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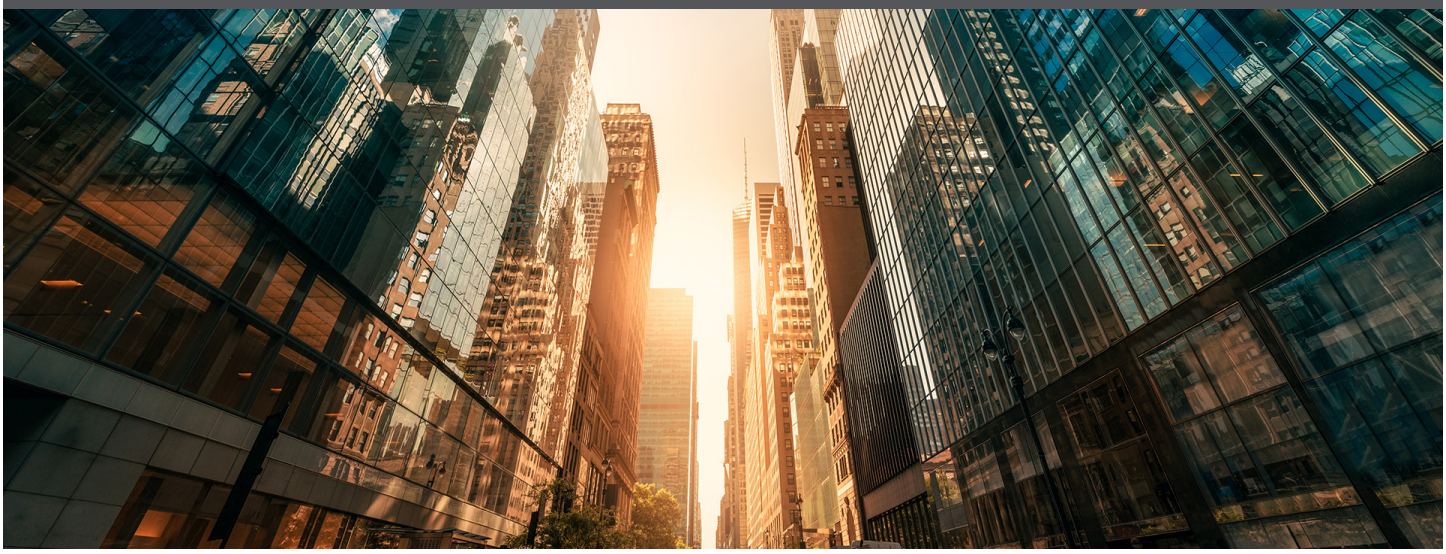

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BIS Issues New Export Controls Targeting GAAFET, Quantum, and Additive Manufacturing, and Ushers in New Age of Plurilateral Export Controls: 5 Key Takeaways

The U.S. Department of Commerce's Bureau of Industry and Security ("BIS") recently issued an interim final rule ("IFR") under the Export Administration Regulations ("EAR") imposing licensing requirements for exports to ***all destinations worldwide*** of certain gate all-around field effect transistor ("GAAFET") technology, quantum computing items, advanced semiconductor manufacturing equipment ("SME"), additive manufacturing equipment, and aerospace coating systems technology.

The new measures are notable not only for their restrictive application to all destinations in the world—an unusual type of control under the EAR—but also for their institution of a new license exception, "Implemented Export Controls" ("IEC"), that allows for exports of the newly controlled items to specified "like-minded" countries that have instituted comparable export controls that are harmonized with U.S. controls.

The new controls are effective immediately as of September 6, 2024, with the exception of controls over certain quantum items, which take effect November 5, 2024, the cutoff date for public comment on the IFR.

Here are five key takeaways on the new rule:

1. **The IFR imposes worldwide export controls targeting certain GAAFET, quantum, advanced SME, additive manufacturing, and aerospace coating systems items.**

   - BIS is issuing new unilateral controls under authority of Section 1758 of the Export Control Reform Act of 2018, which empowers BIS to target "emerging and foundational technologies" (referred to in BIS parlance as "Section 1758 technologies").

   - The IFR targets certain equipment, materials, software, and technology relating to GAAFET integrated circuit structures, quantum computing, advanced semiconductor SME, additive manufacturing, and aerospace coating systems.

   - The controls apply to all covered items that are "subject to the EAR," *i.e.,* (a) located in the United States; (b) of U.S. origin, wherever located; (c) of non-U.S. origin and incorporating more than a "de minimis" amount of controlled U.S. content; and (d) of non-U.S. origin and the "direct product" of certain technology or software subject to the EAR.

- The IFR requires any person worldwide that seeks to export, reexport, or transfer (in-country) covered items to any destination in the world to seek a BIS export license, unless a license exception (such as License Exception IEC) applies.

- These new controls apply even to Canada, which historically has been exempt from many U.S. export controls, and Australia and the United Kingdom, which for which BIS recently lifted most export controls in implementation of the AUKUS security pact.

- The IFR controls the items at issue by establishing several new Export Control Classification Numbers ("ECCNs") on the Commerce Control List ("CCL"), and amending certain other ECCNs, as follows:

  - **2B910, 2D910:** Additive manufacturing equipment designed to produce metal or metal alloy components, and software for the development or production of such equipment

  - **2E903:** Technology for the development or production of "coating systems" designed to protect certain ceramic matrix composites and designed to operate at temperatures exceeding 1,373.15 K (1,100° C)

  - **3A901, 3D901:** Complementary metal oxide semiconductor (known as "cryogenic CMOS") integrated circuits, parametric signal amplifiers operating at low temperatures, and software for development or production of such items

  - **3A904, 3D901:** Cryogenic cooling systems and components, and software for the development or production of such items

  - **3B001.c.1.a, c.1.c, q; 3D001; 3D002:** Equipment for isotropic dry etching and anisotropic dry etching, certain extreme ultraviolet masks and reticles, and software for the development or production of such items and use of certain such items, which are useful in GAAFET production

  - **3B901, 3D901:** Scanning electron microscope equipment for imaging integrated circuits, and software for the development or production of such items

  - **3B904:** Cryogenic wafer probing equipment

  - **3C907, 3C908, 3C909:** Materials relating to silicon and germanium isotopes (which are needed to develop spin-based quantum computers)

  - **3D907:** Software to extract "GDSII" or equivalent data (*i.e.,* a database file format for data exchange of integrated circuit artwork or integrated circuit layout artwork)

  - **3E905:** Technology for the development or production of integrated circuits using GAAFET structures

  - **4A906, 4D906:** Quantum computers and related electronic assemblies and components, and software for the development or production of qubits and quantum control components

- The IFR provides that, in evaluating license applications pursuant to these worldwide destination controls, BIS will adhere to the following licensing policy:

  - Destinations in BIS Country Groups A:1, A:5, and A:6: Policy of approval

  - Destinations in BIS Country Groups D:1 and D:5 (including China): Policy of denial

  - Rest of world: Case-by-case consideration

2. The IFR establishes License Exception IEC for specified "like-minded countries," with certain other license exceptions available.

- The IFR establishes License Exception IEC authorizing exports of the newly controlled items to "like-minded countries" that have imposed similar controls, a novel approach.

- The list of controlled items and IEC eligibility for various countries is set out here. Notably, eligibility is quite narrow as of this time, and in many cases the list excludes countries that are considered close allies.

- The conferral of license exception privileges on strategically aligned countries is not altogether unprecedented, as the EAR provides for such privileges for countries that participate in multilateral export control regimes (such as the 42-country Wassenaar Arrangement) and major defense partners of the United States.

- What makes License Exception IEC notable, however, is the clear step towards plurilateralism apart from prevailing multilateral structures noted above, with an emphasis on a small group of "like-minded countries" that have implemented harmonized controls.

- This seems likely to create a strong incentive for U.S. partners to adopt similar controls, and marks a milestone in the perhaps inexorable move towards Cold War era-type trading blocs restricting the flow of advanced technologies.

- In addition to License Exception IEC, the covered items also are eligible for export (subject to certain limitations) under License Exceptions TMP, RPL, GOV, and TSU.

3. The IFR allows for certain cross-border technical collaboration and releases of technology to foreign national employees, subject to certain key limitations.

- The IFR expressly acknowledges the reliance of companies in the impacted industries on cross-border research and development and on foreign talent with critical technical knowledge.

- Based on this, the IFR sets out certain exclusions and a general license authorizing certain such activity, including releases to foreign nationals that otherwise would be controlled as "deemed exports" to their country of nationality.

  – **Deemed export exclusions.** The IFR excludes certain releases to foreign nationals of controlled technology and source code that otherwise would be regulated as deemed exports, as follows:

    ■ *Grandfathered employees:* The controls do not apply to deemed exports to employees already employed by a company as of September 6, 2024, with the exception of the release of 3E905 GAAFET technology released to persons whose most recent country of citizenship or permanent residency is in Country Groups D:1 or D:5. (See below regarding the related general license authorizing releases to such persons.)

    ■ *Exclusion for other deemed exports:* Releases of technology and source code controlled under the following ECCNs are excluded, except for persons whose most recent country of citizenship or permanent residency is in Country Groups D:1 or D:5: 2D910; 2E910; 3D001 (for masks/reticles in 3B001.q); 3D901; 3D907; 3E001 (for 3B001.q); 3E901; 3E905; 4E906.

    ■ *Full exclusion:* All releases of technology and source code for anisotropic dry plasma etch equipment and isotropic dry etch equipment are excluded from the deemed export rule.

  – **General license.** A new general license at 15 C.F.R. Part 736, Supplement No. 1, General Order No. 6 authorizes activities, subject to a reporting requirement, as follows:

    ■ *Authorized activity: The general license authorizes the following activities:*

      – *3E905 (GAAFET technology) / Country Groups A:5 and A:6:* Exports to countries in Country Groups A:5 and A:6.

      – *3E905 (GAAFET technology) / grandfathered employees:* Releases to employees already employed as of September 6, 2024, whose most recent country of citizenship or permanent residency is in Country Groups D:1 or D:5.

- *Quantum/employees:* Releases of controlled quantum technology and source code to employees whose most recent country of citizenship or permanent residency is in Country Groups D:1 or D:5.

- *Reporting requirement:* With respect to exports and releases of controlled 3E905 GAAFET technology, the general license requires submission to BIS of an annual report detailing activity taken under authority of the general license, as well as a report regarding the voluntary or involuntary termination of any grandfathered employee who had received such technology pursuant to the general license.

4. The new export controls will have significant implications for CFIUS foreign investment review.

- As a result of the IFR, most foreign investment in U.S. businesses that design, fabricate, develop, test, produce, or manufacture the newly controlled items will be subject to mandatory review by the Committee on Foreign Investment in the United States ("CFIUS").

- This is because (a) all of the controlled items are subject to "National Security" and "Regional Stability" controls and thus are considered "critical technologies" under the CFIUS regulations, and (b) there is an export licensing requirement for all destinations worldwide.

- This means that all foreign investment in U.S. businesses with a sufficient nexus to the newly controlled items will be subject to mandatory CFIUS review, unless the foreign investor is an "excepted investor" under the CFIUS regulations or another exception applies.

- This raises the question of whether the U.S. Department of the Treasury, in its role as chair of CFIUS, will amend the CFIUS regulations to provide that investments by investors eligible under License Exception IEC are not subject to a declaration requirement.

5. The IFR makes a notable change to the structure of the CCL.

- Heretofore, items classified in the "900 series" of the CCL (*i.e.,* items with an ECCN in which a "9" is the second digit) were subject to a low level of export control, mainly consisting of narrowly targeted anti-terrorism and regional stability controls.

- Notably, in issuing the new worldwide controls, BIS mostly has controlled the items through new ECCNs in the 900 series.

- Therefore, exporters should not automatically assume that 900 series classifications are subject to a low level of control.

The IFR has ushered in sweeping worldwide controls for GAAFET, quantum, advanced SME, additive manufacturing, and aerospace coating systems technologies, as well as a new era of plurilateral preferential treatment, presenting challenges for exporters and investors in a fraught geopolitical environment.

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