



BIS wants your help with emerging technology export controls

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The Bureau of Industry and Security (BIS) issued an Advance Notice of Proposed Rulemaking (ANPRM) on November 19, 2018 requesting public comment on identifying “emerging technology.”

Under the Export Control Reform Act of 2018 (ECRA), which was signed into law on August 13, 2018, the Department of Commerce is authorized to establish export controls on emerging and foundational technologies under the framework of the Commerce Control List (CCL). In the ANPRM, BIS indicated that it will issue a separate ANPRM for “foundational technology.”

BIS established representative general categories of “emerging technology” to include the following:

- (1) Biotechnology, such as:
 - (i) Nanobiology
 - (ii) Synthetic biology
 - (iv) Genomic and genetic engineering or
 - (v) Neurotech.
- (2) Artificial intelligence (AI) and machine learning technology, such as:
 - (i) Neural networks and deep learning
(*eg*, brain modelling, time series prediction, classification)
 - (ii) Evolution and genetic computation
(*eg*, genetic algorithms, genetic programming)
 - (iii) Reinforcement learning
 - (iv) Computer vision
(*eg*, object recognition, image understanding)

- (v) Expert systems
(eg, decision support systems, teaching systems)
 - (vi) Speech and audio processing
(eg, speech recognition and production)
 - (vii) Natural language processing (eg, machine translation)
 - (viii) Planning (eg, scheduling, game playing)
 - (ix) Audio and video manipulation technologies
(eg, voice cloning, deepfakes)
 - (x) AI cloud technologies or
 - (xi) AI chipsets.
- (3) Position, Navigation, and Timing (PNT) technology.
- (4) Microprocessor technology, such as:
- (i) Systems-on-Chip (SoC) or
 - (ii) Stacked Memory on Chip.
- (5) Advanced computing technology, such as memory-centric logic.
- (6) Data analytics technology, such as:
- (i) Visualization
 - (ii) Automated analysis algorithms or
 - (iii) Context-aware computing.
- (7) Quantum information and sensing technology, such as
- (i) Quantum computing
 - (ii) Quantum encryption or
 - (iii) Quantum sensing.
- (8) Logistics technology, such as:
- (i) Mobile electric power
 - (ii) Modeling and simulation
 - (iii) Total asset visibility or
 - (iv) Distribution-based Logistics Systems (DBLS).
- (9) Additive manufacturing (eg, 3D printing).
- (10) Robotics, such as:
- (i) Micro-drone and micro-robotic systems
 - (ii) Swarming technology
 - (iii) Self-assembling robots
 - (iv) Molecular robotics
 - (v) Robot compliers or
 - (vi) Smart Dust.
- (11) Brain-computer interfaces, such as
- (i) Neural-controlled interfaces
 - (ii) Mind-machine interfaces
 - (iii) Direct neural interfaces or
 - (iv) Brain-machine interfaces.

- (12) Hypersonics, such as:
 - (i) Flight control algorithms
 - (ii) Propulsion technologies
 - (iii) Thermal protection systems or
 - (iv) Specialized materials (eg, for structures, sensors).

- (13) Advanced Materials, such as:
 - (i) Adaptive camouflage
 - (ii) Functional textiles
(eg, advanced fiber and fabric technology) or
 - (iii) Biomaterials.

- (14) Advanced surveillance technologies, such as faceprint and voiceprint technologies.

These technologies are already “subject to the EAR” but may not have an Export Control Classification Number (ECCN) assigned to them. For example, “Smart Dust” is not described on the CCL.

BIS is still gathering information about several of these technologies and other areas of emerging and cutting-edge technology, which may not be described by any of the 14 groups above. Therefore, BIS is requesting comment on:

- (1) How to define emerging technology to assist identification of such technology in the future
- (2) Criteria to apply to determine whether there are specific technologies within these general categories that are important to US national security
- (3) Sources to identify such technologies
- (4) Other general technology categories that warrant review to identify emerging technology that are important to U.S. national security
- (5) The status of development of these technologies in the United States and other countries
- (6) The impact specific emerging technology controls would have on U.S. technological leadership
- (7) Any other approaches to the issue of identifying emerging technologies important to US national security, including the stage of development or maturity level of an emerging technology that would warrant consideration for export control.

Comments must be received by BIS on this Proposed Rule by the **December 19, 2019 deadline**. DLA Piper is available to assist with comments or questions regarding this or any other export control matter.

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