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ALERT

# Commerce Publishes New Controls on Emerging Technologies

October 7, 2020

On October 5, 2020, the U.S. Department of Commerce's Bureau of Industry and Security (BIS) published a rule implementing certain changes in the Export Administration Regulations (EAR) that were agreed upon in December 2019 by participating governments in the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, a multilateral export control regime of like-minded countries. The rule targets six emerging technologies, including devices used to make sophisticated integrated circuits as well as certain hacking and surveillance tools, as further described below:

- **Additive manufacturing machines:** BIS's new rule updates Export Control Classification Number (ECCN) 2B001, which controls certain computer numerically controlled (CNC) machines, to make clear that hybrid machines that have multi-axis CNC capability, along with additive manufacturing capability, must still be evaluated against the technical criteria in ECCN 2B001. U.S. companies may recall that additive manufacturing (*e.g.*, 3D printing) was one area of potential concern that BIS identified in its 2018 Advance Notice of Proposed Rulemaking (ANPRM) seeking comments on criteria for identifying emerging technologies under Section 1758 of the Export Control Reform Act of 2018 (ECRA).
- **Computational lithography software specially designed for the development of patterns on Extreme Ultraviolet (EUV) masks or reticles:** BIS also updated ECCN 3D003, which had controlled certain physics-based simulation software specially designed for the development of lithographic, etching, or deposition processes, so that it now controls emerging

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## Practice Areas

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Electronic Design Automation (EDA) or computational lithography software developed for Extreme Ultraviolet (EUV) masks used in semiconductor manufacturing. BIS commented that Extreme Ultraviolet Lithography (EUVL) "introduces a number of issues that must be accurately modeled and corrected on the mask or reticle to produce optimized patterns in resist" and that specific software is necessary for EUVL, such as mask three-dimensional effects, mask-shadowing effects, direction of illumination effects, long range flare effects, proximity effects, stochastic effects in resist, and source-masks optimization. Again, the U.S. government has highlighted semiconductor manufacturing as a key area of concern, particularly with respect to technology transfers involving China.

- **Technology for finishing wafers for 5nm production:** In this same vein, the new rule creates ECCN 3E004, which controls technology for the production of substrates for high-end integrated circuits. Specifically, the new ECCN controls technology required for slicing, grinding, and polishing of 300 millimeter diameter silicon wafers to achieve a Site Front least sQuares Range (SFQR) less than or equal to 20 nanometers at any site of 26 millimeters by 8 millimeters on the front surface of the wafer and an edge exclusion of less than or equal to 2 millimeters.
- **Software for monitoring and analysis by law enforcement of communications and metadata acquired via a handover interface from a telecom provider:** The rule adds to ECCN 5D001 a control on surveillance software specially designed or modified for monitoring or analysis by law enforcement (*i.e.*, to analyze the content of communications acquired from a handover interface). Importantly, to be captured by this new control, the software (1) must be able to execute searches on the basis of "hard selectors" (*i.e.*, data or a data set related to an individual, such as family name, given name, email, street address, phone number, or group affiliations) of either the content of communication or metadata acquired from a communications service provider using a handover interface, and (2) must provide the ability to map the relational network or track the movement of targeted individuals based on such searches. ECCN 5D001 carves out from control network management tools or banking software specially designed or modified for billing purposes, Network Quality of Service (QoS), Quality of Experience (QoE), mediation devices, or mobile payment or banking use.
- **Digital forensics tools that circumvent authentication or authorization controls and extract raw data:** BIS also updated ECCN 5A004 such that it now controls digital forensics or investigative tools that circumvent authentication or authorization mechanisms and extract raw data from a computer or communications device. BIS noted that while these tools have traditionally been used by law enforcement, they are now increasingly being employed by the military to extract time-critical information from devices on the battlefield. The new rule is not intended to cover items that extract data that is completely unprotected on a device, or test or production equipment, system administrator tools, or tools used for retail purposes, such as unblocking mobile phones. Nor are items limited to extracting simple user data (*e.g.*, contact lists, videos, and photos, such as to transfer personal information between mobile phones) controlled. BIS also added exclusion notes to ECCN 5D002 and ECCN 5E002 to carve out intrusion software and techniques used to circumvent authentication and authorization and extract raw data (which are well known and often exchanged as part of legitimate cyber incident response and vulnerability analysis activities), respectively, from control.

- **Sub-orbital craft:** Finally, BIS added controls on sub-orbital craft—which are designed to operate above the stratosphere and land on Earth without completing an orbit—to ECCN 9A004.

ECRA formalized and prioritized identifying and establishing appropriate controls during the early development stages on the export of "emerging and foundational technologies" that are essential to the national security of the United States but are not yet listed on the EAR's Commerce Control List. BIS noted that the new controls summarized above were instituted "in a manner contemplated by" ECRA for identifying emerging technologies. This rule also follows BIS's request for broader, overarching feedback on foundational technologies earlier this year and emerging technologies in 2018, which may be used to add additional controls under U.S. law and to inform future U.S. proposals to multilateral regimes like the Wassenaar Arrangement.

Please contact one of the authors listed on this alert if you would like additional information regarding this rule or BIS's broader proposals and proceedings for identifying and controlling emerging and foundational technologies.

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*Nicole Hager, a Law Clerk at Wiley Rein LLP, contributed to this alert.*