University of California Export Control Training

Fischer & Associates

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Q & A

1. ITAR

Regulatory Overview

ITAR- State Department controls (22 CFR 120-130): Defense Directorate for Trade Controls (DDTC)

ITAR controlled items (defense articles, technical data) and activities (defense services) are listed on the U.S. Munitions List ("USML"). Categories include:

I. Firearms, Close Assault Weapons and Combat Shotguns
II. Guns and Armament
III. Ammunition/Ordnance
IV. Launch Vehicles, Guided Missiles, Rockets, Torpedoes, Bombs, and Mines
V. Explosives, 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, Range Finder, Optical and Guidance Control
XIII. Materials and Miscellaneous Articles
XIV. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment
XV. Spacecraft and Related Articles
XVI. Nuclear Weapons and 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

Regulatory Overview (continued)

Sample from US Munitions List (ITAR): Category XII(d): Guidance and navigation systems or end items, as follows:

(1) Guidance or navigation systems (e.g., inertial navigation systems, inertial reference units, attitude and heading reference systems) having any of the following:

(i) A circular error probability at fifty percent (CEP50) of position error rate less (better) than 0.28 nautical miles per hour, without the use of positional aiding references;

(ii) A heading error or true north determination of less (better) than 0.28 mrad secant (latitude) (0.016043 degrees secant (latitude)), without the use of positional aiding references;

(iii) A CEP50 of position error rate less than 0.2 nautical miles in an 8 hour period, without the use of positional aiding references; or

(iv) Meeting or exceeding specified performance at linear acceleration levels exceeding 25g (MT if designed or modified for rockets, missiles, SLVs, drones, or unmanned aerial vehicle systems capable of a range greater than or equal to 300 km or incorporating accelerometers specified in paragraph (e)(11) or gyroscopes or angular rate sensors specified in paragraph (e)(12) of this category that are designated MT);

NOTE 1 TO PARAGRAPH (d)(1): For rocket, SLV, or missile flight control and guidance systems (including guidance sets), see Category IV(h).

NOTE 2 TO PARAGRAPH (d)(1): Inertial measurement units are described in paragraph (e) of this category.

(2) Global Navigation Satellite System (GNSS) receiving equipment, as follows:

(i) GNSS receiving equipment specially designed for military applications (MT if designed or modified for airborne applications and capable of providing navigation information at speeds in excess of 600 m/s);

(ii) Global Positioning System (GPS) receiving equipment specially designed for encryption or decryption (e.g., Y-Code, M-Code) of GPS precise positioning service (PPS) signals (MT if designed or modified for airborne applications);

(iii) GNSS receiving equipment specially designed for use with an antenna described in Category XI(c)(10) (MT if designed or modified for airborne applications); or

(iv) GNSS receiving equipment specially designed for use with rockets, missiles, SLVs, drones, or unmanned air vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km (MT);

NOTE TO PARAGRAPH (d)(2)(iv): "Payload" is the total mass that can be carried or delivered by the specified rocket, missile, SLV, drone, or unmanned aerial vehicle that is not used to maintain flight. For definition of "range" as it pertains to rocket systems, see Note 1 to paragraph (a) of USML Category IV. For definition of "range" as it pertains to aircraft systems, see Note 2 to paragraph (a) of USML Category VIII.

(3) GNSS anti-jam systems specially designed for use with an antenna described in Category XI(c)(10);

(4) Mobile relative gravimeters having automatic motion compensation with an in-service accuracy of less (better) than 0.4 mGal (MT if designed or modified for airborne or marine use and having a time to steady-state registration of two minutes or less);

(5) Mobile gravity gradiometers having an accuracy of less (better) than 10 Eotvos squared per radian per second for any component of the gravity gradient tensor, and having a spatial gravity wavelength resolution of 50 m or less (MT if designed or modified for airborne or marine use);

NOTE TO PARAGRAPH (d)(5): "Eotvos" is a unit of acceleration divided by distance that was used in conjunction with the older centimeter-gram-second system of units. The Eotvos is defined as $1/1{,}000{,}000{,}000$ Galileo (Gal) per centimeter.

(6) Developmental guidance or navigation systems funded by the Department of Defense (MT if designed or modified for rockets, missiles, SLVs, drones, or unmanned aerial vehicle systems capable of a range equal to or greater than 300 km).

NOTE 1 TO PARAGRAPH (d)(6): This paragraph does not control guidance or navigation systems: (a) in production, (b) determined to be subject to the EAR via a Commodity Jurisdiction determination (see §120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

Note 2 to paragraph (d)(6): Note 1 does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

Note 3 to paragraph (d)(6): This provision is applicable to those contracts or other funding authorizations that are dated October 12, 2017 or later.

Note 4 to paragraph (d)(6): For definition of "range" as it pertains to rocket systems, see Note 1 to paragraph (a) of USML Category IV. For definition of "range" as it pertains to aircraft systems, see Note 2 to paragraph (a) of USML Category VIII.

Definitions

§120.6 Defense article.

Defense article means any item or technical data designated in §121.1 of this subchapter. The policy described in §120.3 is applicable to designations of additional items. This term includes technical data recorded or stored in any physical form, models, mockups or other items that reveal technical data directly relating to items designated in §121.1 of this subchapter. It also includes forgings, castings, and other unfinished products, such as extrusions and machined bodies, that have reached a stage in manufacturing where they are clearly identifiable by mechanical properties, material composition, geometry, or function as defense articles. It does not include basic marketing information on function or purpose or general system descriptions.

§120.9 Defense service.

(a) *Defense service* means:

(1) The furnishing of assistance (including training) to foreign persons, whether in the United States or abroad in the design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation, demilitarization, destruction, processing or use of defense articles;

(2) The furnishing to foreign persons of any technical data controlled under this subchapter (see §120.10), whether in the United States or abroad; or

(3) Military training of foreign units and forces, regular and irregular, including formal or informal instruction of foreign persons in the United States or abroad or by correspondence courses, technical, educational, or information publications and media of all kinds, training aid, orientation, training exercise, and military advice. (See also §124.1.)

§120.10 Technical data.

(a) *Technical data* means, for purposes of this subchapter:

(1) Information, other than software as defined in §120.10(a)(4), which is required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of defense articles. This includes information in the form of blueprints, drawings, photographs, plans, instructions or documentation.

(2) Classified information relating to defense articles and defense services on the U.S. Munitions List and 600-series items controlled by the Commerce Control List;

(3) Information covered by an invention secrecy order; or

(4) Software (*see* §120.45(f)) directly related to defense articles.

(b) The definition in paragraph (a) of this section does not include information concerning general scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities, or information in the public domain as defined in §120.11 of this subchapter or telemetry data as defined in note 3 to Category XV(f) of part 121 of this subchapter. It also does not include basic marketing information on function or purpose or general system descriptions of defense articles.

Definitions (continued)

§120.11 Public domain.

(a) *Public domain* means information which is published and which is generally accessible or available to the public:

(1) Through sales at newsstands and bookstores;

(2) Through subscriptions which are available without restriction to any individual who desires to obtain or purchase the published information;

(3) Through second class mailing privileges granted by the U.S. Government;

(4) At libraries open to the public or from which the public can obtain documents;

(5) Through patents available at any patent office;

(6) Through unlimited distribution at a conference, meeting, seminar, trade show or exhibition, generally accessible to the public, in the United States;

(7) Through public release (i.e., unlimited distribution) in any form (e.g., not necessarily in published form) after approval by the cognizant U.S. government department or agency (see also §125.4(b)(13) of this subchapter);

(8) Through fundamental research in science and engineering at accredited institutions of higher learning in the U.S. where the resulting information is ordinarily published and shared broadly in the scientific community. Fundamental research is defined to mean basic and applied research in science and engineering where the resulting information is ordinarily published and shared broadly within the scientific community, as distinguished from research the results of which are restricted for proprietary reasons or specific U.S. Government access and dissemination controls. University research will not be considered fundamental research if:

(i) The University or its researchers accept other restrictions on publication of scientific and technical information resulting from the project or activity, or

(ii) The research is funded by the U.S. Government and specific access and dissemination controls protecting information resulting from the research are applicable.

§120.15 U.S. person.

U.S. person means a person (as defined in §120.14 of this part) who is a lawful permanent resident as defined by 8 U.S.C. 1101(a)(20) or who is a protected individual as defined by 8 U.S.C. 1324b(a)(3). It also means any corporation, business association, partnership, society, trust, or any other entity, organization or group that is incorporated to do business in the United States. It also includes any governmental (federal, state or local) entity. It does not include any foreign person as defined in §120.16 of this part.

Definitions (continued)

§120.17 Export.

(a) Except as set forth in §126.16 or §126.17, export means:

(1) An actual shipment or transmission out of the United States, including the sending or taking of a defense article out of the United States in any manner;

(2) Releasing or otherwise transferring technical data to a foreign person in the United States (a "deemed export");

(3) Transferring registration, control, or ownership of any aircraft, vessel, or satellite subject to the ITAR by a U.S. person to a foreign person;

(4) Releasing or otherwise transferring a defense article to an embassy or to any of its agencies or subdivisions, such as a diplomatic mission or consulate, in the United States;

(5) Performing a defense service on behalf of, or for the benefit of, a foreign person, whether in the United States or abroad; or

(6) A launch vehicle or payload shall not, by reason of the launching of such vehicle, be considered an export for purposes of this subchapter. However, for certain limited purposes (see §126.1 of this subchapter), the controls of this subchapter may apply to any sale, transfer or proposal to sell or transfer defense articles or defense services.

(b) Any release in the United States of technical data to a foreign person is deemed to be an export to all countries in which the foreign person has held or holds citizenship or holds permanent residency.

§120.25 Empowered Official.

(a) *Empowered Official* means a U.S. person who:

(1) Is directly employed by the applicant or a subsidiary in a position having authority for policy or management within the applicant organization; and

(2) Is legally empowered in writing by the applicant to sign license applications or other requests for approval on behalf of the applicant; and

(3) Understands the provisions and requirements of the various export control statutes and regulations, and the criminal liability, civil liability and administrative penalties for violating the Arms Export Control Act and the International Traffic in Arms Regulations; and

(4) Has the independent authority to:

(i) Inquire into any aspect of a proposed export, temporary import, or brokering activity by the applicant;

(ii) Verify the legality of the transaction and the accuracy of the information to be submitted; and

(iii) Refuse to sign any license application or other request for approval without prejudice or other adverse recourse.

(b) For the purposes of a broker who is a foreign person, the empowered official may be a foreign person who otherwise meets the criteria for an empowered official in paragraph (a) of this section.

Definitions (continued)

§120.41 Specially designed.

(a) Except for commodities or software described in paragraph (b) of this section, a commodity or software (*see*§120.45(f)) is specially designed if it:

(1) As a result of development, has properties peculiarly responsible for achieving or exceeding the controlled performance levels, characteristics, or functions described in the relevant U.S. Munitions List paragraph; or

(2) Is a part (see §120.45 (d)), component (see §120.45(b)), accessory (see §120.45(c)), attachment (see §120.45(c)), or software for use in or with a defense article.

(b) For purposes of this subchapter, a part, component, accessory, attachment, or software is not specially designed if it:

(1) Is subject to the EAR pursuant to a commodity jurisdiction determination;

(2) Is, regardless of form or fit, a fastener (e.g., screws, bolts, nuts, nut plates, studs, inserts, clips, rivets, pins), washer, spacer, insulator, grommet, bushing, spring, wire, or solder;

(3) Has the same function, performance capabilities, and the same or "equivalent" form and fit as a commodity or software used in or with a commodity that:

(i) Is or was in production (i.e., not in development); and

(ii) Is not enumerated on the U.S. Munitions List;

(4) Was or is being developed with knowledge that it is or would be for use in or with both defense articles enumerated on the U.S. Munitions List and also commodities not on the U.S. Munitions List; or

(5) Was or is being developed as a general purpose commodity or software, i.e., with no knowledge for use in or with a particular commodity (e.g., a F/A-18 or HMMWV) or type of commodity (e.g., an aircraft or machine tool).

Definitions (continued)

§120.41 Specially designed (continued)

NOTE TO PARAGRAPHS (a) AND (b): The term "commodity" refers to any article, material, or supply, except technology/technical data or software.

NOTE TO PARAGRAPH (a)(1): An example of a commodity that as a result of development has properties peculiarly responsible for achieving or exceeding the controlled performance levels, functions, or characteristics in a U.S. Munitions List category would be a swimmer delivery vehicle specially designed to dock with a submarine to provide submerged transport for swimmers or divers from submarines.

NOTE TO PARAGRAPH (b): The term "enumerated" refers to any article on the U.S. Munitions List or the Commerce Control List and not in a "catch-all" control. A "catch-all" control is one that does not refer to specific types of parts, components, accessories, or attachments, but rather controls unspecified parts, components, accessories, or attachments only if they were specially designed for an enumerated item.

NOTE 1 TO PARAGRAPH (b)(3): For the purpose of this definition, "production" means all production stages, such as product engineering, manufacture, integration, assembly (mounting), inspection, testing, and quality assurance. This includes "serial production" where commodities have passed production readiness testing (*i.e.,* an approved, standardized design ready for large scale production) and have been or are being produced on an assembly line for multiple commodities using the approved, standardized design.

NOTE 2 TO PARAGRAPH (b)(3): For the purpose of this definition, "development" is related to all stages prior to serial production, such as: design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into a product, configuration design, integration design, layouts.

NOTE 3 TO PARAGRAPH (b)(3): Commodities in "production" that are subsequently subject to "development" activities, such as those that would result in enhancements or improvements only in the reliability or maintainability of the commodity (e.g., an increased mean time between failure (MTBF)), including those pertaining to quality improvements, cost reductions, or feature enhancements, remain in "production." However, any new models or versions of such commodities developed from such efforts that change the basic performance or capability of the commodity are in "development" until and unless they enter into "production."

NOTE 4 TO PARAGRAPH (b)(3): The *form* of a commodity is defined by its configuration (including the geometrically measured configuration), material, and material properties that uniquely characterize it. The *fit* of a commodity is defined by its ability to physically interface or connect with or become an integral part of another commodity. The *function* of a commodity is the action or actions it is designed to perform. *Performance capability* is the measure of a commodity's effectiveness to perform a designated function in a given environment (e.g., measured in terms of speed, durability, reliability, pressure, accuracy, efficiency). For software, the *form* means the design, logic flow, and algorithms. The *fit* is defined by its ability to interface or connect with a defense article. The *function* means the action or actions the software performs directly related to a defense article or as a standalone application. *Performance capability* means the measure of the software's effectiveness to perform a designated function.

NOTE 5 TO PARAGRAPH (b)(3): With respect to a commodity, "equivalent" means its form has been modified solely for fit purposes.

NOTE 1 TO PARAGRAPHS (b)(4) AND (5): For a defense article not to be specially designed on the basis of paragraph (b)(4) or (5) of this section, documents contemporaneous with its development, in their totality, must establish the elements of paragraph (b)(4) *or* (5). Such documents may include concept design information, marketing plans, declarations in patent applications, or contracts. Absent such documents, the commodity may not be excluded from being specially designed by either paragraph (b)(4) or (5).

NOTE 2 TO PARAGRAPHS (b)(4) AND (5): For the purpose of this definition, "knowledge" includes not only the positive knowledge a circumstance exists or is substantially certain to occur, but also an awareness of a high probability of its existence or future occurrence. Such awareness is inferred from evidence of the conscious disregard of facts known to a person and is also inferred from a person's willful avoidance of facts.

Definitions (continued)

§120.45 End-items, components, accessories, attachments, parts, firmware, software, systems, and equipment.

(a) An *end-item* is a system, equipment, or an assembled article ready for its intended use. Only ammunition or fuel or other energy source is required to place it in an operating state.

(b) A *component* is an item that is useful only when used in conjunction with an end-item. A major component includes any assembled element that forms a portion of an end-item without which the end-item is inoperable. A minor component includes any assembled element of a major component.

(c) *Accessories* and *attachments* are associated articles for any component, equipment, system, or end-item, and which are not necessary for its operation, but which enhance its usefulness or effectiveness.

(d) A *part* is any single unassembled element of a major or a minor component, accessory, or attachment which is not normally subject to disassembly without the destruction or the impairment of designed use.

(e) *Firmware* and any related unique support tools (such as computers, linkers, editors, test case generators, diagnostic checkers, library of functions, and system test diagnostics) directly related to equipment or systems covered under any category of the U.S. Munitions List are considered as part of the end-item or component. Firmware includes but is not limited to circuits into which software has been programmed.

(f) *Software* includes but is not limited to the system functional design, logic flow, algorithms, application programs, operating systems, and support software for design, implementation, test, operation, diagnosis and repair. A person who intends to export only software should, unless it is specifically enumerated in §121.1 of this subchapter (e.g., USML Category XIII(b)), apply for a technical data license pursuant to part 125 of this subchapter.

(g) A *system* is a combination of parts, components, accessories, attachments, firmware, software, equipment, or end-items that operate together to perform a function.

Note to paragraph (g): The industrial standards established by INCOSE and NASA provide examples for when commodities and software operate together to perform a function as a system. References to these standards are included in this note to provide examples for when commodities or software operate together to perform a function as a system. See the INCOSE standards for what constitutes a system at: *http://g2sebok.incose.org/app/mss/asset.cfm?ID=INCOSE%20G2SEBOK%202.00&ST=F,* and in INCOSE SE Handbook v3.1 2007; ISO/IEC 15288:2008. See the NASA standards for examples of what constitutes a system in NASA SE Handbook SP-2007-6105 Rev 1.

(h) *Equipment* is a combination of parts, components, accessories, attachments, firmware, or software that operate together to perform a function of, as, or for an end-item or system. Equipment may be a subset of an end-item based on the characteristics of the equipment. Equipment that meets the definition of an end-item is an end-item. Equipment that does not meet the definition of an end-item is a component, accessory, attachment, firmware, or software.

§120.50 Release.

(a) Technical data is released through:

(1) Visual or other inspection by foreign persons of a defense article that reveals technical data to a foreign person; or

(2) Oral or written exchanges with foreign persons of technical data in the United States or abroad.

Sample Scenarios

Scenario 1: DSP-73 Export

A UC research team will embark on a research expedition to the Philippines. They will need to use an ITAR-controlled oceanographic research instrument in order to conduct the intended research. The instrument will initially be exported to a bonded warehouse in Taiwan. It will then be loaded onto a Taiwanese flagged vessel on which U.S. persons and research collaborators from several countries will be present. The vessel will transit to the Philippines to conduct research. It will then return to the Taiwanese warehouse, from which a freight forwarder will retrieve it for return to the U.S.

Export Control issues to consider:

- Licensing for all international destinations
- Licensing for all foreign national collaborators who require “access” to the instrument
    - Licensing can be accomplished per country, rather than per individual; however
        - Dual nationals and third country nationals must be accounted for
    - Alternately, if access is restricted to U.S. persons only, a TCP would be required
- Customs lodging-See §123.22
- Complicating factors:
    - UC decides to switch Freight Forwarders
        - License Amendment may be obtained with sufficient lead time
            - Typically processed within 2-3 weeks of submission
    - Changes to the composition of the collaborative research team mean that unexpectedly, a group of French researchers will require access to the instrument
        - Substantive changes cannot be managed with a License Amendment and would require an additional license
            - Can be obtained with sufficient lead time
            - Typically processed within 30-60 days of submission

Sample Scenarios (continued)

Scenario 2: Release of Technical Data

A team of UC researchers utilize a piece of ITAR-controlled radiation-hardening equipment in their shared laboratory space. The lab is generally an open environment, used primarily for fundamental research. The equipment includes a screen which is positioned above the rest of the device, on which it displays data about the performance parameters of the equipment.

Export Control issues to consider:

- Determine whether visual access to the equipment itself could reveal ITAR technical data
- Determine whether performance parameter data displayed on the screen constitutes ITAR technical data
- Because the data displayed includes information about the operation of the equipment, there is the potential for unauthorized release of technical data to foreign nationals
- UC maintains an open laboratory environment for all research based on its anti-discrimination policy; access cannot be restricted on the basis of nationality

Scenario 3: Defense Service

A UC researcher is undertaking a sponsored project related to Perceptual Learning on behalf of DSO, a Singaporean defense organization. The work is fundamental research designed to determine the efficacy of a particular Perceptual Learning protocol for the treatment of myopia. The research utilizes an EAR99-controlled device and related software. Additionally, the UC researchers will train DSO personnel in usage of the testing equipment and software. While the project is not intended to specifically provide any military advantage to Singapore, and in fact, DSO sponsors many initiatives for Singaporean public health research, it could potentially result in improved eyesight for certain Singaporean military personnel—and increased know-how and tools in improving soldiers' eyesight on a go-forward basis.

Export Control issues to consider:

- Must determine whether this scope rises to the level of a "defense service"

Sample Scenarios (continued)

Scenario 4: Bona fide Employee Exemption

UC researchers are engaged in a proprietary “service” for a sponsor. The scope of work requires utilizing an ITAR-controlled imaging system in such a way that technical data about the system’s functionality would be revealed.

Export Control issues to consider:

- ITAR “bona fide employee exemption” found in §125.4(b)(10) provides authorization for:
  (10) Disclosures of unclassified technical data in the U.S. by U.S. institutions of higher learning to foreign persons who are their bona fide and full time regular employees. This exemption is available only if:
  (i) The employee's permanent abode throughout the period of employment is in the United States;
  (ii) The employee is not a national of a country to which exports are prohibited pursuant to §126.1 of this subchapter; and
  (iii) The institution informs the individual in writing that the technical data may not be transferred to other foreign persons without the prior written approval of the Directorate of Defense Trade Controls;

- Cannot be used by persons from “126.1” countries (for example, China).

2. EAR

Regulatory Overview

EAR-Commerce Department "Dual use" controls (15 CFR 700-799):

- Commodity/hardware, software, technical data designed and used for civilian applications but which inherently could have a non-civilian use - - generally defense or nuclear proliferation capabilities.
- Technical data/technology: blueprints, plans, diagrams, models, formulae, tables, engineering designs, and specifications, manuals and instructions.
- Exports of certain commodities (whether hardware, software, technology or technical data) identified on the Commerce Control List (CCL) with an Export Control Commodity Number (ECCN) require prior written authorization — an "export license" — or must meet an allowable exception.
    - Licenses take at least 30-60 days to obtain and are often issued with mandatory end use/user conditions.
- Licensing depends on three factors:
    - Type of item;
    - Reason(s) for control e.g., anti-nuclear proliferation (NP), missile technology (MT), national security (NS), chemical biological (CB), and/or several other types of control may apply; and
    - Whether country exported to is controlled for an item with that level of control, based on the Commerce Country Chart.

- Commerce Control List (CCL) 15 CFR 774 Categories 0-9:
    0) Nuclear & Miscellaneous
    1) Materials, Chemicals, Microorganisms, & Toxins
    2) Materials Processing (includes laboratory instruments used in materials processing)
    3) Electronics (includes integrated circuit technology and development)
    4) Computers
    5) Telecommunications and Information Security (includes materials for telecommunications and encryption technology)
    6) Sensors and Lasers (includes many detection devices and related technology)
    7) Navigation and Avionics
    8) Marine
    9) Aerospace and Propulsion

Regulatory Overview (continued)

Within each category 0-9, items are arranged according to the same five groups:

A. Systems, Equipment, and Components
B. Test, Inspection and Production Equipment
C. Material
D. Software
E. Technology

Note: Commercially available items purchased in the US may still be regulated under the EAR. Likewise, EAR controls (and U.S. export controls in general) can "attach" to items purchased internationally once such items are in the U.S. or under certain other circumstances.

- If technical experts cannot determine the accurate ECCN for a particular item, UC may submit a CCATS (Commodity Classification Automated Tracking System) request to BIS in order to obtain the correct classification.
    - The CCATS may be relied upon only to the extent that adequate and accurate information was provided to BIS in the request—including any information which would suggest a different Commodity Jurisdiction outside of the EAR.

Regulatory Overview (continued)

Example ECCN: 8A001 Submersible vehicles and surface vessels, as follows (see List of Items Controlled).

LICENSE REQUIREMENTS

Reason for Control: NS, AT

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to entire entry	NS Column 2
AT applies to entire entry	AT Column 1

REPORTING REQUIREMENTS See §743.1 of the EAR for reporting requirements for exports under License Exceptions, and Validated End-User authorizations

LIST BASED LICENSE EXCEPTIONS (SEE PART 740 FOR A DESCRIPTION OF ALL LICENSE EXCEPTIONS)

LVS: $5000; N/A for 8A001.b and .d *GBS:* N/A *CIV:* N/A SPECIAL CONDITIONS FOR STA *STA:* License Exception STA may not be used to ship any commodity in 8A001.b, 8A001.c or 8A001.d to any of the destinations listed in Country Group A:6 (See Supplement No. 1 to part 740 of the EAR).

LIST OF ITEMS CONTROLLED

Related Controls: For the control status of equipment for submersible vehicles, see: Category 6 for sensors; Categories 7 and 8 for navigation equipment; Category 8A for underwater equipment.

Items: a. Manned, tethered submersible vehicles designed to operate at depths exceeding 1,000 m;

b. Manned, untethered submersible vehicles having any of the following:

b.1. Designed to 'operate autonomously' and having a lifting capacity of all the following:

b.1.a. 10% or more of their weight in air; and

b.1.b. 15 kN or more;

b.2. Designed to operate at depths exceeding 1,000 m; or

b.3. Having all of the following:

b.3.a. Designed to continuously 'operate autonomously' for 10 hours or more; and

b.3.b. 'Range' of 25 nautical miles or more;

TECHNICAL NOTES: 1. For the purposes of 8A001.b, 'operate autonomously' means fully submerged, without snorkel, all systems working and cruising at minimum speed at which the submersible can safely control its depth dynamically by using its depth planes only, with no need for a support vessel or support base on the surface, sea-bed or shore, and containing a propulsion system for submerged or surface use. 2. For the purposes of 8A001.b, 'range' means half the maximum distance a submersible vehicle can 'operate autonomously'.

c. Unmanned, tethered submersible vehicles designed to operate at depths exceeding 1,000 m and having any of the following:

c.1. Designed for self-propelled maneuver using propulsion motors or thrusters controlled by 8A002.a.2; or

c.2. Fiber optic data link;

d. Unmanned, untethered submersible vehicles having any of the following:

d.1. Designed for deciding a course relative to any geographical reference without real-time human assistance;

d.2. Acoustic data or command link; or

d.3. Optical data or command link exceeding 1,000 m;

e. Ocean salvage systems with a lifting capacity exceeding 5 MN for salvaging objects from depths exceeding 250 m and having any of the following:

e.1. Dynamic positioning systems capable of position keeping within 20 m of a given point provided by the navigation system; or

e.2. Seafloor navigation and navigation integration systems, for depths exceeding 1,000 m and with positioning "accuracies" to within 10 m of a predetermined point.

- Check Country Chart to determine whether your intended destination is controlled for export of your particular item.

Regulatory Overview (continued)

Commerce Control List Overview and the Country Chart **Supplement No. 1 to Part 738 page 7**

Commerce Country Chart

Reason for Control

Countries	Chemical & Biological Weapons			Nuclear Nonproliferation		National Security		Missile Tech	Regional Stability		Firearms Convention	Crime Control			Anti-Terrorism	
	CB 1	CB 2	CB 3	NP 1	NP 2	NS 1	NS 2	MT 1	RS 1	RS 2	FC 1	CC 1	CC 2	CC 3	AT 1	AT 2
Iceland[3]	X					X		X	X							
India[7]	X			X		X		X	X							
Indonesia	X	X		X		X	X	X	X	X		X		X		
Iran[1]	See part 746 of the EAR to determine whether a license is required in order to export or reexport to this destination.															
Iraq[1]	X	X	X	X	X	X	X	X	X	X		X	X			
Ireland[3,4]	X					X		X	X			X		X		
Israel	X	X	X	X	X	X	X	X	X	X		X		X		
Italy[3]	X					X		X	X							
Jamaica	X	X		X		X	X	X	X	X	X	X		X		
Japan[3]	X					X		X	X							
Jordan	X	X	X	X		X	X	X	X	X		X		X		
Kazakhstan	X	X	X			X	X	X	X	X		X	X			
Kenya	X	X		X		X	X	X	X	X		X		X		

Export Administration Regulations **Bureau of Industry and Security** **May 24, 2019**

Definitions

"Development." (General Technology Note)--"Development" is related to all stages prior to serial production, such as: design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into a product, configuration design, integration design, layouts.

"Use." (All categories and General Technology Note)--Operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing. Note: With the exception of the 500 and 600 series items, generally the definition would require more than one of these activities in order to constitute "use." With respect to 500 and 600 series items, only one of the above activities may be required to constitute "use."

"Fundamental research." Fundamental research means research in science, engineering, or mathematics, the results of which ordinarily are published and shared broadly within the research community, and for which the researchers have not accepted restrictions for proprietary or national security reasons.

"Published." Technology or software is considered "published" when it has been made available to the public without restrictions upon its further dissemination such as through any of the following:

(1) Subscriptions available without restriction to any individual who desires to obtain or purchase the published information;
(2) Libraries or other public collections that are open and available to the public, and from which the public can obtain tangible or intangible documents;
(3) Unlimited distribution at a conference, meeting, seminar, trade show, or exhibition, generally accessible to the interested public;
(4) 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
(5) Submission of a written composition, manuscript, presentation, computer-readable dataset, formula, imagery, algorithms, or some other representation of knowledge with the intention that such information will be made publicly available if accepted for publication or presentation:
    (i) To domestic or foreign co-authors, editors, or reviewers of journals, magazines, newspapers or trade publications;
    (ii) To researchers conducting fundamental research; or
    (iii) To organizers of open conferences or other open gatherings

**Note: Most "published" technology/software is not subject to the EAR. However, published encryption software remains subject to the EAR under most circumstances.*

Sample Scenarios

Scenario 1: Encryption Items

A UC researcher is developing an experimental proof of concept for a product offering quantum cryptographic capabilities. The researcher has applied to patent this proof of concept and has published related software. UC has determined that the proof of concept, if developed, would result in a 5A002-controlled item. Likewise, any technology which remained unpublished (either in the patent application or in academic journals) would remain subject to the EAR and be controlled under 5E002. Related software would fall under 5D002.

Export Control issues to consider:

- Some items which would otherwise carry ECCN controls can be rendered "not subject to the EAR" by virtue of being published. In this case, the technology comprising the proof of concept has been published and, per § 734.7 and § 734.10, has acquired a status of "not subject to the EAR."
- UC would be obligated to make notifications to BIS regarding any portion of technology which is not included in the patent application or otherwise published.
- If UC were to develop the item itself, it would require prior authorization to export.
- Related software, *even if published*, could retain its export controlled status.
    - Per § 734.7(b), "[p]ublished encryption software classified under ECCN 5D002 remains subject to the EAR unless it is publicly available encryption object code software classified under ECCN 5D002 and the corresponding source code meets the criteria specified in § 742.15(b) of the EAR."
    - § 742.15(b) provides that, subject to certain notification requirements, 5D002 encryption source code is not subject to the EAR.
        - Notification requirement per § 742.15(b)(2): Notify BIS and the ENC Encryption Request Coordinator via e-mail of the Internet location (e.g., URL or Internet address) of the publicly available encryption source code classified under ECCN 5D002, or providing each of them a copy of the publicly available encryption source code. You must provide additional copies to each of them each time the cryptographic functionality of the source code is updated or modified. In addition, if you posted the source code on the Internet, you must notify BIS and the ENC Encryption Request Coordinator each time the Internet location is changed.
    - Encryption software is consistently called out in the EAR to alert that stricter rules apply; government takes a conservative approach to cryptographic controls, including removing some items from the Fundamental Research Exclusion ("FRE").
        - Where the FRE does not apply, a "deemed export" situation arises with regard to certain foreign nationals.
    - Encryption software is controlled for its functional capacity – not for the informational content it supports.

Sample Scenarios (continued)

Scenario 2: License Exception TMP-Tools of Trade

Two UC researchers intend to travel to Brazil to conduct oceanographic research using an ROV over the course of three months. They will be the sole operators of the ROV, and will ship the ROV back to UC upon completion of the research period. The ROV is controlled under 8A001, and requires prior authorization for Brazil.

Export Control issues to consider:

- License Exception TMP (Tools of Trade) may be used.
  - Applies to usual and reasonable kinds/quantities of tools (commodities/software) for use by exporter.
  - Items must remain under "effective control" of exporter or exporter's employee (physical possession, locked in safe, guarded).
    - In some cases, it is necessary to document a security plan/TCP to verify maintenance of effective control.
  - Must accompany exporter when traveling or be shipped within one month before departure or any time after departure, and be returned no later than one year post export.
  - Does not apply to all items/circumstances; Export Control analysis is required for each use of this Exception.

Scenario 3: Denied and Restricted Parties

A UC researcher receives a request to build a simple electronic device for a previously unknown party. The device has no particularly sophisticated capabilities and no particular "dual use" functionality. It would be considered EAR99 and would thus not require prior authorization for export to most destinations (embargoed countries notwithstanding).

Export Control issues to consider:

- Denied/restricted parties screening should be performed to identify whether the proposed recipient is present on any of the eleven lists maintained by the Departments of State, Commerce, and Treasury.
  - Denied and restricted parties may be U.S. *or* non-U.S persons.
  - Some may be transacted with on a case-by-case (licensed) basis; for others, there is a presumption of denial.
  - Some are restricted for all items under the EAR while others may be approved for EAR99 items.

Sample Scenarios (continued)

Scenario 4: License Exception STA

A UC research team has accepted a service contract from an Australian commercial aircraft company. The project will involve UC transferring 9E515.a technology to Australia. 9E515 items are controlled for Australia.

Export Control issues to consider:

- License Exception STA (Strategic Trade Authorization) may be used.
    - Requirement to provide Export Control Classification Number (ECCN) to consignee/recipient.
        - Per 740.20(d)(1), you are required to notify the intended recipient of the item as to its ECCN; in this case, 9E515.a.
        - Per 740.20(d)(1)(i), this information must be provided to the consignee prior to the first export, but if there are additional transfers of the same item to the same consignee and the ECCN remains accurate, you will not need to supply the information again for those subsequent transfers.
        - Per 740.(d)(1)(ii), if there are re-exports or re-transfers to additional parties, the re-exporter or transferor is responsible for furnishing ECCN information to all subsequent consignees.
    - Requirement to obtain Prior Consignee Statement.
        - Per 740.20(d)(2), you must obtain a statement in writing from the intended consignee prior to exporting or transferring the item. If multiple transfers/exports are made of the same item between the same parties, it is sufficient to obtain one statement to cover them all (provided no material changes have occurred with respect to parties, items, or ECCN).
            - Prior Consignee Statement template is provided in 740.20(d)

3. OFAC

Regulatory Overview

- Office of Foreign Assets Control (OFAC) falls under the Department of the Treasury.
- Regulations are found in Title 31 CFR, Parts 500-599.
    - Broadly regulate and restrict transactions with embargoed countries plus certain nongovernmental organizations to implement strategic foreign policy.
    - Restrict transfer and exchange of items and services.
    - Restrict commercial, industrial, and financial relationships benefitting countries
    - Restrict personal travel (Cuba) subject to certain exceptions.
    - Prohibit transactions with certain end users – OFAC's Specially Designated Nationals List (present in the U.S. or abroad).
- Approximately twenty-five embargoed countries plus certain non-governmental organizations: most comprehensive controls apply to the following:
    - Cuba, Iran, Syria, N. Korea
    - Regulations are country-specific, including for example regulations specific to Venezuela
    - OFAC regulations operate independently of other export control regulations (dual-use/EAR, military defense/ITAR)
        - An activity that might not be controlled under EAR or ITAR may be controlled under OFAC
    - OFAC Sanctions Programs: Terrorism
        - Regulations include Executive Order and several sanctions (31 CFR 594-597)
        - Sanctions apply to certain listed entities
- Regulations are country-specific: different restrictions apply to different countries
    - While Cuba regulations have expanded the scope of General Licenses for travel related to educational activities and professional research, including participation in conferences, Specific Licenses may be required for certain activities.
        - New "Cuba Restricted List" prohibits transactions with a broad list of parties, including some hotels.
        - "Prohibited officials of the Government of Cuba" definition expanded as of 2017
    - With respect to Iran, the scope of OFAC General License authorization is much narrower, permitting only fundamental research exchanges but not commodity transfers or any research activity that could be defined as a service.
    - Sudan sanctions have been revoked; however, some restrictions remain

Enforcement

- All regulated activity requires prior authorization in the form of an OFAC license issued by the Department of Treasury.

- While OFAC publishes some country-specific guidance on regulatory interpretation, such guidance is not comprehensive; in general, questions in doubt are handled through requests for Advisory Opinions or License Applications.
    - Data provided in advisory opinions is treated as proprietary and confidential upon request.

- Treasury deploys its own investigative enforcement team, and operates jointly with the FBI and the Commerce Department's Office of Export Enforcement (OEE).

- Sanctions include civil and criminal monetary penalties which can be assessed against the individual violator and/or the institution. Cases can be referred to the Department of Justice for criminal investigation.
    - Monetary penalties can range up to the greater of $250,000 or twice the value of the transaction, per violation.

- The most common violations in the academic and research community involve the following:
    - Cuba-based research and independent travel.
    - Outbound and collaborative Iranian transactions (see below for further detail).
    - Access to restricted research tools in the U.S. by OFAC-restricted foreign nationals.
    - Failure to screen OFAC-restricted end-users.

How Specific Research Activities Trigger OFAC Requirements

- Providing a restricted "service." This concept is common to the regulations across the five most heavily sanctioned nations, as excerpted below from the Iran sanctions:

  "§560.204 Except as otherwise authorized pursuant to this part, including §560.511, and notwithstanding any contract entered into or any license or permit granted prior to May 7, 1995, the exportation, re-exportation, sale, or supply, directly or indirectly, from the United States, or by a United States person, wherever located, of any goods, technology, or services to Iran or the Government of Iran is prohibited, including the exportation, re-exportation, sale, or supply of any goods, technology, or services to a person in a third country undertaken with knowledge or reason to know that:

  (a) Such goods, technology, or services are intended specifically for supply, transshipment, or re-exportation, directly or indirectly, to Iran or the Government of Iran; or

  (b) Such goods, technology, or services are intended specifically for use in the production of, for commingling with, or for incorporation into goods, technology, or services to be directly or indirectly supplied, transshipped, or reexported exclusively or predominantly to Iran or the Government of Iran."

- Common scenarios involving restricted services include the following:
  - Exporting research data which is <u>not</u> publicly available.
    - "Export" is defined as a transfer: electronic, conversational or hard copy media
    - "Publicly available" means published on a website or through scholarly publication, etc.
    - Iranian download of a Website publication containing research results is allowable; however, providing technical assistance upon request from an Iranian individual or institution in Iran triggers license requirement.
  - Importing samples or materials for analysis/provision of data results.
    - Even where the samples or materials are strictly for research purposes and results are intended for publication, importation without a license is prohibited.
    - Note: Importing <u>any</u> item from Iran requires license authorization; other countries have item-specific requirements.
  - Data exchange with OFAC foreign national researchers and scholars <u>based in</u> OFAC countries.
    - Note export prohibition above: issuing data or research results that is unrelated to publication may constitute a restricted export.
    - Serving on collaborative research committees or boards: No issue, unless "service" is being provided: common sense standard – discussions should be limited to what has been published or general discussions pertaining to collaboration.

- Be aware of ongoing changes to Ukraine-related Russia sanctions affecting energy sector

Sample Scenarios

Scenario 1: Graduate Student (Iran)

A graduate student has completed their coursework in Finance at UC and will return to Iran, their home country. The student wants to continue working on a research project conducted during their time at UC, which deals with financial literacy. The UC professor who had supervised the original data collection would like to assist in preparing the student's findings for publication.

Export Control issues to consider:

- Certain activities related to publication "services" are authorized under §560.538, including the following:
  - Collaborating on the creation and enhancement of written publications.
  - Augmenting written publications through the addition of items such as photographs, artwork, translation, explanatory text, and, for a written publication in electronic format, the addition of embedded software necessary for reading, browsing, navigating, or searching the written publication.
  - Substantive editing of written publications.
- However, other activities are restricted under §560.538, including:
  - Providing individualized or customized services (including, but not limited to, accounting, legal, design, or consulting services), other than those necessary and ordinarily incident to the publishing and marketing of written publications, even though such individualized or customized services are delivered through the use of information or informational materials.
    - Academic advising, interpretation of data, etc. could fall under this restriction and therefore require a Specific License.

Sample Scenarios (continued)

Scenario 2: Ecological Preservation in Cuba

As part of an ecological project, UC researchers intend to export shark tracking tags to Cuba's Fisheries Ministry. The tags are EAR99 controlled.

Export Control issues to consider:

- All items subject to the EAR require a license for Cuba, and such applications are generally subject to a presumption of denial.
- However, in this instance, License Exception SCP may be used.
  - § 740.21(c)(1) authorizes the export of donated items for use in certain activities, including scientific and/or ecological activities.
- Screening must be performed on the particular Cuban parties involved to ensure no end user-based controls.
  - Recently published "Cuba Restricted List" must be reviewed

Sample Scenarios (continued)

Scenario 3: Historical Preservation in Cuba

A UC researcher has been engaged by a Cuban historical archival organization to produce architectural documentation of certain historic districts in Old Havana which are slated for redevelopment. The documentation will be gathered using an EAR99-controlled camera-equipped drone. During the project, the researcher also intends to provide training to the organization's personnel on basic operation of the drone—which itself will be donated to them at the conclusion of the work.

Export Control issues to consider:

- All items subject to the EAR require a license for export to Cuba, and such applications are generally subject to a presumption of denial.
    - However, in this instance, License Exception SCP may be used.
        - § 740.21(c)(1) authorizes the export of donated items for use in certain activities, including scientific and/or historic preservation activities.
        - Items may not be donated to organizations administered or controlled by the Cuban government or communist party, and must support eligible activities independent of the Cuban government and communist party.
- U.S. person travel to Cuba requires authorization from OFAC
    - §515.564 authorizes travel for professional research and professional meetings in Cuba as follows:
      (a) *General license*—(1) *Professional research.* The travel-related transactions set forth in §515.560(c) and such additional transactions as are directly incident to professional research are authorized, provided that:
      (i) The purpose of the research directly relates to the traveler's profession, professional background, or area of expertise, including area of graduate-level full-time study;
      (ii) The traveler's schedule of activities does not include free time or recreation in excess of that consistent with a full-time schedule of professional research.
    - Note that many parties and entities, including many hotels, appear on the "Cuba Restricted List" and must not be transacted with during the course of authorized travel.
- Provision of training services to Cuban parties could require specific license from OFAC

Appendix 1: Country-Based Checklists

4. Current Research Topics

Health Sciences and Export Control

- Health sciences research institutions are subject to export control regulations and enforcement efforts. U.S. Government agencies strictly regulate, among other things:
  - Biological Materials (e.g. viruses, pathogens and toxins, etc.) as well as chemicals used in biotechnology and related disciplines
  - Certain laboratory equipment associated with using these items: dispersion and containment equipment; detecting/sensing equipment; processing equipment
  - Related technology to develop the equipment and live materials
- Regulations restrict:
  - Items exported from the U.S. by any mean (shipped, hand-carried, and in the case of technical data/electronically transmitted)
  - Access by certain foreign national researchers in our laboratories for whom items are controlled

Biological Agents and Related Equipment

Materials

- Commerce Control List Category 1 (EAR) 1C350-355, 1C360, 1C395, 1C991
- Controls in Category 1 of the Commerce Control List cover dual-use Materials, Chemicals, Microorganisms, and Toxins including:
  - Chemical precursors for toxic chemical agents (1C350)
  - Human and Zoonotic Pathogens and Toxins (1C351)
  - Animal Pathogens (1C352)
  - Genetic Elements and Genetically Modified Organisms (1C353)
  - Plant Pathogens (1C354)
  - Mixtures and medical, analytical, diagnostic, and food testing kits (1C395)
  - Vaccines, immunotoxins, medical products, diagnostic and food testing kits (1C991)
    - Immunotoxins Containing Human/Zoonotic Toxins
    - Medical Products Containing Botulinum or Conotoxins
    - Diagnostic/Food Testing Kits Containing Human or Zoonotic Toxins

Health Sciences and Export Control (continued)

Appendix 2: Sample Agricultural/Biological Products Review Checklist

Equipment in Support of Health Sciences Research

Commerce Control List Category 2 (EAR) B and E Sections (2E001)

- ECCN 2B352, Equipment capable of use in handling biological materials
  - Complete P3 or P4 facilities
  - Fermenters
  - Centrifugal Separators
  - Cross-flow Filtration Equipment & Components
  - Freeze-drying equipment
  - Protective and Containment Equipment
  - Aerosol Challenge Chambers
  - Spraying or Fogging Systems

Technologies Related to Pathogens and Toxins

- Subject to the Fundamental Research Exclusion, technologies used to produce the materials listed in CCL Category 1 may also be controlled. When such technology is being developed as a function of publishable unrestricted research, foreign national access restrictions will not apply (assuming no USDA restrictions to the contrary). However, when research incorporates proprietary information, foreign national access restrictions may apply.
- Technology required for the development, production, or disposal of export-controlled pathogens, toxins and microbiological materials.

Health Sciences and Export Control (continued)

US Munitions List (ITAR) Category XIV

- Covers Toxicological Agents, Including Chemical Agents, Biological Agents and Associated Equipment
  - Subparagraph (a): Chemical agents, including nerve agents, Amiton, vesicant agents and incapacitating agents
  - Subparagraph (b): “Biological Agents and biologically derived substances specifically developed, configured, adapted or modified for the purpose of increasing their capability to produce casualties in humans or livestock, degrade equipment or damage crops”
  - Subparagraph (c): Chemical agent binary precursors and key precursors
  - Subparagraph (f): Equipment, components, parts, accessories designed or modified for military operations - - involving chemical agents (testing, detection, dispersion, protection against, decontamination, etc.) Bio-agent test, collection, detection, decontamination, disposal and protection equipment
  - Subparagraph (g): Antibodies, polynucleotides, biopolymers or biocatalysts
  - Subparagraph (h): Medical countermeasures, such as vaccines, antidotes, medical diagnostics to protect against chemicals referenced in the subparagraph above or as ad defense against listed bio-agents.
- Note: While Category XIV items and related technology are usually associated with government funded-restricted research (publication restricted and U.S. Person only), some of these items can arise during the course of fundamental research, particularly with respect to medical countermeasures.
  - Example: Research on an antidote to pesticide poisoning where the pesticide is a listed chemical in subparagraph (c). Transfer of such antidote internationally may require State Department export authorization. However, assuming fundamental research, no foreign national restrictions apply to the research process itself or resulting commodity.

Health Sciences and Export Control (continued)

Export Compliance in a BSL-2 Context

Items that are stored and used in a BSL-2 facility may, in fact, also be export controlled as dual use items. Therefore, any such items proposed for international transfer should be evaluated prior to transfer for export licensing requirements. Likewise, any proprietary technology associated with developing such items should also be reviewed for foreign national "deemed export" purposes.

For example, the following is an excerpt from CDC publication Biosafety in Microbiological and Biomedical Laboratories ("BMBL"):

Table 5. Vaccine Strains of BSL-3 and BSL-4 Viruses that May Be Handled as BSL-2

Virus	Vaccine Strain
Chikungunya	181/25
Junin	Candid #1
Rift Valley fever	MP-12
Venezuelan equine encephalomyelitis	TC83 & V3526
Yellow fever	17-D
Japanese encephalitis	14-14-2

For reference, the following ECCNs would apply to the above items:

- 1C351.a.7 Chikungunya virus
- 1C351.a.21 Junin virus
- 1C351.a.42 Rift Valley fever virus
- 1C351.a.55 Venezuelan equine encephalitis virus
- 1C351.a.58 Yellow fever virus
- 1C351.a.20 Japanese encephalitis virus

Health Sciences and Export Control (continued)

Dual Use Research of Concern (DURC)

- Beyond the CCL, cutting edge technologies which may not yet be captured in the existing regulations must be evaluated for possible dual use implications. See 2014 Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern ("DURC")
    - DURC is usually research focused on one or more of 15 specifically named biological agents engaged in the one or more of the 7 following activities:
        - Enhance the harmful consequences of an agent or toxin
        - Disrupt immunity or the effectiveness of an immunization against an agent or toxin without clinical and/or agricultural justification
        - Confer to an agent or toxin resistance to clinically and/or agriculturally useful prophylactic or therapeutic interventions against that agent or toxin or facilitates their ability to evade detection methodologies
        - Increase the stability, transmissibility, or the ability to disseminate an agent or toxin
        - Alter the host range or tropism of an agent or toxin
        - Enhance the susceptibility of a host population to an agent or toxin
        - Generate or reconstitute certain eradicated or extinct agents or toxins
- In the event that fundamental research (potentially involving 1C351 dual use items) evolves into Dual Use Research of Concern, this would trigger an export control review. This export control evaluation would be coordinated with your campus DURC committee.
    - You should remain aware that, in the event of a DURC scope a) the research results may need to be withheld from publication; and b) deemed export licensing may be required for exposure of foreign nationals to the research materials and results.

Aerospace Research and Export Control

Category 9 UAVs (Drones)

- Research using UAVs has expanded significantly in the past 2 years, with increased commercial availability and sophistication. High percentage of use is international, typically in the geo science and atmospheric science areas.
    - Classification of the drone is based on various factors including autopilot capability and other instrumentation incorporated in the UAV.
    - A drone might be EAR99 until a controlled autopilot system/navigation unit, or imaging device is incorporated.
- Because these devices are portable, there is a particular risk of transfer through baggage versus recognized shipment
- Some UAVs are classified within the 600 series, elevating the level of dual use control; some are found in ITAR USML VIII (12).

Appendix 3: UAV Classification Check List

Category 9 Aerospace (CubeSat and research satellites/parts/components/software/technology)

- 9A515 et seq in the 500 series – "Technology "**required**" for the "development," "production," operation, installation, repair, overhaul **or** refurbishing of spacecraft…" See definition of "Required" Part 772
    - (General Technology Note) --As applied to "technology" or "software," refers to only that portion of "technology" or "software" which is **peculiarly responsible** for achieving or exceeding the controlled performance levels, characteristics or functions. See also Note 3 Definition – technology required for EAR component of ITAR item remains EAR technology.
    - Notwithstanding the "or" term (which departs from the normal definition of "use" technology), here the technology must "peculiarly responsible," etc. So merely operating the satellite would not trigger a deemed export absent other factors. However, technology that is peculiarly responsible for supporting any one of the enumerated functions would trigger a deemed export, depending on the circumstances.
    - Hence, when classifying the 9A515 et seq. series for deemed export purposes within the fundamental research context, close attention must be paid to the technology specifically associated with the activity, if that technology is not itself the subject of the fundamental research and is not already in the public domain.
- See also Technology Notes 1 and 2 per 9E, which includes specific inclusion and exclusion rules.
- License STA exception applies, but not in all circumstances such as certain software provisions.
- TCPs: because of the technology concern here, TCP restrictions must be carefully nuanced, so as to maximize fundamental research coverage, but allow for certain restricted carve outs. Also, it is not unusual for campus to conduct an "engineering" function (for example SSL) that is not research, and would require proprietary contract review. Some of these engineering functions may also implicate space launch applications USML IV and XV.).
- NASA contracts: some are now including boilerplate export control language, publication restrictions, and the 7012 clause. Essential to negotiate out these clauses.

5. Key Operational Working Tools-Leveraging Core Administrative Units

Take-Away Questions

- **Are you getting what you need from core operational functions to manage export control?**
- **Do these functions know what to look for and communicate this to you?**
- **Do these functions have the core guidance they need to link their processes to you?**

Issue Spotting with your Sponsored Research/Industry Contracts Teams

- Pre-award Evaluation
  - Does the pre-award proposal routing form and internal check list capture necessary information?
  - Is your pre-award team sufficiently familiar with export control to dialogue with you about potential concerns?
  - Is there a dotted line communication channel between Sponsored research and Export Control?
  - Is the DFARS 7012 fully understood in terms of the FRE exemption? What about service sub-contractual flow down provisions?
  - Is there clarity about the distinction between fundamental research *versus* industry-sponsored "service" recharge contracts?
- Pre-Award Checklist areas:
  - Restrictive clauses
  - Publication and/or citizenship
  - Next level down: Potential for export control data; citizenship approval
  - Data Security: 7012 or other; data transfer protocols
  - Anticipated NDAs/MTAs
  - DOD Form 2345 Certification required?
  - Procurement of specialized tools
  - International data exchange
  - International Shipping
- Post Award/Grant Administration
  - Is there familiarity with export control?
    - Restricted Party Screening
    - Procurement – export controlled items (see also section below)
    - International Travel – transfer of assets (see also section below)
    - Hiring from grant resources – foreign national participation

Procurement Training

How to identify controlled items: What works most efficiently

- Critical to understand how Procurement in your organization works: PI/departmental level identification of laboratory instruments *versus* central procurement?
- Critical to correct common faculty/staff misconceptions, such as:
  - *"If we can purchase these items commercially on the open market, they are not controlled."*
    - Many commercially available items are export controlled.
  - *"If we are conducting fundamental research (no publication/citizenship restrictions accepted in the award), then nothing in the laboratory would be controlled."*
    - Fundamental research projects frequently utilize export controlled equipment.
  - *"If we are conducting research that has no defense implications, nothing in the laboratory would be controlled."*
    - Research that is unrelated to defense may involve EAR or even ITAR items; for example, oceanographic research often utilizes ITAR controlled sensors.
  - *"If an item is not of U.S. origin and is imported by the vendor (or UC), it is not controlled."*
    - U.S. export controls "attach" to items present in the U.S., regardless of their origin.
  - *"If a foreign national does not actually use the item, no restriction is applicable."*
    - In some instances, generally with respect to ITAR, a "visual release" of controlled data can occur even if the foreign national has not used the item.
  - *"If we happen to create an item with defense capability, assuming we publish the research process and associated technology, the resulting commodity is not controlled."*
    - The commodity would remain subject to export controls, for example, with respect to shipping outside of the U.S.
- Timing issue with respect to quotation process
- Decision point: ITAR and EAR, or just ITAR – we recommend both, on a selective basis
  - UC Terms/Conditions: ARTICLE 17 – ADDITIONAL TERMS APPLICABLE TO THE FURNISHING OF GOODS: F. Export Control. If any of the Goods is export-controlled under the International Traffic in Arms Regulations (22 CFR §§ 120-130), the United States Munitions List (22 CFR § 121.1), or Export Administration Regulations (15 CFR §§ 730-774) 500 or 600 series, or controlled on a military strategic goods list, Supplier agrees to provide UC (the contact listed on the Purchase Order) with written notification that identifies the export-controlled Goods and such Goods' export classification.
- Guidance to stake holders is helpful, and the following format may be used.

Appendix 4: Recommended Procurement Guidance

Evaluating foreign national participation in export-sensitive areas: H1/J1/F1 research assignments

- I-129B (H1-O1) Mandatory Certification; J1/F1 same underlying export control requirement
- Critical to organize the timely issuance of an Export Control Questionnaire with respect to H1/O1 Certifications and J1/F1 (grad student) sensitive research positions
    - J1s: many different categories (e.g. compensated/uncompensated/short or longer term etc.)
    - F1s: graduate assistants and OPT positions
- Note: the questionnaire is only as good as the quality of information behind it: i.e. does the respondent understand the nature of the inquiries?
- Results from questionnaire can be reconciled to what is already known regarding controlled areas and TCP coverage:
    - Questionnaire should account for potential status change
- May present opportunity for “high risk” inventory review re deemed exports
- EAR Technology sharing
    - ITAR Anything

Evaluating foreign national participation in export-sensitive areas: H1/J1/F1 research assignments (continued)

- Recommended Questionnaire Content as follows:

1. Will the visa applicant be working in one of the following areas: biomedical sciences, computer sciences, space or space launch sciences, or ***any*** engineering or scientific discipline? Engineering or scientific disciplines may include but are not limited to the following: Chemical, Electrical, Semiconductor, Materials Science, Physics, Mechanical, Geophysical, Marine, Astronomy, Nuclear, Artificial Intelligence or Robotics.

   Check one:

   ☐ No, the assignment will not involve, expose or *potentially* expose the applicant to any scientific discipline, including but not limited to the ones listed above. Please sign and date this form below and submit it to [name contact].

   ☐ Yes, the assignment will involve, expose or *potentially* expose the beneficiary to a scientific discipline (including but not limited to one or more of those listed above). Please describe in the space provided below, and then proceed to Questions 2 A – D below.

2. You are required to answer **all** sub questions A-D below and sign and date at the bottom. If you do not have the information necessary to complete this certification, please contact [Export Administrator] to complete the processing of this certification questionnaire. (Check for yes)

   A. ☐ The visa applicant will work under a sponsored research agreement or contract that restricts or prohibits the participation of foreign nationals or non U.S. persons participating in the research.

   B. ☐ The visa applicant will work under a sponsored research agreement or contract that restricts or prohibits the research team's right to publish any of the data or research results, except for the sponsor's right to review and exclude proprietary data from intended publication. Y? N?

   C. The visa applicant will be provided access (whether or not actually required for his/her work assignment and whether through hard or soft copy) to:
      ☐ Technical data or information that has been stamped or otherwise designated by the sponsor or collaborating institution as being "export controlled";
      ☐ Sponsor or third-party confidential information, materials, or software that is the subject of a Non-Disclosure Agreement (NDA) or equivalent confidentiality agreement;
      ☐ Technology for the development of cryptography, or proprietary source code containing cryptographic functionality;
      ☐ Information pertaining to the underlying design, or development, or production of instruments, materials, software or scientific processes - - where such information is not in itself the subject of fundamental research: for example, a vendor's proprietary information or technology about a particular instrument.

   D. ☐ The visa applicant will be provided access to research equipment, instruments, materials, software, and/or technical data in any form (e.g. blue print, sketches, specifications, documented technology, vendor operational manual/instructions, data results) that is/are governed under the **ITAR***.

      ***ITAR** covers any item (equipment, instruments, materials, software, and/or technical data as exemplified above) *specially* designed, developed or modified for military, defense or space applications) and may include such items whether procured from a vendor, or otherwise received by a research sponsor or collaborating research institution. For a list of the high level **ITAR** categories that identify such defense, military and space items please see (http://www.pmddtc.state.gov/regulations_laws/itar_official.html). For purposes of this certification, "access" means any visual or physical access to the item, regardless of whether such access is actually required by the visa applicant to perform his/her work assignment.

Note: any technology that has been invented as the result of fundamental research and is the precise subject of a research publication (i.e. already in the public domain) may be exempt from this access restriction, pending confirmation by the Export Control Administrator.

Watch-list (restricted party) screening: Refining your distributed responsibility model

- What categories of individuals or entities should be screened?
  - International sponsors of research agreements
  - Inter-institutional MOUs and MOAs with international parties hosting exchange and study- abroad programs
  - Vendors/payees; subcontractors (academic; logistics; business providers, etc.)
  - Industry partners/sponsors (including unknown domestic industry partners)
  - All recipients/consignees of international shipments
  - J-1 exchange visitors/scholars
  - Visiting delegations to the campus from international institutions
  - Commercial licensees of technology know-how or software license agreements
  - External users of core facilities or resources (including, if applicable, “sponsored affiliates” accessing IT network)
  - On-line course registrants (who are not otherwise registered students)
- Has VC screening been delegated out to the relevant stakeholders?
  - If not, consider delegation and VC training
- Is there sufficient training to recognize nuanced circumstances: for example:
  - Hosting a non-restricted individual from a restricted institution
  - Signing an MTA with a non-restricted institution affiliated with a restricted institution
  - Accepting research $ from an entity on another country’s restricted list
  - Software “publication” which in fact implements restrictive registration, dissemination controls and/or fee structure, resulting in capture under the EAR
- Are potential matches communicated to Export Control by delegated stakeholders?

International Travel

- Issue: Where there is a campus-managed pre-travel authorization process, does it sufficiently capture intended transfer of research tools and instruments; can it serve as a capture point for parties which should be screened?
  - Travel Notification is often the first flag raised about potential export control or OFAC issue.
  - Have you introduced export control questions into the existing travel form?
  - If so, are the questions clear and meaningful?
  - Does the Form owner respond to Export Control with export-related concerns?
  - Is the process set up to allow timely intervention by Export Control?
  - Pragmatically: fewer questions = better result! Follow-up on concerns can then occur.

- Sample Travel Questionnaire with drop down follow-up questions, as follows:

Introduction

The following questions are intended to identify export control concerns associated with international travel. Please respond Y or N to the following questions. In the event that a particular travel plan appears to trigger an export control concern, of our export control administrators will contact you to make sure that all necessary compliance steps have been taken in advance of your departure date.

Questionnaire

1. Will you be transporting (either through carry-on luggage or checked bags) laboratory instruments, tools, samples, raw materials, or prototypes?

2. Will you be traveling with a portable electronic device containing proprietary export controlled data, or data which is associated with an export-restricted research project or instrument that you have been or are working on currently (even if such data has nothing to do with the purpose of your immediate travel)?

3. Will you be transporting any device that incorporates specialized scientific software (not including typical operational software such as Microsoft Office, Adobe, etc.) or software programs containing or constituting specialized cryptographic functionality (not including routine commercial laptop cryptographic protection)?

4. Will you be providing any specific training or technical assistance to another individual, entity, or governmental institution (or representatives) beyond scientific collaboration in fundamental research?

5. Will your travel plans involve Iran, Cuba, or Syria?

Questionnaire Key

1. Will you be transporting (either through carry-on luggage or checked bags) laboratory instruments, tools, samples, raw materials, or prototypes?
   If yes, ask the following:
   a. Please list the items
   b. Are you aware of any export controls that apply to the items, including EAR or ITAR classification?
   c. What will the items be used for?
   d. Will the items return with you?
      i. If not, where will they remain?
      ii. Who will have custody of the items?
   e. Will you be providing any items (temporarily or permanently) to another individual or collaborating institution? If so:
      i. Please list the items
      ii. Will the transfer be temporary or permanent?
      iii. Who will be the recipient (institution and individual)?

2. Will you be traveling with a portable electronic device containing proprietary export controlled data, or data which is associated with an export-restricted research project or instrument that you have been or are working on currently (even if such data has nothing to do with the purpose of your immediate travel)?
   If yes, ask the following:
   a. Please describe the data
   b. Please describe the project or instrument which the data is associated with
   c. What will the data be used for?
   d. Do you intend to share the data during your travel?
   e. If so, with whom?

3. Will you be transporting any device that incorporates specialized scientific software (not including typical operational software such as Microsoft Office, Adobe, etc.) or software programs containing or constituting specialized cryptographic functionality (not including routine commercial laptop cryptographic protection)?
   If yes, ask the following:
   a. Please list the software here by name and version.
      i. Please describe what the software is used for.
      ii. Will the software be used by or transferred to anyone else during your travel?
      iii. If so, to whom?

4. Will you be providing any specific training or technical assistance to another individual, entity, or governmental institution (or representatives) beyond scientific collaboration in fundamental research?
   If yes, ask the following:
   a. Please describe the scope and subject of the training.
   b. Who will receive the training?

5. Will your travel plans involve Iran, Cuba, or Syria?
   If yes, ask the following:
   a. Please describe the scope of your activities related to this country
   b. Please list all contacts and institutional affiliations in the country

Core Lab User Facilities: Agreements/External Users

- Several scenarios are possible which could potentially trigger export control requirements:
  - External party remotely provides export controlled items and data for UC staff to work with under an agreed-upon, fee-for-service scope of work
  - External party is present at the laboratory through a collaborative relationship with UC personnel, contributing and incorporating export controlled input
  - UC agrees to ship samples back to an external party, including potential international shipments.
- Important that the Facilities Agreement template include a provision for export control compliance and, in particular, requiring an external user to notify UC of any export controlled item or technology that it intends to introduce into the laboratory under the scope of work (self-operation or UC operation).
  - Agreement may also prohibit export controlled items based on type of facility
- Recommended Agreement Clauses
  - Export Control: Facility User acknowledges that [UC Facility] has many foreign national personnel, employees and students (hereinafter referenced as “facility staff”) working on site at the Facility. Therefore, Facility User agrees not to direct facility staff to generate export controlled data or create or develop any export controlled item pursuant to any research, service, or fabrication activity intended under this Agreement.

  - With respect to export controlled research or proprietary work which the Facility User intends to personally conduct at the Facility on its own behalf, and/or in the event that Facility User intends to provide and/or bring export controlled items (data, tools, software, raw materials and/or other items) to the Facility, Facility User agrees to notify Facility personnel at least 30 days in advance of such intention to conduct such activities or provide such controlled items, so as to enable facility staff to address export control requirements accordingly.

  - In certain cases, the UC reserves the right to decline acceptance of such items or activity where the Facility cannot accommodate the necessary export control requirements. Where export control requirements can be met, Facility staff will brief you on the Facility's specific requirements which you, as the Facility User, will be responsible for.

    In this case, the Facility User agrees to sign an Acknowledgement of Understanding setting forth the specific requirements that the Facility user will be responsible for.

HPC management; Account Holder Agreements; Computational Resources

- Issue: foreign national staff administration of HPC controlled functions?
  - Has HPC Administrator reviewed CCL Category 4 Control criteria for hardware, software and technology to determine if there is a controlled cluster/capability?
- Issue: account holder export controlled software
  - Have you reviewed the Account Holder Policy/Agreement for inclusion of export control protective clause?
  - Does it prohibit uploads of controlled programs without notification to System Administrator for review?
- Issue: Sponsored affiliate accounts: Does your institution allow for “sponsored affiliate” or equivalent account holders - - typically associated with a PI for collaborating purposes?
  - Has the individual been screened?
  - What are the user privileges? And how communicated?
- Issue: DOE MCNP/MCNPX Data code licenses (code which simulates nuclear processes):
  - Individually licensed to PIs through the Radiation Safety Information Computational Center (RSICC) based at Oakridge National Laboratory.
  - RSICC strictly prohibits unauthorized access or use of the code to anyone who is not specifically licensed. With respect to foreign nationals, DOE generally will not grant a license to foreign nationals from certain countries which DOE defines as “sensitive” countries or citizenships for this purpose.
  - Institutional compliance issue is triggered when the institution’s computational resources are used to upload and run the code, generally thought to be a much more efficient process for utilizing the code than on individual laptops.
  - Where such institutional resources could inadvertently allow the code to be accessed or shared with unauthorized users (whether or not foreign nationals), this could lead to a violation of the RSICC license terms. DOE has a fair amount of enforcement discretion in this area and, at a minimum, could bar anyone from the institution from licensing the code in the future. DOE also has agency authorization to audit users which, in itself, can be a time consuming effort to navigate.
  - Important that HPC or Computational Resource Manager be notified of intent to upload code run, so that appropriate license protections can be implemented.

Technology Transfer Considerations

- Issue: With respect to invention disclosure: when is export classification required?
  - Technology and/or item may be export controlled: this will have patent and distribution implications.
  - Where technology is ITAR-governed, and depending on its sensitivity from a national security perspective, the PTO may refer the application for Secrecy Order Review
  - At a minimum, data and/or resulting item could require export licensing to support international transfers; Type 2 and 3 Secrecy Orders are more restrictive.
- If Invention Disclosure form does not already incorporate an export control inquiry, consider using a preliminary checklist of criteria for determining whether Disclosure package should be reviewed by Export Control Administrator:
  - Does item concern: Biomedical sciences, computer sciences, space or space launch sciences, or ***any*** engineering or scientific discipline? (Engineering or scientific disciplines may include but are not limited to the following: Chemical, Electrical, Semiconductor, Material Science, Physics, Mechanical, Geophysical, Marine, Astronomy, Nuclear, Artificial Intelligence or Robotics).
  - If so, how? Refer also to CCL Dual use Control List
  - Does item have direct defense applications under the ITAR: ITAR covers any item (equipment, instruments, materials, software, and/or technical data as exemplified above) *specifically* designed, developed or modified for military, crime enforcement or other defense-related applications):
  - If so, how? would this be its exclusive or primary application? Refer also to USML
- ITAR access issue: who within Tech Transfer should process this case?
  - Because ITAR technical data is considered “released” upon *potential* access to the file or visual access, and such release to a foreign national staff member would require authorization, Tech Transfer should consider having a U.S. Person(s) assigned to export-sensitive Invention Disclosures in the event that the preliminary classification review indicates an ITAR item.
- If item is export controlled, notification should be provided to PTO as part of application process
  - May still not be referred for Secrecy Order Review, or result in only a Type 1 normal export control licensing requirement. Type 2 and 3 restrictive Secrecy Orders can be appealed.
  - International Patent Application may require export license from appropriate authority (Commerce or State); State requires University to register with DDTC in order to apply for an export license. Registration process may take at least 30-60 days.
- Remember: watch list screening requirement applies to commercial licensees

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