



**The Journal of Robotics,
Artificial Intelligence & Law**

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Everything Is Not *Terminator*

Exporting Our AI, Biggering Our Values

John Frank Weaver*

A referral source approached me recently asking about a client who wanted to license an artificial intelligence (“AI”) application to a company in Russia. Although my first thought was, “Why?” I quickly moved to the more relevant question of “How?” Until relatively recently, there were few, if any, legal impediments to exporting AI technology to other countries. However, in January of 2020, the Bureau of Industry and Security (“BIS”), which operates within the U.S. Department of Commerce, implemented a rule, adding “software specially designed to automate the analysis of geospatial imagery” (*i.e.*, geospatial AI software)¹ to the Export Control Classification Number 0Y521 Series.² This suggests new legal issues companies will have to consider before exporting or licensing their AI applications from the United States and demonstrates a new element of the American government’s AI public policy. After giving a brief history of how the rule affecting geospatial AI software (the “Geospatial AI Rule”) came to be, I will discuss both the legal analysis organizations should make before agreeing to export AI software and how the Geospatial AI Rule fits into the values problem in America’s AI public policy.

Controlling the Exporting of Geospatial AI Software

On August 13, 2018, the Export Controls Act of 2018 (the “ECA”) became effective. It enshrined in statute the permanent authority of the Export Administration Regulations (the “EAR”), which are the federal regulations that primarily control the export, re-export, and transfer of commercial, dual-use, and less sensitive military items to end users, end uses, and destinations of concern. The statutory authority for the EAR had been defunct for nearly

two decades, although the EAR had been maintained through a series of Executive Orders.³

The ECA required the creation of an interagency process—led by the Departments of Defense, State, and Energy, among other agencies—to identify “emerging and foundational technologies” that are essential to the national security of the United States, but are not critical military technologies identified in other statutes.⁴ Under the ECA, the Department of Commerce (through the BIS) establishes appropriate controls under the EAR on the export, re-export, or in-country transfer of emerging and foundational technologies identified by the interagency process.⁵ This is consistent with the BIS rule through which the BIS imposes unilateral controls (*i.e.*, controls put in place by the United States, but not by the other country) over the export of any previously uncontrolled software or technology that provides the United States with at least a significant military or intelligence advantage, or because foreign policy reasons justify such controls, so long as the government works to make the controls multilateral within three years.⁶ This provision in the ECA was seen at the time as an attempt to clear the procedural deck for new controls on a number of technologies, most prominently machine learning and other forms of AI.⁷

The Geospatial AI Rule is the first attempt under the ECA to impose unilateral control on the export of AI applications.⁸ By its terms, it prohibits exporting geospatial AI software that matches the following description to all countries, except Canada, without a license:

Geospatial imagery “software” “specially designed” for training a Deep Convolutional Neural Network to automate the analysis of geospatial imagery and point clouds, and having all of the following:

1. Provides a graphical user interface that enables the user to identify objects (e.g., vehicles, houses, etc.) from within geospatial imagery and point clouds in order to extract positive and negative samples of an object of interest;
2. Reduces pixel variation by performing scale, color, and rotational normalization on the positive samples;
3. Trains a Deep Convolutional Neural Network to detect the object of interest from the positive and negative samples; and

4. Identifies 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.⁹

How to Export AI

Although the ECA and the EAR implemented by the BIS are intended to control the exportation of foundational and emerging technologies like AI, as the Geospatial AI Rule shows, that is not the same as a prohibition. Many in the AI sector worry that the BIS will use the ECA to create exporting prohibitions in the EAR that could stunt AI development, but that is not the result of the Geospatial AI Rule. Rather, potential exporters need to apply to the BIS for a license to export geospatial AI software, and the BIS will review applications on a case-by-case basis to determine whether the export or re-export could contribute directly or indirectly to any country's military capabilities in a manner that would alter or destabilize a region's military balance contrary to the foreign policy interests of the United States.¹⁰ Before granting a license, the BIS will consider the nature of the software, the country where the software will go, who will receive the software (comparing it against the Consolidated Screening List of proscribed parties, among other lists),¹¹ and what the software will be used for, among other factors.¹²

But what about other AI applications? Are licenses required to export AI applications used to review job applicants, to maximize marketing leads, or to review web user usage patterns? As of this writing, generally the answer is no, although the nature of the exact application may qualify it as an item "subject to the EAR," which could also require a license, depending on other BIS requirements, which are briefly addressed in the first bullet point below. Going forward, exporting American companies should work with counsel to do several things before entering any agreements to export AI software, applications, or technology:

- Review the AI application under the Commerce Control List maintained by the BIS¹³ and the review guidelines established by the BIS to determine if it falls into a category that is subject to the EAR.¹⁴ If it is, determine whether a license is necessary and apply if that is required.

- If a license is required now, include a provision in the export agreement that it is only effective if the exporting entity is able to obtain the necessary license. If you are the exporting party, you may be able to pass all or some of the licensing costs to the foreign entity.
- If no license is required now, consider adding provisions addressing what occurs if a license is required to export the technology in the future. Such provisions could give the exporting party a termination right in the event a license is required or assign licensing responsibilities between the parties, *e.g.*, fees, completing the application, etc.

If you export AI products from the United States, I recommend completing this legal analysis and exercise before entering an agreement with the importing party. You may avoid a costly and embarrassing government enforcement action or save yourself licensing fees that the other party is willing to pay.

Export Control as Part of American AI Public Policy

The ECA and the Geospatial AI Rule are the result of competing interests tugging at American AI public policy. On one side are AI advocates in the tech industry that worry the ECA will impede the exchange of research and commercial programs across borders, which is beneficial to American developers.¹⁵ On the other side are lawmakers and national security hawks that have been frustrated by the “slow roll-out of rules toughing up export controls,”¹⁶ which they believe frustrates the ECA’s purpose of keeping key technologies away from rival nations, like China.¹⁷

The Geospatial AI Rule is very narrow, targeting only specific types of geospatial AI programs, which is a relief to many in the AI industry. Geospatial AI software has a significant military purpose, as it can identify “anomalies” in satellite imagery, which might actually be troop or military equipment movement that would otherwise be disguised from human analysts looking at the same data. However, the expectation is that future bans will affect more types of AI applications, which could be less popular with AI industry leaders.¹⁸ This type of balancing act is reflected in the memorandum released this year by the Office of Management and

Budget, titled “Guidance for Regulation of Artificial Intelligence Applications” (the “AI Memo”), which explicitly instructs federal agencies to avoid regulatory and non-regulatory actions that “needlessly hamper AI innovation and growth,” but which also qualifies that instruction by noting that agencies should do so only to the extent national security (among other limited and defined considerations) permits this.¹⁹

As a vocal proponent of the American government aggressively inserting values in to regulations governing AI, I support the idea of Washington asserting that as a country we will review AI with military applications before it is exported; that is a value judgment that is appropriate for the federal government to make and regulate. I wish elected leaders and other makers of public policy would think more about the values AI developers should be required to act on or implement in their products, like transparency, identification and elimination of bias, consideration of the public good, etc. The emphasis in the AI Memo on innovation and growth reminds me of *The Lorax*, with the Once-ler biggering and biggering his thneed business without ever wondering why or for what. AI innovation and growth . . . but for what? Is it innovation for innovation’s sake . . . or is it growth to further values that we as a country believe are important?

I am sure the AI industry is preparing for the BIS to add more AI applications to the EAR, likely ones that have a specific military use. That is appropriate, and I hope that future rules exercise the same restraint as the geospatial AI software rule. But I would also like to see regulations addressing values in other AI contexts. Otherwise, we are protecting innovation, but what’s all the innovation for? Just as the Once-ler regrets chopping down the last truffula tree to keep biggering, I would hate to see us chop down our core values to keep innovating.

Notes

* John Frank Weaver, a member of McLane Middleton’s privacy and data security practice group, is a member of the Board of Editors of *The Journal of Robotics, Artificial Intelligence & Law* and writes its “Everything Is Not Terminator” column. Mr. Weaver, who may be contacted at john.weaver@mclane.com, has a diverse technology practice that focuses on information security, data privacy, and emerging technologies, including artificial intelligence, self-driving vehicles, and drones.

1. Geospatial AI software uses machine learning to process satellite images and flag interesting images for human supervisors.

2. Addition of Software Specially Designed to Automate the Analysis of Geospatial Imagery to the Export Control Classification Number 0Y521 Series, 85 Fed. Reg. 459 (January 6, 2020), <https://www.federalregister.gov/documents/2020/01/06/2019-27649/addition-of-software-specially-designed-to-automate-the-analysis-of-geospatial-imagery-to-the-export> (“Geospatial AI Rule”).

3. For further discussion of this issue, see Kevin Wolf’s testimony before House of Representatives Committee on Foreign Affairs on March 14, 2018, available at <https://docs.house.gov/meetings/FA/FA00/20180314/107997/HHRG-115-FA00-Wstate-WolfK-20180314.pdf>.

4. 50 U.S.C. §4817(a)(1).

5. 50 U.S.C. §4817(b)(1).

6. Revisions to the Export Administration Regulations (EAR): Export Control Classification Number 0Y521 Series, Items Not Elsewhere Listed on the Commerce Control List (CCL), 77 Fed. Reg. 22191 (April 13, 2012), <https://www.gpo.gov/fdsys/pkg/FR-2012-04-13/pdf/2012-8944.pdf>.

7. See “The Export Control Reform Act and Possible New Controls on Emerging and Foundational Technologies,” Akin Gump International Trade Alert (September 12, 2018), <https://www.akingump.com/en/news-insights/the-export-control-reform-act-of-2018-and-possible-new-controls.html>.

8. “US Issues First Unilateral Export Control on Artificial Intelligence Software,” Arent Fox (January 6, 2020), <https://www.arentfox.com/perspectives/alerts/us-issues-first-unilateral-export-control-artificial-intelligence-software>. BIS had already issued a rule imposing multilateral controls in May 2019 on 5 emerging technologies, including post-quantum cryptographic algorithms, which is not a form of AI, but which has implications in AI development.

9. Geospatial AI Rule, *supra* note 2.

10. 15 C.F.R. §742.6(b)(1).

11. The Consolidated Screening List can be viewed here: <https://www.export.gov/article?id=Consolidated-Screening-List>.

12. The BIS’s “Introduction to Commerce Department Export Controls” is a useful primer for flagging potential issues in a license application. It is available at <https://www.bis.doc.gov/index.php/documents/regulations-docs/142-eccn-pdf/file>.

13. 15 C.F.R. §774, Supplements No. 1 & 5.

14. 15 C.F.R. §774, Supplement No. 4.

15. James Vincent, “US announces AI software export restrictions,” *The Verge* (Jan. 5, 2020), <https://www.theverge.com/2020/1/5/21050508/us-export-ban-ai-software-china-geospatial-analysis>.

16. “U.S. government limits exports of artificial intelligence software,” *Reuters* (Jan. 3, 2020), <https://www.reuters.com/article/usa-artificial-intel>

ligence/us-government-limits-exports-of-artificial-intelligence-software-idUSL1N2980M0.

17. Liam Tung, “Tech trade ban: Exporting AI is going to get harder, says US,” *ZDNet* (Jan. 6, 2020), <https://www.zdnet.com/article/tech-trade-ban-exporting-ai-is-going-to-get-harder-says-us/>.

18. Vincent, *supra* note 15.

19. Draft Office of Management and Budget Memorandum, Guidance for Regulation of Artificial Intelligence Applications (January 13, 2020) at 1, *available at* <https://www.whitehouse.gov/wp-content/uploads/2020/01/Draft-OMB-Memo-on-Regulation-of-AI-1-7-19.pdf>; *see* John Frank Weaver, “Everything Is Not *Terminator*: The White House Memo on Regulating AI Addresses Values But Not the Playing Field,” *The Journal of Robotics, Artificial Intelligence & Law* (Vol. 3, No. 3; May-June 2020), 217-222.