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Commerce Identifies Emerging Technologies for Potential New Export Control Restrictions and CFIUS Review

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The Department of Commerce's Bureau of Industry and Security has published an **advance notice of proposed rulemaking** seeking public comments on a draft list of various emerging technologies that may soon be subject to additional US export controls. Once finalized, this list of emerging technologies will subject covered technology and associated products to new export licensing requirements. Technologies on the list also will be subject to the newly expanded jurisdiction of the Committee on Foreign Investment in the United States. Accordingly, technology companies and investors may wish to submit comments to help BIS shape how it thinks about, defines and controls such emerging technologies.

On November 19, 2018, BIS published the ANPRM as part of its efforts to determine what should constitute "emerging technologies" for export control and CFIUS review purposes. Specifically, BIS is seeking comments to help it develop criteria to identify "emerging technologies that are important to the national security of the United States for which effective controls can be implemented that avoid negatively affecting US leadership in the science, technology, engineering and manufacturing sectors."

BIS has identified 14 general categories of technology (listed below) that it believes may contain "specific emerging technologies that are essential to the national security of the United States." (Importantly, BIS stated that it does not intend to expand its jurisdiction to cover technologies that are not currently subject to the Export Administration Regulations, nor alter existing controls for products and technologies already specifically described on the Commerce Control List.) The public is encouraged to submit comments that address any of the following issues on or before December 19, 2018:

1. the development of the enumerated emerging technologies in foreign countries;
2. the effect that export controls may have on the development of the emerging technologies in the United States; and
3. the effectiveness of export controls on limiting the proliferation of the technologies in foreign countries.

Once the new export controls are implemented – likely in early 2019 – covered technologies will be subject to more restrictive export licensing requirements. Such licensing requirements will affect where products embodying the technologies can be sold, where research and development with respect to the technologies can take place, how the technologies can be accessed and used within companies, and the employment of non-US persons who will have access to the technologies.

Of equal significance, covered technologies will fall within the definition of "critical technology" for purposes of the CFIUS Pilot Program. Foreign investments involving US companies that "produce, design, test, manufacture, fabricate or develop" critical technologies for use in any of 27 specified industries will be subject to the Pilot Program, which requires a declaration describing the transaction to be submitted to CFIUS at least 45 days prior to closing. Failure to submit a declaration when one is required can result in CFIUS imposing so-called "mitigation measures," including the forced unwinding of the transaction, as well as civil fines up to the value of the transaction in question. Therefore, the criteria and final list of emerging technologies will have a significant effect on foreign investments in US companies and on the efforts of US companies involved with such technologies to raise funds.

Companies and investors should also be aware that BIS is in the process of crafting a definition for "foundational technologies," another component of the definition of "critical technologies" that will be subject to the CFIUS Pilot Program. Although BIS has not yet issued an ANPRM concerning foundational technologies, we anticipate one in early 2019.

General technology categories

1. Biotechnology, such as:
    i. nanobiology
    ii. synthetic biology
    iii. genomic and genetic engineering
    iv. neurotech
2. Artificial intelligence 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
    xi. AI chipsets
3. Position, Navigation and Timing (PNT) technology
4. Microprocessor technology, such as:
    i. systems-on-chip
    ii. stacked memory on chip
5. Advanced computing technology, such as:
    i. memory-centric logic
6. Data analytics technology, such as:
    i. visualization
    ii. automated analysis algorithms
    iii. context-aware computing
7. Quantum information and sensing technology, such as
    i. quantum computing
    ii. quantum encryption

iii. quantum sensing

8. Logistics technology, such as:
    i. mobile electric power
    ii. modeling and simulation
    iii. total asset visibility
    iv. distribution-based logistics systems
9. Additive manufacturing (*e.g.*,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
    vi. smart dust
11. Brain-computer interfaces, such as
    i. neural-controlled interfaces
    ii. mind-machine interfaces
    iii. direct neural interfaces
    iv. brain-machine interfaces
12. Hypersonics, such as:
    i. flight control algorithms
    ii. propulsion technologies
    iii. thermal protection systems
    iv. specialized materials (for structures, sensors, etc.)
13. Advanced Materials, such as:
    i. adaptive camouflage
    ii. functional textiles (*e.g.*, advanced fiber and fabric technology)
    iii. biomaterials
14. Advanced surveillance technologies, such as:
    i. faceprint and voiceprint technologies

If you have any specific questions, please reach out to any member of the CFIUS and export control team.

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Key Contacts

Kevin King Washington, DC	kking@cooley.com +1 202 842 7823
Christopher Kimball Washington, DC	ckimball@cooley.com +1 202 842 7892
Shannon MacMichael Washington, DC	smacmichael@cooley.com +1 202 728 7069
Rebecca Ross Washington, DC	rross@cooley.com +1 202 728 7150
