule creates a new License Exception Notified Advanced Computing (NAC) in § 740.8 for certain consumer-grade ICs with AI capabilities, including certain data center ICs that fall short of the performance threshold in 3A090.a and non-data center ICs that have a TPP of 4800 or more, which includes a notification requirement for certain exports and reexports. This license exception applies to ICs under ECCN 3A090.b and non-datacenter ICs under 3A090.a, and is generally available for exports, reexports, and transfers to or within Country Groups D:1, D:4, and D:5 (as well as Macau), provided the applicable criteria are met. Notification to BIS is required for exports and reexports to Macau or Country Group D:5. Within 25 days of its receipt of the notification, BIS and other export control agencies will determine whether each transaction falling under this exception may proceed or instead require a license. More information on the NAC process is available [here](#).

### ***Temporary General License***

- To avoid disruption of supply chains of certain advanced computing items, the rule adds a Temporary General License (TGL) in a new paragraph, (d)(2) in Supplement No. 1 to part 736–General Orders.

Meeting the requirements for TGL-advanced computing items (including product scope, end-use scope, and end-user restrictions) overcomes the license requirements specified in § 742.6(a)(6)(iii). This TGL permits certain shipments otherwise requiring a license 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 A:6) when the recipient is located in but is not headquartered in or whose ultimate parent company is not headquartered in, Macau or Country Group D:5, so that these entities can engage in integration, assembly, inspection, testing, quality assurance, and distribution activities for ultimate end-use outside of Country Groups D:1, D:4, or D:5 (except for those countries also identified in Country Groups A:5 or A:6) by entities not headquartered, or whose ultimate parent company is not headquartered, in Macau or a destination specified in Country Group D:5. This TGL expires on December 31, 2025.

### ***Circumvention Prevention***

- To address circumvention and diversion concerns, the AC/S IFR significantly expands the scope for the RS controls and licensing requirements that apply to ECCN 3A090, ECCN 4A090, and other items on the Commerce Control List that meet or exceed the performance parameters of 3A090 or 4A090. The requirements are expanded beyond China and Macau to cover the export of certain controlled advanced computing items 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.
- As an IFR, the rule is subject to further revision and includes a request for public comments on several specific topics, including control parameters, the deemed export and deemed reexport exclusion, definitions of key terms, and risks related to infrastructure as a service (IaaS) (e.g., IaaS customers potentially “developing” or “producing” a dual-use AI foundation model). In addition, BIS broadly welcomes comments on all the topics and regulatory changes described in the new IFRs.

### ***U.S. Person and End-Use Restrictions***

- This rule clarifies the scope of U.S. person services and related activities controlled under § 744.6(c)(2) of the EAR, which, when combined with the IFR published last year, represents a notable expansion of EAR controls on U.S. person activities. For context, the EAR generally restricts exports, reexports, and transfers (in-country) of U.S. items, rather than services or other activities of U.S. persons. In broadening BIS's authorities, the Export Control Reform Act of 2018 (ECRA) authorizes BIS to impose controls on activities of U.S. persons related to nuclear explosive devices, missiles, chemical or biological weapons, plants for chemical weapons precursors, foreign maritime nuclear projects, and foreign military intelligence services. Here, the new rule broadens the scope of restrictions on specific activities of U.S. persons in § 744.6 to apply to Macau and destinations specified in Country Group D:5 where the person knows an 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) Macau or a destination specified in Country Group D:5 where production of advanced-node ICs occurs or, in certain cases, where the person does not know whether production of advanced-node ICs occurs at such facility. The rule also adds paragraph (c)(3) to clarify the scope of activities that are captured through the EAR and

to provide guidance on the types of due diligence that should be undertaken in reviewing a transaction to determine whether the end-use for the relevant item involves the "development" or "production" of "advanced-node integrated circuits versus other legacy ICs."

- In the October 2022 IFR, BIS instituted new end-use and end-user controls for supercomputers and semiconductor manufacturing in Section 744.23 of the EAR. Exports, reexports, or transfers (in-country) of certain items subject to the EAR (wherever produced and including, in some cases, EAR99 items) became prohibited without a license when the exporter had knowledge that the item would be used (directly or indirectly) in one of the designated prohibited end-uses. Here, the new AC/S IFR amends and expands § 744.23 by adding two new end-use controls to capture operations by Chinese entities located outside of China – such as a PRC-headquartered cloud or data server provider – related to diversion and misuse of items subject to the EAR.
  - The rule adds a new, expansive advanced computing end-use control under paragraph (a)(3)(i) that requires a license for the export, reexport, or transfer (in-country) 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 a person has "knowledge" at the time of the export that the item ultimately 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.
  - The rule also creates an additional end-use control for items identified under (a)(3)(ii) to specify that an end-use control applies to any technology specified in ECCN 3E001 (for 3A090) that has been developed by an entity headquartered in, or whose ultimate parent company is headquartered in, Macau or a Country Group D:5 country, when certain requirements are met, including that the technology is reexported or transferred from Macau or another country of concern and is for the "production" of advanced computing items.
  - In addition, the rule expands the scope of the supercomputer end-use control in paragraphs (a)(1)(ii)(A) and (B) by expanding the restriction from China and Macau to cover Macau or a destination specified in Country Group D:5.

### ***Compliance and Export Clearance-Related Measures***

- The rule also makes several revisions to the model certificate in supplement no. 1 to part 734 and clarifies that this certificate may be used for all FDP rules under § 734.9.
- To assist with compliance and enhance compliance programs, the rule adds five new red flags to BIS's "Know Your Customer" Guidance and Red Flags in supplement no. 3 to part 732.
- The rule also includes a pair of export clearance changes for the Automated Export System (AES) to increase the transparency of .z, 3A090, and 4A090 shipments. First, the rule states that: "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." Second, this rule revises paragraph (a)(2) of § 758.6

(destination control statement and other information furnished to consignees) to expand the list of ECCNs that an exporter must incorporate as an integral part of the commercial invoice. Specifically, this revision requires that the ECCN(s) for any 3A001.z, 3A090, 4A003.z, 4A004.z, 4A005.z, 4A090, 5A002.z, 5A004.z, or 5A992.z items be included on the commercial invoice, in addition to the existing requirement to include the "600 series" or 9x515 ECCNs on the commercial invoice.

### **Semiconductor Manufacturing Equipment (SME) IFR**

The SME IFR also significantly revises and expands on the October 2022 IFR provisions related to equipment. The changes include the implementation of controls on additional types of SME, revising restrictions on U.S. person activities, and expanding the scope of licensing requirements to additional countries that are subject to a U.S. arms embargo.

#### ***ECCNs 3B001 and 3B002 Controls Replace ECCN 3B090***

- This rule eliminates ECCN 3B090 and replaces its provisions in ECCNs 3B001 and 3B002 adding new types of controlled SME and implementing harmonizing controls on associated software and technology in ECCNs 3D001, 3D002, 3D003, and 3E001. In addition, the rule imposes national security license requirements on the newly added SME items as well as those moved to ECCNs 3B001 and 3B002 for Country Group D:5 destinations and Macau. BIS also revised the regional stability license requirements and review policy to expand the license requirement to Country Group D:5 destinations and Macau. According to BIS, "the newly added items under ECCNs 3B001 and 3B002, and associated software and technology therefor, are, with limited exceptions, only used for fabricating logic ICs with non-planar transistor architecture or with a 'production' 'technology node' of 16/14 nanometers or less." Further, "[e]ach of the items added with this SME IFR are key to the production of 'advanced-node integrated circuits,' . . . that will be necessary to enable new platforms to leverage advanced analytics or autonomy in ways that will be essential to the twenty-first-century battlefield."
- The SME IFR also adds a special 0% *de minimis* rule for items in new ECCN 3B001.f.1.b.2.b (specified lithography equipment) at § 734.4(a)(3). Under this new rule, foreign-manufactured items incorporating any 3B001.f.1.b.2.b U.S.-origin equipment, regardless of value, are subject to the EAR's controls when the equipment is destined for use in the development or production of advanced-node ICs that meet certain parameters unless the country from which the foreign-made item was originally exported controls the item on its export control list. Currently, Japan is the only country that maintains equivalent controls and is eligible for this carve-out.

#### ***TGL for Less Restricted SME Parts, Components, or Equipment***

- This rule creates a new TGL for companies headquartered in the United States and Country Groups A:5 and A:6 countries (and not majority-owned by an entity headquartered in Macau or a Country Group D:5 country) to send items to facilities in U.S. arm-embargoed countries or Macau for the development or production of parts, components, or equipment of certain Category 3B tools. The TGL overcomes the

license requirements described in § 744.23(a)(4) of the EAR when the specific product scope and end-use scope requirements are met. This TGL expires on December 31, 2025.

### ***New Defined Terms***

- The SME IFR adds definitions for “Extreme Ultraviolet” (EUV) and “Advanced-Node Integrated Circuits” in § 772.1. EUV is used within ECCNs 3B001, 3B002, and 3D003. Advanced-node integrated circuits are defined to simplify text in § 744.6 and § 744.23 that previously described the criteria for “advanced” ICs. This definition of “advanced-node integrated circuits” includes notes to clarify the meaning of “production technology node.”
- As with the AC/S IFR, this rule implements significant revisions to the EAR’s controls on activities of “U.S. persons” throughout § 744.6 to clarify and simplify the structure of the controls. For example, the rule restructures and consolidates paragraph (c). In addition, the rule includes revisions at §§ 744.6(c)(2)(i) and (ii) to clarify the types of end-uses relevant to the controls and the types of “facilities” relevant to the prohibited end-uses. The rule also includes an exclusion in paragraph (d)(4) that applies to the SME and advanced-node IC support prohibitions in paragraphs (c)(2)(i) through (iii) for natural U.S. persons “employed or working on behalf of a company headquartered in the United States or a destination specified in Country Group A:5 or A:6 and not majority-owned by an entity that is headquartered in Macau or a destination specified in Country Group D:5.” This exclusion is designed “to ease the compliance burden and corresponding disincentive to employ U.S. persons in activities for which governments of closely allied destinations maintain or may establish appropriate controls.”

### ***End-Use Controls***

- The SME IFR also makes significant changes to the § 744.23 end-use controls on supercomputers, advanced-node integrated circuits, and SME, including simplifying the format of this section by combining the product scope paragraphs with end-use scope paragraphs, revising the text to reflect the overarching purpose of inhibiting the indigenization of front-end IC production equipment and related parts and components (including by adding a back-end exclusion), and expanding the country scope to Macau and any destination in Country Group D:5.

### **Entity List Additions**

Effective October 17, 2023, BIS added 13 PRC entities (two companies and their eleven subsidiaries, identified here) to the Entity List due to their involvement in the development of advanced computing chips and engagement in activities contrary to U.S. national security and foreign policy interests. In addition, these entities are subject to the “footnote 4” Entity List FDP rule designation, and a BIS license is required to send chips to these entities or parties acting on their behalf.

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