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Vice President
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January 9, 2019

Matthew S. Borman
Deputy Assistant Secretary for Export Administration
Department of Commerce
1401 Constitution Avenue, NW
Washington, DC 20230

Re: BIS 2018-0024, Review of Controls for Certain Emerging Technologies

Dear Deputy Assistant Secretary Borman:

In accordance with *Federal Register* notices related to the above-referenced docket, the National Association of Manufacturers submits these comments regarding the Commerce Department's current review of emerging technology in connection with the Export Control Reform Act of 2018.

If you have any questions, please do not hesitate to contact me.

Respectfully,

Linda Dempsey

Comments of the National Association of Manufacturers
on the Review of Controls for Certain Emerging Technologies
(Docket BIS 2018-0024)

January 9, 2019

Manufacturers appreciate the opportunity to provide input on the Commerce Department's ongoing effort to implement the Export Control Reform Act of 2018 (ECRA), enacted as part of the John S. McCain National Defense Authorization Act of 2019 (NDAA).

The National Association of Manufacturers (NAM) is the largest manufacturing association in the United States, representing more than 14,000 manufacturers, large and small, in every industrial sector and in all 50 states. Manufacturing employs more than 12.7 million women and men across the country and produced a record $2.33 trillion in output to the U.S. economy through the first half of 2018.

Trade and investment, including exports, are critical for the growth of the U.S. manufacturing sector. Over the last quarter century, manufacturers in the United States have quadrupled exports, which has helped drive a similar quadrupling of U.S. manufacturing output to reach record levels. Today, manufacturers in the United States export about half of U.S. value-added output ($1.35 trillion), helping to support record U.S. manufacturing production and about half of the U.S. manufacturing workforce. Continued expansion in exports and improved global manufacturing competitiveness is vital to enable the highly-productive U.S. manufacturing sector to continue to grow well-paying American jobs by increasing exports and improving U.S. manufacturing competitiveness.

Given that exports are so important for business growth and competitiveness in the U.S. manufacturing sector, the NAM and its members engaged in significant efforts with Congress to update U.S. export control policy and mechanisms that resulted in the passage of ECRA last year. Manufacturers have long urged policymakers to consider carefully any restrictions on U.S. exports given their importance to the health, growth and competitiveness of the sector. At the same time, manufacturers recognize and support the need for narrowly tailored provisions to protect the national security interests of the United States. Those goals were reflected in the new ECRA legislation enacted last year, which lays out clearly U.S. policy to "*use export controls only after full consideration of the impact on the economy of the United States and only to the extent necessary*" to accomplish identified objectives[1]. ECRA further emphasizes that "national security controls [be] tailored to focus on those core technologies and other items that are capable of being used to pose a serious national security threat to the United States" and that U.S. leadership "in the science, technology, engineering and manufacturing sectors . . . requires that United States persons are competitive in global markets." Manufacturers, therefore, strongly supported this legislation and welcome its full implementation by the administration.

Manufacturers appreciate the Commerce Department's ongoing engagement with the private sector in developing just such tailored approaches that will strengthen both U.S. national security and the U.S. manufacturing sector. The Department's Advanced Notice of Proposed Rulemaking related to Controls for Certain Emerging Technologies (Emerging Technologies ANPRM or ANPRM) represents a useful start to this engagement. For the manufacturing community, there are three key recommendations to consider:

[1] Export Control Reform Act of 2018 (ECRA), Sec. 1752, codified at [ ].

1. Carefully calibrated updates to export controls are appropriate, but must be developed through a deliberative and ongoing process;
2. New controls must take into consideration the need to strengthen and fortify America's manufacturing and defense industrial base and supply chains; and
3. Continued and frequent engagement with the private sector is vital to produce and support the best outcomes.

Each of these recommendations is laid out in greater detail below:

I. Calibrated Updates to Export Controls are Appropriate but Must be Developed through a Deliberative and Ongoing Process

Strengthening export controls in a thoughtful and calibrated way, as required by the NDAA, is vital to produce outcomes that address effectively and appropriate real threats without undermining U.S. global competitiveness or the U.S. economy. During the 17-month long legislative process which led to ECRA and its counterpart, the Foreign Investment Risk Review Modernization Act (FIRRMA), the NAM worked toward and welcomed improvements to the bills. One of these enhancements was the requirement for an ongoing process led by the Department of Commerce to identify foundational and emerging technologies not adequately covered by existing export controls.

As is evident in the text of the legislation, particularly in the detailed criteria for identifying and controlling new technologies, Congress intended for this ongoing process to be deliberative and deeply sourced so as to safeguard specific national security interests while not hampering the efforts of U.S. entities leading the world in research and development in these technologies. Therefore, every effort should be made to gather information from all available sources.

Many organizations, including the NAM with our broad base of membership, welcome the opportunity to work with Commerce's Bureau of Industry and Security (BIS) to craft narrowly tailored controls that serve the interests outlined by Congress and appreciated the extension of the original 30-day comment period on this initial ANPRM. The 52-day period ultimately provided, however, was relatively limited for a request of this scope and depth and particularly difficult given that it fell during a holiday period when needed technical experts were not available. As the Commerce Department moves forward with the deliberative process to review potential additional controls on these identified emerging technologies, it is critical that such proposals are published for review and comment to ensure that the manufacturers affected by the controls have sufficient opportunity to continue the specific nature of the proposals.

Recommendation: Manufacturers urge BIS to ensure and articulate an ongoing process in which manufacturers and other stakeholders can continue to provide more detailed and comprehensive information on specific technologies.

II. New Controls Must Support the National Security Goal of Strengthening America's Manufacturing and Defense Industrial Base and Supply Chain Resiliency

Overwhelmingly, the national security concerns that led to FIRRMA and ECRA were centered around China's aggressive strategy of leveraging the United States' open investment environment to secure access to leading American technology and using that access to advance its own political and economic agenda. As policymakers counter predatory practices of China and other foreign governments, it is critical that they also recognize the importance of other national security objectives. ECRA itself requires that, in crafting new export controls, the Administration must "maintain the leadership of the United States in science, technology, engineering and manufacturing sectors."

As emphasized in the administration's interagency report, *Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States*

(Supply Chain report*),* earlier this year, "America's manufacturing and defense industrial base supports economic prosperity, global competitiveness, and arms the military with capabilities to defend the nation."[2] In outlining the unprecedented challenges faced by the U.S. manufacturing base, the report identifies the "loss of vital skills in the domestic workforce" and notes that "many sectors continue to move critical capabilities offshore." Overly onerous controls could exacerbate these and other challenges identified in this report in several ways as explained below:

- Foreign Availability and Unilateral Controls: As noted in ECRA, "application of unilateral controls should be limited for the purposes of protecting specific United States national security and foreign policy interests." As such, it is important to demonstrate that any unilateral control provide a real, tangible and qualitative advantage to U.S. military and defense capabilities that is likely to persist for a significant period of time. Overly broad controls will invariably capture technologies that are already ubiquitous outside of the United States.

  - For example, the ANPRM identifies artificial intelligence (AI) technology generally and a number of subsets of AI, including technologies like machine learning. AI, in varying levels of sophistication, is used in all or most manufacturing industries in the United States and abroad to perform tasks at varying levels of complexity. Advanced automotive technologies, for example, use some form of AI, neural networking, and/or machine learning for computer vision. Not only are these features offered by automakers around the world, the techniques underlying these technologies are widely available, including through projects like Baidu's Apollo program.[3]

  - The ANPRM also identifies position, navigation and timing technology which could encompass such ubiquitous technology as civil GPS receivers, as well as position and location correction techniques that are already widely used globally for civil applications in the cellular phone, automotive, marine and aviation industries.

  These examples are but a few from the broad sets of technologies identified in the ANPRM.

  Recommendation: As BIS continues this process, therefore, it must ensure, consistent with ECRA, that any unilateral controls proposed be narrowly tailored to the specific national security concern giving rise to the controls and should only be imposed on technologies for which the United States is the sole source.

- Deemed Exports and Workforce: The United States has some of the brightest and best technology talent in the world. For this reason, U.S. and non-U.S.-headquartered manufacturers alike have chosen to make the United States their hub for research and development activities. This development is vital both for the growth of the U.S. manufacturing sector and the well-paying jobs it supplies, but also to support and build the U.S. technological leadership that ECRA recognizes as critical to U.S. national security.

  While the United States is oftentimes the "center of gravity" for many manufacturers' research and development activities, those same manufacturers also view the ability to leverage research teams globally as critical to support their innovation and technological leadership. Manufacturers harness research teams globally for many reasons, including taking advantage of strategic locations, clusters of expertise, or the ability to operate in

[2] *Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United* States, available at https://media.defense.gov/2018/Oct/05/2002048904/-1/-1/1/ASSESSING-AND-STRENGTHENING-THE-MANUFACTURING-AND-DEFENSE-INDUSTRIAL-BASE-AND-SUPPLY-CHAIN-RESILIENCY.PDF

[3] China-based Baidu has established the Apollo Open platform providing an open software platform for over 100 global partners to develop autonomous driving systems that leverage many of the technologies identified in the ANPRM, including: artificial intelligence and machine learning; position, navigation, and timing technology; data analytics; and logistics technologies. Additional information is available at http://apollo.auto/.

several time zones at once to move forward projects quickly, and to seek out the best available talent, regardless of nationality, in what is an incredibly competitive race for a limited pool of leading-edge talent worldwide.

Deemed export licensing requirements that limit the ability of manufacturers to leverage global research and development teams or even foreign talent in the United States will, in the best case, impose delays that will slow fast-paced development and, in the worst case, push some of the best non-U.S. talent into the arms of foreign competitors and isolate or immobilize foreign subsidiaries of U.S. companies given the uncertainty surrounding the licensing process. Overly broad and onerous deemed export restraints will almost certainly stymie future U.S.-led research and development and could seriously interrupt current projects.

The competition for these highly skilled workers is often fierce and potential barriers like the need to license deemed exports can have a deleterious effect on competitiveness. For instance, one member of the NAM has a facility in the United States focused on development of technologies, which is supported by more than 65 different nationalities. New controls impacting technologies already in development will place additional burdens on manufacturers in the United States to identify materials across their business and information and communications infrastructure to establish necessary technology controls and may necessitate obtaining deemed export licenses for employees and contractors already actively engaged in development efforts.

Recommendation: To ameliorate these negative consequences of the expansion of controls to deemed exports, BIS should consider the adoption and expansion of the licensing exemption to allow companies to export, re-export, or transfer emerging technologies among its related parties as currently codified in 15 CFR 740.17(a).

- Breadth of Impact and Evolution of Supply Chains: New controls on emerging technologies will affect a broad swathe of companies, not just those in the traditional technology sectors. As a cross-sectional association, the NAM has members working in or supplying to multiple sectors that will be affected by controls in the 14 sets of representative technology categories laid out by BIS, including manufacturers of automobiles and automotive parts, agricultural equipment, construction equipment, electrical components, machinery, medicine and medical equipment, energy equipment and chemicals. The proposed technologies have a wide range of applications in traditional manufacturing applications, such as line-side 3-D printing for industrial components, machine learning for increased efficiencies in assembly line production and quality assurance, advanced logistics technology and data analytics. Manufacturers in the United States increasingly need to develop those technologies with their operations abroad and with input from foreign national employees for the reasons identified above. Overcontrolling even a small segment of the 14 identified categories (*e.g.*, by including non-national security sensitive technologies within the scope of any definition) could have significant and wide-ranging impacts on where companies choose to develop supply chains. Indeed, overcontrolling technologies could have the opposite effect of what is intended by undermining and restricting principally U.S.-based technological development while effectively incentivizing foreign-based technology development which would not face such unnecessarily restrictive export controls.

  Recommendation: Given the breadth of the potential impact across a wide spectrum of the U.S. manufacturing sector and consistent with the mandate of ECRA, BIS should tailor any new controls as narrowly as possible to the national security concern. As noted above, the adoption or expansion of licensing exemptions could help to address some of these concerns.

- Efficient, Effective Updates to the Commerce Control List: As noted in ECRA, efficient administration of export controls requires the addition of items, but also their removal. This is particularly important in the case of emerging technologies where controls are specifically tied to the newness or "emerging" status of the technology.

  Recommendation: Manufacturers urge, therefore, that BIS articulate a clear process by which emerging technology controls will be reviewed, updated, and, for items that no longer serve a specific national security interest, removed. This should include frequent review of emerging technologies that are subjected to control and mechanisms by which stakeholders can petition for removal of a control.

- Focus on National Security Concerns: As stated in the ANPRM, BIS seeks to identify "emerging technologies that are essential to U.S. national security, for example because they have potential conventional weapons, intelligence collection, weapons of mass destruction, or terrorist applications or could provide the United States with a qualitative military or intelligence advantage." All 14 of the technologies in the proposed list are inherently dual-use, and in many cases the greatest advancements for those technologies are occurring in the commercial realm. None of these technologies are unique to military, intelligence, or other national security end uses.

  Recommendation: Any proposed controls, therefore, need to be narrowly tailored so that they do not hamper U.S. technological leadership, which, as explained above, is oftentimes dependent upon and improved through cross-border technology development. New controls should carve out applications of the technology for civilian/commercial use as several current Export Control Classification Numbers (ECCNs) do (*e.g.*, exclusions for civil automotive and weather applications of otherwise controlled sensors, exclusions for civil telecom applications of otherwise controlled semiconductors, etc.). Further, BIS should seek to identify technical thresholds and performance parameters that are unique to the military or intelligence applications, rather than controlling whole buckets of technologies. To the extent that it is not feasible due to the dual-use nature of the technology, BIS should rely upon the "specially designated" criteria to link the controls to military or intelligence applications.

III. Continued Engagement with the Private Sector Is Vital to Produce and Support the Best Outcomes and Appropriately Implement ECRA

Manufacturers are eager to help the Commerce Department and the broader interagency in their efforts to identify emerging and foundational technology and place the appropriate controls around them to address real national security concerns. Further, a significant amount of expertise on emerging technology and foreign availability lies with the private sector. As such, manufacturers recommend the institution of several practices to optimize the information and advice that the private sector is able to provide to the Commerce Department as this process progresses:

Recommendations:

- The Need for Specific Scenarios: As affirmed in a meeting with Assistant Secretary Ashooh last month, manufacturers understand there will be additional notices of proposed rulemaking that have greater specificity with regard to individual sets of controls for certain emerging technologies, including with ECCNs and precise descriptions of what commodities, software and technology will be covered. In order to provide the most useful feedback in that process and help scope any controls as effectively as possible, manufacturers would need detailed guidance as to the national

security concerns prompting individual technology controls, such as the proposed reasons for the control and the specific licensing policies that BIS would plan to implement for each technology.

- Establishment of a Business Confidential Channel: In this docket, the Commerce Department is asking for specific and sensitive information regarding emerging technologies. While many of the technologies identified in the ANPRM are widely available, including outside of the United States, many manufacturers' specific implementations of and plans for such technologies are highly proprietary and not appropriate for wide dissemination. The same is true for information that manufacturers may possess regarding their foreign competitors' technical capabilities as no company wants to publicize exactly how much (or little) it knows about the competition. Much like the confidential channel used by the Commerce Department's International Trade Administration and United States International Trade Commission in trade-remedy cases, the Commerce Department should consider a method of accepting business confidential information for the purposes of ECRA implementation.

- Hasten Establishment of the Emerging Technology Technical Advisory Committee (ETTAC): As required in ECRA, the quick establishment and implementation of the ETTAC is a key step in providing opportunity for the private sector to plug into the process of tailoring controls for emerging and foundational technologies. Given the breadth of the emerging technology categories, it is appropriate to ensure that the ETTAC include representation from a broad cross-section of manufacturing industries. Additionally, the ETTAC could serve a number of useful functions to ensure that effective communication between the private sector and BIS is ongoing. The need for this channel has already been identified by some NAM members and be used to create a regulatory framework for amendments to ECCN definitions.

- Time: Time is a significant factor in the creation of a useful final product. Future requests for comments from the private sector should offer sufficient time, preferably, the maximum response time of 90 days, to ensure thorough, well-researched, and well-documented comments from at least a representative sample of relevant stakeholders. It is particularly important to include stakeholders in industries not currently subject to export controls and who may not be closely watching regulatory developments and/or who may require additional education as to the potential impact of controls.

IV. Conclusion

Manufacturers understand that there are real national security concerns that need to be addressed by an ongoing, regularized process regarding controls on emerging and foundational technologies and welcome the Commerce Department's efforts to seek private sector comments. As detailed above, manufacturers support the Department's efforts to develop appropriately tailored export controls to address national security threats in a manner that also recognizes the importance of a strong and globally competitive U.S. manufacturing sector that is needed, in the words of the interagency *Supply Chain* report, support the development of "technologies necessary to win the future fight." The NAM values the opportunity to comment in this process and we look forward to continued engagement with the Commerce Department and other agencies involved in the full implementation of ECRA.