

## Commerce Gives Industry 30 Days to Provide Comments Regarding Possible Export Controls over Emerging Technologies

November 19, 2018

### Key Points

- The Bureau of Industry and Security published a **notice** today seeking public comments on how it should define and identify a wide variety of emerging technologies that are not now controlled for export, but should be because they are essential to the national security of the United States.
  - This request for comments is the public start to the most complex, intellectually challenging and economically significant effort to identify simultaneously multiple disparate categories of undefined emerging technologies for non-specific national security concerns that warrant (i) unilateral controls on their export to foreign countries, (ii) limitations on their release to foreign persons in the United States and (iii) additional mandatory filing requirements with CFIUS for non-controlling foreign investments of any size in U.S. businesses in a wide variety of sectors.
  - Comments are due on or before December 19, 2018—*i.e.*, in 30 days.
  - “Representative general categories” of emerging technologies on which Commerce seeks comments “include” (i) “biotechnology”; (ii) “artificial intelligence”; (iii) “Position, Navigation, and Timing (PNT) technology”; (iv) “microprocessor technology”; (v) “advanced computing technology”; (vi) “data analytics technology”; (vii) “quantum information and sensing technology”; (viii) “logistics technology”; (ix) “additive manufacturing”; (x) “robotics”; (xi) “brain-computer interfaces”; (xii) “hypersonics”; (xiii) “advanced materials”; and (xiv) “advanced surveillance technologies.” The notice leaves open the possibility that other categories of technology will be captured in this process.
1. The Request for Comments Is the Start of the Public Process to Address Concerns About Uncontrolled Transfers of Emerging Technologies

The Commerce Department’s Bureau of Industry and Security (BIS) notice is the administration’s first public step to comply with the requirements of Section 1758 of the **Export Control Reform Act (ECRA)**, which became law on August 13, 2018. As described in previous **alerts**, Congress created the section to address concerns about

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a provision in the bills introduced in late 2017 that would have expanded the jurisdiction of the Committee on Foreign Investment in the United States (CFIUS) over investments by U.S. companies in foreign countries that could result in the release to foreign persons of uncontrolled critical technology, including emerging and foundational technologies. Section 1758 addresses the policy concerns of the original CFIUS outbound control provision, but through an ongoing, regular-order, interagency export control process that includes public notice and comment.

Commerce has not proposed in the notice any new export controls or amendments to existing regulations. Rather, it seeks the public's assistance in creating criteria for identifying specific emerging technologies that are "essential to the national security of the United States," which is the statutory standard for imposing controls on emerging and foundational technologies. "National security" is not defined in the law or the notice. The notice's examples of concerns to be addressed do not include the domestic economic policy concerns identified as national security issues in other administration actions, such as those pertaining to the importation of steel and aluminum. Rather, the examples provided are those with "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."

The administration will review the public comments, along with its own analyses, as part of its plan to prepare a proposed rule to add emerging technologies to the Commerce Control List (CCL) of the Export Administration Regulations (EAR). The proposed rule will identify the countries, end uses or end users to which exports of the newly identified technologies would require a license. After interagency review of the comments on the proposed rule, Commerce plans to publish a final rule implementing the new controls. (If the final rule is consistent with the EAR's "deemed export" rule, releases of the technology to foreign persons in the United States would require a license if a license was required to export the technology to that person's home country.) The notice does not contain a schedule for when these events will occur. ECRA requires the administration to ask the relevant multilateral export control regimes to add the newly controlled emerging technologies to the multilateral export control lists. Until and unless that happens, however, the controls will be unilateral, meaning that only the United States will impose them.

The implications of this emerging technology effort are not just with respect to potentially new export controls. Any technologies identified in the export control regulations as "emerging" will also be "critical technologies" under the new CFIUS law, the Foreign Investment Risk Review Modernization Act (FIRRMA). As described in our earlier [alert](#), this means that U.S. businesses that produce, design, test, manufacture, fabricate or develop such technologies and use them in or design them for targeted sectors would be subject to a CFIUS pilot program implementing FIRRMA. Consequently, controlling foreign investments, along with certain non-controlling foreign investments, would be subject to a **mandatory** filing requirement with CFIUS 45 days before closing.

## 2. Standards for Determining What Emerging Technologies Should Become Controlled

In deciding whether to identify a technology as "emerging" and impose controls on its export, ECRA Section 1758 requires the administration to take into account:

- the development of the technology in foreign countries

- the effect that export controls imposed pursuant to this section may have on the development of the technology in the United States
- whether export controls would be effective in limiting the technology's proliferation to, or development in, foreign countries.

Section 1758 is an element of the broader ECRA statement of policy for export controls, which is that the United States should “use export controls only after full consideration of the impact on the economy of the United States and only to the extent necessary -- (A) to restrict the export of items which would make a significant contribution to the military potential of any other country or combination of countries which would prove detrimental to the national security of the United States; and (B) to restrict the export of items if necessary to further significantly the foreign policy of the United States or to fulfill its declared international obligations.”

### 3. The Representative Emerging Technologies Identified

Neither the notice nor ECRA defines the term “emerging” technologies. To help inform the administration's development of a proposed rule, the notice lists several broad categories of technologies that may meet the standard of “emerging” for public comment. The listed technologies are “representative” of only the types of technologies that might be considered “emerging” and warranting control. They include:

- “Biotechnology, such as (i) nanobiology; (ii) synthetic biology; (iii) genomic and genetic editing; (iv) or neurotech”
- “Artificial intelligence (AI) and machine learning technology, such as (i) neural networks and deep learning (e.g., brain modeling, time series prediction, classification); (ii) evolution and genetic computation (e.g., genetic algorithms, genetic programming); (iii) reinforcement learning; (iv) computer vision (e.g., object recognition, image understanding); (v) expert systems (e.g., decision support systems, teaching systems); (vi) speech and audio processing (e.g., speech recognition and production); (vii) natural language processing (e.g., machine translation); (viii) planning (e.g., scheduling, game playing); (ix) audio and video manipulation technologies (e.g., voice cloning, deepfakes); (x) AI cloud technologies; or (xi) AI chipsets”
- “Position, Navigation, and Timing (PNT) technology”
- “Microprocessor technology, such as (i) Systems-on-Chip (SoC) or (ii) Stacked Memory on Chip”
- “Advanced computing technology, such as (i) “memory-centric logic”
- “Data analytics technology, such as (i) visualization; (ii) automated analysis algorithms; or (iii) context-aware computing”
- “Quantum information and sensing technology, such as (i) quantum computing; (ii) quantum encryption; or (iii) quantum sensing”
- “Logistics technology, such as (i) mobile electric power; (ii) modeling and simulation; (iii) total asset visibility; or (iv) distribution-based logistics systems (DBLS)”
- “Additive manufacturing (e.g. 3D printing)”

- “Robotics such as (i) micro-drone and micro-robotic systems; (ii) swarming technology; (iii) self-assembling robots; (iv) molecular robotics; (v) robot compilers; or (vi) Smart Dust”
- “Brain-computer interfaces, such as (i) neural-controlled interfaces; (ii) mind-machine interfaces; (iii) direct neural interfaces; or (iv) brain-machine interfaces”
- “Hypersonics, such as (i) flight control algorithms; (ii) propulsion technologies; (iii) thermal protection systems; or (iv) specialized materials (for structures, sensors, etc.)”
- “Advanced Materials, such as (i) adaptive camouflage; (ii) functional textiles (e.g., advanced fiber and fabric technology); or (iii) biomaterials”
- “Advanced surveillance technologies, such as faceprint and voiceprint technologies.”

These are not the headings in the notice; they are the entirety of the topics listed for public comment. No additional details or definitions are provided about the meaning of these terms. The notice also does not contain any commentary or guidance on what the potential national security concerns are, or could be, with respect to such technologies, or why Commerce identified these technologies as examples.

#### 4. The Comments That Commerce Seeks

Commerce asks industry for comments—within the next 30 days—on:

- how the administration should define emerging technologies
- what the criteria should be for determining whether there are specific technologies within these general categories that are important to U.S. national security
- what sources the administration can refer to in order to identify emerging technologies
- what other general technology categories might be important to U.S. national security and warrant control
- information about the status of development of the listed technologies in the United States and other countries
- information about what impact the specific emerging technology controls would have on U.S. technological leadership
- suggestions for other approaches to identifying emerging technologies warranting controls.

BIS’s first request for comment is about how the administration should define emerging technologies. Because this request is not for advice about abstract or generally applicable definitions, but rather about how the term should be defined in the context of export controls to address the policy concerns that motivated ECRA, a logical approach would be to bind the definition by the statements of policy in ECRA for why the export control system exists and what it is designed to accomplish. Also, given that ECRA Section 1758 is focused on identifying both emerging and foundational technologies, a definition should not include foundational technologies. Thus, an example of a definition that would be consistent with the ECRA standards could be something along the lines of:

“Emerging technologies” are specific, non-mature (i.e., developmental) core technologies essential to the national security of the United States that:

- i. are required for the development, production, use, operation, installation, maintenance, repair, overhaul or refurbishing of specific and identifiable potential conventional weapons, intelligence collection, weapons of mass destruction or terrorist applications;
- ii. could provide the United States with a specific and identifiable qualitative military or intelligence advantage;
- iii. are not available in or otherwise being developed in foreign countries; and
- iv. are not within the scope of any existing multilateral controls.

Note: A technology must not be identified or controlled as “emerging” unless it is within the scope of policy statements in ECRA for which technologies should be controlled for export. In particular, a technology must not be so identified if a unilateral export control over it would:

- i. harm domestic research into the identified technology;
- ii. not be effective at preventing countries of concern from developing it indigenously or otherwise acquiring comparable technology from third countries;
- iii. be imposed without full consideration of the impact on the economy of the United States of such a control; or
- iv. is of a type that is not likely to be considered acceptable by the multilateral regime allies, or that is inconsistent with the standards for the types of controls that are subject to the multilateral regimes.

Each commenter will likely have its own take on how to approach BIS’s first question. Nonetheless, this is an example of a definition that would be consistent with the standards in ECRA.

## 5. Items to Which the Notice Does Not Apply

Both ECRA and the notice refer to only possible additional controls on emerging “technology.” ECRA defines “technology” as including “information, in tangible or intangible form, necessary for the development, production, or use of an item.” Thus, the scope of the notice is limited to possible new controls on information that is within the scope of the term “technology” and does not include possible new controls on commodities (i.e., physical items) or software.

The notice also does not apply to “foundational” technologies, which will be the subject of a similar process beginning in 2019. It also does not apply to technology the EAR already exempts from being “subject to the EAR,” such as information that results from “fundamental research” or that is “published” information. This does not mean that EAR99 technologies— technologies that are “subject to the EAR” but not identified on the EAR’s CCL—are exempt from the notice’s scope. To the contrary, the entire purpose of the effort is to identify EAR99 technologies that should be added to the CCL and controlled.

Finally, the notice does not apply to technology already identified on the CCL, the U.S. Munitions List (USML), or another of the U.S. government’s export control lists. Thus, for example, the notice does not seek comment on technology or technical data directly related to or required for the development or production of military items because they are already controlled on the CCL or the USML in specific and broad

catch-all categories. Herein lies one of the significantly challenging aspects of the effort. The administration is asking industry to provide advice on which non-mature technologies not directly related to or required for military items are “essential to the national security of the United States.” This is, of course, better than not asking for comments and is an important effort required by ECRA, but it is nonetheless an inherently difficult one for those experts in the referenced technologies who have no national security experience.

## 6. Who Should Prepare and File Comments, and What Should They Include?

The notice is open for comments from the public. In particular, any company that develops or produces the types of technologies described on the representative list, or individuals who are experts in the listed or other potentially emerging technologies, should consider submitting comments. Industry will often have more information than the government about their own technologies, including whether they qualify under the statutory standards, and how to describe most accurately the technologies at issue.

Industry will also generally have more information than the government on which technologies are already being developed outside the United States. If a technology is already available outside the United States, ECRA makes clear that it would generally not be a good candidate for a unilateral (i.e., U.S.-only) control because the United States will have no ability to curtail its transfer to destinations, end uses and end users of concern. For comments on foreign availability to be effective, they must be supported with evidence. Companies will, of course, not have proprietary information of their competitors. They will, however, often have a sense for comparable technologies that competitors and academics are already developing through sources such as academic publications, web sites, trade shows, customer comments and government reports.

Industry is also generally in a better position to describe whether, as both a legal and a psychological matter, the imposition of a unilateral export control (and increased foreign investment controls) on a particular technology would be harmful or helpful to domestic research into the identified technology, such as through loss or gain of investments, foreign markets or the availability of qualified professionals necessary to develop it. In particular, commenters should provide estimates in their comments on what the economic implications would be—good or bad—of a unilateral control on the technology and economic sector they know best. Similarly, if a company or individual has reason to believe that an uncontrolled emerging technology has specific application to a conventional weapon, intelligence collection capability, weapon of mass destruction or terrorist activities, or would help or harm a qualitative military or intelligence advantage for the United States, then the notice asks for such information.

All comments filed are made public. Some companies and individuals, however, may not want to publicly disclose what a particularly sensitive military application for their technology could be. Others may not want to describe publicly, and thus to their competitors, what novel commercially sensitive technologies they are developing. If one has such concerns, a common next step is to contact Commerce to discuss how or whether it would be possible for the government to nonetheless get the benefit of the insight.

## 7. 30 Days Over the Holidays

Commerce is asking for a massive amount of difficult-to-assemble information on a wide variety of non-mature, hard-to-define technologies, and subsets thereof, and commentary on national security concerns known to only a few people outside of government **within 30 days**. This period is not only over the holiday season, but also in the heart of the fourth quarter when company engineers, researchers, sales staff, management and other professionals are focused on completing annual sales, shipments and other goals. Although responses to most BIS notices can be primarily handled by trade compliance professionals, quality responses to this notice largely depend upon time-consuming and thoughtful input from professionals not normally involved in export control issues.

BIS requests for information involving far less complex issues have had far longer comment periods. For example, BIS gave industry 60 days to submit comment on (i) possible changes to controls on a small number of specific infrared detection items, (ii) possible controls over spraying and fogging systems, and (iii) whether requirements should be imposed on the export of electronic waste.

ECRA does not impose a 30-day, or any other, time limit on this process or require that all emerging technologies of potential national security concern are of equal significance. Moreover, a core element of ECRA Section 1758 is that the identification process be informed by “multiple sources of information.” There will indeed be a proposed rule on which industry will have an opportunity to provide comments before any final controls are imposed. If, however, you do not believe that 30 days is sufficient to provide comments commensurate with the national and economic security significance, and technological complexity, of such a proposed rule, then you should make that comment, too, and ask for additional time, ideally before Thanksgiving.