

**Comments of the
Semiconductor Industry Association**

On

**The Interim Final Rule Entitled
“Export Controls on Semiconductor Manufacturing Items”**

88 Fed. Reg. 73424 (Oct. 25, 2023)

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The Semiconductor Industry Association (SIA) submits these comments in response to the request from the Bureau of Industry and Security (BIS) in the above-captioned rule. The Interim Final Rule entitled *Export Controls on Semiconductor Manufacturing Items* (SME IFR) amended the Export Administration Regulations (EAR) by refining the scope of the interim final rule released on October 7, 2022 (October 7 IFR) to more effectively achieve national security objectives while responding to public comments about the controls adopted in the October 7 IFR.

Part I of these comments contains introductory and background comments about SIA and semiconductors. Part II contains general comments about the SME IFR and related Interim Final Rule entitled *Implementation of Additional Export Controls: Certain Advanced Computing Items; Supercomputer and Semiconductor End Use; Updates and Corrections* (AC/S IFR) including requests for BIS to consider. Part III contains comments, questions, and requests about specific provisions in the SME IFR for BIS to consider.

Part I -- Introduction and Background

SIA has been the voice of the U.S. semiconductor industry for over 40 years. SIA member companies represent more than 99% of the U.S. semiconductor industry by revenue and are engaged in the research, design, and manufacture of semiconductors. The U.S. is the global leader in the semiconductor industry today. Continued U.S. leadership in semiconductor technology will drive economic strength, national security, and global competitiveness. More information about SIA and the semiconductor industry is available at www.semiconductors.org.

Semiconductors are complex products critical to the functioning of everyday consumer electronics, communications, and computing devices in the automotive, industrial, financial, medical, retail, and many other sectors of the economy. They are also critical components for future technologies, such as artificial intelligence, quantum computing, and 5G/6G telecommunications. Few industries, if any, have a supply chain and

development ecosystem as complex, geographically widespread, and interdependent as the semiconductor industry. A joint report¹ by the Boston Consulting Group (BCG) and SIA found that more than 120 countries were involved as an exporter or importer of semiconductor products. The United States is the world leader in this global market. Semiconductors are consistently one of the United States' top exports. In 2022, U.S. exports of semiconductors totaled \$61.1 billion, ranking fifth highest behind only refined oil, airplanes, crude oil, and natural gas.

Domestically, maintaining a strong U.S. semiconductor research, design, manufacturing, and supplier base is both an economic security and a national security imperative. As stated in both the House and Senate versions of the 2021 National Defense Authorization Act: *"The leadership of the United States in semiconductor technology and innovation is critical to the economic growth and national security of the United States."*² Given how important the economic vitality and competitiveness of the U.S. semiconductor industry is to national security, as a general matter, it is critical to ensure that U.S. export controls are narrowly tailored and designed to achieve specific national security objectives. We therefore strongly encourage that government work closely with industry to ensure that U.S. policies are crafted in a manner that both enhances our national security while also continuing to enable the semiconductor industry in the U.S. to grow and innovate. To that end, SIA welcomes Secretary Raimondo's recent announcement regarding the reestablishment of the President's Export Council Subcommittee on Export Administration (PECSEA) to "gather insight from key stakeholders to ensure our controls are carefully tailored to maximize our national security impact while advancing U.S. technological leadership"³ as well as the subsequent request for nominations.⁴

Overseas markets play a crucial role in this capital-intensive industry, comprising more than 80% of U.S. semiconductor sales. Access to global markets is therefore needed to ensure that U.S. semiconductor companies are able to continually fund the very large R&D investments and capital expenditures that are required to maintain U.S. technology ahead of global competitors, a phenomenon that a BCG report⁵ termed the "virtuous innovation cycle." It is therefore notable that, in its recently released assessment of the microelectronics industrial base in the U.S., the Department of Commerce

¹ *Strengthening the Global Semiconductor Supply Chain in an Uncertain Era*, BOSTON CONSULTING GROUP, April 2021, https://www.semiconductors.org/wp-content/uploads/2021/05/BCG-x-SIA-Strengthening-the-Global-Semiconductor-Value-Chain-April-2021_1.pdf.

² H.R. 6395 § 1824(b) and S. 4049 § 1098(b).

³ "Remarks by Commerce Secretary Gina Raimondo at the Meeting of the President's Export Council," U.S. DEPARTMENT OF COMMERCE, Nov. 29, 2023, <https://www.commerce.gov/news/speeches/2023/11/remarks-commerce-secretary-gina-raimondo-meeting-presidents-export-council>.

⁴ *Notice of Reestablishment of the President's Export Council Subcommittee on Export Administration and Solicitation of Nominations for Membership*, U.S. DEPARTMENT OF COMMERCE, BUREAU OF INDUSTRY AND SECURITY, Jan. 9, 2024, <https://www.govinfo.gov/content/pkg/FR-2024-01-09/pdf/2024-00190.pdf>.

⁵ *How Restrictions to Trade with China Could End US Leadership in Semiconductors*, BOSTON CONSULTING GROUP, March 2020, https://web-assets.bcg.com/img-src/BCG-How-Restricting-Trade-with-China-Could-End-US-Semiconductor-Mar-2020_tcm9-240526.pdf.

acknowledged that “export controls, by limiting the size of the addressable market, may reduce...funds available for corporate R&D.”⁶

Revenue from sales in China is particularly critical for the success of U.S. semiconductor firms across the industry ecosystem, as China remains the single largest market for semiconductors, accounting for 31% of global sales and 35% of U.S. chip sales in 2022. It is also the largest market for the sale of semiconductor manufacturing equipment. With the revenue needed to maintain U.S. technology leadership impacted by U.S. government restrictions, we strongly encourage the U.S. government to actively pursue proactive trade and economic policies aimed at opening and expanding market access for semiconductors in third countries – namely to grow the addressable market outside of China. We likewise urge the U.S. government to address trade barriers that impact our companies’ ability to operate their complex global supply chains and ultimately sell their semiconductor products in foreign markets.

It is also critical that U.S. export controls are implemented in a multilateral manner, such that they do not undermine innovation and the technology base in the United States, by disallowing U.S. companies from selling to overseas customers or in certain markets when their foreign competitors are unencumbered from selling to those same customers or markets. As the Commerce Department has repeatedly stated, multilateralism is a fundamental factor in the effectiveness of export controls. But while we acknowledge BIS’s well-meaning efforts to engage with U.S. allies and partners towards achieving multilateral and plurilateral export control alignment, the results of these efforts so far fall well short of the rhetoric. The reality is that U.S. companies remain severely disadvantaged in the global marketplace due to the unilateral controls implemented in the October 7 IFR and AC/S IFR. And even when other countries have adopted similar lists of items subject to export controls, those other governments have not implemented end-user and end-use controls similar to BIS controls in Part 744 of the EAR. Therefore, companies whose products are subject to U.S. export controls face a diminishing market that provides opportunities for growth by companies that are not subject to U.S. export controls. In other words, while the size of the total addressable market for U.S. semiconductor products has contracted, the total addressable market for non-U.S. semiconductor products is growing. This is true not only for those products subject to U.S. export controls, but also for products that are not subject to export controls due to the broader chilling effect that such controls have on the global market. Our comments will address these unintended, but very real, consequences in more detail below.

Finally, SIA and our member companies recognize the need to protect national security and believe maintaining a healthy U.S. semiconductor industry is an essential component to achieving that goal. To that end, SIA has long been a partner of the U.S.

⁶ *Assessment of the Status of the Microelectronics Industrial Base in the United States*, U.S. DEPARTMENT OF COMMERCE, BUREAU OF INDUSTRY AND SECURITY, OFFICE OF TECHNOLOGY EVALUATION, Dec. 2023, <https://www.bis.doc.gov/index.php/documents/technology-evaluation/3402-section-9904-report-final-20231221/file>

Government in providing support and feedback regarding export control policy, particularly with respect to semiconductors. SIA appreciates the opportunity to provide its comments, questions, and requests with respect to the AC/S IFR and SME IFR.

Part II -- General Comments

Comment II.A: BIS should consider the unintended consequences of the AC/S IFR and SME IFR, in particular, that these rules accelerate the design-out of U.S.-origin products and technology from global supply chains.

Export controls should consider foreign availability of controlled commercial products to avoid creating incentives for the development of competing technologies outside the U.S. If controls are not modernized as technologies and national security concerns evolve – which includes decontrols where appropriate in light of future developments – the broad application of such controls disincentivize investment in the U.S. and risks ceding U.S. leadership to global competitors by “designing out” U.S.-origin technology from global technology supply chains.

As U.S. export control rules grow increasingly complex, and the “small yard” to which these rules apply grows ever broader, many foreign customers are increasingly opting to source non-U.S. technology, software, components, and equipment to avoid the risk of “tainting” their foreign-made items. That is, even foreign customers that are not directly affected by the rules are making business decisions to avoid U.S.-branded content (i.e., that which is exported from the U.S. and sold by a U.S. company) in order to reduce their risk of shipment delays or supply chain disruptions due to current or future U.S. export controls that they cannot fully understand. This over-control is unintended and harmful to the U.S. industrial base, particularly where there is availability of competitive non-U.S. technology, software, components, and equipment. These risks exist across the different subsets of the semiconductor supply chain and are amplified by the application of extraterritorial unilateral controls like the foreign direct product rule (FDPR).

Export controls also factor into procurement and investment decisions of governments and companies worldwide. The prior experience of the machine tool industry, the satellite industry, and others should be carefully considered, as there may be lessons to be learned on how export controls contributed to procurement and investment decisions, to the possible detriment of the affected U.S. industry. Implementation of multilateral and plurilateral controls may mitigate the negative impact, but if U.S. controls are more extensive and more restrictive than similar controls imposed by other governments, the negative impact on U.S. industry will persist.

BIS should also consider that the comparative advantage held by the U.S. may be at risk if China develops an entire ecosystem of chips and chipmaking equipment that is “good enough” to replace incumbent suppliers in the technologies of the future – such

as electric vehicles and the IoT – not only in the Chinese domestic market but globally.⁷ Evidence exists that Chinese competitors are making progress to that end, posing a serious challenge to continued U.S. semiconductor leadership globally. Exacerbating this dynamic is the lack of proactive U.S. trade and economic policies to open new markets for U.S.-origin semiconductor products, while China continues to expand its network of trade agreements and its global economic influence via the Belt and Road and Digital Silk Road initiatives.

More specifically, at the heart of the October 7 IFR, the SME IFR, and the AC/S IFR, is an effort to deter China from making progress toward leading-edge technology process nodes. However recent product announcements demonstrate that China is, in fact, making technological progress despite U.S. and allied restrictions.⁸ Similarly, chip design is one of the U.S. and its allies' greatest strengths. Design of microprocessors, artificial intelligence (AI) accelerators, and smartphone chips historically has been dominated by U.S. and allied companies. Likewise in this segment of the industry, evidence suggests that foreign competitors are developing alternatives, challenging the underlying assumption that the U.S. will necessarily maintain its leadership.

China's indigenous tool market is also experiencing rapid growth, as Chinese foundries replace foreign-made equipment with domestic alternatives in the wake of restrictions. According to market analysis, nearly half (47.25%) of all machinery equipment tenders by Chinese foundries from January to August 2023 were won by local manufacturers.⁹ In this case, restricting the ability of companies subject to U.S. export controls to service the installed base of tools already in Chinese fabs is forcing Chinese legacy chip producers – ostensibly not the focus of the regulations – to replace tools manufactured by U.S. and western-headquartered companies with Chinese domestic equipment, hastening the development of domestic “good enough” alternatives which are then not subject to the jurisdiction and oversight of the U.S. and allies. It runs counter to the expressed purpose of the rules and could contribute to the Chinese stated goal of achieving self-sufficiency.

Overbroad U.S. controls also create an incentive for China to invest in legacy

⁷ Jingyue Hsiao, *Major China-based semiconductor equipment providers form strategic investment venture*, DIGITIMES ASIA, Jan. 5, 2024, <https://www.digitimes.com/news/a20240105VL202/china-investment-semiconductor-equipment.html>; Jacky Wong, *Surpassing Tesla, China's BYD Will Take On the World in 2024*, WALL STREET JOURNAL, Jan. 2, 2024, <https://www.wsj.com/business/autos/chinas-ev-champion-byd-will-take-on-the-world-in-2024-9da4cfde>.

⁸ Anton Shilov, *Huawei's New Mystery 7nm Chip from Chinese Fab Defies U.S. Sanctions*, TOM'S HARDWARE, Sept. 3, 2023, <https://www.tomshardware.com/news/huaweis-new-mystery-7nm-chip-from-chinese-fab-defies-us-sanctions>; Charlotte Trueman, *Chinese-made 7nm chips in Huawei phone raise questions over U.S. export ban*, COMPUTERWORLD, Sept. 8, 2023, <https://www.computerworld.com/article/3706373/chinese-made-7nm-chips-in-huawei-phone-raise-questions-over-us-export-ban.html>; Jeff Pao, *SMIC bypasses US curbs to make 7nm chips*, ASIA TIMES, Sept. 5, 2023, <https://asiatimes.com/2023/09/smic-bypasses-us-curbs-to-make-7nm-chips/>.

⁹ Fanny Potkin and Yelin Mao, *Chinese chip equipment makers grab market share as US tightens curbs*, REUTERS, Oct. 18, 2023, <https://www.reuters.com/technology/chinese-chip-equipment-makers-grab-market-share-us-tightens-curbs-2023-10-18/>.

technologies, with the unintended consequence of artificially repressing Western companies' investment in legacy technologies. Traditionally, when controls have been limited to "cutting-edge" technology on a narrow set of dual-use cases, there is a relatively small commercial economic incentive for a potential competitor to make the significant investments necessary to approach the cutting edge. Instead, what typically happens is that the potential competitor operates in "follower" mode, and feeds on the domestic commodity portion of the market with modest investment and a cheap local supply chain. These vendors may use this learning to try to "bootstrap" themselves to the higher performance part of the market, but in the semiconductor industry, that tends to be a constantly moving target, and the investments required tend to be daunting. The gap may slowly close over time – but also may persist for as long as the technology advances.

However, if export controls are too aggressive and try to control the lower performance items, then the market size for the foreign supplier expands significantly. This expanded market justifies a lot more investment by the domestic suppliers in the country of concern. The unintended consequence is that foreign competitors seize market share in legacy technologies, to the detriment of U.S. suppliers.

Comment II.B: BIS should implement licensing policy evenly.

Unevenly applied licensing policy can distort the market, creating winners and losers unintentionally.

We therefore recommend that when BIS grants a license for a particular product, BIS should fast-track licenses for competitors' comparable products. Ideally, the license effective dates should be aligned within product types, to ensure that all competitors have an equal opportunity to bid for customer business. This alignment is critical to ensure no party receives an unfair competitive advantage due to inconsistent licensing decisions, particularly given that semiconductor products are tightly integrated into finished products and "second sourcing" is difficult and expensive, and therefore rarely occurs.

Also, it would be helpful for BIS to maintain a register of published licenses by product category and key features. Currently, companies have no way of knowing whether a particular product or technology will be granted a license, except through rumors and by conducting market research. Companies that do not apply for licenses or whose licenses are not given equal treatment are then at a severe disadvantage to competitors who are more aggressive about filing, or more fortunate in having their licenses approved by BIS.

Comment II.C: BIS should implement improved mechanisms for interaction with industry.

While we welcome the announcement regarding the PECSEA, we encourage the Commerce Department and the Administration to issue proposed rules when possible and, more broadly, to develop additional mechanisms to facilitate regular engagement with industry stakeholders in the development of future export controls.

Comment II.D: We ask BIS to further clarify the complex new regulations.

In comments on the October 7 IFR, we noted the complexity of new regulations including the enhanced foreign direct product rules. The increasing complexity under the AC/S IFR and SME IFR severely impacts broad and informed compliance. While we appreciate the FAQs published by BIS on December 29, 2023,¹⁰ and understand that plans to issue an upcoming corrections and clarifications rule, there are a number of questions regarding these rules that BIS has not yet addressed:

- BIS should further clarify the definition of “headquartered” company. The definition of “headquartered” could go two different directions: either (1) a simple, objective test, like situs of incorporation, or (2) a multipart, subjective “nexus” kind of test. Which direction does BIS intend to go, and does BIS plan to publish a FAQ or a rule change to further clarify this definition?
- BIS should issue a formal interagency review process for the review of notification requirements submitted in SNAP-R for License Exception NAC. We suggest that the review includes an appeals process for filers in scenarios where BIS requires a license rather than providing a confirmation of License Exception NAC eligibility.
- We request that BIS publish the applicable subparagraphs of z.1 to z.4 of ECCN 4A003.z, as these subparagraphs appear to be missing in the AC/S IFR.
- BIS should clarify that, in the case of in-country transfers, repair or storage of items at another location is not a change in end-use. Repair or storage of an item that has already been authorized should not require reauthorization. A more restrictive interpretation would cause unnecessary business interruptions and compliance costs without serving the stated policy objective of the regulations.

Finally, it is important to recognize that, given the complexity of the regulations, reasonable parties can differ in interpreting the license requirements. Where lack of clarity leads to differing interpretations, companies with similar products can end up taking different compliance approaches, which in turn leads to inconsistent outcomes

¹⁰ *Frequently Asked Questions (FAQs) for “Export Controls on Semiconductor Manufacturing Items” (SME IFR) and “Implementation of Additional Export Controls: Certain Advanced Computing Items; Supercomputer and Semiconductor End Use; Updates and Corrections” (AC/S IFR)*, U.S. DEPARTMENT OF COMMERCE, BUREAU OF INDUSTRY AND SECURITY, Dec. 29, 2023, <https://www.bis.doc.gov/index.php/documents/policy-guidance/3434-2023-frequently-asked-questions-003-clean-for-posting/file>.

and could distort the market.

Comment II.E: We ask that BIS retain and expand the deemed export exclusion.

In the preamble to both the AC/S IFR and SME/IFR, BIS requests comments on the deemed export exclusion to licensing requirements for foreign nationals. Deemed exports and reexports are excluded from the license requirements related to regional stability reasons for control in Section 742.6(a)(6)(iv) of the EAR.

It is important for U.S. commercial innovation and leadership to allow companies to continue to recruit and retain the best and brightest talent and avoid overly broad restrictions on the nationalities of available talent. As SIA has previously noted, one of the key factors driving growth and innovation in the U.S. semiconductor industry and across the broader tech sector is the availability of highly educated professionals – from both the U.S. and abroad – to create jobs and develop new technologies.¹¹ In many respects, the U.S. is already falling behind in the global competition for a skilled semiconductor workforce.

In the U.S., there is a significant gap between the number of U.S. persons qualified for technical positions in the semiconductor industry and the number of positions U.S. companies need to fill. To bridge the workforce gap, U.S. companies need access to the best talent, which may often be a non-U.S. person.

In July 2023, SIA and Oxford Economics published a report highlighting the significant shortage of technology workers in the semiconductor industry. The report found that the United States lacks a sufficient number of technicians, computer scientists, and engineers, with a projected shortfall of 67,000 of these workers in the semiconductor industry by 2030 and a gap of 1.4 million such workers throughout the broader U.S. economy. One of our core recommendations is to pursue policies designed to retain and attract more international advanced degree students within the U.S. economy, for the following reasons, among others:

The process of growing the domestic pipeline of U.S.-citizen students pursuing advanced degrees in STEM fields will take years or decades to bear fruit. In the meantime, we estimate that approximately 16,000 master's- and PhD-level international engineers are leaving the U.S. each year. For the semiconductor industry alone, these departures contribute to a projected total gap of approximately 17,000 master's and PhD engineers by the end of the decade. Simply put, the workforce gap for individuals with advanced engineering and computer science degrees cannot be realistically addressed for the foreseeable future solely with U.S.-citizen graduates.¹²

¹¹ See: <https://www.semiconductors.org/policies/workforce/>.

¹² *Chipping Away: Assessing and Addressing the Labor Market Gap Facing the U.S. Semiconductor Industry*, SEMICONDUCTOR INDUSTRY ASSOCIATION, July 8, 2023, https://www.semiconductors.org/wp-content/uploads/2023/07/SIA_July2023_ChippingAway_website.pdf.

And while the U.S. struggles to retain engineering graduates educated in U.S. universities, Chinese universities continue to produce more than 77,000 STEM PhD graduates per year.¹³

In light of the workforce shortages and talent retention challenges, the imposition of a license requirement for nationals from the 45 countries specified in Country Groups D:1, D:4, and D:5 (excluding those also listed as A:5 and A:6 countries) to access certain source code and technology, similar to the regional stability controls for specified items on the Commerce Control List, would put U.S. semiconductor companies at a significant competitive disadvantage vis-à-vis global competitors. Even if such a licensing policy were based on a presumption of approval, the process of applying for such licenses alone would discourage the hiring of nationals from these countries, as well as create significant business and operational delays in a fast-paced industry due to the extended timeline from persons being hired to actively working. There are similarly many long-serving, valuable employees of semiconductor firms who are nationals of the restricted countries but reside in the U.S. and partner countries and could be negatively impacted by a new license requirement. Additionally, deemed exports are unique to the EAR. This places U.S. companies at a particular disadvantage in comparison to our peers.

We therefore appreciate BIS's thoughtful approach on deemed exports and deemed reexports in these regulations – namely the exclusion of such requirements from the regional stability controls in Section 742.6(a)(6)(iv) – which will help to ensure that U.S. companies are able continue recruiting and retaining the best talent for developing and producing the next generation of technologies. However, we note that the effectiveness of the deemed exports and reexports exclusion is severely undermined without implementing exclusions for similar technology ECCNs that can also be required for the development and production of ICs, including advanced node ICs. Indeed, we recommend that BIS consider a similar exclusion for ECCNs 3E002 (microprocessor technology) and 4E001 (computer technology under 4E001 not limited to products classified under 4A090).

For example, there is a considerable overlap between ECCN 3E001 for development of chips controlled under 3A090 and ECCN 3E002. A similar overlap exists between ECCN 4E001 for the development of electronic assemblies controlled under 4A090, and 4E001 for computers controlled under ECCN 4A003. Retaining a licensing requirement for deemed exports of technology controlled under ECCN 3E002 and 4E001 for computers controlled under 4A003 significantly undercuts the deemed export exclusion under the AC/S IFR. In general, the deemed export licensing experience of SIA member companies with respect to ECCN 3E002 and 4E001 for computers controlled under 4A003 has led to negative and counterintuitive outcomes.

¹³ *China is Fast Outpacing U.S. STEM PhD Growth*, CENTER FOR SECURITY AND EMERGING TECHNOLOGY, Aug. 2021, <https://cset.georgetown.edu/wp-content/uploads/China-is-Fast-Outpacing-U.S.-STEM-PhD-Growth.pdf>.

To the detriment of U.S. chip designers, BIS's frequent practice of imposing overly restrictive license conditions has led to situations and outcomes in which licenses are granted, but in practice cannot be used, because the overly restrictive conditions prevent the applicant from performing the intended job description. In several cases, deemed export licenses for non-U.S. nationals with world-class expertise have included conditions so restrictive as to make the licenses practically useless. This contributes to the broader workforce shortage and talent gap in the United States described above.

PART III -- Comments on Specific Provisions of the SME IFR

SIA also wishes to offer these additional comments on the SME IFR:

i. We ask that BIS consider remedying the current misalignment with the controls implemented by key allies.

SIA maintains that multilateral controls are more effective than unilateral controls and that they ensure that U.S. companies are not placed at a disadvantage in the global marketplace. We recognize that the U.S. is taking steps to implement multilateral and plurilateral controls with selected allies, for example through controls on a common list of equipment described in the SME IFR. However, significant differences remain between BIS rules and similar controls promulgated by other governments, which ultimately put companies whose products are subject to the EAR at a competitive disadvantage. For example, U.S. regulations are more complex and comprehensive than current controls in allied countries, which do not have equivalent controls to the U.S. Entity List or U.S. end-user and end-use controls, for example.

In the case of semiconductor manufacturing equipment, while the United States, Netherlands, and Japan agreed upon a specific list of semiconductor manufacturing equipment in ECCN 3B001, 3B002, and related ECCNs that would require a license to export to China, the end-use controls in sections 744.6(c)(2)(i) and (ii) (U.S. person support for advanced node IC production in China); 744.6(c)(2)(iii) (U.S. person support for newly controlled 3B001 equipment in China); 744.23(a)(2) (exports for advanced node production in China); and 744.23(a)(4) (exports for SME production in China) are completely unilateral.

The Dutch government has implemented in its export control laws such catch-all and "is informed" authorities in Articles 2(1) and 3(1) of its Strategic Services Act (*Wet Strategische diensten*). The Japanese government has implemented similar catch-all and "is informed" authorities in its export control laws and regulations through a combination of provisions, namely those in Article 25 (1) and (3) of the Foreign Exchange and Foreign Trade Act ("FEFTA"); Article 9(2)(vi) and (vii) of the *Ministerial Order on Invisible Trade Connected with Visible Trade* (MITI Order No. 8 of 1998, as amended); METI Notice Regarding Technology Transfers that Require a License Under FEFTA Article 25(1) and Foreign Exchange Order 17(2) at 2; Article 4(1)(iv)(b) of the *Export Trade Control Order* (Cabinet Order No. 378 of 1949, as amended) for the export

of goods; and Article 9(2)(vii)(b) of the *Ministerial Order on Invisible Trade Connected with Visible Trade* (MITI Order No. 8 of 1998, as amended). Neither is co-extensive with the requirements of the EAR. In other words, neither the Dutch government, the Japanese government, nor any other government prohibit their citizens or companies incorporated under their legal systems from providing support to advanced node IC production in China, supporting tools for advanced node IC production, or exporting otherwise uncontrolled items for the development or production in China of otherwise uncontrolled SME. This means that the effectiveness of the U.S. unilateral controls is significantly limited, because non-U.S. person companies may legally engage in activities that U.S. companies cannot.

The October 7, 2022 and revised October 17, 2023 rules impose end-use controls and prohibitions on U.S. support for advanced fabrication facilities in China. This means that U.S. companies are unable to export *any* semiconductor manufacturing equipment, even equipment that are not subject to list-based controls, to advanced fabrication facilities in China, or to provide support (e.g., service) for such equipment, to the extent that the equipment would be used to develop or produce advanced logic, DRAM, or 3D NAND chips in China. By contrast, foreign competitors from Japan, Korea, Taiwan, Israel, and the Netherlands may export equipment not subject to list-based controls to advanced fabs in China, as well as to support such equipment. Not only do these unilateral controls mean that they are generally less effective at stopping what the U.S. government seeks to stop in China, but the asymmetry creates structural incentives for non-U.S. persons and non-U.S. companies to perform the same services that U.S. companies are no longer able to provide in China. In other words, the asymmetry undermines the competitiveness of U.S. semiconductor manufacturing equipment companies while failing to achieve the stated national security objectives of this regulation due to the ability of foreign competitors to continue supplying equipment and support to advanced fabs in China. Congress recognized this very point in section 4811(4) of the Export Control Reform Act of 2018 (ECRA), which underscored that “export controls applied unilaterally to items widely available from foreign sources generally are less effective in prevent end-users from acquiring those items.”

We therefore strongly request that BIS do all that is possible to make the new controls both effective and not counter-productive. Every dollar earned by our non-U.S. competitors because of the existence of U.S. unilateral controls, regardless of licensing policies, is invested in their research and development efforts that could ultimately lead to the erosion of U.S. semiconductor leadership.

Our request for multilateral controls is also a statutory requirement. Specifically, section 4812(b)(3) of ECRA explicitly requires the President to “seek to secure the cooperation of other governments and multilateral organizations to impose control systems that are consistent, to the extent possible, with” controls imposed by the U.S. In addition, ECRA § 4811(3) requires that any controls imposed under section 4812, which include end-use controls, “must be evaluated on an ongoing basis . . . to avoid negatively affecting [U.S.] leadership in the science, technology, engineering, and manufacturing sectors,

including foundational technology that is essential to innovation.”

We therefore recommend that BIS commit to working quickly and aggressively with the allies to convince them to adopt comparable controls. Specifically, to ensure a level playing field, multilateral (and plurilateral controls) should be coordinated in the following respects:

1. All participating member states should control the same list of items;
2. All participating member states should implement the same license exceptions/general licenses for controlled items;
3. All participating member states should implement the same licensing policy;
4. All participating member states should implement the same end-user and end-use controls; and
5. All participating member states should implement a “no undercut” rule, so that a license issued by one participating member state will not “undercut” a license denial by another participating member state.

Only with such efforts and results in the near term will the EAR’s end-use controls be both effective and not counter-productive and ECRA’s mandatory obligations be satisfied.

ii. Licensing Policy

The SME IFR attempts to level the playing field for U.S. companies by changing the license review standard from a presumption of denial to a presumption of approval if an applicant can demonstrate there is a foreign-made item that performs the same function as the tool that a license is being sought for. While the spirit of this attempt to level the playing field is appreciated, the license review standard does not achieve this objective. First, U.S. companies must still seek a license, and manage the related documentation burdens both internally and vis-à-vis their customers, while foreign competitors do not. This in turn creates a global deterrent for purchasing a U.S. made tool. Second, many companies have experienced years-long waiting periods to receive licenses – yet another significant deterrent for purchasing U.S. equipment. Third, there is a massive administrative burden and cost to U.S. companies in having to prepare thousands of these license applications. Fourth, the maintenance of end-use controls/U.S. support prohibitions is arguably unnecessary now that the U.S. has published controls on the most advanced semiconductor equipment.

iii. Temporary General License

- a. BIS should clarify the term "ultimate end use" in the Temporary General License (TGL), especially regarding whether it includes software and technology. Guidance on the scope of "ultimate end use" concerning technology transfer would be beneficial. Clarification is required around what constitutes knowledge of the "ultimate end use." It is currently unclear what is expected of exporters who are not aware of "ultimate end use" – for example, when an exporter is shipping to an original design manufacturer (ODM) who will build servers and then sell those servers to distributors who will then sell to the distributor's customers.
- b. Likewise, BIS should clarify whether the TGL can be used when exporters do not know the "ultimate end use" location but obtain export authorizations to ship legally to D:1, D:4, or D:5 destinations if needed. For instance, can a U.S. company use TGL to send 3A090 items to its subsidiary in China for inspection, testing, or quality assurance for worldwide distribution if the company holds a valid export authorization for any subsequent reexport or in-country transfer to an end user in China?
- c. BIS should explain the relationship between the new TGL and the 2022 TGL. Clarity is needed on whether the 2023 TGL supersedes the expiration of the 2022 TGL, specifically whether companies can use the new TGL to continue or resume activities meeting the TGL product and end-use scope.
- d. BIS should confirm either in an FAQ or preferably in the corrections and clarifications rule that recipients can be located in countries that are listed in country groups D:1 and D:4. (This appears to be an accidental omission.) As written, shipments are limited to exports, reexports, and transfers to D:1, D:4, and D:5 (minus A:5, A:6) when the recipient is located in, but not headquartered in, Macau or D5. This draft limits the TGL to recipients located in Macau or D:5, though we believe BIS's intent is to permit exports, reexports, and transfers to D:1, D:4, and D:5.
- e. The TGL provides authorization for limited supply chain related end-use activities (integration, assembly (mounting), inspection, testing, quality assurance, and distribution) but does not appear to cover customer support. Given that some U.S. headquartered companies may have customer support teams located in countries that require export licenses (Vietnam, China, Kuwait, etc.), it would be sensible for the TGL authorization (or a license exception) to authorize transfer of products to those internal teams to support this ongoing business. Such customer support is of a similar nature to the end uses currently permitted under the TGL.

- f. We also suggest that for in-country transfers, BIS should not require a license for the repair or storage of an item at a secondary location that has already been authorized for export to the country.
- g. We suggest that the TGL should apply to newly created NS- and RS-controlled items in addition to AT-only items so that it has the same scope as the supply chain authorizations it is replacing, and recommend that the scope of the TGL reads as follows:

The items subject to the EAR that are specified on the Commerce Control List (CCL) in supplement No. 1 to part 774 of the EAR that are designated as controlled on the CCL either (i) only for AT reasons; or (ii) for RS and NS reasons and subject to controls in §§ 742.6(a)(6)(i) and 742.4(a)(4), respectively.

- h. The requirements for meeting the “direction” language in Supplement No. 1(d)(1) to Part 736 of the EAR are unclear. BIS should clarify the “direction” requirement in the TGL for certain recipients “developing” or “producing” “parts,” “components,” or “equipment” (as specified in § 744.23(a)(4) of the EAR) at the **direction** of a company that is headquartered in the United States or a destination specified in Country Group A:5 or A:6 and not majority-owned by an entity headquartered in either Macau or a destination specified in Country Group D:5. In its clarification, BIS should state that a person can satisfy the “direction” requirement by creating and retaining a written document stating that the exports, reexports, and transfers of items subject to the EAR qualify under the TGL. BIS also should clarify that supplier instructions, and other documentation meet the “direction” requirement if such documents in their totality factually demonstrate that the ‘development’ or ‘production’ activities being undertaken in Macau, or a destination specified in Country Group D:5, occur at the direction of a company that is headquartered in the United States or a country in Country Group A:5 or A:6.

iv. **Carveout for Section 744.23(a)(4)**

BIS indicated in its FAQ IV.Q3 and Q4 on the SME/IFR¹⁴ that controlling exports, reexports, and transfers of items subject to the EAR for use in upgrading in China SME already produced by companies headquartered in the U.S. or in A:5/A:6 countries is not part of the policy objective for the revised 744.23(a)(4) controls. Accordingly, as BIS confirmed, the TGL in Supplement No. 1 to Part 736, paragraph (d)(1), authorizes such exports, reexports, and transfers that would otherwise be controlled by 744.23(a)(4) if directed by such a company. This makes sense because the upgraded tools in this context are of a type that could have been exported from the United States without a

¹⁴ “FAQs for SME IFR and AC/S IFR,” U.S. DEPARTMENT OF COMMERCE, BUREAU OF INDUSTRY AND SECURITY, Dec. 29, 2023, <https://www.bis.doc.gov/index.php/documents/policy-guidance/3434-2023-frequently-asked-questions-003-clean-for-posting/file>.

license. As BIS confirmed in the FAQ, this conclusion also makes policy sense because such activities are not in support of the indigenous development or production in China of SME, which is the policy concern Section 744.23(a)(4) was created to address.

To simplify this policy conclusion, SIA recommends that BIS publish a carve-out note, such as the following, to Section 744.23(a)(4) of the EAR to exempt certain upgrades from a license requirement:

Section 744.23(a)(4) does not apply to exports, reexports, or transfers of items subject to the EAR made at the written direction of a company headquartered in the United States or a country in Country Groups A:5 or A:6 for use in upgrading equipment and other items within the scope of Category 3B that had been developed and produced by such companies.

BIS should amend Section 744.23(a)(4) of the SME IFR to create an exemption for mass market encryption commodities described in ECCNs 5A992 and 5D992. Such items including laptop computers, mobile devices, and other, similar items. These items are characterized by broad foreign availability, so that foreign suppliers can easily replace U.S.-origin items. In addition, these items are widely distributed through mass market channels, making effective control difficult or impossible. Finally, excluding items classified under ECCN 5A992 and 5D992 does not harm the policy objectives of Section 744.23(a)(4).

v. Request Clarification on Scope of the Term “Destined for”

Under Topic 45 of the October 17 IFR, BIS advises that an item is “destined for” the destination of a system into which the item is incorporated overseas. Consequently, a supplier would require an export license to supply an item to any destination worldwide if the supplier has “knowledge” that the item will be incorporated into a non-U.S. made system that is “destined for” a restricted end use in a country covered by the end-use restrictions. The BIS guidance departs from traditional export control principles in that the restrictions would not apply with respect to the disposition of systems into which the exported item has been incorporated. Usually, the end use of the item has been the incorporation of the item into the system, at which time the item no longer exists as a tradeable item.

We request BIS clarification as to whether the “destined for” BIS guidance only applies to Section 744.23 end-use restrictions or whether it also applies to other EAR provisions.

vi. SIA Recommends the Use of Consistent Definitions

We request that BIS be consistent in using term definitions, including adding quotes to the term *technology* in Section 744.23(a)(3)(ii)(A) of the EAR so that it is defined in

Section 772.1 of the EAR.

vii. SIA recommends insertion of note referenced in the preamble to the text of the SME IFR to the text of the amended Section 744.6(d)(4).

Section 744.6 (Restrictions on specific activities of “U.S. persons”) includes an important paragraph (d)(4) specifying certain exclusions for natural “U.S. persons”. Although the preamble to the SME IFR references a “new Note to paragraph (d)(4) to provide additional context on when activities of “U.S. persons” are excluded, including providing guidance on how these criteria apply to “U.S. persons” working as freelancers for companies headquartered in the United States or in a destination specified in Country Group A:5 or A:6, on behalf of a company not headquartered in the United States or in a destination specified in Country Group A:5 or A:6, or some combination of these scenarios.” This note does not appear in the amended text of Section 744.6 itself – presumably an inadvertent omission.

* * *

Thank you for the opportunity to comment on the Interim Final Rule. If you have any additional questions or would like to discuss these comments further, please contact SIA via mthornton@semiconductors.org.

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