

New Export Control Rules Target China's Acquisition of Semiconductor Equipment, Advanced Computing, and Supercomputer Technologies

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On October 7, 2022, the U.S. Department of Commerce's Bureau of Industry and Security (BIS) announced a series of long-awaited regulations – issued as an interim final rule – amending the Export Administration Regulations (EAR) to enhance export controls on a range of goods, software, and technology and restrict China's ability to purchase and manufacture advanced computing chips. The regulations impose new controls on items relating to advanced computer and semiconductor manufacturing capabilities, broaden end use restrictions, expand the scope of foreign-produced items subject to licensing requirements, and add to Entity List prohibitions.

Through this rule, BIS has informed the public that specific activities of U.S. persons that support the development or production of certain integrated circuits (ICs) in China require a license. In an effort to address supply chain impacts arising from these new restrictions, BIS established a Temporary General License (TGL) to permit limited manufacturing activities within China when relating to items destined for use outside China. Finally, BIS issued guidelines on a model certificate that may be used as part of compliance programs and corporate due diligence efforts.

The U.S. policy imperative giving rise to these regulations is the Chinese government's mobilization of resources to augment military modernization efforts, including the development of Weapons of Mass Destruction (WMD), and continue human rights abuses. Certain of the regulations became effective on October 7, 2022 but were

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officially published in the Federal Register on October 13, 2022. Other portions of the new rule are effective on October 12 and 21. According to BIS, given the urgent need for this set of regulations to counter China's malign activities, BIS is not publishing the new rule as a Section 1758 technology rule (*i.e.*, an emerging and foundational technologies rule for advanced semiconductor manufacturing equipment) pursuant to the Export Control Reform Act of 2018 (ECRA), which requires a notice and comment period (50 U.S.C. § 4817(a)(2)(C)). Nevertheless, comments on the regulations, because they have been issued as an interim final rule, are being solicited and are due by December 12, 2022.

New Control Categories for High-Performance ICs

At the outset, new entries are being added to the Commerce Control List (CCL) to restrict China's access to advanced computing capabilities and related ICs given that China is rapidly developing exascale supercomputing capabilities. According to BIS, these capabilities can improve the speed and accuracy of China's military decision making, planning, and logistics, as well as enhance the capabilities of China's autonomous military systems (*e.g.*, systems used for cognitive electronic warfare, radar, signals intelligence, and jamming), improve weapons design and testing, and perpetuate human rights abuses.

As a result, the new rule adds Export Control Classification Numbers (ECCNs) to the CCL as follows:

- **3A090** for specified high-performance ICs
- **4A090** for specified computers, electronic assemblies, and certain components containing 3A090 ICs
- **4D090** to accommodate the software associated with the items controlled in ECCN 4A090

The new ECCNS will now be controlled for Regional Stability (RS) reasons when exported, reexported, or transferred to or within China, and the EAR has accordingly been amended at Section 742.6(a)(6) to reflect this new licensing requirement. These ECCNS will also be controlled for Anti-Terrorism (AT) reasons, in addition to other ECCNs – new ECCN 3A991.p for certain ICs and 4A994.l for certain computing items containing such ICs – that will now be controlled for AT reasons as well. Much of the associated software and/or technology controls for ECCN 3A090 and 4A090 items already exist in the CCL as ECCNs 3D001, 3E001, and 4E001, which likewise will be controlled for RS reasons when destined to China in addition to other reasons currently stipulated by the EAR. Additionally, BIS added RS license requirements to ECCNs 5A992 and 5D992, which control mass market encryption products, to comport with the new rule changes and to ensure that mass market hardware and software meeting the performance parameters of the new high-performance IC-related ECCNs (*i.e.*, 3A090 and 4A090) are similarly subject to the new RS licensing requirement.

Further, the new rule imposes a unique license requirement for the export of technology related to 3A090 ICs from China to any destination worldwide for the design, development, or production of advanced computing chips, if the technology has been developed by an entity headquartered in China, is the direct product of software subject to the EAR, and is for the production of certain advanced computing ICs and computers or assemblies containing them. The intent here is to address the risk of diversion of chips designed by Chinese entities and used for military modernization efforts.

BIS has cautioned that most license applications for items controlled for RS reasons will be reviewed under a presumption of denial policy. The exception is that a case-by-case license review policy will apply to applications for semiconductor manufacturing items destined for end users located in China that are headquartered in the United States or specific countries that pose a substantially lower risk of diversion (*i.e.*, Country Groups A:5 and A:6). The case-by-case license review policy will take into account factors such as technology level, customers, and compliance plans.

Under the new rule, for the newly added ECCNs and associated software and technology, as well as other ECCNs meeting the performance parameters of the new ECCNs, available license exceptions are limited to (1) Servicing and Replacement of Parts and Equipment (RPL), (2) Governments, International Organizations, International Inspections Under the Chemical Weapons Convention, and the International Space Station (GOV) (transactions made by or consigned to the U.S. Government), and (3) Technology and Software Unrestricted (TSU) (operation technology and software and software updates). License Exceptions RPL and TSU require that the equipment or software originally was lawfully shipped to its current location and continues to be lawfully used.

Notably, the new licensing requirements tied to ECCN 3A090 and 4A090 ICs and related hardware do not extend to deemed exports and reexports, such as disclosures of technology required to develop these ICs to a foreign person in the United States. The lower-level AT controls added at ECCNs 3A991.p and 4A994.l do apply to deemed exports and reexports, but only if the information to be released exceeds that to which the foreign person already had lawful access prior to this new rule, which may create a nuanced compliance challenge for companies involved in emerging technology sectors.

At least initially, the new RS controls will be carried out as a unilateral control, with the caveat that if a multilateral export control regime adopts controls for the identified technology, BIS will adopt multilateral controls instead.

New Controls for Certain Semiconductor Manufacturing Items

BIS also added a new ECCN 3B090 to the CCL for certain advanced semiconductor manufacturing equipment, such as deposition equipment. ECCN 3B090 items are controlled for RS (and AT) reasons as well and require a license when destined to China. In addition, controls for software and technology associated with items in ECCN 3B090 are found in ECCNs 3D001 and 3E001 of the CCL, respectively, and are also controlled for RS reasons.

License applications for ECCN 3B090 semiconductor manufacturing items destined to end users in China that are headquartered in the United States or in a country in Country Group A:5 or A:6 will be considered on a case-by-case basis and in light of factors such as technology level, customers, and compliance plans. Only License Exception GOV is available for exports, reexports, and transfers of items controlled under new ECCN 3B090 (and the associated software and technology), as listed under Section 740.2(a)(9) of the EAR.

Entity List, Advanced Computing, and Supercomputer Foreign Direct Product (FDP) Rules

Under the EAR, restrictions can apply to certain foreign-manufactured direct products of U.S. technology or software. In many cases, this foreign direct product rule requires that both the technology or software at issue and the final foreign-manufactured product be controlled for national security reasons under U.S. law, which is a fairly small universe of products. However, BIS has issued broader FDP rules for certain types of transactions, including those involving Huawei Technologies Co., Ltd. and its affiliates (Huawei), as well as Belarus and Russia.

The new BIS rule further revises the current Entity List FDP rule, which formerly only applied to Huawei, to capture additional products under the EAR that will be subject to export restrictions, specifically to 28 Chinese entities that were previously on the Entity List but are now designated by a new footnote 4. The rule is closely patterned after the existing Huawei FDP rule, although it also covers direct products of encryption software and technology. Under this rule, non-U.S. produced items that are the direct product of certain software or technology are now subject to the EAR and require a license for these 28 entities. Further, non-U.S. items that are produced by a plant or a major component of a plant, which is the direct product of certain technology or software, are now also subject to the EAR. According to BIS, the 28 Chinese entities are involved in activities contrary to U.S. national security and foreign policy interests, including, for example, the development or production of ICs or supercomputers that support China's development of stealth technologies, space planes, hypersonic missiles, and other military applications.

Next, BIS issued a broader new Advanced Computing FDP rule targeting China that similarly provides that a foreign-produced item will be subject to the EAR if it meets (1) a specific product scope and (2) a specific destination scope. Under the Advanced Computing FDP rule, a foreign-produced item will meet the product scope criterion if it is the direct product of certain software or technology subject to the EAR and the foreign-produced item falls under, or is an IC, computer, electronic assembly, or other component that otherwise meets the performance parameters of new ECCNS 3A090 or 4A090 (or the related technology ECCNs). The product scope additionally includes foreign-produced items classified as ECCNs 3A090 and 4A090 (or covered by the related technology controls) or otherwise meeting the performance parameters of these new ECCNs that are products of a complete plant or major component of a plant (whether made in the U.S. or abroad) that itself is a direct product of a certain U.S.-origin technology or software. The second criterion, the destination scope, requires knowledge that the foreign-produced item is being exported, reexported, or transferred (in-country) to or within China; being incorporated into any part, component, computer, or equipment not designated as EAR99 (the lowest level of control) that is destined for China; or technology developed by an entity headquartered in China for the production of a mask or an IC wafer or die. To assist companies in determining whether certain items being exported, reexported, or transferred (in-country) are subject to the EAR based on the Advanced Computing FDP rule, BIS provides a Model Certification in Supplement No. 1 to Part 734. The Model Certification is not required under the EAR, but it may assist industry with the process of resolving potential red flags regarding whether an item is subject to the EAR based on the Advanced Computing FDP rule.

The Supercomputer FDP rule is similar. It states that a foreign-produced item meets the product scope criterion if it is the direct product of certain specified technology or software subject to the EAR (*i.e.*, certain electronics, computing, telecommunications, and encryption technology and software covered by Categories 3, 4, and 5 in the CCL). The product scope additionally includes foreign-produced items that are products of a complete plant or major component of a plant (whether made in the U.S. or abroad) that is itself a direct product of certain specified U.S.-origin technology or software. The second criterion, the country and end use scope, are then met if there is knowledge that the foreign-produced item will be (1) used in the design, development, production, operation, installation, maintenance, repair, overhaul, or refurbishing of a supercomputer located in or destined for China, or (2) 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 for China.

Supercomputer and Semiconductor Manufacturing End Use Prohibitions

Additionally, 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) are prohibited without a license when the exporter has knowledge that the item will be used (directly or indirectly) in one of the newly designated prohibited end uses.

The end use scope includes the development, production, use, operation, installation, maintenance, repair, overhaul, or refurbishing of a *supercomputer* located in or destined for China; the incorporation of certain ICs and computing items subject to the EAR into, or the development or production of, any component or equipment that will be used in a *supercomputer* located in or destined to China; the development or production of ICs at a semiconductor fabrication facility located in China that fabricates ICs with specific parameters (or whether it is unknown that the facility can produce such ICs); or the development or production in China of any parts, components, or equipment specified in certain ECCNs in Category 3B of the CCL.

License requirements apply when knowledge exists at the time of export, reexport, or transfer (in-country) that the item is destined for a specific end use, *i.e.*, the development or production of certain ICs at a semiconductor fabrication facility in China. Licenses, moreover, will be reviewed under a presumption of denial when the exports lead to the development of supercomputer capabilities in China or specific IC development capabilities.

In order to expand the reach of these rules, BIS has included an "is informed" process, where it may inform persons (either directly or through an amendment to the EAR) that a license is required for certain exports, reexports, or transfers (in-country) of any item subject to the EAR to a certain end user if there is an unacceptable risk of use in, or diversion to, certain military activities or WMD uses.

The foregoing end use controls will not qualify for any license exceptions and, as with other end use/end user controls under the EAR, this limitation applies even when the items fall under other less-restrictive provisions of the EAR.

Industry members should carefully review these new restrictions, as certain of the end use prohibitions only apply to specific items subject to the EAR, while others (*i.e.*, the restriction on items for the development or production of certain ICs in China) apply to all items subject to the EAR, including EAR99 items. BIS also cautioned exporters, reexporters, and transferors regarding due diligence best practices, including obtaining end use statements and evaluating all other available information about Chinese customers.

Restrictions on U.S. Person Support

BIS added new restrictions on specific activities of U.S. persons in Section 744.6 of the EAR, some of which parallel the new end use prohibitions described above. The EAR generally restricts exports, reexports, and transfers (in-country) of U.S. items, rather than services or other activities of U.S. persons; however, ECRA authorizes BIS to impose controls on U.S. person activities related to nuclear explosive devices, missiles, chemical or biological weapons, plants for chemical weapons precursors, foreign maritime nuclear projects, and foreign military intelligence services.

Although EAR restrictions on activities typically require the U.S. person to have "knowledge" that their activities are contributing to prohibited end uses, this rule places the public on notice that "support" by U.S. persons related to the provision of items used to produce the most advanced semiconductors necessary for military programs of concern (*e.g.*, missile programs or programs related to nuclear explosive devices) requires a license, even when the end use of such items cannot be determined by the U.S. person. Specifically, the rule informs U.S. persons that a license is required for certain activities, which could involve support for WMD-related end uses, including support related to (1) any item not subject to the EAR that the person knows will be used in the development or production of ICs at a semiconductor fabrication facility located in China that fabricates ICs with specific parameters; (2) any item not subject to the EAR but meeting the parameters of any ECCN in Product Groups B, C, D, or E in Category 3 of the CCL that the person knows will be used in the development or production of ICs at a Chinese semiconductor fabrication facility, where it is unknown whether the facility fabricates ICs with the specific parameters referenced above; or (3) any item not subject to the EAR and meeting the parameters of ECCN 3B090, 3D001 (for 3B090), or 3E001 (for 3B090), regardless of end use or end user.

In this context, "support" activities are defined broadly to include: shipping, transmitting, or transferring (in-country) to or within China; facilitating the shipment, transmission, or transfer (in-country) to or within China; and servicing any restricted item located in China. The new controls can capture, for example, activities of a U.S. company facilitating or otherwise supporting a sale by a foreign affiliate of foreign-designed and -manufactured products to China that ordinarily would be outside of the scope of the EAR's controls.

Measures to Minimize Short Term Impacts on Supply Chains

As noted above, the rule adds a model FDP supply chain certification under new Section 734.9(h) of the EAR to assist exporters, reexporters, and transferors in determining whether items are subject to the EAR based on the Advanced Computing FDP rule.

Perhaps more importantly, the rule also establishes a supply chain TGL in paragraph (d) of Supplement No. 1 to Part 736 of the EAR. According to BIS, the purpose of the TGL is to avoid disruption of supply chains for items covered by ECCNs that are ultimately destined to customers outside of China.

Effective October 21, 2022 through April 7, 2023, the TGL allows exports, reexports, in-country transfers, and exports from abroad destined to or within China by companies not headquartered in Country Groups D:1 or D:5 or E to continue or to engage in integration, assembly, inspection, testing, quality assurance, and distribution of items covered by ECCNs 3A090 and 4A090, as well as associated software and technology in ECCNs 3D001, 3E001, 4D090, or 4E001; or any item that is a computer, IC, electronic assembly or component, and associated software and technology, specified elsewhere on the CCL, which meets or exceeds the performance parameters of ECCN 3A090 or 4A090.

The TGL does not authorize the export, reexport, in-country transfer, or export from abroad to "end users" or "ultimate consignees" in China. In addition, the TGL does not overcome the license requirements of Section 744.11 (Entity List) or Section 744.21 (military end use/end user restrictions) of the EAR when an entity listed in Supplement Nos. 4 or 7 to part 744 is a party to the transaction or when there is knowledge of any other prohibited end use or end user.

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