

BIS Imposes New Controls to Limit the Development and Production of Advanced Computing and Semiconductor Capabilities in China

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The Commerce Department's Bureau of Industry and Security (BIS) has amended the Export Administration Regulations (EAR) to impose **a series of significant new export controls** designed to limit the development and production in China of:

- advanced node semiconductors;
- semiconductor production equipment;
- advanced computing items; and
- supercomputers.

The Biden-Harris administration has determined that the existence of indigenous capabilities to develop or produce such items in China is a national security threat.

To achieve these policy objectives, the new rules impose not only traditional controls on the export of listed commodities, software, and technology, but also novel controls on:

- activities of U.S. corporations and individual U.S. citizens;
- exports of unlisted items for specific end uses; and
- shipments from outside the U.S. (including from China) of non-U.S.-origin items produced with specific types of U.S. technology, software, or equipment.

As a result, U.S. and non-U.S. companies (and individual U.S. citizens) that engage in transactions pertaining to the advanced computing, artificial intelligence, supercomputer, semiconductor production equipment, or semiconductor-related supply chains involving China will need to review closely the complex rules to determine whether their internal compliance programs and business plans need to change.

Policy Bases for the New Controls—And How They Are and Are Not Different From Previous Export Controls

Contact Information

If you have any questions concerning this alert, please contact:

Thomas J. McCarthy

Partner

tmccarthy@akingump.com

Washington, D.C.

+1 202.887.4047

Kevin J. Wolf

Partner

kwolf@akingump.com

Washington, D.C.

+1 02.887.4051

Shiva Aminian

Partner

saminian@akingump.com

Los Angeles

+1 310.552.6476

Anne E. Borkovic

Partner

aborkovic@akingump.com

Washington, D.C.

+1 202.887.4432

Jaelyn Edwards Judelson

Partner

jjudelson@akingump.com

Los Angeles

+1 310.552.6477

Susan M.C. Kovarovics

Partner

skovarovics@akingump.com

Washington, D.C.

+1 202.887.4088

Kimberly M. Myers

Partner

kmyers@akingump.com

Washington, D.C.

+1 202.887.4423

The rule largely implements the export control portion of the national security policy vision National Security Advisor Jake Sullivan articulated in a [recent speech](#) at the 2022 Special Competitive Studies Project Global Emerging Technology Summit where he stated that:

- “Computing-related technologies, biotech, and clean tech are truly ‘force multipliers’ through the tech ecosystem. And leadership in each of these is a national security imperative.” (The new rule does not address any biotech or clean tech issues.)
- With respect to export controls, “we have to revisit the longstanding premise of maintaining ‘relative’ advantages over competitors in certain key technologies. We previously maintained a ‘sliding scale’ approach that said we need to stay only a couple of generations ahead. That is not the strategic environment we are in today. Given the foundational nature of certain technologies, such as advanced logic and memory chips, we must maintain as large of a lead as possible.”
- The U.S. and allied response to Russia’s invasion of Ukraine “demonstrated that technology export controls can be more than just a preventative tool. If implemented in a way that is robust, durable, and comprehensive, they can be a new strategic asset in the U.S. and allied toolkit to impose costs on adversaries, and even over time degrade their battlefield capabilities.”

Export controls have not been so publicly and clearly identified by a senior administration official as a “strategic” tool of national security since the end of the Cold War. Rather, the primary national security purpose of export controls since then has largely been, [in coordination with multilateral export control regime partners](#), to identify and regulate weapons of mass destruction (WMD), conventional military items, and the bespoke and dual-use commodities, software, and technology necessary for their development, production, or use.

The stated policy bases for the new controls reflect the administration’s significant concerns about China’s development and production of WMD and conventional military items, and the use of these technologies to enable human rights abuses. However, the new controls differ in scope from most previous export controls because they are unilateral (i.e., U.S. only), targeted at one country (China), and applied to essentially commercial items that are several stages earlier in the development and production supply chain than the types of items [traditionally subject to export controls](#).

For context, the U.S. has imposed for decades a complete embargo against China on the export of any type of item, regardless of sophistication, that is in any way designed or modified for military, intelligence, or space-related applications. The U.S. also prohibits the unlicensed export of many types of otherwise essentially uncontrolled commercial items if there is knowledge that they are for a military end use or a military end user in China, or for the production or development of WMD in China. In coordination with multilateral export control regime participating states, the U.S. has also imposed for decades controls on “dual-use” items -- items that have both commercial and military (or WMD) applications. (A 77-page list of the names of such already-controlled items is on the [BIS website](#).) The U.S. also unilaterally controls a limited number of items for use in human rights abuses, such as instruments of torture.

Thus, the material difference in tone and scope of the new rule is that it, more so than any other post-Cold War export control rule, expansively considers “the impact of advanced computing integrated circuits, supercomputers, and semiconductor

Tatman R. Savio
Registered Foreign Lawyer
tatman.savio@akingump.com
Hong Kong
+1 852 3694.3015

Chris Chamberlain
Counsel
cchamberlain@akingump.com
Washington, D.C.
+1 202.887.4308

Jingli Jiang
Counsel
jjiang@akingump.com
Beijing
+86 10.8567.2229

Alasdair Kan
Associate
alsadair.kan@akingump.com
London
+44 20.7661.5513

Brett R. Orren
Associate
borren@akingump.com
Washington, D.C.
+1 202.887.4129

Ragan W. Updegraff
Associate
rupdegraff@akingump.com
Washington, D.C.
+1 202.887.4148

Thomas Krueger
Senior Policy Advisor
tkrueger@akingump.com
Washington, D.C.
+1 202.887.4215

Cameron Peek
Associate
cpeek@akingump.com
Washington, D.C.
+1 202.887.4518

manufacturing equipment on **enabling** military modernization, including the development of WMD and **human rights abuses**” in one specific country, i.e., China. This policy and regulatory scope are why compliance with the rule will have a significant impact on otherwise commercial activities. BIS’s policy response to concerns about such impacts is that the government of China “has mobilized vast resources to support its defense modernization, including the implementation of its **military-civil fusion development strategy**, in ways that are contrary to U.S. national security and foreign policy interests.” BIS also stated in its preamble that the “PRC government expends extensive resources to eliminate barriers between China’s civilian research and commercial sectors, and its military and defense industrial sectors. It also is developing and producing advanced integrated circuits (packaged or unpackaged) for use in weapons systems.”

The new controls are not designed to have an impact on the production or development in China of mature node semiconductors or less capable computing applications. The new rules will, however, as a practical matter, have an impact on activities in these sectors until regulated companies and individuals sort out precisely what the complex and novel new rules do and do not control. Even once fully understood, the new rules will have unintended impacts on mature commercial items and contain definitional ambiguities. To allow for such issues to be considered and possibly fixed, BIS is **accepting public comments** on the new rule until December 12, 2022.

Topics Covered in This Alert

This alert does not comment on how markets, foreign buyers, the Chinese government, American political officials, think tanks, or U.S. strategic business planers could react and adapt to the geopolitical, policy, and economic implications of the new rule. This alert also does not comment on unintended consequences, effectiveness, or whether allies will impose similar controls under their own export control systems. These are each significant issues that Akin Gump and others will comment on separately. Rather, this alert is a summary of the new rules from a regulatory compliance perspective. No client alert is a substitute for legal advice. That is particularly the case with this alert given the length and complexity of the new rules. Nonetheless, this alert is divided up in the following topic sections that should help one to generally understand the rules’ scope, better frame requests for legal advice, and consider what changes to compliance programs might be needed.

New Controls on U.S. Person Activities. Section I describes the new controls on U.S. person activities related to the development or production of (i) integrated circuits at semiconductor fabrication facilities in China that develop or produce advanced node semiconductors or (ii) specific types of semiconductor production equipment in China.

New Controls on Exports for Specific End Uses. Section II describes new controls on specific activities involving end uses related to (i) advanced node semiconductors, (ii) production equipment for their production, or (iii) supercomputers.

New Controls on Specific Items. Section III describes new controls on specific types of (i) advanced integrated circuits, (ii) commodities containing such integrated circuits, (iii) semiconductor production equipment, and (iv) related components, software and technology.

New Controls on Non-U.S.-Made Items. Section IV describes the three new foreign direct product rules that subject non-U.S.-made items to EAR licensing requirements if they involve (i) any of the 28 Chinese companies on the Entity List identified as supporting advanced computing applications in China, (ii) supercomputer-related activities in China, or (iii) advanced computing applications in China.

Limited Authorizations Possible. Section V describes (i) the licensing policies in the new rule, which are generally policies of “presumptive denial” unless, in some cases, the company in China is headquartered in the U.S. or in an allied country, and (ii) a temporary general license for some of the newly controlled items if for destinations outside of China.

I. Controls on Activities of “U.S. Persons” that Support the Development or Production of Advanced Node Semiconductors or Semiconductor Production Equipment (§ 744.6)

For decades, the EAR have prohibited U.S. persons, wherever located, from knowingly providing without a license “support,” broadly defined, for the development or production of missiles, nuclear weapons, chemical and biological weapons, and foreign maritime nuclear projects, even if all the underlying items involved are otherwise uncontrolled and not subject to the EAR. The EAR also give BIS the authority to inform U.S. persons that their activities could be in support of such end uses, even without their knowledge, and that, therefore, a license is required for specific exports. This is informally referred to as the “is informed” process. There were media reports of several U.S. companies receiving such notifications over the summer of 2022 pertaining to their exports to China that could be for use in the development or production of advanced node semiconductors or advanced computing capabilities. The new rules essentially codify and expand upon the reported “is informed” letters so that their obligations now apply to all U.S. persons.

BIS stated in the rule’s preamble that the policy basis for the new U.S. person controls is that the Chinese government could use advanced node semiconductors to develop or produce WMD or to support military-intelligence end users. BIS stated that U.S. persons may not always know of such end uses because the “PRC government expends extensive resources to eliminate barriers between China’s civilian research and commercial sectors, and its military and defense industrial sectors. It also is developing and producing advanced integrated circuits (packaged or unpackaged) for use in weapons systems.”

Meaning of “U.S. Person”

The EAR define “U.S. person” to include:

- U.S. companies and other entities incorporated in the U.S. and their foreign branches;
- Individuals, wherever located and regardless of the nationality of their employer, who are U.S. citizens, permanent legal residents, or refugees and asylees in the United States; and
- Any company or individual in the United States. (§ 772.1)

Types of U.S. Person Support Activities Affected

These new U.S. person activity controls apply when the commodities, software, or technology involved in the activity are “not subject to the EAR,” which includes **almost all** non-U.S.-made commodities, software, and technology of any sort or sophistication outside the U.S. The specific U.S. person “support” activities now controlled are:

- “shipping, transmitting or transferring (in-country)” to or within China items not subject to the EAR;
- “facilitating” such shipments, transmissions or transfers, and
- “servicing” items not subject to the EAR.

Activity Controls Pertaining to Semiconductor Fabrication Facilities

The first group of newly controlled U.S. person support activities is directed at “semiconductor fabrication facilities” in China that develop or produce:

- Logic integrated circuits using a non-planar architecture or with a production technology node of 16/14 nm or less;
- NAND memory integrated circuits with 128 layers or more; or
- DRAM integrated circuits using a production technology node of 18 nm half-pitch or less.

In other words, a license is now required for U.S. persons to (i) ship or transmit to, or transfer within, China; (ii) **facilitate** such shipments, transmissions, or transfers; or (iii) **service** any commodity, software, or technology not subject to the EAR (e.g., most foreign-made items) that the U.S. person knows will be used in the development or production of integrated circuits at a fabrication facility in China that develops or produces the advanced node logic, NAND, or DRAM referred to in the new rule. (§§ 744.6(c)(2)(i), (ii), and (iii)). These controls apply even when all the shipments or other activities would occur completely outside the U.S. or by individual foreign persons acting on behalf of a U.S. company.

If a U.S. person does not know if a semiconductor fabrication facility in China develops or produces covered advanced node semiconductors, then the same license obligations apply to its (i) shipment, transmission, or transfer; (ii) facilitation of the shipment, transmission, or transfer, or (iii) servicing of commodities, software, or technology not subject to the EAR (e.g., any non-U.S.-made item) if the items are described in Export Control Classification Number (ECCN) Groups 3B, 3C, 3D, or 3E. These groups of ECCNs describe, among other things, most semiconductor-related production equipment, and related components, materials, software, and technology. (§§ 744.6(c)(2)(iv), (v), and (vi)).

These new controls are directed at “semiconductor fabrication facilities” in China that develop or produce covered advanced node semiconductors. The EAR define “facilities” to mean “a building or outdoor area in which people use an item that is built, installed, produced, or developed for a particular purpose.” (§ 772.1). Thus, if a U.S. person is engaging in a covered support activity for such a “facility,” the activity is still controlled even if it would be for a mature node production line that happens to be in the same facility.

Activity Controls Pertaining to Semiconductor Fabrication Equipment

The second group of newly controlled U.S. person support activities is directed at newly identified semiconductor production equipment for use in producing advanced node semiconductors described in new ECCN 3B090, and the software and technology required for the development or production of such equipment. This means that U.S. persons now require a license to (i) ship, transmit, or transfer to or within China; (ii) facilitate such shipments, transmissions, or transfers; or (iii) service in China any commodity, software, or technology not subject to the EAR (e.g., any foreign-made item) if the item is one of the newly identified semiconductor production equipment-related items described in new ECCN 3B090 or is software or technology for the development or production of such items. (§§ 744.6(c)(2)(vii), (viii), and (ix)).

Scope of “Facilitation” and “Servicing” Prohibitions

A novel implication of the new rule is that if a U.S. corporation wants to “facilitate” the shipment of foreign-made items from outside the U.S. to a covered facility in China, then the U.S. corporation would need a license even if all the work would be done by non-U.S. persons. The EAR does not define the term “facilitate.” The term is, however, commonly used in the sanctions regulations administered by the Treasury Department’s Office of Foreign Assets Control (OFAC). OFAC has not defined the term, but has interpreted it to cover numerous activities that have the effect of supporting an underlying transaction that would be prohibited if the facilitator engaged in it directly. OFAC has also indicated in sanctions programs that the following activities carried out by a U.S. person constitute prohibited “facilitation:”

- Altering its operating policies or procedures, or those of a foreign affiliate, to permit a foreign affiliate to accept or perform a specific contract, engagement or transaction that would be prohibited if performed directly by a U.S. person.
- Referring to a foreign person purchase orders, requests for bids, or similar business opportunities to which the U.S. person could not directly respond as a result of sanctions prohibitions.
- Changing the operating policies and procedures of a particular affiliate with the specific purpose of facilitating transactions that would be prohibited if performed by a U.S. person.

See 31 C.F.R. § 560.417. BIS’s interpretation of the term “facilitate” remains to be seen, and BIS is neither bound by, nor does it reference, OFAC’s rules or definitions. Until BIS states its position on the issue, U.S. companies and persons may want to consider OFAC’s approach to “facilitation” as they examine how to comply with the new rules.

The prohibitions on “servicing” non-U.S.-made items in China are also novel for the EAR. BIS has not defined the term. Absent regulatory definitions, the normal position of BIS is that dictionary and industry-standard definitions govern.

II. End Use Controls on Items Subject to the EAR Pertaining to Advanced Node Semiconductors and Supercomputers (§ 744.23)

The new rules impose controls on the export, reexport, or transfer by anyone from anywhere of various types of commodities, software, and technology subject to the EAR (e.g., all U.S.-origin items) if there is knowledge that they will be used to develop, produce, or use various types of integrated circuits, semiconductor production equipment, or supercomputers. Each control has a slightly different scope.

Development or Production of Integrated Circuits

A license is required to export, reexport, or transfer a commodity, software, or technology subject to the EAR if there is knowledge that the item will be used in the development or production of integrated circuits at a fabrication facility in China that develops or produces one of the covered types of advanced node logic, DRAM, or NAND. (§§ 744.23(a)(1)(iii) and (a)(2)(iii)). If one does not know if the fabrication facility develops or produces covered advanced semiconductors, then a license is required if the item to be exported, reexported, or transferred is described in any of the Group 3B, 3C, 3D, or 3E ECCNs. These ECCNs describe most semiconductor production and related items. (§§ 744.23(a)(1)(iv) and (a)(2)(iv)). In essence, BIS wants to stop the flow of any type of material U.S.-origin content for use in developing or producing in China advanced node semiconductors.

Development or Production of Semiconductor Production Equipment

A license is required to export, reexport, or transfer any item subject to the EAR if the item will be for use in the development or production in China of any part, component, or equipment described in ECCNs 3B001, 3B002, 3B090, 3B611, 3B991 or 3B992, regardless of end use or end user. (§§ 744.23(a)(1)(v) and (a)(2)(v)). The ECCNs describe most types of semiconductor production equipment, and their specially designed components. In essence, BIS wants to stop the flow of any type of material U.S.-origin content for use in developing or producing in China almost every type of semiconductor production equipment, and related components, regardless of the technology nodes of the semiconductors to be produced from such equipment.

Development, Production, or Use of a Supercomputer

A license is required to export, reexport, or transfer most types of integrated circuits, computers, and electronic assemblies subject to the EAR and described on the CCL if there is knowledge that the items will be for use in the development, production, use, operation, installation (including on-site installation), maintenance (checking), repair, overhaul, or refurbishing of a supercomputer in or destined to China. (§§ 744.23(a)(1)(i), (ii) and (a)(2)(i), (ii)). The specific ECCNs for the integrated circuits covered are 3A001, 3A991, 4A994, 5A002, 5A004, and 5A992. The specific ECCNs for computers and electronic items covered are 4A003, 4A004, 4A994, 5A002, 5A004, and 5A992. In essence, BIS wants to stop the flow of almost any type of U.S.-origin electronics for use in developing, producing, or using supercomputers in China.

The term “supercomputer” is defined as “[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.”

BIS’s Due Diligence Advice

BIS uses the new rule to remind the public that:

“As with all end-use controls under the EAR, exporters, reexporters, and transferors are responsible for reviewing their transactions in accordance with the **“Know Your Customer” Guidance** in supplement no. 3 to part 732 of the EAR. If your customer is a semiconductor manufacturing “facility” involved in the end uses set forth in paragraph (a)(2) of § 744.23, in

addition to the best practice of obtaining an end-use statement from your customer, you should also evaluate all other available information to determine whether a license is required pursuant to § 744.23. If your customer is a reseller, distributor, or other intermediary transaction party, it is a good compliance practice to attempt to obtain confirmation of the actual end use and end user of your products. If the intermediary party (e.g., reseller, distributor) cannot furnish these details at the time of the proposed export or reexport because it is a prospective order and no specific customer has yet been identified, as a good compliance practice you may attempt to obtain a written statement that the intermediary party understands the license requirements in § 744.23 and will either: (a) inform you of the actual end use and end user, once known, so you may evaluate whether a license is required for any proposed in-country transfer, or (b) evaluate the end use and end user and apply for any required license for any proposed in-country transfer.”

BIS is basically telling U.S. and foreign persons, in the U.S. and abroad, that they should take affirmative steps to find out whether their shipments of electronics and other commodities, including related software and technology, are going to be used in China (i) at facilities that develop or produce advanced node semiconductors, (ii) to develop or produce semiconductor production equipment or related items, or (iii) develop, produce, or use supercomputers.

III. New Controls on Specific Types of Items—Advanced Computing Integrated Circuits, Electronics Containing Them, Semiconductor Production Equipment and Related Items

BIS has added to the EAR’s control list several new controls over specific types of advanced computing integrated circuits, electronics containing them, and specific types of semiconductor manufacturing equipment, and related components, software, and technology.

A. New Controls on Advanced Computing Integrated Circuits and Electronics Containing Them (ECCNs 3A990 and 4A990)

New ECCN 3A090 controls integrated circuits that have or are programmable to have an aggregate bidirectional transfer rate over all inputs and outputs of 600 Gbyte/s or more to or from integrated circuits other than volatile memories, and also:

- One or more digital processor units executing machine instructions having a bit length per operation multiplied by processing performance measured in Tera Operations per Second (TOPS), aggregated over all processor units, of 4,800 or more;
- One or more digital primitive computational units, excluding those units contributing to the execution of machine instructions relevant to the calculation of TOPS for 3A090.a.1, having a bit length per operation multiplied by processing performance measured in TOPS, aggregated over all computational units, of 4,800 or more;
- One or more analog, multi-value or multi-level primitive computational units having a processing performance measured in TOPS multiplied by 8, aggregated over all computational units, of 4,800 or more; or

- Any combination of digital processor units and primitive computational units whose calculations according to 3A090.a.1, 3A090.a.2 and 3A090.a.3 sum to 4,800 or more.

The types of integrated circuits that could be within the scope of this new control include graphic 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).

New ECCN 4A090.a controls computers, electronic assemblies, and components “containing any integrated circuits, any of which exceeds the limit in 3A090.a.” ECCN 4A090.a thus essentially adopts the “see-through” rule approach of the International Traffic in Arms Regulations (ITAR), which means that any computer, assembly, or component that “contains” a 3A090.a integrated circuit is controlled. This is a rare break from the traditional EAR rule that one determines the control status of an item by its characteristics, not its components.

New ECCNs 3A090 and 4A090, and related software and technology, are controlled for the new China-specific Regional Stability (RS) reasons and also Anti-Terrorism (AT) reasons. This means that, for such items, licenses are required to export or reexport to, or transfer within, China, Russia, Belarus, Iran, North Korea, Cuba, and Syria. Licenses for such exports, reexports, or transfers will be presumptively denied.

Software and Technology Controls, and Deemed Export Carve-Out (§ 742.6(a)(6)(ii))

BIS has created new controls over the software and technology for the development or production of integrated circuits, computers, and other items described in the new ECCNs 3A090 and 4A090. Unlike most export controls, however, the new China-specific license requirements for such technology and source do not exist for deemed exports or deemed reexports -- i.e., releases to Chinese nationals who are outside of China. (There continue to be deemed export controls for releases to nationals of countries subject to Anti-Terrorism controls.)

Limited License Exceptions

Unlike for most of the new controls, license exceptions RPL (for replacement parts), TSU (for bug fixes), and GOV (for government end uses) are, in part, authorized for use in connection with the newly controlled 3A090 and 4A090 items. (§ 740.2(a)(9)). These license exceptions, however, are not available with respect to controlled shipments to entities on the Entity List or in connection with newly controlled supercomputer or semiconductor production equipment end uses. To use license exceptions RPL and TSU, the equipment or software at issue must have been shipped legally and continue to be used legally.

Novel Control on Exports From China of Integrated Circuit Technology (§ 742.6(a)(6))

The new rule imposes a novel license requirement for anyone to export **from China** to any destination technology for the development or production of 3A090 integrated circuits if (i) the technology is developed by an entity headquartered in China that is the direct product of software subject to the EAR and (2) the technology is for the

production of integrated circuits, or the commodities containing them, that meet or exceed the performance thresholds of ECCNs 3A090 or 4A090.

The goal of this control is to limit the design capabilities of Chinese entities using software produced from U.S. technology to develop for production outside of China semiconductors for advanced computing applications in China. BIS advises that entities outside of China that receive such technology from China confirm that a license was obtained to export such technology from China. (Because the licensing policy is one of presumptive denial, there are not likely to be many such licenses in existence.) Without such evidence, the recipient could become involved in a violation of the EAR. This is because EAR section 764.2(e) prohibits, among other things, buying or using an item, including technology, subject to the EAR with knowledge that the item was shipped in violation of the EAR.

Impact on Encryption Items Normally Available for Export to China Without a License

One can no longer rely on the availability of License Exception ENC (encryption) or mass market classification of encryption commodities or software for export to, reexport to or transfer within China. Specifically, ECCN 5A002 commodities and ECCN 5D002 software that meet or exceed the performance parameters of new ECCNs 3A090 or 4A090 may no longer use License Exception ENC for China. (§ 740.2(a)(9)). Similarly, ECCN 5A992 and 5D992 mass market encryption items now require a license for China if they meet or exceed the performance parameters of new ECCNs 3A090 or 4A090. (§ 742.6(a)(6)). Companies with such products will need to update their internal classification marking and control systems to reflect that the License Exception ENC and mass market authorizations do not apply for China, notwithstanding the products' ECCNs.

B. Expanded ECCNs for Lower-Level High-Performance Integrated Circuits and Electronics Containing Them (ECCNs 3A991.p and 4A994.l)

BIS created new subparagraph ECCN 3A991.p to control lower-level high-performance integrated circuits, not otherwise controlled, that have a processing performance of 8 TOPS or more, or 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. BIS also created new subparagraph 4A994.l to control computers, electronic assemblies, and components, not otherwise controlled, "containing integrated circuits, any of which exceeds the limit of ECCN 3A991.p." Technology and software for such integrated circuits and electronics are controlled at the same level.

These items are controlled for Anti-Terrorism reasons only, meaning that they do not require a license to China, unless there is knowledge of a military end use or end user, or a General Prohibition is implicated. Because these items were EAR99 items before the rule change, they did not require a license for most countries, including to Russia or Belarus. They now require a license to Russia, Belarus, and other countries subject to Anti-Terrorism controls.

C. New ECCN for Semiconductor Production Equipment (ECCN 3B090)

BIS created a new ECCN 3B090 for specific types of semiconductor manufacturing equipment important to producing advanced node logic semiconductors. The new controls also apply to specially designed parts and components for such equipment,

and software and technology for their development or production. The new Regional Stability controls only impose requirements for the export, reexport, or transfer of such items to China. The additional Anti-Terrorism controls also imposes license requirements involving Russia and countries subject to comprehensive embargoes. As with other items subject to the new China-specific Regional Stability controls, the traditional deemed export and deemed reexport controls do not apply to software or technology covered by these new controls. (Deemed export controls, however, apply to releases to nationals from countries subject to Anti-Terrorism controls.)

The scope of the new ECCN is detailed and complex, but the types of equipment at issue are, in essence:

- Semiconductor deposition equipment for depositing cobalt through electroplating processes.
- Chemical vapor deposition equipment capable of deposition of cobalt or tungsten fill metal having various characteristics.
- Equipment capable of fabricating a metal contact within one processing chamber in specific ways.
- Equipment capable of fabricating a metal contact in a vacuum environment in specific ways.
- Equipment capable of depositing a cobalt metal layer selectively in a vacuum environment in specific ways.
- Physical vapor deposition equipment capable of depositing a cobalt layer of specific types.
- Atomic layer deposition equipment capable of depositing a work function metal for specific purposes.
- Equipment capable of fabricating copper metal interconnects in a vacuum environment in specific ways.
- Equipment capable of area selective deposition of a barrier or liner using an organometallic compound.
- Atomic layer deposition equipment capable of producing a void/seam free fill of tungsten or cobalt in specific types of structures.

IV. Three New Foreign Direct Product Rules That Subject Non-U.S.-Origin Items to the EAR (§ 734.9)

The EAR has, for decades, subjected foreign-made items outside the United States to the jurisdiction of the EAR if they were the direct product of technology or software controlled for “National Security” reasons (i.e., identified as a dual-use item by the Wassenaar Arrangement participating states) and the foreign-made item was also identified as a type of item controlled for “National Security” reasons. In other words, sensitive dual-use foreign-made items made from sensitive dual-use U.S.-origin technology are controlled the same as if the item had been made in the United States.

In August 2020, BIS created a novel Huawei-specific foreign direct product rule to subject otherwise uncontrolled items not subject to any country’s export controls produced outside the U.S. to the jurisdiction of the EAR if they were the direct product of specific types of technology or software, or produced by equipment that was

produced from specific types of technology or software. In response to Russia's invasion of Ukraine, BIS created two additional foreign direct product rules to impose controls over items produced outside of the U.S. that were destined to Russia or Belarus.

In the new China-specific rules, BIS has expanded the once-Huawei-specific foreign direct product rule to apply to 28 other listed entities. It also created two new foreign direct product rules focused on otherwise uncontrolled foreign-origin content for advanced computing and supercomputer-related applications in China. There are now seven materially different, and extraordinarily complex, ways in which a non-U.S.-made item can be subject to the jurisdiction of the EAR under a foreign direct product rule. (§ 734.9). This count does include the ways in which a non-U.S.-made item could be subject to the EAR under the de minimis rules. (§ 734.3(a)(3)). Companies that are involved in the shipment of non-U.S.-origin items involving China or Russia, at a minimum, will need to substantially update their internal controls, classification efforts, and training programs to account for the wide range of extraordinarily complex extraterritorial applications of the EAR.

A. Expanded "Entity List FDP Rule" (§ 734.9(e)(2))

The rule amends the existing Entity List foreign direct product rule to designate 28 already-listed entities as "Footnote 4" entities. The policy basis for the new control over foreign-produced items destined to any of these 28 entities is that "many supercomputer parts and components based on U.S. technology and software are not produced in the United States, and more conventional export control measures would not effectively limit the U.S. contribution to Chinese advanced computing efforts by these entities." A short-hand way of thinking about this change is that there are now 28 Huawei-like (but not identical) foreign direct product rules regulating foreign-produced items for use in connection with the entities.

The 28 "Footnote 4" entities are:

- Beijing Institute of Technology
- Beijing Sensetime Technology Development Co., Ltd.
- Changsha Jingjia Microelectronics Co., Ltd.
- Chengdu Haiguang Integrated Circuit
- Chengdu Haiguang Microelectronics Technology
- China Aerospace Science and Technology Corporation (CASC) 9th Academy 772 Research Institute
- Dahua Technology
- Harbin Institute of Technology
- Higon
- IFLYTEK
- Intellifusion
- Megvii Technology
- National Supercomputer Center Zhengzhou

- National Supercomputing Center Changsha
- National Supercomputing Center Guangzhou
- National Supercomputing Center Jinan
- National Supercomputing Center Shenzhen
- National Supercomputing Center Tianjian (NSCC-TJ)
- National Supercomputing Center Wuxi (NSCC-WX)
- National University of Defense Technology
- New H3C Semiconductor Technologies Co., Ltd.
- Northwestern Polytechnical University
- Shanghai High-Performance Integrated Circuit Design Center
- Sugon
- Sunway Microelectronics
- Tianjin Phytium Information Technology
- Wuxi Jiangnan Institute of Computing Technology
- Yitu Technologies

Determining when a foreign-produced item is subject to the EAR under the Entity List foreign direct product rule is complicated. In essence, as with the Huawei-specific rule, if there is knowledge that a foreign-produced item is either (i) the direct product of specific types of semiconductor, computer, or telecommunication software or technology subject to the EAR; or (ii) produced by equipment that is the direct product of various types of technology or software subject to the EAR, then a license is required before shipping the non-U.S.-origin item to anyone either (i) for incorporation into, or use in producing or developing, any commodities produced, purchased, or ordered by one of the Footnote 4 entities; or (ii) when a Footnote 4 entity is a party to the transaction.

The scope of the foreign-made items caught by the new Footnote 4 controls is, however, slightly broader than the Huawei-specific rules. Specifically, a foreign-produced item can be caught by the new rules if it is the direct product of software or technology subject to the EAR for encryption-related reasons, or produced with equipment that is the direct product of such software or technology. This is not the case for the Huawei-specific rules. In addition, the licensing policy for Footnote 4 entities is presumptive denial, which is not the case for many types of items affected by the Huawei-specific policies. For some of the Footnote 4 entities, however, there is a possibility of a license if the shipment is necessary to detect, identify, or treat infectious diseases.

B. New “Advanced Computing FDP Rule” (§ 734.9(h))

If there is knowledge that a foreign-produced item is either:

1. destined to China or will be incorporated into any commodity described on the Commerce Control List that is destined to China; or
2. technology developed by an entity headquartered in China for the production of a mask or an integrated circuit wafer or die,

then the foreign-produced item is subject to the EAR under the new Advanced Computing foreign direct product rule if it is:

1. the direct product of certain types of semiconductor, computer, telecommunications or encryption-related software or technology subject to the EAR; or
2. produced by equipment that is the direct product of such technology or software;

and is also:

1. described in one of the new ECCNs for advanced computing integrated circuits, and related equipment, software and technology (i.e., specified in ECCNs 3A090, 3E001 (for 3A090), 4A090 or 4E001 (for 4A090)); or
2. an integrated circuit, computer, electronic assembly or component that meets the performance parameters of ECCNs 3A090 or 4A090.

The actual rule is far more complicated than this summary. To help with compliance, BIS suggested that those involved with non-U.S.-origin items covered or potentially covered by this new foreign direct product rule could obtain a written certification from a supplier that asserts that the item being provided would or would not be subject to the EAR if the contemplated transaction meets the destination scope requirements of the rule. BIS also provided a Model Certification exporters could use to obtain such assurances. BIS stated that while such a “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.” BIS also noted that, absent such certification, exporters, reexporters, and transferors must conduct due diligence to determine if the items meet the product scope. In addition, BIS reiterated that obtaining the certificate does not relieve exporters of their obligation to exercise due diligence, including by following “Know Your Customer” and red flag guidance in [Supplement No. 3 to Part 732 of the EAR](#) to ensure that the contemplated transaction does not have other unresolved red flags or raise other compliance requirements.

C. New “Supercomputer FDP Rule” (§ 734.9(i))

Under the new supercomputer foreign direct product rule, a foreign-produced item that is either:

1. the direct product of specific types of semiconductor, computer, telecommunications or encryption software or technology subject to the EAR; or
2. produced by equipment that is the direct product of such technology or software,

is subject to the EAR if there is knowledge that it is for either:

1. the development, production, operation, installation, maintenance, repair, overhaul or refurbishing of a supercomputer in China, or
2. for incorporation into, or used to develop or produce, commodities that will be used in a supercomputer in China.

Because the product scope, end-use scope, and China-specific country scope of this new foreign direct product rule are generally the same as the end-use controls in new section 744.23, items that are within the scope of this new foreign direct product rule will also usually require a license under the new section 744.23. In other words, unless an item is completely developed and produced outside the U.S. without the use

of any technology, software, or equipment subject to the EAR, it is likely going to require a license (which will likely be denied) to develop, produce, or use if for use in a supercomputer in China or for developing a supercomputer, or its components, destined to China.

V. Licensing Policies and Temporary General Licenses

The licensing policy for exports, reexports, transfers, and activities subject to the new controls is a “presumption of denial.” There are some types of transactions, however, for which there is a “case-by-case” review policy. The “case-by-case” review policy applies if the transaction or activity is in connection with activities involving companies in China headquartered in the United States or one of the allied countries in Country Groups A:5 (e.g., South Korea) or A:6 (e.g., Taiwan). For example, there are media reports of one-year licenses having already been issued to allow newly controlled exports to the multinational semiconductor fabrication facilities in China that have headquarters in the United States, South Korea, and Taiwan. BIS and its interagency partners will consider whether to approve such licenses taking in “account factors including technology level, customers and compliance plans.”

In order to avoid disruption to the supply chains for items ultimately destined to customers outside of China, BIS created a six-month Temporary General License (TGL) to permit specific, limited manufacturing activities in China related to items now controlled under newly created ECCNs 3A090 and 4A090 (and related software and technology) when those items are destined for use outside of China. Specifically, from October 21, 2022 to April 7, 2023, the TGL allows exports and reexports to, and transfers within, China by companies not headquartered in Country Groups D:1 or D:5 or E (i.e., countries of concern or subject to embargoes) so that they may continue to engage in integration, assembly (mounting), inspection, testing, quality assurance and distribution of:

- Items covered by ECCN 3A090 or 4A090;
- Items that are computers, integrated circuits, electronic assemblies or components that meet or exceed the performance parameters of ECCN 3A090 or 4A090; or
- Associated software and technology described in ECCNs 3D001, 3E001, 4D090 or 4E001.

The new TGL does not authorize the export, reexport, or transfer to end users or ultimate consignees in China. It also does not overcome the license requirements for the export, reexport, or transfer to companies that are on the Entity List, to military end-users or for military end uses, or when there is knowledge of any other prohibited end uses or end user. Finally, there is not a TGL for items affected by the U.S. person controls in section 744.6 or the items affected by the end use controls in section 744.23.

VI. Conclusion

As with any complex and novel export control rule involving complex technologies and supply chains, the new rules will likely have unintended impacts, mistakes, and ambiguities that need be fixed. BIS is encouraging companies to spot them and send them in as public comments before December 12. BIS will likely be creating FAQs to address issues associated with the rule before then. Thus, one should not hesitate to point out to BIS issues that should be stated more clearly or corrected.

