Prepared by Holland & Knight
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U.S. EXPORT CONTROLS: A GUIDE FOR U.K. COMPANIES AND UNIVERSITIES INTERESTED IN PARTNERING WITH THE U.S. IN R&D

Prepared for the Foreign, Commonwealth and Development Office of the United Kingdom

by HOLLAND & KNIGHT LLP

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This Guide is intended to help U.K. companies and universities understand U.S. export controls and avoid common pitfalls that can occur. It is designed as an overview of the various U.S. export control regimes, and can serve as a preliminary guide to determine what export controls may apply to a particular transaction. This Guide, however, only provides general guidance about the process involved. It is not intended to provide advice with respect to any particular transaction.

AUTHOR'S NOTE

At a first glance, U.S. export controls might appear complex and uninviting to the U.K. researcher. Scratch the surface and you will find that the U.S. export control regime shares a lot with U.K. export controls as both are based on the principles of the Wassenaar Arrangement. The two U.S. export control lists—the U.S. Munitions List and the Commerce Control List—track closely the Wassenaar Arrangement Munitions List and List of Dual-Use Goods and Technologies. The U.S. will sometimes unilaterally add items to the two lists before having negotiated the corresponding change to the Wassenaar Arrangement Lists with its partners, but these are relatively rare and provisions are made for the U.S.'s closest allies, such as the U.K.

Furthermore, both commercial and military exports to the U.K., and the involvement of U.K. nationals in controlled activities are treated favorably, with export licenses, when required, granted in most cases without any unusual delays. Of particular importance to U.K. researchers is the U.S. concept of the "Fundamental Research Exception," which takes out of the scope of export controls a large portion of basic and applied research in the context of academic collaborations—both between U.S. universities and U.S. government research sponsors, as well as between U.S. and U.K. universities and research laboratories.

In recent years, U.S. regulators have collaborated extensively to streamline the two export control regimes—targeting defense and dual-use technologies, respectively. As a result, both the U.S. Munitions List and the Commerce Control List are now based on the enumeration approach; many controls were re-evaluated, and certain items decontrolled or moved from the defense to the dual-use list; definitions and license exceptions were synchronized across the two regimes; and mechanisms created to minimize the administrative burden on exporters.

This Guide is intended to help U.K. businesses and researchers navigate the complexities of U.S. export controls and provide useful tips on how to engage in collaboration with U.S. counterparts, while avoiding common pitfalls.

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EXECUTIVE SUMMARY

The U.S. is part of the Wassenaar Arrangement. Accordingly, U.S. regulatory regimes that govern the export of defense and dual-use goods and technology—namely, the International Traffic in Arms Regulations (**ITAR**) and the Export Administration Regulations (**EAR**)—generally follow the basic principles established by the Wassenaar Arrangement. Within the ITAR- and EAR-frameworks, the U.S. maintains the U.S. Munitions List and the Commerce Control List, which correspond to the Wassenaar Arrangement Munitions List and List of Dual-Use Goods and Technologies. U.K. companies and researchers looking to engage in projects with a U.S. nexus can expect to find similar controls to those under the U.K. Strategic Export Control Lists, which contain the consolidated list of strategic military and dual-use items that require export authorisation from Great Britain and Northern Ireland.[1]

U.S. export controls, however, add a layer of complexity, which is different from the practice in the U.K. First, the U.S. unilaterally adds items to its control lists, outside the scope of the Wassenaar Arrangement, on the basis of national security, foreign policy, or other strategic reasons—while the U.S. regulators attempt to negotiate with their Wassenaar Arrangement partners to have those controls approved multilaterally, it has built in a mechanism in its law, which will allow to keep such unilateral controls indefinitely. In that sense, U.S. export controls are more restrictive than those of the U.K. A recent example of such unilateral controls are new entries added to the Commerce Control List under the heading of "emerging technologies" in response to recent changes to the U.S. investment regime, which required that special focus be paid to emerging and foundational technologies—those that are not otherwise controlled on the two lists but warrant special treatment because of their strategic importance to the national security of the U.S. (As of the publication of this Guide, the U.S. government has not named any foundational technologies, but has only provided examples of the types of technologies that may fall under its umbrella.)

Furthermore, there are two export regulators in the U.S.—the U.S. Department of State, which deals with defense exports, and the U.S. Department of Commerce, which deals with dual-use and commercial exports. Separately from the export controls based on the technology characteristics, a third agency, the Department of the Treasury, administers economic sanctions programs.

In an effort to streamline the two export control regulatory regimes, the U.S. government undertook significant changes in 2010-2013 through the Export Control Reform process. Broadly speaking, these changes aimed to demilitarize items that had become prevalently used in commercial applications; adopt the enumeration approach with respect to items controlled on the U.S. Munitions List (i.e., moving away from open-ended definitions of "specifically designed for military use"); and synchronize definitions, available license exceptions, and procedural requirements. The changes also allowed for a single license application to the U.S. Department of State, when the export involves *both* defense and dual-use technologies to be used in the same

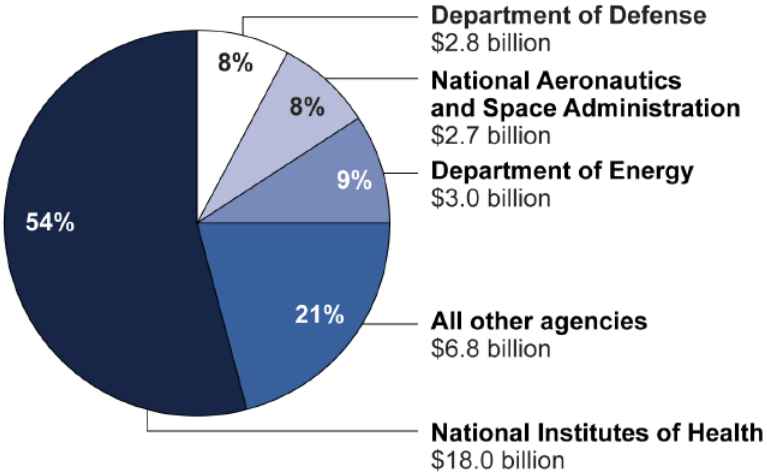
[1] UK Strategic Export Control Lists, UK Dep't Int'l Trade *available at* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/948279/uk-strategic-export-control-list.pdf (last updated Jan. 2021).

project. The Export Control Reform was conducted in close collaboration with industry with the goal of keeping U.S. businesses competitive globally, while permitting closer and easier collaboration with close allies, such as the U.K.

The most recent published statistics on dual-use exports to the U.K., from FY 2019, support the U.S.'s stated goal of closer and easier collaboration with its closest allies. By way of example, the U.S. Department of Commerce's average processing time for export applications to the U.K. (excluding deemed exports) was 16 days, compared to the overall average of 23 days. The U.S. Department of Commerce approved such applications at a rate of 89.5 percent (or 1,688 applications), compared to the overall average of 85.5 percent. With respect to deemed export applications, which are used to authorize foreign nationals working on export controlled projects in the U.S., the global community filed 1,320 deemed export applications; those filed by British Nationals represented only 2.4 percent of the total). Of the applications filed, the U.S. Department of Commerce approved 78.13 percent and returned the remainder without further action; meaning, either the application had to be revised or BIS determined that no license was required for the proposed transaction. Since 2015, the U.S. Department of Commerce has not denied any deemed export license applications filed by British Nationals. Similarly, for FY 2019, only 1.9 percent of the U.S.'s exports to the U.K. (valued at $69.2 billion) were subject to a dual-use good license requirement. Read together, these statistics demonstrate that the U.S. is serious about supporting collaborations with the U.K.

Of particular importance to U.K. companies and researchers is the Fundamental Research Exception, which recognizes the enormous value U.S. universities and research laboratories contribute to the development and advancement of cutting edge technologies and innovations. The most recent published data shows that in FY 2017 the U.S. Federal Government spent approximately $33.3 billion funding research and development at U.S. universities.[2] (See Fig. 1.) This suggests a great potential for collaboration between U.S. and U.K. researchers, particularly given the relatively lesser controls for the U.K. and close ties between the two countries. To advance such opportunities, U.K. researchers should learn the scope of the Fundamental Research Exception and look for opportunities to collaborate with U.S. counterparts. In essence, the Fundamental Research

Figure 1: Percentage and Total Amount of Federal Funding Obligated for Research and Development at U.S. Universities, by Agency, in Fiscal Year 2017



Source: GAO analysis of National Science Foundation data. | GAO-20-394

[2] *See* U.S. Gov't Accountability Office, Report No. GAO-20-394, *Export Controls: State & Commerce Should Improve Guidance & Outreach to Address Univ.-Specific Compliance Issues* (May 2020), *available at* https://www.gao.gov/assets/710/707104.pdf.

Exception stipulates that research results that would otherwise be export controlled are outside the scope of the U.S. export controls, if the research was conducted at an accredited U.S. university and there were no restrictions placed on publication of the research results.

In sum, while the U.S. export control regime has its own complexities, it is not unlike what U.K. businesses know about export controls from their experience at home. The U.S. government and the export regulators, specifically, are mindful of the need to remain competitive and have worked to improve the overall regulatory environment. And the U.S. and the U.K. have been long-standing close allies, which helps enterprises between U.S. and U.K. companies and nationals.

INTRODUCTION

U.K. companies and universities working with U.S. companies or universities often face what seems like a maze of U.S. export control regulations and requirements, overlapping other regulatory regimes, such was customs and immigration, university research, and conflict of funding, and a host of other matters. Navigating export control requirements can be daunting, especially in light of the peculiarity of the U.S. regime, which, unlike allies within the Wassenaar Arrangement, is bifurcated in dealing with the export of controlled technologies and adds a layer of complexity by the interplay with the separate economic sanctions programs and foreign investment limitations associated with critical technologies. The recent Export Control Reform process sought to address some of the issues by streamlining definitions and procedures but the field is constantly changing in response to emerging technologies and novel applications of well established, foundational technologies, and the U.S. balancing its national security concerns with support for open investment and trading environments.

Broadly speaking, the U.S. government implements controls that regulate both *what* items (*inclusive* of technology, software, and technical data) are exported, re-exported, or transferred and *who* receives such items. In that respect, the U.S. follows the *in rem* jurisdiction principle, i.e., the controls follow U.S.-origin goods no matter how many times they change hands. The level of control and need for a license ultimately depends on the ultimate destination of the item and whether the U.S. considers it to be an ally or not, and whether the exported item is a defense or dual-use product or service.

As a general rule with very limited exceptions, defense exports, i.e., exports of defense equipment and technology listed on the U.S. Munitions List (**USML**), will require a license from the U.S. Department of State's Directorate of Defense Trade Controls (**DDTC**), notwithstanding the country of ultimate destination. By contrast, civilian items, including dual-use items, i.e., items that have both a civilian and military use, and certain demilitarized equipment, are controlled for specific foreign policy reasons. Such items are listed on the Commerce Control List (CCL) under the regulation of the U.S. Department of Commerce's Bureau of Industry and Security (**BIS**), which imposes controls based on where the item is ultimately headed. The USML and the CCL largely follow the Wassenaar Arrangement control lists but are broader in scope as the U.S. government may unilaterally add an item to either list prior to submitting it for review under the Wassenaar Arrangement.

Other agencies are involved in the implementation and enforcement of U.S. export controls. For example, the U.S. Department of Treasury's Office of Foreign Assets Control (**OFAC**) administers economic sanctions, either adopted by the UN Security Council or unilaterally by the U.S.; U.S. Customs and Border Patrol enforces export requirements for goods shipped to foreign destinations. Given the kaleidoscope of U.S. federal agencies that regulate export activities, U.K. companies and universities need to understand what actions, communications, transfers, and research may expose them to U.S. export controls and, if non-compliant, U.S. sanctions.

The goal of this Guide is to reduce barriers to U.K.-U.S. research and innovation collaboration by improving U.K. researchers and industry's understanding of the U.S. export control regime and

making the system easier to navigate. To accomplish this, this Guide addresses the following topics:

1) **The ABC of U.S. Export Controls**—the agencies that enforce them; the items (tangible and intangible) controlled; and insights into the enforcers' motivations. The discussion covers:
    a. National Security as the *raison d'etre* of the U.S. export control regime.
    b. The interplay between the U.S. export control regime and the Wassenaar Arrangement.
    c. The impact of the recent Export Control Reform process in streamlining the bi-furcated U.S. export control regime and aligning it more with the Wassenaar Arrangement enumeration approach.
    d. The newly introduced "emerging" and "foundational" technologies as part of a foreign direct investment overhaul and the impact on U.S. export controls.
    e. How to determine whether the International Traffic in Arms Regulations (**ITAR**) or the Export Administration Regulations (**EAR**) restrict a company's or university's operations, within and outside the United States.
    f. "Controlled" commodities, technology, or technical data and the exchange of knowhow.
    g. The interplay between regulatory frameworks governing exports of tangible and intangible commodities and information, and those governing inbound foreign investment into the United States.

2) The EAR—the focus of this Guide is on export of commercial dual-use technology, as the regime is more nuanced than defense trade controls, and allows for greater collaboration across borders. Specific attention is paid to:
    a. Industry sectors and product categories subject to increased scrutiny.
    b. Reading the CCL to determine whether a commodity, software, or technology is controlled for export under the EAR.
    c. Distinguishing between technical data and equipment.
    d. Understanding the EAR's extraterritorial reach.
    e. Exports to the U.K. and Licensing Statistics.

3) Universities—the Guide gives special attention to university research, accounting for the desire within academia to collaborate across borders. In the U.S., universities play an important role in cutting edge technology research and development (**R&D**), with a substantial amount of the research sponsored by the U.S. Department of Defense and other U.S. agencies, or their contractors. The competing interests of maintaining an open learning environment and the ability to publish, and accepting funding that places limitations on who can participate in the research or how broadly the research results

can be shared has been debated by academia for decades but is particularly important of late, with over 1.2 million foreign students enrolled in U.S. universities.

a. Dos and Don'ts.

b. Distinguishing between academic research and industry collaboration.

c. Employment of non-U.K. foreign nationals.

4) **Dealing in Controlled Technologies: Obligations, Key Considerations, and Recommended Compliance Steps.**

5) **Ramifications for Non-Compliance Under the EAR.**

6) **Practical Advice for U.K. Actors Engaging in Collaborative R&D or Technology Transfer or Exporting to the U.S.**

To ease your journey, this Guide provides a glossary of key terms and identifies helpful secondary sources.

We use the following key symbols:

The bell denotes practice pointers and flags potential pitfalls.

http:// The electronic version of the Guide includes hyperlinks to Web sites with additional information. Please note that because Web addresses change, some links might become outdated.

"**foreign**" Unless stated otherwise, by "foreign," this Guide means non-U.S.

LIST OF ABBREVIATIONS

AT	Anti-Terrorism reasons for control
BIS	Bureau of Industry and Security, Department of Commerce
CCATS	Commodity Classification Automated Tracking System
CCL	Commerce Control List
CFIUS	Committee on Foreign Investment in the United States
CJ	Commodity Jurisdiction determination
C.F.R.	U.S. Code of Federal Regulations
DDTC	Directorate of Defense Trade Controls, Department of State
DECCS	Defense Export Control and Compliance System
DTSA	Defense Technology Security Administration
EAR	Export Administration Regulations
EAR99	Item subject to the EAR, but not specifically listed on the CCL
ECCN	Export Control Classification Number
ECR	Export Control Reform, a government-wide approach to reform
ECRA	Export Control Reform Act passed by Congress in 2018
EI	Encryption Items controls
FIRRMA	Foreign Investment Risk Review Modernization Ac
FMS	Foreign Military Sale program
FOCI	Foreign Ownership, Control, or Influence
FY	Fiscal Year
GC	General Correspondence approval
ITAR	International Traffic in Arms Regulations
LOA	Letter of Offer and Acceptance
MDE	Major Defense Equipment

MLA	Manufacturing License Agreement
MT	Missile Technology
MTCR	Missile Technology Control Regime
NS	National Security
PCL	Personnel Security Clearance
R&D	Research and Development
RS	Regional Stability
RWA	Return the application without action
SNAP-R	Simplified Network Application Process Redesign, an electronic account for submissions to U.S. Department of Commerce
TAA	Technical Assistance Agreement
TCP	Technology Control Plan
TID	TID, in “TID U.S. business,” respectively, stands for “technology,” “infrastructure,” and / or “personal data”
USML	U.S. Munitions List
Wassenaar Lists	Wassenaar Arrangement List of Dual-Use Goods and Technologies and Munitions List

1. UNIVERSITIES AND SMALL BUSINESSES INVOLVED IN COLLABORATIVE R&D

A. How are Export Controls Relevant?

U.S. agencies, such as the U.S. Department of Defense, are investing less and less in their own internal research and development. As a result, more and more of that work in cutting-edge technologies is farmed out to U.S. universities and their affiliated laboratories, or to super-specialized small businesses. In a knowledge-based economy, collaboration across fields or borders involves employing non-U.S. scientists, engineers, and companies to advance research and development. Collaboration on cross-border R&D may involve the transfer of controlled technical data or technologies that are vital to U.S. national security and other interests. As a result, U.S. export enforcement personnel are particularly interested in R&D activities, whether in academia or the private sector.[3]

A university or company that can deftly navigate the U.S. export controls maze can ensure compliance, without unnecessarily restricting academic collaboration and employment, sponsorship, and admittance of non-U.S. students and scholars. Further, university researchers and administrators need to understand when export control laws apply to research, whether sponsored or not, to avoid creating overly burdensome controls or otherwise unnecessarily restricting normal university activities.

B. Deemed Export

The U.S. government controls the "export," "reexport," and "transfer (in-country)" of tangible *and* intangible items to foreign countries and nationals, notwithstanding where the transfer takes place. Of most importance to universities and other R&D businesses is the transfer of controlled information. Even if the transfer to a foreign national is *within* the United States, it is "deemed" to be an export to the home country of the foreign national. A "deemed" export can happen if controlled information is revealed through a demonstration, oral briefing, or a lab visit; in an email; or by posting to a company's or university's internal or external website.

Determining whether a transfer qualifies as a "deemed export" has become the modus operandi for determining whether research undertaken at a U.S. company or university delivers the kind of knowledge the U.S. government considers crucial for U.S. national security and, as such, warrants control.

C. Key Government Actors

Numerous U.S. agencies are responsible for developing, implementing, funding, and overseeing university operations, research, hiring, and mandatory disclosure requirements. Readers of this Guide should be aware of the following agencies (classified in one of four categories):

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[3] *See* U.S. Gov't Accountability Office, Report No. GA0-07-70, Report to the Comm. on the Judiciary, Export Controls: Agencies Should Assess Vulnerabilities & Improve Guidance for Protecting Export-Controlled Info. at Univs. (Dec. 2006), *available at* https://www.gao.gov/assets/gao-07-70.pdf.

i. **Policy Developers**—U.S. Congress and Office of Science and Technology Policy.

ii. **Regulators / Rule-Makers**—U.S. Departments of Commerce, State, Defense, Treasury, and Education.

iii. **Funding Agencies—**U.S. Departments of Defense, Energy, and Commerce; NASA; DARPA; National Institutes of Health; and National Science Foundation (*among others*).

iv. **Enforcers—**U.S. Departments of Justice, Treasury, and Homeland Security (CBP) and U.S. Patent and Trademark Office, as well as the enforcement divisions of the Departments of Commerce, State, and Defense.

Streamlined Approach. Companies and universities, both U.S. and non-U.S., are frequently juggling competing compliance obligations. In a positive development, over the last decade, the Directorate of Defense Trade Controls and the Bureau of Industry and Security have worked, in a collaborative manner, to harmonize their respective regimes. As a result, companies and universities are now able to streamline and harmonize their compliance programs.

2. UNTANGLING THE U.S. EXPORT CONTROL MAZE

A. U.S. Approach to Export Controls

The U.S. government regulates the export of tangible and intangible commodities to secure U.S. national security and promote foreign policy objectives (e.g., anti-terrorism, crime control, nuclear nonproliferation, etc.). Of particular concern to the U.S. government are exports of equipment (and components and technology/IP associated therewith) that are designed, manufactured, developed, or produced by the U.S. defense and high-technology sectors. It is important for readers to understand that "technology" includes technical data, such as blueprints or manuals, as well as services, including the transfer of "knowledge" or training. While equipment export procedures are at least somewhat comparable to the U.K. export procedures, it is the licensing of technology that often creates practical problems for U.K. companies engaging with U.S. companies.

Example: In informal preliminary discussions about joint work, a U.S. company may withhold "export-controlled technical data" or refuse to discuss certain issues. Even where talks are held in the U.S., any such disclosure would be considered a "deemed export."

Furthermore, U.S. jurisdiction follows U.S.-origin equipment and technology (*in rem* jurisdiction) and lasts throughout the life of any such equipment or technology. As a result, after exporting the U.S.-origin commodity or technology, you may still need an authorization from the U.S. government to subsequently re-export or transfer (in country) to a third party.

The United States takes both a multilateral and a unilateral approach to export controls. As a party to the Wassenaar Arrangement, the U.S. recognizes and controls all items identified on the

Wassenaar Arrangement List of Dual-Use Goods and Technologies and Munitions List (**Wassenaar Lists**) by placing them, respectively, on the Commerce Control List (**CCL**) or the U.S. Munitions List (**USML**). The Directorate of Defense Trade Controls **(DDTC**) at the Department of State administers the International Traffic in Arms Regulations (**ITAR**) and maintains the USML. In parallel, the Bureau of Industry and Security (**BIS**) at the Department of Commerce administers the Export Administration Regulations (**EAR**) and maintains the CCL. However, the U.S. has added a number of items to the CCL, which *do not* appear on the Wassenaar Lists—controlled for antiterrorism, regional stability, or crime control purposes; in this regard, the United States *unilaterally* controls certain items. The intricacies of U.S. export controls and the two lists are discussed in greater detail in Section 3.

B. Export Control Reform

Under President Obama, the U.S. undertook to streamline the two export control regimes. These efforts resulted in a more unified approach. For example, most definitions in the ITAR and the EAR were synchronized. Most importantly, the U.S. adopted an enumeration approach to controlled items and deescalated controls for certain defense items that were transferred from the USML to the CCL. Of particular interest to readers of this Guide will be the following:

i. The "***positive list***" approach was adopted to describe controlled items using objective criteria rather than broad, open-ended, subjective, or design intent-based criteria, constituting a major change to the USML. All USML categories, with the exception of Categories I–III, were revised as part of the Export Control Reform process.[4]

ii. The USML and CCL were revised so that each

   a. is consistent with the U.S. government's criteria for "tiered" control, i.e., the idea that controlled items may be controlled at different levels based on ultimate destination, end-uses, and end-users;

   b. creates a "bright line" between the two lists to clarify jurisdictional determinations and reduce government and industry uncertainty about whether a particular item is subject to the jurisdiction of the ITAR or the EAR; and

   c. is structurally "aligned" to allow the eventual combination of the two lists into a single control list.

iii. Certain defense items were moved from the USML to the CCL to reduce the licensing burden for certain less sensitive technologies.

[4] The Export Control Reform process, which aimed to streamline the two export control regimes, should not be confused with the Export Control Reform Act of 2018, which extended the life of the EAR and delegated the U.S. Commerce Department with the authority of identifying "emerging and foundational" technologies as part of "critical technologies" that are the basis for CFIUS jurisdiction over certain foreign investment transactions.

iv. License exceptions were synchronized across the EAR and ITAR regulatory regimes.

C. U.S. Committee on Foreign Investment in the U.S.

The Committee on Foreign Investment in the United States (**CFIUS**) is an inter-agency committee comprised of a number of U.S. agencies, including the U.S. Departments of the Treasury, Justice, Homeland Security, State, Commerce, and Defense. CFIUS has jurisdiction over foreign investment transactions in the U.S., if such investments would pose a threat to U.S. national security. The term "national security" is intentionally left undefined to allow CFIUS flexibility in its review.

In 2018, the U.S. Congress amended the Defense Production Act of 1950 to expand CFIUS jurisdiction.[5] CFIUS can now review transactions that will result in foreign control over a U.S. business;[6] certain controlling and non-controlling investments in a TID U.S. business,[7] i.e., a U.S. business that handles "critical technology,"[8] "critical infrastructure,"[9] or "sensitive data" of U.S. nationals;[10] and certain real estate transactions if the real estate is located in close proximity to designated sensitive U.S. military facilities, maritime ports, or airports.[11]

i. Transactions Subject to a Mandatory Review by CFIUS

With the exception of a small number of transactions involving a TID U.S. business, filing with CFIUS is voluntary, i.e., parties to the transaction can choose to close without having their transaction reviewed by CFIUS. Parties choose to file to prevent CFIUS from unilaterally initiating a review, which can happen at any point in the future, and which might result in CFIUS ordering a divestiture.

Transaction subject to a mandatory review include:[12]

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[5] Foreign Investment Risk Review Modernization Act of 2018 (**FIRRMA**), Title XVII, Pub. L. 115-232.
[6] *See* 31 C.F.R. § 800.208 (defining "control" under Part 800 of the CFIUS Regulations); *id.* at § 800.210 (defining "covered control transaction" under Part 800 of the CFIUS Regulations); *id.* at § 800.213 (defining "covered transaction' under Part 800 of the CFIUS Regulations).
[7] 31 C.F.R. § 800.248 (defining TID U.S. business).
[8] *See* 31 C.F.R. § 800.215.
[9] Appendix A to 31 C.F.R. Part 800.
[10] *See* 31 C.F.R. § 800.241.
[11] Appendix A to 31 C.F.R. Part 802 identifies the specific military installations and geographic areas, proximity to which may trigger CFIUS review. CFIUS identifies, on its webpage, the relevant lists of airports and maritime ports identified in the regulations. The U.S. Department of the Treasury hosts a "CFIUS Real Estate Instructions (Part 802)" page, providing resources for locating airports and maritime ports identified by the CFIUS regulations. As of the time of the last update to this Guide, the instructions page was available at https://home.treasury.gov/policy-issues/international/the-committee-on-foreign-investment-in-the-united-states-cfius/cfius-real-estate-instructions-part-802.
[12] 31 C.F.R. § 800.401.

- A foreign person acquiring a controlling or non-controlling[13] interest in a U.S. business that designs, produces, manufactures, fabricates, or develops "critical technology"; or
- a foreign government acquiring a *substantial interest* in a TID U.S. business.

ii. Foundational and Emerging Technologies

One important concept introduced as part of the CFIUS reform in 2018 affects the U.S. export control regime as it introduces the term "foundational and emerging technologies." Under FIRRMA, CFIUS can review investments in U.S. businesses that handle "critical technology." Critical technology is itself defined to include items subject to the ITAR and the EAR, as well as a new category of "foundational and emerging technologies."[14]

The term "foundational and emerging technologies" is not defined in the CFIUS statute. Instead, in a parallel legislation—the Export Control Reform Act (**ECRA**)[15]**—**Congress delegated to the U.S. Department of Commerce the responsibility of identifying "foundational and emerging" technologies that are essential to the country's national security *and* not already captured on the USML or the CCL.[16]

Not already on the USML or CCL. It is important to appreciate that the term "critical technology" already captures USML and CCL items; therefore, "foundational and emerging" technologies are, by definition items, different from ITAR- or EAR-controlled items, i.e., items that are typically aligned with the Wassenaar Arrangement lists.

a. "Emerging" Technologies

As the final arbiter on what constitutes foundational and emerging technologies, Commerce has decided to add "emerging" technologies to the CCL, identifying them as "emerging" technologies in the specific entry. This approach is intended to help industry navigate the controls by adding "emerging" technologies under the umbrella of the EAR framework, which is already known to exporters. Commerce's continued reliance on the CCL to control "emerging" technologies is good news for industry. First, it suggests that Commerce lacks interest in creating a separate control list. Second, it ensures that newly controlled items are (i) described with specificity; (ii) assigned specific Export Control Classification Numbers **(ECCNs)**; and (iii)

[13] If non-controlling interest, it must be coupled with certain rights allowing access to the controlled technology or affecting decision-making regarding the controlled technology.
[14] *See* 31 C.F.R. § 800.215.
[15] The Export Control Reform Act (**ECRA**) (codified in Chapter 58 to Title 50 of the U.S. Code) was signed into law on August 13, 2018, in response to a comprehensive overhaul of the foreign direct investment regime driven by a concern that certain sectors of the U.S. economy that are vital for its national security are consistently targeted by unfriendly nations and deserve better protection (e.g., semiconductors).
[16] 50 U.S.C. § 4817.

governed by familiar licensing requirements. Third, it makes locating newly controlled "emerging" technologies easier, as the CCL is well known.[17]

b. "Foundational" Technologies

"Foundational technologies" have been more of a challenge. The plain meaning of the term foundational suggests that not only are these technologies not currently controlled, but also they are so prevalent in use to be the basis of many other technologies and innovations. In August 2020, BIS announced that it was pursuing an interagency process to identify and describe "foundational technologies;" proposed two factors for evaluating whether a technology is "foundational"—(i) is the technology required or used to pursue innovations in the conventional weaponry, foreign data gathering, and weapons of mass destruction spaces and (ii) was the technology illicitly procured; and solicited comment from the public regarding possible definitions, sources to identify them, criteria to determine special treatment, and what the impact of controlling such technologies may be.[18]

As of the publication of this Guide, the U.S. government has not designated any "foundational" technologies. Based on the tenor and contents of BIS's announcement, however, we expect BIS to designate, as "foundational," technologies involved in the semiconductor, laser, sensor, and underwater system manufacturing spaces. We also expect that BIS will follow a similar approach as with "emerging" technologies, and will include "foundational" technologies on the CCL.

D. Regulated Activities

The U.S. government regulates the "export," "reexport," and "transfer (in-country)" of all U.S. origin items as well as items physically located in the U.S. The Export Control Reform process harmonized the definitions of these terms across the EAR and ITAR.

i. **Export** is a broadly defined term, capturing all transfers of tangible and intangible U.S. origin items to a foreign country or foreign national outside the United States.[19]

ii. **Reexport** captures transactions where a U.S. origin item, lawfully exported to a foreign country, is exported from the foreign country to a third country.

iii. **Transfer** (in-country) captures transactions where a U.S. origin item, lawfully exported to a foreign country, is transferred within the foreign country of export by the originally authorized end-user to third party.

[17] In October 2020, the U.S. government added six "emerging technologies" to the CCL. See *Implementation of Certain New Controls on Emerging Techs. Agreed at Wassenaar Arrangement 2019 Plenary*, 85 Fed. Reg. 62,583, 62,584 (Dep't Commerce Oct. 5, 2020).

[18] *Identification and Review of Controls for Certain Foundational Techs.*, 85 Fed. Reg. 52,934, 52,934 (Dep't Commerce Aug. 27, 2020).

[19] Please see section 1.B. for a discussion of "deemed exports" under 22 C.F.R. § 120.17.

E. The Regulators & Their Commodities

Readers of this Guide should be aware of the activities and regulatory and enforcement regimes of the following U.S. federal agencies.

i. U.S. Department of State

The U.S. State Department Directorate of Defense Trade Controls (**DDTC**) administers the exports of defense equipment and technology under the International Traffic in Arms Regulations (**ITAR**), 22 C.F.R. Parts 120–130. With limited exceptions, virtually *all* defense equipment and technology regulated under the ITAR and exported from the U.S. requires a DDTC license. For joint projects between U.S. and U.K. companies, the U.S. company may obtain broad authorization, generally in the form of a Technical Assistance Agreement (**TAA**), to cover technology transfers. However, if equipment will be exported in furtherance of the project authorized under the TAA, the exporter needs to obtain a separate license for the specific equipment to be exported. DDTC works closely with various subsections of the U.S. Department of Defense, particularly the Defense Technology Security Administration (**DTSA**) and services such as the U.S. Air Force and U.S. Navy when reviewing license applications.

Classified Information & U.S. Contractors. U.S. companies may be granted access to classified information to perform on a U.S. government contract. Cleared contractors are subject to the requirements of the National Industrial Security Program Operating Manual (NISPOM), DoD 5220.22-M, administered by the U.S. Department of Defense. NISPOM controls of classified information are separate and in addition to export controls. In rare circumstances, U.K. nationals might be granted special permission to access U.S. classified information in certain joint NATO programs or other joint government projects.

Please see Section 3.A. for a more comprehensive discussion of items controlled under the ITAR; applicable controls; and licensing process and exceptions.

ii. U.S. Department of Commerce

The U.S. Department of Commerce Bureau of Industry and Security (**BIS**) regulates the export of commercial products and technology, and certain less-sensitive defense items controlled under the Export Administration Regulations (**EAR**), 15 C.F.R. Parts 730–774. These rules cover a wide range of commercial, including dual-use, products, controlled because of potential military applications, national security concerns, or other strategic value. Unlike defense goods, many commercial goods and technologies can be exported to many countries without a license. Please see Section 3.B. for a more comprehensive discussion of items controlled under the EAR; applicable controls; and licensing process and exceptions.

iii. Office of Foreign Assets Control, U.S. Department of the Treasury

There are a number of other U.S. laws and regulatory regimes that U.K. businesses should be aware of, as they may come into play when dealing with U.S. companies.

Restricted and Prohibited Transfers. In addition to general export licensing, the U.S. has a number of other specific restrictions that apply to particular countries, organizations, or persons:

- The U.S. prohibits the export of all, or nearly all, goods to Cuba, Iran, North Korea, Syria, and the Crimea region (note that the list of countries under comprehensive embargo changes from time to time). Summaries of sanctions restrictions are available online at:

  http://www.treasury.gov/resource-center/sanctions/Programs/Pages/Programs.aspx.

Of practical concern is the U.S. claim of jurisdiction over U.K. subsidiaries of U.S. companies with respect to trade with Cuba and Iran.

- The U.S. government has a number of prohibited party lists, including the Specially Designated Nationals (**SDN**) List of known terrorists, narcotics traffickers, etc. This list, along with other sanctioned entities and individuals lists may be searched through the **U.S. Consolidated Screening List Search Engine**, available online at: https://www.trade.gov/data-visualization/csl-search.[20]

3. BASICS OF ITAR AND EAR CONTROLS

A. ITAR

The DDTC, under the ITAR, has jurisdiction over all export activities involving U.S. origin defense articles, defense services, and related technical data. Items controlled under the ITAR appear on the USML, at 22 C.F.R. § 121.1 and may be accessed at https://www.ecfr.gov/cgi-bin/text-idx?SID=20af92e55045210d8187cc22cee35549&mc=true&node=pt22.1.121&rgn=div5#se22.1.121_11. Through the USML, the ITAR controls not only end items, such as military aircraft, surface vessels of war, military electronics (*including radar and communications systems*), certain spacecraft, and associated equipment, but also the parts and components that make up the end item, or are otherwise incorporated into the item.

i. Reading the USML

The USML classifies defense articles, services, and technical data across 21 categories, listed below:

I. Firearms, Close Assault Weapons, and Combat Shotguns
II. Guns and Armament
III. Ammunition/Ordnance

[20] At the publication of this Guide, the U.S. Consolidated Screening List encapsulated the following lists:

- **Department of Commerce** (Denied Persons, Unverified, Entity, and Military End-User lists);
- **Department of State** (Nonproliferation Sanctions; AECA Debarred List);
- **Department of the Treasury** (Specially Designated Nationals List; Foreign Sanctions Evaders List; Sectoral Sanctions Identification List; Palestinian Legislative Council List; and Correspondent Account or Payable-Through Account Sanctions List; Non-SDN Menu-Based Sanctions List).

IV. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines
V. Explosives and Energetic Materials, Propellants, Incendiary Agents, and their Constituents
VI. Surface Vessels of War and Special Naval Equipment
VII. Ground Vehicles
VIII. Aircraft and Related Articles
IX. Military Training Equipment and Training
X. Personal Protective Equipment
XI. Military Electronics
XII. Fire Control, Laser, Imaging, and Guidance Equipment
XIII. Materials and Miscellaneous Articles
XIV. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment
XV. Spacecraft and Related Articles
XVI. Nuclear Weapons Related Articles
XVII. Classified Articles, Technical Data and Defense Services Not Otherwise Enumerated
XVIII. Directed Energy Weapons
XIX. Gas Turbine Engines and Associated Equipment
XX. Submersible Vessels and Related Articles
XXI. Articles, Technical Data, and Defense Services Not Otherwise Enumerated

Each USML category has subcategories dedicated to equipment, components, and related technical data.

"Positive Lists" & "Catch-All Provisions." As a result of the ECRA, only articles, services, and technical data specifically listed on the USML, are controlled under the ITAR. However, be aware of "catch-all" provisions that may sweep in additional items. The "catch-all" provisions, however, are generally limited to parts and components "specially designed" for military application (see a discussion of the definition of "specially designed" below).

ii. Are You Exporting a Defense Article, Technical Data, or Defense Service?

Defense article is any item (or component or part thereof) or *technical data* that is designated on the USML. The term also covers any item directly relating to a defense article (e.g., technical data stored or recorded in a model, mock-up, or physical form).

Technical data is any information required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance, or modification of a defense article. Technical data may include blueprints, operations and maintenance manuals, and the like.

Defense service means providing assistance, including training, to a foreign person in the U.S. or abroad in the design, development, production, etc. of a defense article, as well as providing

military training or advice to foreign military forces. Defense services also include informal collaboration, conversations, or interchanges concerning technical data.[21]

"Look Through" Treatment. If an item contains any components that are controlled under the ITAR, the entire item is controlled under the ITAR. For example, a commercial radio that would normally not be controlled under the ITAR, would be controlled under the ITAR if it contained an ITAR-controlled microchip.

iii. Specially Designed—"Catch-And-Release" Analysis

The "specially designed" definition has a two-prong analysis structured as "paragraph (a)" and "paragraph (b)." Paragraph (a) identifies which commodities and software are specially designed, and paragraph (b) identifies which parts, components, accessories, attachments, and software are excluded from "specially designed." Paragraph (a) is the "catch" and paragraph (b) is the "release" in this "catch-and-release" structure. An article is "specially designed" if it is "caught," – if either of the two elements of paragraph (a) applies, but it is not "released" – if none of the elements of paragraph (b) apply.

Therefore, any part, component, accessory, attachment or software described in an exclusion under paragraph (b) would not be controlled by a "catch-all" paragraph of the USML. In this way, paragraphs (a) and (b) are inextricably linked, and are intended to work together to identify the parts, components, accessories, attachments, and software that need to be treated as "specially designed" for purposes of the "catch-all" provisions of the USML.

To protect U.S. national security interest, "catch" paragraph (a) is designed to be broad in scope, with the idea that any overreaching is addressed by "release" paragraph (b), so that parts, components, accessories, attachments and software that do not warrant being controlled are not treated as "specially designed."

The structure of the definition lends itself to a decision tree process. DDTC and BIS each provide a "Specially Designed" decision tool on their respective websites: https://www.pmddtc.state.gov/?id=ddtc_public_portal_dt_specially_designed and https://www.bis.doc.gov/index.php/specially-designed-tool.

Unrevised USML Categories. *Note that the items described in USML categories that have not been revised yet as part of the Export Control Reform initiative (Categories I, II, and III) provide much less detail and are broader in scope of application. For example, current USML Category II(d)* includes "Kinetic energy weapon systems specifically designed or modified for destruction or rendering mission-abort of a target." Note the difference between "specially designed" (defined term) and specifically designed (undefined, much broader term).*[22]

[21] These terms are defined in Part 120 of the ITAR.
[22] Check the status of USML Categories I, II, and III on DDTC's website—https://www.pmddtc.state.gov/?id=ddtc_kb_article_page&sys_id=70757839db30d30044f9ff621f961992—to determine if the Category has been revised, and the effective date of the revision.

iv. Commodity Jurisdiction

Upon written request, DDTC will provide advice as to whether a particular article is a defense article subject to the ITAR, or a less-sensitive defense item or dual-use item subject to EAR.[23] Inquirers are not required to be registered with DDTC in order to file a Commodity Jurisdiction **(CJ)** request.[24]

Determinations are based on the origin of the technology (*i.e.*, as a civil or military item), whether it provides critical military or intelligence advantage, any special or unique characteristics and capabilities, product development stage, and funding history. The applicant should provide detailed information regarding the item to be classified, and make affirmative arguments as to why and where the item should be classified. CJ requests are subject to an interagency review process. Most applications take 30 to 90 days to process; however, some may take several months.

Existing CJ determinations in the Export Control Reform context. *CJ determinations issued prior to the transition of items from the USML to the CCL, where the item was found to be subject to the EAR, will remain valid.*

v. Registration

Generally, manufacturers, exporters, and brokers of defense articles and defense services are required to register with DDTC before commencing their respective activities. DDTC utilizes the Defense Export Control and Compliance System (**DECCS**) to process registration applications, which must be renewed on an annual basis. Further, registrants must notify DDTC of all material changes within 5 days of the effective date.

No registration or registration fee is required to export CCL items on a BIS license, other than creating a SNAP-R account with the Commerce Department for electronic filing of export licenses or export classification determinations.

B. EAR

The EAR covers a wide range of commercial, "dual-use", and less-sensitive munitions items, including certain spacecraft and commercial satellites and items otherwise of strategic value to the U.S.

i. Reading the CCL and Ties to Wassenaar Arrangement

[23] 22 C.F.R. § 120.4.
[24] While DDTC would prefer that the manufacturer of a commodity file the CJ request, a third party (e.g., reseller), including a foreign company, can also file if it needs to obtain formal determination. DDTC's CJ webpage is available at https://www.pmddtc.state.gov/ddtc_public?id=ddtc_kb_article_page&sys_id=249f7c0adb6cf7007ede365e7c9619fd.

The CCL is a comprehensive list of the specific items that are controlled by the EAR. The CCL is similar to the Wassenaar Arrangement "dual-use" list; however, the CCL has additional unilaterally controlled items.

The CCL is divided into ten categories and each category is further subdivided into five product groups:

CATEGORIES

0. Nuclear Materials, Facilities, and Equipment [and Miscellaneous Items]
1. Special Materials and Related Equipment, Chemicals, Microorganisms, and Toxins
2. Materials Processing
3. Electronics
4. Computers

5 (Pt. 1) Telecommunications
5 (Pt. 2) Information Security (including encryption)

6. Sensors and Lasers
7. Navigation and Avionics
8. Marine (vessels, propulsion, and equipment)
9. Aerospace and Propulsion (includes aircraft and aircraft engines)

PRODUCT GROUPS

- *Commodity*. Finished or unfinished good ranging from high-end microprocessor to aircraft to ball bearing.

- *Test, Inspection, and Production Equipment*. This includes equipment specifically for manufacturing or testing controlled commodities, as well as certain generic machines such as computer numerically controlled (CNC) manufacturing and test equipment.

- *Material*. This includes certain alloys and chemical compounds.

- *Software*. This includes software specifically associated with particular commodities or manufacturing equipment, as well as any software containing encryption.

- *Technology*. Technology, as defined in the EAR, includes both technical data and services. Unlike the ITAR, there is generally no distinction between the two. However, the EAR may apply different standards to technology for "use" of a commodity than for the technology for the "design" or "production" of the commodity.

ii. U.S. Controls Over Foreign-Made Commodities

A foreign-made commodity is only regulated by the EAR (and, therefore, has re-export or transfer requirements under the EAR) if it has above *de minimis* U.S. content by value *or* contains certain U.S. technology. The *de minimis* amount is 25 percent or more for most countries (including the U.K.) or at least 10 percent for embargoed countries. Special rules

apply with respect to re-exports to countries subject to a U.S. arms embargo or comprehensive embargo. *De minimis* rules become particularly relevant when you are dealing with U.S. technology; please refer to Section 4 for a discussion of export controls applicable to U.S. "technologies."

De Minimis Rule for "600 Series" and 9x515 Items. *As discussed in more detail, a special de minimis rule applies to less-sensitive munitions items transitioned from the ITAR ("600 Series") and spacecraft, satellites, and related items (ECCN 9x515) which is 25 percent for most countries (including the U.K.) and 0 percent for countries subject to an arms embargo or comprehensive embargo.*

iii. What are the "600 Series" and "500 Series"?

As part of Export Control Reform, many items that were previously controlled on the USML were transferred to the CCL, in new 600 and 500 series. For the most part, the transferred items were moved to the corresponding CCL category, with the ECCN following the format "xY6zz." Military satellites and related technology were transferred to CCL Category 9, ECCN 9x515, or the 500 series. See Appendix A to this Guide for a detailed explanation on how to read the entries in the 600 and 500 series.

"600 Series" and 9x515 Items. *Items transferred from the USML to the CCL as part of the Export Control Reform were added to newly created 600/500 series in the respective categories of the CCL.*

iv. Specially Designed – "Catch-and-Release" for 600 and 500 Series

Although a goal of Export Control Reform was to create "positive" lists, without using design intent criteria, certain sections of the existing and new 600-series CCL entries use the term "specially designed." The "catch-and-release" analysis described in Section 3.A.iii. applies, in equal measure to the 600 Series items, with one caveat of note: BIS includes one extra exclusion that "releases" an item from the application of "specially designed" designation.

4. IMPLICATIONS FOR "TECHNOLOGY" SHARING & INTELLECTUAL PROPERTY

A. "Technology" Under the EAR

i. Framework

Under the EAR, "technology" is the *information* necessary for the "development"; "production"; "use"; operation; installation; maintenance; repair; overhaul; or refurbishing of a controlled item. Such *information* can be tangible or intangible and includes, but is not limited to:

- Plans, blueprints, and manuals or documentation;
- Diagrams, models, drawings, and photographs;
- Formulae and tables;
- written or oral communications;

- engineering designs and specifications;
- computer-aided design files;
- electronic media or information revealed through visual inspection.

Accordingly, and as the examples above demonstrate, "technology" under the EAR *does not* distinguish between technical services and data (*unlike* the ITAR). However, and by way of example, the EAR may apply different standards to technology necessary to "use" a commodity versus technology necessary to "design" or "produce" a commodity. Lastly, readers should be aware that certain "published" unclassified "technology" is not subject to the EAR.[25] For more information on what constitutes publicly available "technology," please navigate to Section 5.

ii. Reading the CCL

Each CCL Category has a "technology" subsection. To determine whether "technology" associated with a particular commodity is controlled, you need to first classify the associated commodity and then scroll down to section "E" of the relevant CCL categories and review the existing "technology" ECCNs (a "technology" ECCN is identified by inclusion of the letter "E" in the second place of the ECCN number e.g., ECCN 3E001).

Unlike EAR, in the world of ITAR, "technology" is broken down into two categories—"technical data" and "defense services."

B. Cloud Computing

As of March 2020, storage and transmission of technical data delivered via a foreign communications infrastructure no longer constitute an "export" under the ITAR or the EAR, so long as the technical data or controlled technology is:

1. Unclassified;
2. Secured using cryptographic modules that either comply with the Federal Information Processing Standards Publication 140-2 (FIPS 140-2) or its successor,[26] or afford security strength comparable to the minimum 128 bits of security strength achieved by the Advanced Encryption Standards (AES-128);
3. Secured using end-to-end encryption (can rely on third party or internally developed cryptography); *and*
4. Not sent from or intentionally sent to a person, or stored in, an embargoed country or the Russian Federation.

[25] *See* 15 C.F.R. § 734.7.
[26] FIPS 140-2 is available at https://csrc.nist.gov/publications/detail/fips/140/2/final.

To ensure the above described data does not become an export and trigger the ITAR registration requirement, companies and universities need to be extra vigilant in ensuring the data remain encrypted and is not revealed as technical data during its stay in the foreign country.

C. Effective Compliance Program and Training

Disclosure of "export-controlled technology" to a non-U.S. national in the U.S. will constitute a "deemed export." Accordingly, U.S. companies with access to classified or otherwise sensitive information typically have a Technology Control Plan (**TCP**) or another specific procedure in place that restrict non-U.S. persons' access to the U.S. company's classified, sensitive unclassified information, and / or controlled unclassified information.[27] For U.K. companies and persons, the deemed export issue often arises:

- When holding meetings in the U.S. regarding potential joint work.
- In conjunction with plant visits, although there are certain exemptions.[28]
- When U.K. nationals or permanent residents employed by a U.S. contractor have access to technical data or defense services. In such cases, an authorization in the form of a DSP-5 license must be obtained from DDTC to authorize the U.K. person's ability to receive ITAR-controlled technical data and defense services.[29]

5. UNIVERSITY RESEARCH AND EXPORT CONTROLS

Generally, the three areas where export controls may apply are: (1) university teaching activities, within and outside the United States; (2) university research; *and* (3) foreign campuses. Although the U.S. government *does* control certain teaching and research activities, it is important to note that *many* such activities are either not subject to export controls or, if subject to controls, can proceed without the need for a license. Further, both the ITAR and the EAR exclude "publicly available" information from the scope of their controls and provide some limited exemptions allowing release of information in the context of university research and educational activities. Additionally, the embargo regulations (blocking virtually all exports to certain countries) permit transfers of certain information and informational materials.

A. University Teaching

University teaching will generally not be subject to export controls because it comprises what is termed "publicly available" or "general" information commonly taught at universities. (Note that information from certain university conducted research might not be excluded from export controls; see next section.)

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[27] *See* 22 C.F.R. § 120.17, .19.
[28] 22 C.F.R. § 125.2(a), 125.5.
[29] *See Licensing of Foreign Persons Employed by a U.S. Person, DDTC.* https://www.pmddtc.state.gov/sys_attachment.do?sysparm_referring_url=tear_off&view=true&sys_id=e455263cdbd59f00d0a370131f96190c (last visited Mar. 28, 2021).

i. "Publicly Available" Information is Not Subject to Export Controls

Despite agreeing on the boundaries of what constitutes "publicly available" information and that such information should not be controlled, the ITAR and the EAR provide slightly different examples of what information qualifies as "publicly available."

- **ITAR** tethers "publicly available" information to information in the *public domain*, i.e., information that is generally available or accessible and published through:
    - sales at newsstands and bookstores;
    - subscriptions available to any individual, without restriction;
    - second-class mailing privileges granted by the U.S. government;
    - libraries open to the public or from which the public can obtain documents;
    - patents available at any patent office;
    - unlimited distribution at conferences, seminars, meetings, exhibitions, or trade shows that are (i) held in the United States and (ii) generally accessible to the public;
    - public release in any form after the cognizant U.S. government agency so approves; and
    - fundamental research in the United States.[30]
- **EAR** tethers "publicly available" information to *published* information, i.e., information that has been made public, without any further restrictions on further dissemination.[31] Examples include:
    - subscriptions available, without restriction, to any individual who desires to obtain or purchase the published information;
    - libraries or other public collections that are open and available to the public, and from which the public can obtain tangible or intangible documents;
    - unlimited distribution at a conference, meeting, seminar, trade show, or exhibition, generally accessible to the interested public;
    - public dissemination (i.e., unlimited distribution) in any form (e.g., not necessarily in published form), including posting on the Internet on sites available to the public; *or*
    - submission of a written composition, manuscript, presentation, computer-readable dataset, formula, imagery, algorithms, or some other representation of

[30] 22 C.F.R. § 120.10 (excluding information in the "public domain" from the definition of "technical data"); *id*. at § 120.11 (defining "public domain").
[31] 15 C.F.R. § 734.3(b)(3) (establishing that "published" information is not subject to the EAR); *id*. at § 734. 7 (defining "published"). .

knowledge with the intention that such information will be made publicly available if accepted for publication or presentation in certain situations.

As the above overviews demonstrate, the key differences between the two regimes concern **intent to publish**; whether the publication is distributed for a fee; and whether the conference or trade show takes place in the United States or not.

ii. General Educational Information

General educational information or knowledge, i.e., information communicated, taught, discussed, and / or otherwise shared within and outside schools, colleges, and universities, is *not* subject to export controls, *even if* such information relates to items included on the USML or the CCL.[32] The relevant regulatory carve outs are as follows:

- **ITAR**—explicitly excludes, from the definition of "technical data," "information concerning *general* scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities[.]"[33]

- **EAR—**explicitly states that "instruction in catalogue courses and associated teaching laboratories of academic institutions," is not subject to the EAR.[34]

For example, a graduate-level, catalogue course on integrated circuits discussing analog integrated circuit design or design and modeling of Very Large Scale Integrated circuits and systems will *not* be export controlled, even though the underlying technology is listed in CCL Category 3, because it is general engineering information commonly taught in an academic institution. Furthermore, *foreign* students from *any* country may take, audit, or observe such catalogue course because the information taught is not controlled.

B. University Research

i. Fundamental Research Exception

In 2016, the EAR and ITAR harmonized, for the most part, their respective definitions of "fundamental research" and related concepts.[35] Both regimes exempt from their respective controls published and otherwise unrestricted results of "fundamental research" from accredited U.S. higher learning institutions.

The exception, however, is nuanced; to take advantage of it, the *results* must be (i) produced as part of basic and applied research in science and engineering *and* (ii) broadly shared

[32] Both the ITAR and the EAR recognize the concept of *general* educational information, without using that exact phrase in their regulatory frameworks.
[33] 22 C.F.R. § 120.10(b) (emphasis added).
[34] 15 C.F.R. § 734.3(b)(3).
[35] 15 C.F.R. § 734.8(c) (defining "fundamental research" as research in the science, math, and engineering fields, that is ordinarily published and broadly shared, and that is not restricted for any national security or proprietary reasons); 22 C.F.R. § 120.11 (defining "fundamental research" as research in the science and engineering fields, at an accredited U.S. institution of higher learning, that is ordinarily published and broadly shared, and the dissemination of which is not restricted).

within the scientific (ITAR) / research (EAR) communities (that is, there should be no restrictions on publication or dissemination of the research results; for example, for national security or proprietary reasons).

Further, it is essential to distinguish the information or product that *results* from the fundamental research from the *conduct* that occurs within the context of the fundamental research. While the *results* of the fundamental research are not subject to export controls, an export license may be required if during the *conduct* of the research export-controlled technology is released to a foreign national. By way of example, such export-controlled technology may come from the research sponsor, from a research partner institution, or from a previous research project conducted at the university.

a. A Two-Step Analysis

In determining whether the "fundamental research" exception applies, it is helpful to think of a research project in three phases: (1) pre-existing information; (2) conduct of research; *and* (3) research results. The researcher must then perform a two-step analysis, both prongs of which must be met:

- ***First*, will there be any restrictions on publication or dissemination of the research results**?
  - If *yes*, the research *does not* qualify as fundamental.
  - If *no*, then the research qualifies as fundamental, and the research results may be released to foreign nationals.
- ***Second*, did the researcher use any pre-existing controlled data or hardware to conduct the fundamental research**?
  - If *yes*, foreign nationals *cannot* participate in conducting the research without a license, even if they may receive the end results.
  - If *no*, foreign nationals *may* participate in conducting the research.

b. BIS Hypothetical: Joint U.K./U.S. university research

For example, U.K. and U.S. university researchers are collaborating on a *joint* research project concerning vector identification for the Marburg virus (a hemorrhagic fever virus). The terms of the collaboration do *not* restrict either (i) the publication of the research results or (ii) any technology being released to the researchers.[36]

[36] *Frequently Asked Questions*, U.S. DEP'T COMMERCE, available at https://www.bis.doc.gov/index.php/documents/compliance-training/export-administration-regulations-training/1554-ear-definitions-faq/file (last visited Mar. 11, 2021) (quoted from "Q.1: What is considered fundamental research under the EAR?").

- **Is the research pursued "fundamental?"**—Yes, the research would be considered fundamental. Further, information resulting from the research (e.g., results, methods), would not be subject to the EAR.

- **Is there a "deemed" export**?—No, U.K. and other foreign nationals can work at the U.S. university and pursue the research objectives (so long as tied to fundamental research) would not create a "deemed export."

- **Can the researchers discuss research methods and outcomes without an export license**?—Yes. As between the two universities, the researchers do not need an export license to discuss research methods and outcomes.

- **What actions require an export license?**—The U.S. university will need to apply for an export license to export the Marburg virus samples (ECCN 1C531) to the U.K. university.

ii. Publishing Research Results

As noted above, publication or dissemination restrictions prevent universities from utilizing the "fundamental research" exception. Disqualifying restrictions may be for proprietary or national security reasons; for example, the sponsor reviews the research to determine whether the results can be patented. However, conditions to review research results to ensure sponsor-provided proprietary information or patent information is not released will not be considered a restriction on publication.[37]

The EAR provides examples of "specific national security controls" that would disqualify universities from relying on the "fundamental research" exception:

- required pre-publication review by the government, with right to withhold permission for publication;

- restrictions on pre-publication dissemination of information to non-U.S. citizens or other categories of persons; or

- restrictions on participation of non-U.S. citizens or other categories of persons in the research.[38]

Although the ITAR does not spell out its own examples, given the harmonization between the two regimes, the EAR examples are instructive when interpreting the limitations on fundamental research.

iii. Common Pitfalls When Negotiating Research Grants and Funding

[37] 22 C.F.R. § 120.10(b), .11(a)(8); 15 C.F.R. § 734.8(b)–(c).
[38] 15 C.F.R. § 734.8(b).

Many common pitfalls arising from research grants and funding negotiations come from a lack of due diligence. Accordingly, university administrators or researchers who enter a negotiation should:

1) perform extensive screening of an external-funding contract's terms to ensure that the sponsor:

    a. is required to provide explicit notice that a specific technology or data is export controlled; and

    b. agrees not to place any restrictions on publication or dissemination of the research results.

2) inquire whether foreign nationals may participate in the project and, if possible, insert mutual periodical disclosure requirements into the contract terms.

3) look out for provisions that declare all information export controlled, or restrict access to U.S. citizens or representatives of foreign persons (particularly in government contracts).

4) make note of and request confirmation, if unclear, on effect of "incorporated by reference" provisions and flow-down clauses.

Government Procurement Officials. Do not assume that all such officials are experts in your field; they may be including a clause because of a lack of knowledge or understanding of the project involved.

Flow-Down Clauses. Remember, not all clauses are mandatory flow-down clauses, and you may seek a modification or removal. If you are a subcontractor, review the scope of the flow-down clauses to ascertain the scope of possible export control restrictions.

C. Interplay Between a U.S. University's or Scholar's Presence Abroad and the Development of Critical, Emerging, and Foundational Technologies

As noted above, even minimal U.S. content or U.S. technology can give the U.S. government jurisdiction over foreign-manufactured items. The concern is particularly prevalent in the critical technology and the emerging and foundational technologies spaces because, as the respective names suggest, each involves research into either new and yet unknown technologies or reliance on existing and "foundational" technologies to develop or modify related end items. The issue is further complicated by the fact that the U.S. government has not, as of the publication of this Guide, set clear parameters on the boundaries of emerging and foundational technologies. For additional information on foundational and emerging technologies, please consult Section 2.C.ii. To mitigate possible exposure to additional U.S. export controls, U.K. universities should be aware of the following.

i. U.S. Professors Teaching Abroad

A U.S. person who is hired to teach abroad, either permanently or temporarily, may expose a U.K. university to U.S. export controls. As a result, a U.S. professor employed by a U.K. university can only (i) teach on matters generally taught in a U.S.-catalogue course and (ii) disclose only the results of "fundamental research" performed at a U.S. university to his / her students or peers. With respect to embargoed countries, although a U.S. professor may share the information generally released in a catalogue course under the information and informational materials exemption, U.S. professors are prohibited from providing any services to embargoed countries (providing a degree is considered a service and therefore prohibited; as such, teaching a course towards obtaining a degree would also be prohibited).

ii. U.S. Campuses Abroad

As noted above, catalogue courses generally taught at a U.S. university are not subject to U.S. export controls. Accordingly, U.S. universities can offer the same catalogue courses abroad. There are, however, limitations with respect to fundamental research. For example, the ITAR only recognizes fundamental research if performed at an accredited institution of higher education in the United States. Accordingly, a research collaboration between a U.S. university abroad and a U.K. university may trigger export control requirements. Please see Section 5.B. for additional details on what constitutes "fundamental research."

iii. Presenting at Conferences

Presenting at conferences or participating in trade shows, whether within or outside the territory of the United States, may require an export license if, in the course of either, you reveal controlled technical data or technology. By way of example:

- Showing or distributing brochures that do not contain any technical information about a piece of equipment or commodity will generally *not* trigger any export control licensing and/or authorization requirements;

- Discussions of distributed written material may prompt questions about an item's general performance and functionality of a controlled item. Such conversations will generally *not* trigger any export control licensing and/or authorization requirements. However, be mindful not to disclose detailed specifics about the technology. As a rule of thumb, if you wouldn't share the information for proprietary reasons, the information is likely export-controlled;

- By contrast, discussions about an item's design that would allow a third party to reverse engineer your item will typically trigger export control licensing or other authorization requirements.

iv. Research Collaboration Across Borders and Remote Learning

Technological advances are facilitating increased reliance on online platforms for typically in person tasks, e.g., remote working and remote learning. As a result, U.K. and U.S. companies

and universities have to bolster their compliance standards to ensure technical data does not slip through the cracks. If a foreign national is collaborating with or employed by a U.K. university that is, in turn, working with a U.S. partner, the U.K. university will need to determine whether the project involves sensitive or controlled items subject to U.S. export control jurisdiction. If yes, the foreign person's involvement may be limited based on their nationality.

By way of example, the U.S. restricts exports of advanced telecommunications systems to certain Chinese entities and their affiliates. If, in the above-described scenario, the U.K. university's involvement results in export of controlled systems to a Chinese national, the collaboration will likely be controlled. On the other hand, a U.K. university engaged in a research collaboration with a U.S. partner, may engage a Chinese national in other projects that are not related to the U.K./U.S. project provided that no U.S.-origin controlled technology is used in such other project.

Broadly speaking, U.K. and U.S. students can take advantage of the various remote learning platforms, as information generally taught in a U.S.-catalogue course is not subject to U.S. export controls.

v. Case Study: the Roth Case

On July 1, 2009, John Reece Roth, a seventy-one-year-old retired University of Tennessee emeritus professor of electrical engineering, was sentenced to four years in prison for illegal exports of military technical information after a trial that had been followed closely by academic institutions. Roth was convicted for conspiring with Atmospheric Glow Technologies, Inc., a private company, to unlawfully export defense articles to one of his Chinese students in violation of the Arms Export Control Act, 22 U.S.C. § 2778. The Chinese student was enrolled at the University of Tennessee and was hired by Professor Roth as a research assistant for a project on plasma actuators that were being developed for use in U.S. Air Force drones.

What is most intriguing about the Roth case is that even though the university compliance officer was instructing the professor that the involvement of the Chinese student was in violation of export controls, the professor chose to continually disregard the advice. While it is sometimes difficult to convince faculty that they must comply with export control laws, making an effective compliance program even more needed, the fact that the University of Tennessee had an export compliance program and compliance personnel who were actively trying to protect the controlled information determined the results of the case. Roth was convicted and sentenced to jail, while the university was neither charged nor penalized.

6. EAR CONTROLS: LICENSES AND STATISTICS

A. When is a License Required?

Determining whether a license is required for a particular export is a multi-step process:

- First, classify the item subject to export;

- Second, determine which policy reason, if any, controls the exported item and whether that policy reason restricts export to your ultimate foreign country of destination or foreign end-user; and

- Third, review any available license exceptions.

i. Classifying an Exported Item (ECCN or EAR99)

Items that are subject to specific controls are identified on the CCL under an Export Control Classification Number (**ECCN**). Each CCL category lists a number of ECCNs covering specific commodities, software, and technology. These ECCNs are highly technical because control is based on the performance capability of the item such as:

- The speed of a computer or chip.

- The designed operating temperature range.

- The accuracy or ability to manufacture to a certain size for manufacturing equipment.

"Black Box" Treatment. *For classification purposes and unlike the ITAR, the EAR generally looks at the whole commodity being exported rather than at any individual subcomponents of the commodity. Hence, a commercial aircraft would be classified as a commercial aircraft, regardless of the fact that it may contain certain software that would be controlled if exported separately. The principal exceptions to this rule are:*

- *Products containing encryption, which will be classified as encryption devices regardless of the commodity (i.e., the encryption controls take precedence).*
- *Products containing ITAR-controlled components.*
- *Foreign-manufactured commodities for which value of the U.S. content is considered above de minimis levels for U.S. jurisdiction purposes.*

Items subject to the EAR but not described on the CCL are known as EAR99 items. For example, a ball bearing that does not meet the tolerances specified under any ECCN would receive an EAR99 designation. Items designated as EAR99 generally do not require a license, unless the export is to a country subject to a comprehensive embargo or to a prohibited end-user or end-use.

Classification Request. Because some items are difficult to classify, or licensing requirements are uncertain, BIS has two assistance procedures. A party can either request that BIS classify a particular item (a "classification request"), in which case BIS will determine or verify the ECCN of an item.

Alternatively, a party can request an "advisory opinion" as to whether a license is required or would be granted for a particular transaction.[39]

BIS Entity List. The Entity List is a list, published by BIS, of foreign nationals that are subject to specific license requirements. Frequently, even exports, reexports, and transfers (in country) of EAR99 items will require a license, when the intended recipient is listed on the Entity List. In fact, in 2013, BIS initiated an administrative proceeding against the University of Massachusetts at Lowell for exporting an EAR99 item to SUPARCO, a Pakistan-entity then appearing on the Entity List.[40]

ii. Determining the Policy Reasons for Control

Once an item has been classified under a particular ECCN, the starting place for determining whether a license is required for export to a particular country is the reasons for control following the ECCN.

These reasons include:

AT	Anti-Terrorism	**CB**	Chemical and Biological Weapons
CC	Crime Control	**CW**	Chemical Weapons Convention
EI	Encryption Items	**FC**	Firearms Convention
MT	Missile Technology	**NS**	National Security
NP	Nuclear Nonproliferation	**RS**	Regional Stability
SL	Surreptitious Listening	**UN**	United Nations Sanctions
SS	Short Supply	**SI**	Significant Items

The most commonly used controls appear to be anti-terrorism and national security, while other controls only apply to limited types of items. For example, the entry for ECCN 9A991, civil aircraft, lists "License Requirements: Reason for Control: AT" (*i.e.*, anti-terrorism) and the following:

Control(s)	Country Chart

[39] *See* 15 C.F.R. § 748.3. Note: while the regulators prefer that the manufacturer of a product file a classification request, a third party (including a foreign person) can make the request as well.
[40] *Order Relating to U. Mass at Lowell, Settlement Agreement, and Proposed Charging Letter*, U.S. Dep't Commerce, https://efoia.bis.doc.gov/index.php/documents/export-violations/export-violations-2013/837-e-2306/file (last visited Mar. 28, 2021).

AT applies to entire entry	AT Column 1

Cross-Reference the Country Chart. Once you determine the policy reason for control associated with the ECCN of interest, consult the Commerce Country Chart to determine if you need a license to export the commodity to the particular ultimate destination. If the reason for control applies to the particular ultimate destination, a license is required. For example, Iran has an "X" under AT Column 1, therefore a license would be required to export ECCN 9A991 items (certain aircraft and gas turbine engines) to Iran.

The Commerce Country Chart is produced at Supplement No. 1 to Part 738 of the EAR and is also available at https://www.bis.doc.gov/index.php/documents/regulations-docs/2253-supplement-no-1-to-part-738-commerce-country-chart.

U.K. Policy Controls. *The only policy reasons for control that apply to exports to the U.K. are CB Column 1, NS Column 1, MT Column 1, and RS Column 1. This means that most items (including technology) on the CCL can be exported to the U.K. without a license. In addition, as discussed below, certain commodities, software, and technology controlled under "NS Column 1" can be exported to the U.K. under license exceptions.*

Key Difference from ITAR. *With very limited exceptions, ITAR-controlled items, unlike EAR-items, are controlled notwithstanding the destination.*

iii. Identifying an Applicable License Exceptions

The EAR contains a number of license exceptions. To determine whether any particular exception covers your export activity, you must review the provisions detailed in 15 C.F.R. Part 740 (see https://www.bis.doc.gov/index.php/regulations/export-administration-regulations-ear), as well as the notes on applicable license exceptions following the relevant ECCN entry.

Determining Whether a License Exception Applies Requires a Holistic Review of the EAR. *For example, most civil aircraft spare parts may be shipped to most countries without a license (with the exception of embargoed destinations). However, certain "hot section" aircraft engines technologies may require licenses to most destinations because of the much stricter controls.*

a. Available License Exceptions

AGR Excepts export of agricultural commodities to Cuba as well as the re-export of U.S.-origin agricultural commodities to Cuba, subject to certain restrictions.

APP Excepts computer exports to certain countries

APR Excepts additional permissive re-exports from and to certain countries.

AVS Excepts aircraft and vessels stopping in the U.S. and most exports of spare parts associated with aircraft and vessels; also excepts export of spacecraft and components for fundamental research

BAG Excepts personal baggage of individuals leaving the United States and crew members of exporting or re-exporting baggage carriers.

CIV Excepts items controlled for national security reasons to particular countries where end-user is civilian.

ENC Excepts certain encryption devices and software.

GBS Excepts items controlled for national security reasons to particular countries.

GFT Excepts certain gifts and humanitarian donations.

GOV Excepts exports and re-exports for international nuclear safeguards, U.S. government agencies, agencies of cooperating governments, international inspections under the Chemical Weapons Convention, and the International Space Station.

LVS Excepts items of limited value (value is set under each ECCN).

RPL Excepts certain repair and replacement parts for items already exported.

SCP Excepts certain exports for support of the Cuban people

STA Strategic partnership program, where the end user of the exports located in an allied country (subject to a number of limitations).

TMP Excepts certain temporary exports, re-exports or imports, including items moving through the U.S. in transit.

TSR Excepts certain technology and software to certain countries.

TSU Excepts certain operation technology and software; sales technology and software; software updates; mass-market software.

b. Not All License Exceptions Cover 600 Series and 9x515 Items

Certain license exceptions may be used for the export of 600 Series and 9x515 items; however, exports to countries subject to an U.S. arms embargo (Country Group D:5 at Supplement No. 1 to EAR Part 740) are restricted and generally not available for license exception. For additional details, see Appendix A to this Guide.

B. License Application Process

A license application is made by the exporter or its authorized agent (note that an exporter must be a person in the U.S.). On the other hand, a re-exporter or transferor may be located outside of the U.S. License applications are made via the SNAP-R account. Rules for filing applications are set forth in 15 C.F.R. Part 748 (see https://www.bis.doc.gov/index.php/documents/regulations-docs/2349-part-748-application-classification-advisory-and-license-1/file).

A license application will typically consist of:

- Online application (BIS-748P Form), listing the applicant, purchaser, end-user, commodity, and intended end-use of the commodity;
- Letter of explanation;
- Supporting technical descriptions of the product; and
- End-use certificate (where required).

Electronic Filing. Applications are filed *electronicall*y via BIS's SNAP-R (the Simplified Network Application Process - Redesigned) Portal. To file, you will need to (i) obtain a Company Identification Number (**CIN**) and (ii) create / activate a SNAP-R user account in SNAP-R. For further information, *see https://www.bis.doc.gov/index.php/licensing/simplified-network-application-process-redesign-snap-r*. All supporting documentation under 15 C.F.R. Part 748 must be attached to the online application (*.pdf format required*).

Application Processing Times. BIS has up to two months to process a license; a license application is subject to an interagency review (*i.e.*, Department of Defense, etc.). Reasons for delay include, but are not limited to:

- A policy determination needs to be made with respect to export to a particular country.
- Difficulty in verifying the end-user.
- Need for government-to-government assurances.
- "Significant item" such as gas turbine hot-section technology.
- Interagency dispute as to whether to grant the license or not.

Application status may be checked using STELA (System for Tracking Export License Applications) at *https://snapr.bis.doc.gov/stela/*.

License Approval. Once a license is approved, it is generally valid under the specific terms of the application, such as quantity and dollar value, and for a period of 48 months (with some

exceptions).[41] Although a license grant will contain "riders and conditions," these are generally much less onerous than the provisos common in ITAR licenses. Common provisos include:

- Restricting products to commercial uses.
- Restricting manufacturing equipment to the manufacturer of commercial products described in application and prohibiting manufacture of munition items or defense articles.
- Requiring the end-user to agree to Post-Shipment Verification visits by BIS to the end-user's facility.
- Certain reporting requirements if specific conditions are met.

Practical Tips for Filing License Applications*:*

(1) **Have your CIN handy—**you will need to log into your account and to file the application;

(2) **Think Ahead—**the standard license term is four years, accordingly your license application should capture all commodities, software, and technology you may export to the identified end-user(s). Similarly, ensure you are capturing all possible intermediate consignees (e.g., freight forwarders that will transport the licensed items) and possible end-users and ultimate consignees.

(3) **Be Consistent—**ensure the product description you provide to BIS matches information on your website and explain any variations.

(4) **Holistic Review of Exported Commodities**—ask questions to determine whether your product is fully integrated; if not, the individual components may need to be classified separately.

(5) **Identify Relevant License Exceptions**---include such information in your letter of explanation.

(6) **Be Prepared for Follow Up Questions**, but do not get discouraged and do not hesitate to resubmit your BIS application if its returned without action (**RWA**).

C. Violations & Penalties

Entities and individuals, whether foreign or domestic, that violate the EAR may be subject to criminal and administrative action. Criminal action may include issuance of penalties and fines, forfeiture of assets, and imprisonment. Administrative action may involve high civil penalties or may result in a warning letter. The number of criminal convictions for fiscal years (FY) 2019 and 2020 have remained steady at thirty-five, but represent an overall increase from FY 2015–2018

[41] 15 C.F.R. § 750.7.

(approximately twenty-nine). The associated prison time for FY 2019 and 2020 (average: 826.5 months) is likewise higher than for FY 2017 and 2018 (average: 541 months). Prison time, however, did deeply decline from FY 2019 to FY 2020 (from approximately 1,000 months to 615 months). On civil penalties and fines, the assessed monetary amount nearly doubled from FY 2019 to FY 2020 (from approximately $18 million to $32 million).

D. BIS Statistics of Note

BIS publishes, on an annual basis, reports disclosing aggregate-level data about the investigations it conducts, the fines and penalties it assesses, and the licenses it grants or denies.[42] Furthermore, because sensitive or proprietary information protected from public disclosures under the Freedom of Information Act (**FOIA**), contents of BIS-applications are kept strictly confidential. Applicants, typically, also do not publicize their efforts and, as a result, publicly available information that would allow a third party to link an aggregate-level data point to a specific foreign actor is limited. BIS reports certain statistics that are useful to U.K. companies and universities:

- In FY 2020, BIS processed 37,895 export license applications, valued at over $173.3 billion. The number of applications processed represents a 10.8 percent increase from 2019; given the impacts of COVID-19, the increase in license applications may be explained by exporters' being overly cautious in response to U.S. government's continued efforts to regulate exports to China.

- BIS granted 86.3 percent of the license applications it reviewed in FY 2020; representing a 0.8 percent increase from FY 2019. By contrast, BIS only denied 1.4 percent of received FY 2020 applications.

- The average processing time of a license application in FY 2020 was 23 days; a number that includes reviews that involved inter-agency collaboration with the Departments of Energy, State, and Defense.

- BIS continues to grant licenses for dual-use items, such as information technologies controlled under ECCN 5A992, and military aircraft and related commodities, controlled under ECCN 9A610, demonstrating the agency is willing and able to authorize transfers of sensitive equipment. Further in FY 2019, ECCN 9A610 was among the top three ECCNs of U.S. licensed export to the U.K.

- BIS does not publish its reasoning for rejecting a license application. Based on our experience, denials are often the result of an applicant being unwilling or unable to provide details about the contemplated transaction or parties involved. This Guide's audience is unlikely to face similar

[42] *See generally* BIS Statistical Reports, Dep't Commerce *available at* https://www.bis.doc.gov/index.php/statistical-reports.

challenges. Further, it is much easier for the U.S. government to assess risk when one of the parties is a trusted and long-term trading partner and ally.

- At the publication of this Guide, BIS had not made available FY 2020 statistics specific to the U.S.'s trade with the U.K. However, FY 2019 statistics are instructive:

    - In FY 2019, BIS's average processing time for export applications (excluding deemed exports) to the U.K. was 16 days. BIS approved such applications at a rate of 89.5 percent (or 1,688 applications); inversely, BIS denied just one application and returned without action 195 applications.

    - The global community filed 1,320 *deemed* export applications with BIS in FY 2019; applications filed by British Nationals, by contrast, represent only 2.4 percent of the total. Of the applications filed, BIS approved 78.13 percent and returned the remainder without further action; meaning, either the application had to be revised or BIS determined that no license was required for the proposed transaction. Since 2015, BIS has not denied any deemed export license applications filed by British Nationals.

    - In FY 2019, only 1.9 percent of the U.S.'s exports to the U.K. (valued at $69.2 billion), were subject to a BIS-license requirement. Accordingly, where a license requirement exists, the commodity, software, or technology must be of particular concern to U.S. national security or foreign interest. Given the lack of clarity offered by the U.S. government on the scope of emerging and foundational technologies, U.K. companies and universities ought to be particularly vigilant in ensuring their equipment and associated technologies do not become subject to U.S. export controls.

    - In FY 2019, the most common exception utilized to export items to the U.K. was encryption commodities, software, and technology (representing 57.3 percent of license exceptions utilized). The U.S. government must, at least, tacitly approve such transfers or collaborations, given the frequency with which the exception is used.

    - In FY 2019, exporters to the U.K. relied on license exception TMP so frequently that the value of items exported thereunder earned it third place on BIS's "Top Ten ECCNs by Value to the United Kingdom." License Exception TMP allows the temporary export, re-export, and transfer (in-country) of certain U.S.-origin items *without* a license. Relevant here, license exception TMP can be used to return foreign-manufactured goods to their original country of

export (pursuant to certain timing requirements) and to export test equipment to a U.S. person's foreign subsidiary, affiliate, or facility. Although BIS does not disclose the purpose for which the exception was used, the fact that it can be used for the aforementioned suggests the following: U.K. companies and universities will not have to overcome significant hurdles to get their product, technology, or software back to the U.K. (so long as none are enhanced while in the U.S.) and the U.K. remains one of the most trusted allies of the U.S., thereby, facilitating little difficulty in obtaining a license.

7. PRACTICAL TIPS FOR U.K. COMPANIES AND UNIVERSITIES

A. Developing Effective Compliance Procedures

i. Screen against barred entities lists and determine export controls on a project or academic course matter basis.

ii. Minimize limitations on publication and keep an open learning environment.

iii. For *each* sensitive / controlled project:

a. develop a TCP;

b. brief the principal investigator and all participants (including students) on their obligations under U.S. export control laws and the specific restrictions associated with the project;

c. consider instituting a special committee to ensure work flow remains compliant with applicable export control regulations.

iv. Consider developing a series of trainings that can be applied across multiple projects.

v. Have administrators, researchers, managers, and project team members certify to having attended the training (consider implementing a periodic-review certification requirement).

vi. Designate an export compliance officer with sufficient resources to implement export control procedures and direct access to the legal department and senior management.

B. U.S. Content

In certain cases, incorporation of minimal U.S. content or U.S. technology *can* subject an item to U.S. export controls. Accordingly, ensure your compliance team keep a close watch on changes to supply chains.

C. Temporary Import of Foreign-made Items into the U.S.

Prior to carrying or shipping foreign manufactured equipment to the United States, review Part 740 to the EAR (available at https://www.bis.doc.gov/index.php/documents/regulations-docs/2341-740-2/file) to understand exceptions applicable to foreign-made items temporarily brought to the United States and be mindful of the associated timing requirements. Similarly, ensure the items are not enhanced in any way while in the United States.

D. Be Proactive

Ask questions of your U.S. partners regarding the nature of the information being shared.

E. On Securing Your Proposed Transaction

When entering into a transaction with a U.S. company or university:

i. **ask questions** concerning export licensing early in the process. If you don't ask, the U.S. company may not address such issues with you until much later in the relationship.

ii. **retain, if possible, your own expert**, even if your U.S. business partner appears or claims to be an expert on U.S. export requirements; even prominent U.S. companies miss the compliance mark. By way of example, ITT Inc., formerly known as ITT Corporation, a then leading manufacturer of military night vision equipment was ordered to pay $100 million USD for, amongst others things, transmitting defense-related technical data to the U.K. without prior U.S. government authorization.[43] On the other hand, your U.S. partner may take an ultra-conservative approach on licensing issues or attempt to use U.S. export laws to their business advantage.

iii. **factor in U.S. export control laws' impact on your bottom line**. From the outset, you need to understand how such laws directly and indirectly impact your transaction and, if necessary, take preemptive steps to prevent unintended violations.

F. Budget Time to Obtain Necessary Licenses

The licensing process will take longer than you think, so plan accordingly. Average license processing times won't apply to your case, and, for the most part, "rush" or "emergency" license processing does not exist. However, applications for exports

[43] *ITT Corp.to Pay $100 Million Penalty & Plead Guilty to Illegally Exporting Secret Military Data Overseas*, Dep't of Justice, https://www.justice.gov/archive/opa/pr/2007/March/07_nsd_192.html (last visited Mar. 28, 2021).

of controlled items to the U.K. will generally be processed expeditiously, and are likely to be approved.

G. Stay Positive

Most importantly, don't get discouraged. The U.S. and U.K. share a very close relationship and generally exports to the U.K. are authorized.

8. FREQUENTLY ASKED QUESTIONS

A. CONTROL OF FOREIGN-MADE ITEMS

i. **Question**: Does the U.S. government control the movement of items that are 100 percent foreign made?

Answer: Yes. The U.S. government controls the export of 100 percent foreign made items that are located in the United States and were not imported thereto on a temporary basis (*see also "Travel to / from the U.S." section*).

B. WHO IS A FOREIGN NATIONAL OR FOREIGN PERSON

i. **Question**: Who is a "foreign national" or "foreign person?"

Answer: The terms "foreign national" and "foreign person" are synonymous under the EAR. A "foreign national / person" is any person who has not been granted (i) permanent residence (e.g., Green Card); (ii) U.S. citizenship; *or* (iii) protected person status under 8 U.S.C. § 1324b(a)(3) (e.g., political refugees).[44] The term also includes entities (e.g., corporations, business associations, trusts, societies) that are not incorporated or organized to do business in the U.S.; foreign governments and their subdivisions (e.g., diplomatic missions, agencies); and international organizations.

ii. **Question**: What if the foreign national is a dual citizen?

Answer: Generally, BIS follows the principle of the last citizenship or residence.

C. TRAVEL TO OR FROM THE U.S.

i. **Question**: I am a foreign researcher who is traveling to the U.S. to attend a conference. What conversations can and can't I engage in while in the U.S.?

[44] *See* 31 C.F.R. 772.1.

Answer: The U.S. government, generally, does not control the activities of foreign persons, unless such activities involve, enhance, and / or reveal information about a U.S. controlled item. Please consult the applicable foreign country's export control laws. Further, *prior to* traveling to the U.S., we strongly encourage you to (i) record and (ii) discuss the purpose and goals of the travel with your university's or company's compliance department. Note: your U.S. counterpart might not be able to discuss certain topics if that would involve the disclosure of export-controlled information.

ii. **Question**: I am a foreign person who is traveling to the U.S. for work from the U.K. I am taking my work laptop in order to share and / or showcase certain 100 percent foreign designed and developed technology to U.S. colleagues and partners. Do I need a license to take the technology back home?

Answer: Generally, you do not need a license to take the technology back home. Foreign-items can be returned to their original country of export, under License Exception TMP, *so long as* (i) the foreign-origin item's capabilities and characteristics are not enhanced while in the U.S. *and* (ii) the return is not to Cuba. Applying the aforementioned reasoning to our example, the foreign person *does not* need an export license to transport his / her work laptop back to the U.K., so long as the technology on the work laptop was not enhanced in any way while it was in the U.S.

iii. **Question**: What if, while in the United States, I or my U.S. colleagues or partners enhance the technology on my work laptop?

Answer: If, during your stay in the United States, you or your U.S. colleagues enhance the technology's capabilities or characteristics by, for example, incorporating certain U.S. technical data into it or downloading certain controlled software, you may need to apply and acquire an export license prior to traveling outside the U.S.

D. COLLABORATIONS AND INVOLVEMENT OF FOREIGN NATIONALS

i. **Question**: I am a foreign researcher who is consulting on a U.S.-university led research project. What conversations can and can't my U.S. colleagues hold with me?

Answer: Generally speaking, a U.S. person can show and distribute non-technical information about controlled and non-controlled equipment or commodities. He / she can also discuss an item's general performance and functionality and participate in talks about the results of "fundamental research." He / she, however, *cannot*, without a license, reveal any details that would allow you to reverse engineer a controlled item. If you are party to the research project and the project involves a controlled technology, the

U.S. university would likely obtain an export license to involve you in the research. Such exports are typically granted for U.K. nationals.

ii. **Question**: My U.K. laboratory is collaborating on a research project with a U.S. partner. Can my proposed staff include a Chinese National?

Answer: It depends on the research pursued; the Chinese National's role; the commodity or item involved, and whether the Chinese National is also a U.K. National or resident. You are generally encouraged to consult with your U.S. counsel. However, the following tips may prove useful:

- If the research project involves a U.S. government agency or some third-party sponsor, review the relevant contract for provisions governing and / or restricting involvement of foreign nationals.
- If the research project involves "fundamental research," generally, a Chinese National will be able to assist.
- If the research project involves non-public data and no license exception applies, the U.S. partner may need to obtain a license prior to sharing the non-public data with the Chinese National.
- If the Chinese National is a dual citizen or a permanent resident of a different country, determine the applicable country.
- As a best practice, share the fact that you propose to use a Chinese National as part of your team so that you can coordinate with your U.S. partner whether a license is required. Be mindful that the controls differ by destination, and an export to a Chinese National would be deemed an export to his home country.

iii. **Question**: Are certain research projects or international collaboration efforts more likely to trigger U.S. export controls than others?

Answer: Each project and proposed international collaboration *must* be reviewed individually. However, by rule of thumb, U.K. companies and universities should be particularly cautious when entering into collaboration agreements or pursuing research activities involving:

- Inherently military in nature or "dual-use" (i.e. civilian or military) items;
- "Emerging technologies" (see section 2.C.ii);
- Geological surveying equipment or projects involving lasers, micro-electronics, or remote sensors;
- Aerospace engineering;

- Advanced computing;
- Controlled chemicals, biological agents, and toxins; or
- Bio-technology.

APPENDIX A: CCL 600 Series and 500 Series

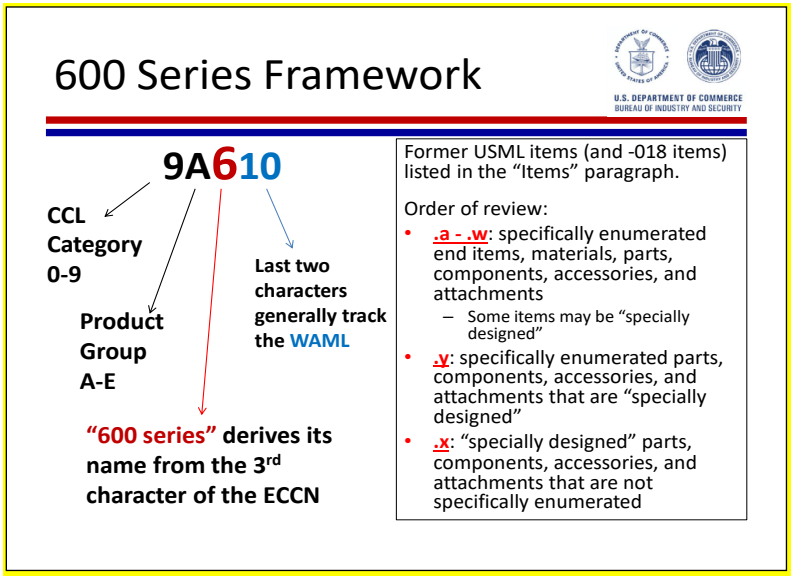
1. "600 Series"

A. Framework

The "600 Series" is defined as ECCNs in the "xY6zz" format on the CCL that control items on the CCL that were previously on the USML, or that are covered by the Wassenaar Arrangement Munitions List (WAML). The 600 Series constitutes the munitions ECCNs within the larger CCL.

- The "6" indicates the entry is a munitions item on the CCL
- The "x" represents the CCL Category
- The "Y" represents the CCL Product Group

The fourth and fifth characters ("zz") of each 600 Series ECCN tracks the WAML categories for the types of items at issue.



i. 600 Series Paragraphs (a) Through (w)

Unless otherwise noted, each 600 Series ECCN in paragraphs (a) through (w) positively enumerates specific munitions end items, parts, components, accessories, and attachments. (These items moved from the USML to CCL.) As an example, ECCN 9A610.a. covers military aircraft "specially designed" for a military use that are not enumerated in USML Category VIII(a).

ii. 600 Series Paragraph (y) – Specific Parts Controls

Skipping over paragraph (x) for the moment, paragraph (y) contains controls of specific parts, components, accessories, and attachments "specially designed" for a commodity subject to control in the respective ECCN or a defense article in the corresponding USML category. Paragraph (y) is a positive list, which includes specific parts, such as ECCN 9A610.y.1. aircraft

tires, and ECCN 9A610.y.2. analog gauges and indicators. Additionally, paragraph (y) does not control the enumerated item if it was not "specially designed" for a 600 Series item or USML item listed in the respective ECCN.

If a part, component, accessory, or attachment is specifically described in paragraph (y), then no review of paragraph (x) is needed.

Items listed in paragraph (y) are only controlled for AT reasons.

Items listed in paragraph (y) require a license for export to China, Russia, or Venezuela under the EAR's Military End-Use/End-User rule at EAR § 744.21. These items are subject to a case-by-case policy as to whether the items "would make a material contribution to the military capabilities of [China], Russia, or Venezuela, and would result in advancing the country's military activities."

a. 600 Series Paragraph (X) – "Catch All" Controls

Paragraph (x) controls parts, components, accessories, and attachments that are "specially designed" for a commodity in the particular ECCN (except for paragraph (y)) and not elsewhere specified on the USML or the CCL.

Paragraph (x) of the 600 series on the CCL should not be confused with paragraph (x) of the USML categories (*see* discussion at below).

Items determined to be subject to the EAR under a prior CJ determination and not on the CCL (*i.e.*, EAR99) retain EAR99 status if not otherwise identified on the CCL.

b. Reasons for Control

The 600 Series ECCNs are subject to the following reasons for control:

- National Security Column 1 (NS1)
- Regional Stability Column 1 (RS1)
- AT Column 1 (AT1)
- United Nations Embargo (UN)
- Missile Technology Column 1 (MT1) – if controlled by the Missile Technology Control Regime (MTCR)
- Chemical and Biological Weapons Proliferation Column 1 (CB1) - if controlled by the Australia Group
- Firearms Convention (FC) - if controlled by the Firearms Convention

600 Series Framework

U.S. DEPARTMENT OF COMMERCE
BUREAU OF INDUSTRY AND SECURITY

9A610 Military aircraft and related commodities.

License Requirements

Reason for Control: NS, RS, MT, AT, UN

Control(s)	Country chart
NS applies to entire entry except 9A610.u, .v, .w, and .y	NS Column 1
RS applies to entire entry except 9A610.y	RS Column 1
MT applies to 9A610.u, .v, and .w	MT Column 1
AT applies to entire entry	AT Column 1
UN applies to entire entry except 9A610.y	See § 746.1(b) for UN controls

License Exceptions

LVS: $1500
GBS: N/A
CIV: N/A
STA:
(1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for any item in 9A610.a (i.e., "end item" military aircraft), unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for "600 series" end items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9A610.

.a - .x items controlled to all countries except Canada

.y items controlled to Country Group E:1 countries as well as China, Russia, and Venezuela (§ 744.21)

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2. ECCN 9x515 or "500 Series"

A. Framework

Certain commercial and "dual-use" satellites as well as related items are controlled under ECCN 9x515.

9x515 Framework

U.S. DEPARTMENT OF COMMERCE
BUREAU OF INDUSTRY AND SECURITY

9A515

CCL Category 0-9

Product Group A-E

Last two characters reference USML Cat XV

"5" is used to distinguish from 600 series and dual-use items not previously in USML Cat XV

- .a - .w: specifically enumerated end items, materials, parts, components, accessories, and attachments
  - Some items may be "specially designed"
- .y: items that would otherwise be within the scope of 9A515.x. but that have been identified in interagency-cleared CCATS
- .x: "specially designed" parts, components, accessories, and attachments that are not specifically enumerated

These satellites and related items include:

- Satellites
  - Commercial communication satellites
  - Lower-performance remote sensing satellites
  - Planetary rovers
  - Planetary and interplanetary probes
- Related systems for the above
  - Ground control systems
  - Training simulators
  - Test, inspection, and production equipment
  - Non-critical software for production, operation or maintenance
  - Non-critical technology for development, production, installation, operation or maintenance
  - Radiation hardened microelectronics
- Parts and components of satellite bus and payloads not listed on the USML
  - Thousands of types of parts and subsystems
  - Hundreds of thousands of specific parts

Spacecraft enumerated in 9A515.a (and 9A004) remain subject to the EAR even when incorporating a hosted payload performing a function described in USML Category XV(a). On the other hand, spacecraft incorporating a primary or secondary payload are subject to the ITAR.

"500 Series" items are not eligible for export to China since China is subject to U.S. arms embargo (*see* Country Group D:5).

B. Reasons for Control

Generally subject to the same scope of controls as 600-Series items:

- National Security Column 1 (NS 1)
- Regional Stability Column 1 or 2 (RS 1 or 2)
- Missile Technology (MT Column 1)
- Anti-Terrorism Column 1 (AT 1)

3. License exceptions available for 600/500 Series:

License Exception	EAR Provision	Description
LVS*	15 C.F.R. § 740.3	Low value shipments ($ 1500 for most 600 Series and 9x515 items)
TMP	15 C.F.R. § 740.9	Temporary exports (tools of trade, kits with replacement parts/components, exhibition/demonstration, certain exports to a U.S. person's facility abroad, personal protective equipment); certain returns of items temporarily in the U.S.
RPL	15 C.F.R. § 740.10	One-for-one replacement parts/components; return repaired or replaced items (special recordkeeping requirements for 600-Series)
TSU	15 C.F.R. § 740.13(a), (b), (f), (g)	Operation technology/software; technology/source code in the U.S. to bona fide, full time regular employees of U.S. universities; copies of technology previously authorized.
GOV	15 C.F.R. § 740.11(b) or (c)	Personnel and agencies of the U.S. government; contractor support personnel; shipments made for or on behalf of the U.S. government; shipments directed by the U.S. Dept. of Defense; shipments to NATO and cooperating governments.
BAG	15 C.F.R. § 740.14	Shipments of personal protective equipment and individual production equipment.
STA*	15 C.F.R. § 740.20(c)(1)	Subject to restrictions, shipments of 600-Series to "Country Group A:5" countries and shipments of 9x515 to "Country Group A:5 and A:6"

*Availability based upon particular ECCN