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## *New Export Regulations on AI Software Could Signal Narrow Approach to Pending "Emerging Technology" Controls*

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Near the end of 2018, in response to action by Congress to clamp down on the overseas transfer—particularly to China—of so-called “emerging and foundational technologies,” the U.S. Department of Commerce (“Commerce”) issued an advanced notice of proposed rulemaking (“ANPRM”) outlining 14 categories of “emerging technologies” not yet restricted on the Commerce Control List (“CCL”) for export to foreign nations and foreign nationals. Prominent among the emerging technologies targeted for heightened controls is artificial intelligence (“AI”). Industry watchers have been waiting ever since for Commerce’s Bureau of Industry and Security (“BIS”) to issue new controls over these categories, with concerns running high that sweeping restrictions will impact innovation, technology sharing, and R&D involving everything from autonomous vehicles to quantum computing.

The wait continues. But a recent action by BIS imposing new controls over a specific type of AI software could foreshadow a more targeted and restrained approach.

On January 6, 2020, Commerce issued restrictions on exports and reexports of AI software designed to analyze satellite images.<sup>1</sup> Contrary to some early reporting, this new action was not undertaken pursuant to the ANPRM, but rather under a little-recognized “safeguard” provision tucked into the Export Administration Regulations (“EAR”), authorizing the Executive Branch to impose immediate, short-lasting controls over items when deemed warranted for military, intelligence, or foreign policy reasons. However, the move might signal an inclination by BIS to take a careful approach to regulating AI and other emerging technologies.

### **Backdrop to the New Measure**

Supplement No. 5 to Part 774 of the EAR houses a relatively obscure table (prior to January 6, it listed only one item) under the following lede: “The following table lists items subject to the EAR that are not listed elsewhere in the CCL, but which the Department of Commerce, with the concurrence of the Departments of Defense and State, has identified warrant control for export or reexport because the items provide at least a significant military or intelligence advantage to the United States or for foreign policy reasons.”<sup>2</sup> Commerce designates such items under the 0Y521 series of export control classification numbers (“ECCNs”), which includes 0D521 for software.<sup>3</sup> The designation of an item as 0Y521 lasts for one year. Commerce may subsequently: (i) move the item to another ECCN;



(ii) extend the time frame of the item's 0Y521 designation pursuant to the regulatory procedures; or  
(iii) take neither step, in which case the item becomes EAR99 at the one-year expiry.

Items that are designated as 0Y521 are controlled for Regional Stability (Column 1), which means that they may not be exported, reexported, or transferred in-country to any foreign country except Canada, absent a license from BIS. No license exceptions are available for these items, except for License Exception GOV under 15 C.F.R. § 740.11(b)(2)(ii), which permits certain exports, reexports, and in-country transfers made by or consigned to a department or agency of the U.S. Government. BIS's policy is to review applications for export licenses for these items on a case-by-case basis.

## **Software Specially Designed to Automate the Analysis of Geospatial Imagery**

The newest move adds one category of software to ECCN 0D521: artificial intelligence software designed to analyze geospatial imagery and point clouds.<sup>4</sup> Specifically, the software that is now controlled is geospatial imagery software "specially designed" for training a Deep Convolutional Neural Network to automate the analysis of geospatial imagery and point clouds. To fall within the confines of this ECCN, the software must perform *all* of the following functions:

1. Provide a graphical user interface that enables the user to identify objects (e.g., vehicles, houses) from within geospatial imagery and point clouds in order to extract positive and negative samples of an object of interest;
2. Reduce pixel variation by performing scale, color, and rotational normalization on the positive samples;
3. Train a Deep Convolutional Neural Network to detect the object of interest from the positive and negative samples; **and**
4. Identify objects in geospatial imagery using the trained Deep Convolutional Neural Network by matching the rotational pattern from the positive samples with the rotational pattern of objects in the geospatial imagery.

Notably, this type of software is only controlled under 0D521 if it is "specially designed" for the purpose of training a neural network to analyze geospatial imagery and point clouds. An item is "specially designed" if the item, as a result of development, "has properties peculiarly responsible for achieving or exceeding the performance levels, characteristics, or functions in the relevant ECCN."<sup>5</sup> Accordingly, AI software that is capable of training neural networks on analyzing geospatial imagery will only be captured under 0D521—and, therefore, export-restricted under this ECCN—if it is developed for such a purpose.

## **The Impact of the 0D521 Classification**

The control of this software takes immediate effect (though the public may comment on the move through March 6, 2020). Commerce has not provided for any wind-down period, and the export, reexport, or in-country transfer of software classified as 0D521 now requires a license if destined for any country or national thereof other than Canada. As an item that is now export-controlled for "regional stability" purposes, the AI satellite imagery software also falls under the definition of "critical technologies," subjecting to mandatory review by the Committee on Foreign Investment in the United States any transaction where a foreign investor seeks control over a U.S. business that develops or manufactures such technologies.<sup>6</sup>



While this classification may capture artificial intelligence software specially designed to analyze satellite images, Commerce’s choice to confine its scope to software that is “specially designed” is a narrowing factor that may exclude software that could be used for this purpose, but is not designed to do so. This decision reflects an intention to impose the control in a narrow and targeted manner.

The U.S. Government intends to submit the classification of this type of software to the Wassenaar Arrangement, a multilateral export control regime that seeks to harmonize many countries’ export control classifications systems.<sup>7</sup> Submitting a 0Y521 item for multilateral regime consideration is one of the requisite steps for extending the item’s control beyond one year.<sup>8</sup> The U.S. Government may be anticipating submitting this software—and perhaps other types of emerging technologies—to Wassenaar to secure a higher level of classification for these items on a permanent basis.



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<sup>1</sup> 85 Fed. Reg. 459 (Jan. 6, 2020).

<sup>2</sup> 15 C.F.R. Part 774, Supp. 5.

<sup>3</sup> 15 C.F.R. § 742.6(a)(7) (“These items are typically emerging technologies (including emerging commodities, software and technology) that are not yet included in the CCL, so such items are listed on the CCL in 0Y521 ECCNs while the U.S. Government determines whether classification under a revised or new ECCN, or an EAR 99 designation, is appropriate.”).

<sup>4</sup> A “point cloud” is “a collection of data points defined by a given coordinate system. A point cloud is also known as a digital surface model.” 85 Fed. Reg. at 460.

<sup>5</sup> 15 C.F.R. § 772.1.

<sup>6</sup> See 31 C.F.R. §§ 801.204 and 801.213.

<sup>7</sup> 85 Fed. Reg. at 460.

<sup>8</sup> 15 C.F.R. § 742.6(a)(7).

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